

An Investigation into Trust and its Effect on Teams

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Certificate of Authorship

I certify that the work in this thesis has not previously been submitted for a degree, nor has it been submitted as part of the requirement for another degree.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of this thesis itself have been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

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Mahwish Ali Bhatti

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Abstract

Project failures have become a major concern for researchers and practitioners. According to the literature, organisations very often give attention to teamwork as there is a view that it is essential for the smooth operation of a project (Thamhain 2004; Bubshait et al 1999). Therefore, teamwork is one of the important factors for the success or failure of a project. In addition to the importance of teamwork, team issues affecting its performance also need attention. Among these team issues, people issues are least discussed in the literature (Dirks & Ferrin 2001). One such team issue is trust.

Trust is believed to be influenced by individual personality, individual behaviours and interpersonal relationships (Hassanein & Head 2004; cited by Lumsden & McKay 2006). When it comes to the individual's behaviour, much of the psychology literature believes it to be influenced by various sources. One example is David (2007) who produced a model showing human nature, personality and culture among the sources that influence an individual's behaviour. Moreover, trust is deeply rooted in an individual's personality (Akhter 2004; Sutherland & Tan 2004). As the importance of teams has been stressed it is quite evident that the most important attribute that makes up teams, i.e. humans, has a strong impact on a team's trust and performance. Unfortunately, due to limited empirical studies on trust in Information Technology (IT) literature, the aspects of individuals' behaviour are missing and the studies from the psychology literature are not reflected in IT or project management literature.

The research presented in this thesis is an exploratory study and it introduces a framework to help understand how trust influences IT project teams. It also includes the role of project managers and team leaders in improving trust within teams. The framework encompasses the role of project managers and team leaders in building trust within a team highlighting loyalty, communication management, motivation, etc. It also includes aspects of individuals' behaviour which affect trust within a team.

A qualitative study was carried out to achieve the objectives of this study. The analysis of responses was done from six semi-structured interviews of IT project managers and

team leaders from two Australian organisations, gathered based on their experience in managing team projects. The individual behaviours found in this study that can affect trust, and consequently projects, were frustration, compassion, deception, transparency, idleness, talk (gossiping), inappropriate behaviours, inappropriate work attire, unnecessary disturbance, bad odour, playing practical jokes and an immature attitude. The role of managers and team leaders in improving trust within teams and the team members found in this study were to: operate with transparency, earn respect, maintain the flow of communication, promote team building activities, share team/project success, motivate team members, and keep the team united. The results showed that trust is a central element and without trust, teamwork will be negatively affected resulting in project failure and poor team performance.

1. Introduction

The purpose of this study was to explore the factors that influence trust in IT teams, to understand the role of project managers and leaders in improving trust, to investigate individual behaviours associated with it, and to determine how it affects team performance. According to Dirks and Ferrin (2001), there is a general agreement about the effect of trust on teams but this has not been consistently backed up by empirical evidence. Trust was chosen as the focus of this thesis to contribute to the limited number of empirical studies on trust in the IT literature (Costa 2003).

To achieve the objectives of this research, semi-structured interviews were conducted with six project managers and team leaders. The results from the interviews were analysed to develop the framework that is introduced in this thesis.

This chapter explains the research context and the relevance of the topic within the IT industry. The chapter also discusses the issues, followed by a justification of this research, and provides an outline for the rest of the chapters.

- In Section 1.2, the context of this research is discussed. Here the overview of IT team failure is presented and its relationship with project failure is discussed. The section summarizes various past attempts to solve project failure, highlighting what has been ignored and leading towards the importance of teamwork.
- In Section 1.3, the importance of teamwork leading towards issues within the team is highlighted and trust is introduced forming the basis of the research questions.
- In Section 1.4, the research problems within the literature context are discussed and the research questions of this study are introduced.
- In Section 1.5, the justification for the research is given and the limitations of existing studies are discussed.

1.1 Background to the Research

1.1.1 IT Project failures

Every project, irrespective of its nature, makes a certain change; IT projects, if successful, bring a radical change to the software industry (Geddes 1990). However, if unsuccessful, it becomes necessary to identify the reasons causing their failure. The attempts to gain a comprehensive understanding of the causes of project failure have been a difficult task for both researchers and practitioners (Pinto & Mantel 1990; Kreps & Richardson 2007). It is difficult because the determination of what constitutes project failure is unclear and there has been a lack of consensus in the literature. Consequently, the identification of the factors that affect the failure of IT projects has become a major concern for software organisations. The project management literature is overflowing with numerous reasons for project failure including issues related to project managers' performance, team members' performance, organisational and environmental factors (Avots 1969; Sayles & Chandler 1971; Morgan & Soden 1979; Baker et al 1983; Pinto & Slevin 1989; Pinto & Prescott 1988, 1990; Lewis 1995; Spolsky 2007; Kreps & Richardson 2007; Emam & Koru 2008). From the perspectives of project types, project stakeholders and project life cycles, different issues have been pointed out in studies.

Pinto and Slevin's study (1989) confirms that one reason for the difficulty in determining project failure is the difficulty of measuring project success. Another reason is the variety of success and failure factors. But in another study, Belassi and Tukel (1996) grouped all the critical factors found in the literature in the following ways:

- Factors relating to the project.
- Factors relating to the team and the project manager.
- Factors relating to organisations.
- Factors relating to the external environment.

Factors related to project included its size and value, uniqueness of project activities, density of a project, its lifecycle and urgency. Among factors relating to project managers, the ability to delegate authority, the ability to resolve conflicts with

tradeoffs, and the ability to coordinate as well as the commitment and competence of the project managers were critical. As to team members, factors such as commitment, communication, technical skills and troubleshooting were critical. Factors related to the organisation included management support and organisation structure. And, finally, the political, social and economical environment were among the external factors.

Despite Belassi's effort, the problem of increasing project failure remains critical. Though determining the reasons for a project failure is difficult, there are a few criteria widely cited in the literature and by practitioners: time, budget and quality (Belassi and Tukel 1996; Bubshait et al 1999; Emam & Koru 2008). From earlier studies, it was assumed that if a project's completion time missed its deadline, or costs overran, or outcomes did not satisfy customers, the project was a failure (Lewis 1995).

There is a big difference between carrying out a very simple project involving one or two people and one involving a complex mix of people, organisations and tasks (Spolsky 2007). Project management is the facilitation of planning, scheduling, and controlling activities that must be done to achieve project objectives (Lewis 1995). From a traditional project management approach, when project managers managed their projects according to costs, time and quality, non-technical factors such as managerial, organisational and cultural issues also played a critical role in project performance (Saucer 1993; cited by Thite 2000; Lowry & Morgan 1996; cited by Thite 2000).

Leavitt (1975) suggests that it would be better if groups, rather than individuals, made up the building blocks of organizations. Research has also shown that in many situations, groups and teams increase commitment, improve decision making, and encourage innovation (Parker 1996; Klenke 1997; Verma 1997; Koehler 1992; Bubshait et al 1999; Mitchell 2001; Sonnekus 2004; Spolsky 2007).

1.1.2 Importance of trust in IT projects

The introduction of software and software-based products has widely influenced people's lifestyle and will continue to do so (Cattaneo et al 2001, p.3). As technology grows, the challenge of avoiding project failure gets increasingly more difficult.

IT projects are governed by multi-disciplined team members i.e., different people from different disciplines working together as a team, which makes the success of teamwork even more crucial and challenging. Nearly all IT projects rely on teamwork (Peslak & Stanton 2007). Various factors contribute towards the success of a team. These factors have been the focus of many researchers and practitioners trying to understand the success of teamwork (Gladstein 1984; Henderson & lee 1992; Cohen & Bailey 1997; Guinan et al 1998; Hoegl & Gemuenden 2001; Peslak 2006). However, very few studies have included trust as a possible factor (Peslak & Stanton 2007; Mayer et al 1995; Castro 1994). Conversely, the importance of trust has been highlighted in various other team-related aspects including leadership communication and self-managing teams (Lawler 1992; cited by Mayer et al 1995; Costa 2003; Hart & Saunders 1997). A positive effect of teams' trust and performance is found in the service and manufacturing industries (Shen & Chen 2007). The importance of trust is also cited in virtual teams (Corbitt et al 2004).

Trust is one of the team issues that has gained controversy in terms of its inconclusive nature (Corbitt et al 2004; Lipnack & Stamps 2000; Cascio 2000). As many IT projects are governed by team efforts, it is important to understand where trust stands in IT projects.

The goal of this research is to help understand how trust influences teams' performance through analysing the role of team leaders and team members with respect to their individual behaviours. The justification of this research is correlated with the motivational factors which are detailed in Section 1.4.

1.2 Research Problem and Questions

It is claimed that teamwork is a crucial issue for the success or failure of a project. Organisations tend to pay attention to team work and appreciate that teamwork is essential for the smooth operation of an organisation and its projects (Thamhain

2004; Hoegl & Gemuenden 2001; Hogan & Thomas 2005; Sonnekus 2006; Spolsky 2007). In addition to the importance of teamwork, factors affecting team performance highlighted in the literature include leadership, organizational factors, and the roles of both the team leaders and the team members. However, studies on team members which include trust issues, behaviours, etc., and their effect on team performance are limited in discussion in the project management literature (Dirks & Ferrin 2001; Erdem 2003). While discussing project failure, negligence of handling the effect of people issues on the outcome of a project was highlighted (Bubshait et al 1999; Kreps & Richardson 2007 p.443). Bubshait et al (1999) high-performing team model includes people issues such as communication, conflict, commitment, trust, etc. IT projects are dependent on teamwork and its success is becoming challenging which makes it very important for the research to address this issue.

Extensive research can be found in the area of project team management and issues related to teams that result in team failure, and consequently lead to IT project failure, including Koehler (1992); Klenke (1997); Lai (1997); Bubshait & Farooq (1999); Kloppenborg & Petrick (1999); Thite (2000); Sotiriou & Wittmer (2001); Henderson (2004); Wang et al (2005) and Sonnekus (2006) . Studies which have looked at the causes of project failure lack empirical studies on issues related to people such as trust, communication, conflict, stress, etc. Moreover, the people side of team management is the least discussed in the literature and is discussed in chapter 2 (Paulk 2002; Sonnekus 2006; Kreps & Richardson 2007). When it comes to analysing team or project failure, none of the factors are directly related to people (Cookes-Davies 2002). Among people issues, trust in teams has been the victim of a lack of attention. However, it has grabbed attention in the last few years. Sabherwal has emphasized that trust improves performance and distrust hurts performance (Sabherwal 1999). The empirical studies on trust only generally recognize trust as a vital player in organisations but this support has not been consistent (Erdem 2003).

The overall concept of trust has not gained solid consensus among scholars and practitioners because trust is 'elusive' and difficult to understand (Castro 1994; Dirks & Ferrin 2001). This research introduces a framework to help understand trust within

teams which will help improve team performance and help to avoid IT project failures.

The research questions proposed by this research are:

Research Question 1: What factors indicating distrust disturb team dynamics and lead to a failed project?

Research Question 2: What is the role of team leaders and managers in building trust within IT teams of successful projects? This leads to two further sub-categories.

- i. What is the role of team leaders and managers in building trust between team management (leaders, managers) and team members?
- ii. What is the role of team leaders and managers in building trust of team members for each other?

Research Question 3: What are the individual behaviours of team members that increase or decrease the perceived level of trust among team members in IT teams?

Research Question 4: In what ways does trust facilitate higher team performance and project success?

A qualitative approach was used to answer the research questions. In order to answer each research question, semi-structured interviews were conducted to elicit data from the participants. The data from all the interviews were then analysed to find the answers. Research questions were related to IT teams' trust issues, including real time experiences of project managers and team leaders, and qualitative methods provided the tools to help analyse the answers to these questions (Greenhalgh & Taylor 1997; Morse & Richard 2002). A semi-structured approach was chosen to explore the role of management and people in building trust in IT teams (Leedy & Omrod 2005; Sarosa 2007).

1.3 The Scope of the Research

The aim of this study is to explore factors that influence trust and the role of project managers, team leaders and team members in building trust within IT teams. The outcomes of the research will be presented in a framework proposed by this study. The IT teams referred to in this study are teams involved in software development in

short-term or long-term projects. Short-term projects constituted with time less than 24 weeks and any project with time more than 24 weeks were considered as long term projects. The formation of teams did not consider gender but the size of teams was more than two people.

Studies on trust seem to lack analysis especially when it comes to issues involving people working in teams (Dirks & Ferrin 2001; Costa 2003). This study is interested in exploring trust within IT teams not only to understand the role it plays in teams' success but to understand the importance of trust through analysing individuals' behaviour. Trust engenders effects such as a positive attitude, a higher level of cooperation and other forms of workplace behaviours (Dirks & Ferrin 2001). This idea has been reflected in most theoretical treatments of trust and its effect on workplace attitude and behaviours (Jones and George 1998; Mayer et al 1995).

1.4 Justification of the Research

Justification of this research is related to the motivation for this research. It is justified on three grounds: the need for understanding the importance of trust within IT teams, the need to investigate social factors related to successful IT teams, and the lack of empirical research on trust in IT team projects. This research will add to the understanding of trust in IT teams through the role of management and team members' behaviour.

1.4.1 Need for understanding importance of trust in IT teams

Much has been said about the importance of trust in various studies. Castro (1994) stated that it is difficult, if not impossible, to have effective and productive working relationships without trust. Castro's study does not include IT projects but has implications for the analysis of IT projects since they rely on teamwork (Peslak & Stanton 2007). Moreover, the importance of trust has been cited in areas such as communication, leadership, management, negotiations, performance appraisal and implementation of self managing teams (Mayer et al 1995, p.709; Alexander 2002; Ocker et al 2009). Others include business environment (Becton et al 2002), outsourced information system development (Sabherwal 1999) and virtual teams (Corbitt et al 2004). With all these dimensional studies on trust, there is still a lack of

empirical studies on trust within IT teams. Further, a potential area of research lies in investigating how important trust is to leaders of IT teams and to what extent they enforce measures to improve it.

The importance of trust is widely understood and agreed upon by scholars. However, research on the topic has been greatly affected by the applicability of the term “trust” to different contexts and levels of analysis (Costa 2003). Nevertheless, given its wide domain of research, clear boundaries for the concept of trust in terms of defining trust need to be understood. In this study, trust at the work team level refers to the extent to which team members trust each other within a work team. This is similar to other studies that focus on work team processes (e.g. Gladstein, 1984; Dirks & Ferrin 2001; Costa 2003). This study views trust as a central element for team performance that affects not only the role of team leaders and managers but also the way team members behave and perform.

The idea of this research is taken from recent studies on trust exploring relationships of trust with team performance and various other variables concerning team members (Peslak & Stanton 2007; Costa 2003; Costa et al 2001; Dirks & Ferrin 2001). However, this research explores how trust affects team performance through analysing individuals’ behaviour and the role of team leaders.

1.4.2 Need for analysing trust in IT teams

Future research may give more consideration to the significant role that trust plays in the interpretation of behaviours, the motives underlying those behaviours, and how they affect individual responses (Dirks & Ferrin 2001). Shen and Chen (2007) suggest that there is a need to explore factors that can more effectively advance team performance. Though there has been research about factors that can improve team performance, there is a need to investigate factors that affect trust issues that can improve team performance. Team performance measures were similar to the measures previously proposed and validated in the literature, such as “budget”, “customer requirements” and “time” (Emam & Koru 2008; Jones 2000).

Trust is strongly related to humans, so focussing on its psychological effects is an obvious subject for researchers. Much of the literature on psychology focuses on individual personality differences and interpersonal relationships while discussing trust (Hassanein & Head 2004; cited by Lumsden & McKay 2006). Moreover, trust is believed to be deeply rooted in an individual's personality (Akhter 2004; Sutherland & Tan 2004) so for this reason, most of the literature on trust is found in psychology literature rather than in IT. IT projects are deeply manifested in teams and as humans are a central part of teams, establishing trust is a crucial aspect. Unfortunately, IT literature does not contain much focus on this aspect, an omission which this study intends to overcome.

1.4.3 Need for empirical research on trust in IT team projects

The relationship between trust and team performance is inconclusive. While considering only IT teams, empirical evidence is not present but a general understanding of a positive effect of trust on team performance is maintained (Dirks & Ferrin 2001). Therefore, there is a need to contribute to research related to trust in IT through an empirical study. Costa's et al. (2001) study on trust formulated a model suggesting trust is positively related with team satisfaction and perceived task performance. In general, the research suggests that trust is important for teams in organisations, but the extent to which trust may be considered a dominant factor in IT teams is not covered by Costa's study and it needs more investigation. Over the past decades, researchers have increasingly recognised the importance of trust at individual, team and organisational levels (Turner & Muller 2005; Baykasoglu 2007). However, the research has not consistently supported this perspective (Costa 2003). Costa's (2003) efforts in exploring the nature of trust suggest trust between team members to be positively associated with commitment. The teams in Costa's study did not include IT teams and ignores the fact that IT projects are far more team centred than other, non-IT, projects. Trust has also been cited as a crucial aspect in virtual team development and effectiveness and has also been directly linked to virtual team efficiency, collaboration and performance (Iacono and Weisband 1997; Jarvenpaa et al 1998). This gives future implications for the study of trust in IT teams.

1.5 Contribution of the Research

The outcome of this thesis is the proposal of a framework to investigate the factors that influence trust in IT teams. It also aims to investigate individual behaviours that can build or break trust and affect team performance. The framework introduced is designed to improve team performance and help to avoid IT project failures. Moreover, the framework will help in explaining the role of trust within an IT team, highlighting the role of project managers and team leaders through loyalty, communication management, motivation, etc. IT projects are governed by teams involving individuals with different behaviours, making trust an important factor to enable them to work efficiently. Unfortunately, statistical evidence is not present in the current literature to back the latter statement. Emphasis on individual perspectives in relation to trust can be found in psychology literature but is lacking in IT literature. This research will address that lack.

The results of this study can be used as a guide in analysing other team issues involving people, such as communication, conflict etc. Hence, an enhanced framework can be initiated to improve the management of an IT team's performance. This study will help team leaders and project managers understand how trust works in a team environment and the important role it plays in members' and teams' performance. This will help them manage and control trust within teams.

In summary, the major contribution of this research are:

1. Improved understanding of trust in IT teams.
2. A framework focusing on the importance of trust in IT teams that will show how project managers and team leaders influence project success.
3. An understanding of individuals' behaviour associated with trust and how it can disturb team dynamics.
4. Highlight the importance of trust to help project managers and team leaders to prepare their teams for better performance.

Some minor contributions of the thesis are:

1. Investigation into one of the factors that can be critical to project success.
2. A model based on trust that encourages other possible models incorporating other non-technical issues such as communication, stress, conflict etc.

2. Related Work

2.1 Introduction

The goal of this research is to explore how trust influences IT project teams and to analyse the role of project managers' and team members' behaviours to understand their effect on the success of team projects. The research questions were formulated through analysis of various sources of current literature which included Castro 1994; Dirks (1999,2000); Dirks & Ferrin 2001; Sutherland & Tan 2004; Akhter 2004; Lumsden & McKay 2006; Peslak & Stanton 2007; David 2007. The method used to identify the research paper was based on search strings. Strings were formulated randomly from the research questions. Multiple databases were used and after the search result abstracts were read to check the relevancy of the topic. In this chapter the literature is highlighted to explain how the research questions were formed through the ideas and criticism of the existing literature.

- In Section 2.2, past approaches on project failure from the literature are reviewed, leading to the literature on the team issues in IT projects.
- In Section 2.3, related work on trust in IT teams is presented, highlighting the research problems and the need for this research.

2.2 Past Approaches on Project Failure

The literature review of this study is based on the model shown in figure 2.1. The main contributors to this model are Bubshait & Farooq (1999) and Belassi & Tukel (1996). The literature review starts from project failure and team issues in projects followed by people issues in teams which finally leads to trust in IT teams where the potential gap is identified.

Project failure has been the area of focus for a number of researchers over the last decade. A group of researchers has been dedicated to finding pre-emptive measures against project failure. This includes work done in decision support systems (Buell 1967; Bedell 1983; Shafer & Mantel 1989; Balachandra & Raelin 1980, 1985;

Tadsina 1986; Nguyen 2006; Fox & Spence 2005; Smith 2004) and developing indicators for early decisions on project termination (Avots 1969; Swider 1988).

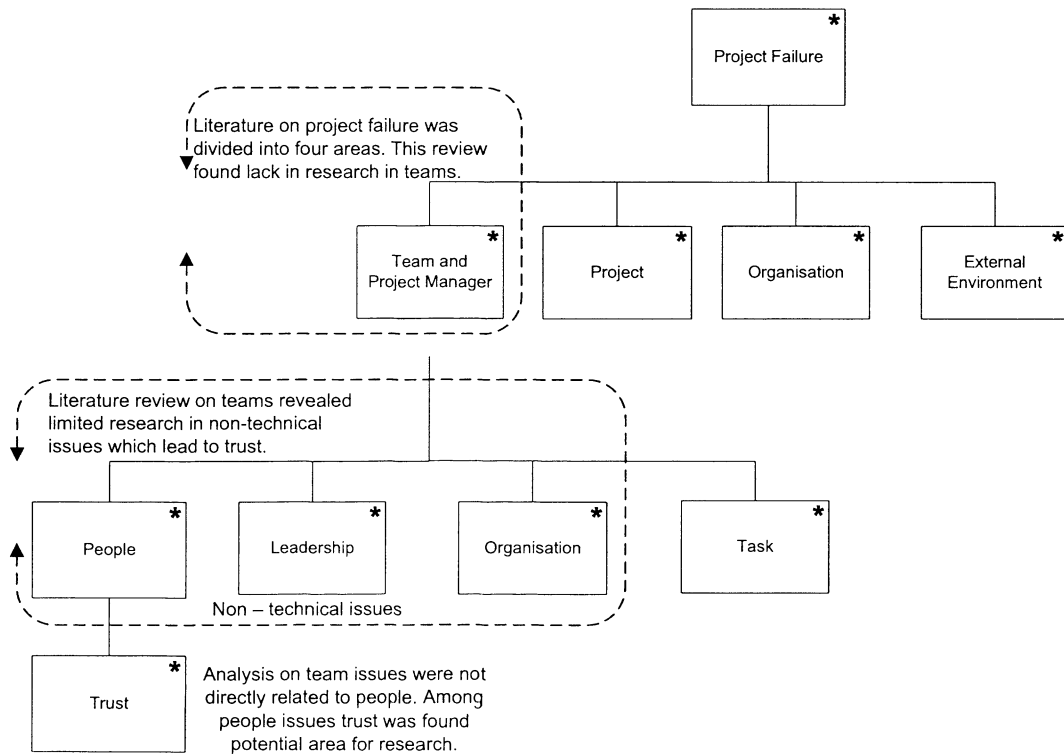


Figure 2.1 Literature review model

A part of this research group is dedicated to analytical studies related to project failures which are scarce in the literature (Pinto and Mantel 1990). Figure 2.1, highlighting different areas of project failure in the literature. The next section discusses project failures in light of different stakeholders which leads to studying the project failures in light of team issues leading to the gap found in the literature, i.e., trust.

2.2.1 Project failures in light of stakeholders and technological factors

Studies in the area of project failure date back to 1967, when success and failure factors were introduced by Rubin and Seelig (1967). The study was not entirely dedicated to factors related to project failure but an attempt to investigate the role of project managers in the successful completion of a project. Project success and failure are associated with various factors including social, cultural, economic,

political, legal, technological, and environmental. All these factors are discussed in light of the various stakeholders, for example, management, the project manager, sponsors, and customers (Mallak et al 1991). However, technological factors are the focus throughout the literature as they can be measured, including skills, software development tools and method (Guinan et al 1998). On the other hand, social factors are not easy to manipulate and can be subjective. Factors such as outlook, priorities, interests, role conflicts, power struggles, trust and communication skills can undermine the team process and derail the task (Bubshait & Farooq, 1999). Rubin and Seelig's (1967) study included the technological performance of the project manager as a factor of project success. It discusses the relationship between project managers and project success. The study discusses the importance of teams through assessing the experience of the project manager, but is not sufficient to analyse team success.

Many theoretical and empirical studies came after the pioneering study of Rubin and Seelig (see Sayles & Chandler 1971; Jonason 1971; Archibald 1976; Martin 1976; Baker et al 1983). All these studies considered one or more stakeholders and studied their effect on project success. As project success was the ultimate question, the majority of these studies focused on various attributes of stakeholders. For example, team selection, the project manager's role in project success (Martin 1976; Cleland & King 1983; Baker et al 1983; Pinto & Slevin 1989), leadership, organisational issues and people issues (Thamhain & Wilemon, 1998; Bubshait & Farooq, 1999; Klenke 1997; Koehler 1992; Thamhain 2004; Kliem & Ludin, 1992; Thamhain & Nurick, 1994; Smith 2004). People issues, as shown in figure 2.1, arise from team issues. Though they were acknowledged as a contributory factor to project success/failure, their level of analysis was not deep enough. Therefore, the review on the literature of this study shifted to the literature of project failure from the team issues' perspective to get an insight into what exactly was missing. This is presented in the next section.

Until the late 1980s, researchers continued with theoretical studies which dealt with factors affecting project success and performance (Cleland & King 1983; Locke 1984; Might & Fischer, 1985; Hughes 1987; Morris & Hough 1987; Pinto & Slevin 1989). Belassi and Tukel (1996) grouped all possible factors that were found in the

literature into four different criteria: factors related to the project, the organisation, the project manager, and team members. This indicates that until 1996, work done on critical factors of project success or failure was related to the groups introduced by Belassi and Tukel. Although there appears to be agreement on most of the success factors, the key issues for the majority of project managers are budgetary and timing constraints (Wateridge 1995; Jones 2000; Eman & Koru 2008). The literature on project failure tends to ignore people issues related to social psychology (sociology), conflict resolutions, trust, and factors which might have an impact on teams (Dirks & Ferrin 2001; Erdem 2003; Peslak & Stanton 2007). The following section further investigates the literature from further down the hierarchy of team issues as shown in figure 2.1.

2.2.2 Project failures in light of teams and their issues.

From some of the team issues discussed in recent studies, communication and user involvement issues are prominent (Wateridge 1995; Hogan & Thomas 2005). Other factors that have been researched are team size (Biffel and Halling 2003), team role allocation according to personality (Gorla and Lam 2004). The literature drifts from project managers' issues to issues related to users of the projects but overlooks people working in teams. Some of the people issues in relation to team success are evident from Wateridge and other scholars (Thamhain & Wilemon, 1998; Bubshait & Farooq 1999; Belassi & Tukel, 1996). However, their discussions are related to the role of teams and their importance. For example, it is known that the level of commitment affects team success, but the way a project manager assesses individual commitment is unclear (Thamhain & Wilemon, 1998; Bubshait & Farooq 1999; Hogan & Thomas 2005). Some or limited research contributes to issues such as communication, user involvement, commitment and trust. Reflection on software development reveals that it is as much about people and teamwork as it is about technical expertise and is the importance for the developers to be competent in their technical expertise as well as working in a team (Pieterse and Kourie 2006; Peslak & Stanton 2007).

Team success is highly dependent on the people involved in the project team. Koehler (1992) points out that the selection of team members is one of the important factors of team success. In his study, Koehler (1992) explains that functional experience and organizational knowledge should be reflected in the selection of team members. However, selection does not explain the ingredients of a successful team. While Koehler identifies some important elements of successful teamwork, they are not sufficient to guarantee team success. Team issues include non-technical or social issues apart from technological issues which can be classified under four factors shown in figure 2.1, including people, tasks, organisation and leadership (Thamhain & Nurick 1999; cited by Bubshait & Farooq 1999). According to Thamhain & Nurick, all these factors contribute to a high-performance team.

According to Bubshait and Farooq, the purpose of high-performing teams is clear, but the process of developing such a team is challenging (Bubshait & Farooq 1999). As teams involve a group of individuals, the people factor is an important aspect of teams (Lechler 1998; Pieterse and Kourie 2006; Peslak & Stanton 2007). However, when it comes to analysing project failure none are directly related to people (Cooke-Davies 2002). Cooke-Davies's study gives a new dimension which forces us to think that studies on project failure or team failure are based on what people do. Cooke & Davies explain this strange omission by the fact that people perform every process and it is the people who determine ultimate satisfaction. Therefore, it is important to study the effect of people issues on their performance as well as team performance. Similarly Jiang, Klein, Chen and Lin (2002) found an overlapping set of people factors affecting project success, including user involvement and participation and the execution of management support. Due to a lack of empirical studies on people issues, most of the team issues that are directly influenced by people are missing from the literature. Among them, trust is one of the issues that has suffered.

Team issues are studied in earlier research in relation to their importance to successful projects (Martin 1976; Koehler 1992; Dyer 1994; Klenke 1997; Lai 1997; Bubshait & Farooq 1999; Smith 2004; Campobasso et al 2004; Bureau 2004; stock 2004; Hollenbeck et al. 2004). While discussing non-technical or social factors, all studies are focused on the leadership styles of project managers such as

transformational leadership, leadership styles as success factors, charismatic leadership, etc (Kloppenborg & Petrick 1999; Thite 2000; Sotiriou & Wittmer 2001; Wang et al 2005; Turner & Muller 2005; Thamhain 2004). Some of the studies have included the motivation of team members (Cougar & Smith 1992; cited by Smith 2004; Smith 2004) and the importance of team building (Bubshait & Farooq 1999; Hogan and Thomson 2005; Ocker and Rosson 2009). One thing indicated by the literature is the focus on the project manager as an element of team success. Therefore, team success seems to be an important concern for researchers and practitioners and the research has presented a set of different issues, but very few studies have highlighted trust through their studies.

The concept of trust is primarily found in studies focused on virtual teams (Alexander 2002; Hung et al 2004; Greenberg et al 2007). The discussion on trust has been limited to its importance in virtual teams, communication and self-managing teams (Shen & Chen 2007; Corbitt et al 2004). Moreover, a very limited number of studies on trust has been dedicated to IT teams (Wilson et al 2006; Shen & Chen 2007). The results from the study of Wilson et al (2006) provide important insights that unravel the development of trust in distributed teams. Although this study examined patterns of trust over time, it did not explicitly investigate mechanisms of social control. Also, the result from his study needs to be interpreted in light of IT teams.

Another significant study indicates the positive effect of trust on team performance and itself is greatly affected by leadership (Shen & Chen 2007). However, their study doesn't help practitioners to understand or guide how trust influences team performance. Greenberg proposed action steps for each stage to show managers and team leaders how to help team members develop trust and sustain it through a project's successful completion. Although her study is very significant in context of this study, it still doesn't highlight how trust is applicable within IT teams.

A framework that could be used as a guide to help describe the importance of trust and how it influences IT teams would be a great contribution. It can be used to formulate guidelines for team leaders and managers to improve trust in their teams.

The framework in question is not that of project success or team success, but of various other attributes that indirectly affect team success, that will help understand the importance of trust and how it influences IT teams (Bubshait & Farooq 1999; Cohen & Bailey 1997). Peslak and Stanton (2007) determine the influence on team performance processes and have developed an overall team success model (TSM). The factors include emotions, personal processes and team processes which lead to IT team success. Peslak and Stanton's research holds a valuable contribution to IT teams and overall project success and is closely related to this study. However, Peslak and Stanton's (2007) study is a superset of what this study intends to achieve. Peslak and Stanton's research studied various factors affecting team's success in which trust was one of the factors. With respect to the Peslak and Stanton (2007) study, this study only focuses on trust which differs from their study because trust was not the focus of their study and there were various other team issues discussed besides trust.

IT projects are often governed by teamwork and the success of a team is important for the success of a project (Castro 1994). The measure used for project success or failure were time, cost and customer requirements. Teamwork includes both individual contributions and what has been called 'collective work products' (Katzenbach & Smith; cited by Klenke 1997). The literature recognises the importance of teamwork, team issues and how projects benefit from them. While reviewing project failure, team success emerged as a considerable variable and gaps in the people side of team management were particularly seen in IT teams. Coming back to people issues from which arises trust, the literature doesn't hold a solid consensus.

It is certain from the literature of project management that teams are given importance in terms of team building foundations and factors affecting their success (see e.g. Thamhain & Wilemon, 1998; Bubshait & Farooq, 1999; Klenke 1997; Koehler 1992; Thamhain 2004; Kliem & Ludin 1992; Thamhain & Nurick 1994; Smith 2004). Most extensive discussions are directed towards the leadership of project managers and different leadership styles reflecting the need for a high-performance team (Lai 1997; Kloppenborg & Petrick 1999; Thite 2000; Sotiriou &

Wittmer 2001; Henderson 2004; Wang et al 2005; Turner & Muller 2005). Other than leadership, a considerable amount of research has given attention to issues related to organisation and task, for example, technical success, quality results, risk sharing, work environment, etc (Bubshait & Farooq 1999). From the people side of issues, the majority of the research is diverted towards the role of these issues and, it has been debated, that communication and conflict are by far in the majority.

From a project manager's experience (Rubin & Seeling 1967), the wrong choice of a project manager and inadequate management support (Avots 1969) leads to poor requirement definition (Falconbridge & Ryan, 2002) and inadequate application of project management principles (Cleland & Ireland 2002; cited by Henrie and Poza 2005). The common element is that people give rise to all these factors. Henrie and Poza (2005) point out that 'a common theme to project management success or failure is the people involved in the project'. Henrie and Poza's study is inclined towards awareness of culture in the field of project management using a literature review and it lacks empirical data. As trust is one of the people issues, it is argued that these studies have a lack of focus in exploring the influence of trust while including people analysis. Overall, the literature suggests a potential in investigating trust in IT teams with respect to the role of project managers and team leaders through analysis of individual behaviour which is not found in the current literature (Erdem 2003). This aspect is reviewed in the following section. See Table 2.1 for a summary of studies discussed above.

2.3 Trust in Information Technology Teams

The reason for exploring trust is not only the gap found in the literature but the strong potential that has been indicated by some of the authors (Erdem 2003; Dirks & Ferrin 2001; Shen & Chen 2007). The purpose is to explore how IT teams and the people involved in them are bothered by the need to trust each other.

Throughout the literature, several issues related to people have been studied in regard to their affect on team performance. The issues include personality types (Bradley & Herbert 1997; White 1984; cited by Gorla & Lam 2004, p.79; Gorla & Lam 2004; Kroger & Theusen 1992; cited by Bradley & Herbert 1997; Shaw 1976; cited by

Bradley & Herbert 1997; Wanous & Youtz 1986, p.149; Peslak 2006). Other than personality conflict and trust, stress has also been discussed by various authors (Shrum et al 2001, p.681; Trimmer et al.2002; Cohen et al. 2004; Hambrick 1995). The issues discussed in these studies are remarkable but all these studies have limited scope and lack empirical research. Some issues, in particular trust, which this research aims to cover, lack analysis in the current literature. For this review, these issues are intentionally referred to as team issues that are critical to team performance.

Trust has been widely studied by researchers in numerous disciplines, viewing trust from unique disciplinary perspectives and creating various definitions of trust (Lewicki & Bunker 1996). Hart and Saunders describe trust as a confidence that the behaviour of another will conform to one's expectation, and confidence in the good will of another (1997). Researchers analyse trust differently, depending on the focus and phase of trust being studied (Rousseau et al 1998; Belanger et al 2002; McKnight & Chervany 2002). Despite the divergence of trust across and within the various disciplines, "scholars do appear to agree fundamentally on the meaning of trust (Rousseau et al 1998)." Based on a cross-disciplinary meta-analysis, Rousseau et al. (1998) defined trust as follows: "*Trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another*". Schultz explains that this definition trust is not behaviour or a choice, but an underlying psychological condition that can cause or result from such actions.

Sociologists have focused on trust as an institutional phenomenon, concentrating on how institutions, e. g. structures, roles, and regulations, provide assurances in situations of risk and uncertainty, and on the trust individuals put in those institutions (Lewicki & Bunker 1996, 1995).

In contrast to situation-specific, institution-based trust, trusting beliefs and trusting intentions are defined as person-specific (McKnight & Chervany 2002). The trust constructs "trusting beliefs" and "trusting intentions" originate from social psychology. Social psychologists have focused on interpersonal transactions between

individuals including the expectations and willingness of a trustee in a specific situation, and the risks associated with assuming and acting. The concept of trust in sociology literature is more aligned to that of the IT literature that discusses trust. For this study we have adopted the definition of trust proposed by Boon and Holmes (1991, p.184) which is:

“a state involving confident positive expectations about another’s motives with respect to oneself in situations entailing tasks”

2.3.1 Trust and team performance

Trust is an important aspect of interpersonal as well as inter-organisational relationships (Holmes & Boon 1991; cited by Sabherwal 1999; Hart & Saunders 1997). Sabherwal states that trust improves performance and distrust hurts performance (1999). Trust is important and is needed where more than two people have to work together to achieve a common goal. The importance of trust has been cited in various disciplines including leadership, communication and self-managing teams (Lawler 1992; cited by Mayer et al 1995, p.709; Costa & Roe 2001; Costa 2003). Trust plays a critical role in establishing the performance groundwork for any team. However, the concept of trust has not gained consensus among scholars and practitioners (Lee 2003). In this regard, Carnevale and Wechsler (1992) note that “trust is elusive and difficult to comprehend (p. 473 cited by Lee 2003).” Mayer et al (1995) gave trust three synonyms which are confidence, predictability and cooperation. In their study, they have not only defined trust but have given an integrative model of organisational trust based on the derivation that trust is important. As IT projects are influenced and dependent on team efforts, we believe it is important to understand where trust stands in IT projects.

For over a decade, there has been a common understanding that trust has a positive effect on performance, but it is surprising that it is not backed up by empirical evidence (Dirks and Ferrin 2001). Dirks explains in his studies that there are two types of trust within teams that may affect team performance: trust between team members and trust of the team leader by team members (Dirks 1999; Dirks 2000).

The empirical evidence provided by Dirks (1999, 2000) and Dirks & Ferrin indicates that there is a strong correlation between the latter and team performance, but the correlation for the former and team performance is weak, at best (2001). As the research of Dirks (1999, 2000) and Dirks and Ferrin (2001) was outside the IT domain, this research aims to contribute to the claims made by these authors within the IT context.

Dirks and Ferrin (2001) show that empirical evidence only recognizes trust as a vital player in organisations plus the support has not been consistent and suggest that trust has a moderating rather than a main affect. Interestingly, the lack of “main effect” points towards teams and groups. Dirks and Ferrin’s (2001) study is based on two models which analyse 43 empirical studies on trust. According to this “main effect” model, trust operates in a straightforward manner: higher levels of trust are expected to result in more positive attitudes, higher levels of cooperation and other forms of workplace behaviour, and superior levels of performance. Given these findings and observations, Dirk and Ferrin suggested that additional research is needed to better understand the effects of trust, particularly on behavioural and performance outcomes. With respect to the “moderating effect” of trust, Dirks & Ferrin explored a model of how trust operated in organizational settings: by serving to facilitate (i.e., moderate) the effects of other determinants on work attitudes, perceptions, behaviours, and performance outcomes (2001). This study supports the claims of Dirks & Ferrin (2001) but aims to validate their arguments within the IT domain.

Erdem (2003) also suggests that trust is important in teamwork but that elements of ‘over trust’ were seen which can negatively impact performance by enforcement of views, dialogues and conflicts. Having said that, Erdem’s study lacks empirical evidence on IT project teams which are highly dependent on teamwork.

There is a general understanding in the literature that trust generates positive effects on team performance, but doubts remain due to the lack of empirical evidence (Dirks & Ferrin 2001). However, trust will always remain as an influential factor on team performance (Erdem 2003; Shen & Chen 2007). A study in 2004 indicates the importance of trust in not only face-to-face teams but in virtual teams (Corbitt et al

2004). Therefore, there is general agreement that high trust yields more effective teams than low trust (Lipnack & Stamps 2000; Cascio 2000).

Another factor that has led to the aims of this research is the need to understand trust in light of people issues such as individual behaviours, a potential highlighted in the literature (Dirks & Ferrin 2001; Lumsden & Mackay 2006; Peslak & Stanton 2007). That non-technical issues related to trust are not properly explored is another indication of a gap in the literature. Because trust involves people, it is important to understand trust from peoples' psychological point of view. The next section will review the findings of the psychology literature.

2.3.2 Trust and individual behaviour

The psychology and sociology literature on trust focuses on individual personality differences, individual behaviour and interpersonal relationships (Kramer & Tyler 1996; Hassanein & Head 2004; cited by Lumsden & McKay 2006). Moreover trust is believed to be deeply rooted in individual personality (Akhter 2004; Sutherland & Tan 2004). Personality itself originates from a Latin word 'persona' (meaning mask) which is a combination of an individual's emotions, thoughts and behaviour. However, the idea of trust and individual behaviour and their relationship has not been explored in IT literature (Erdem 2003) or psychology literature. Traces of trust issues are found in sociology literature but lack empirical evidence. A potential strength lies in studying issues of trust within IT projects as they are team-oriented (Lumsden & Mackey 2006).

Lee (2003) defines the determinant and the basis of trust in which the latter is defined as the nature of trust and former is a factor that can exist independently the from nature of trust. However, Lee's study is limited to one employee and discusses the implication for his work rather than for the team. The research done to investigate the individual behaviours affecting trust within team members and team performance is inadequate. Lumsden & McKay's (2006) study presents the personality relationship with trust but it is specific to a particular field, which is not IT, and more precisely their study emphasizes the customer's perspective. This study is looking to explore

IT teams and how trust affects their performance, keeping personal issues a prominent factor.

2.4 Social Factors Affecting Teams and Trust

Attempts have been made to address the social factors affecting teams and trust, but have been limited to the following perspectives: team members, team management including organisation, leadership including customers and resources available.

A summary of all these factors is compiled from the literature and is summarized in table 2.1.

Social Factor Influencing Teams and Trust	
Factors	References
Team members : Communication and user's involvement, commitment, trust, Selection s, motivation personality	Wateridge 2005, Bubshait & Farooq 1999; Thamhain & Wilemon 1998 ; Belassi & Tukul 1996; Koehler 1992 ; Cookes- Davis 2002; Lechler 1998; Dirks & Ferrin 2001, Jiang et al 2002 ; Smith 2004; Henrie & Poza 2005, Gorla & Lam 2004; Bradley & Herbert 1997; Peslak 2006.
Team Management: Role of Project manager and Team leader such as Leadership styles, project manager as an element	Turner & Muller 2004; Wang et al 2005; Thamhain 2004.
TRUST	
Expression of Trust as lack of study based on people factor	Dirks & Ferrin 2001; Shen & Chen 2007; Cookes-Davis 2002; Cohen & Bailey 1997; Erdem 2003
Discussion of Trust : individual behaviour, positive affect of trust	Lumsden & Mackay 2006; Akhter 2004; Sutherland & Tan 2004; Shen & Chen 2007
Trust Issues : organisation & task	Lai 1997; Thite 2000; Turner & Muller 2005; Wang et al 2005
Importance of Trust	Mayer et al 1995; Costa 2003; Lee 2003;
Contradiction in Trust	Dirks & Ferrin 2001; Erdem 2003; Langfred 2004
Trust in IT teams : discussion limited to virtual teams	Corbitt et al 2004; Lipnack & stamps 2000; Cascio 2000; Alexander 2002; Hung et al 2004; Greenberg et al 2007; Wilson 2005

Table 2.1 Social Factor Influencing Teams and Trust in IT literature

However, it should be noted that these factors are not related to IT teams. It has been argued in the literature review in the previous section that factors relating to trust are reasonably unexplored and this is quite obvious from the table 2.1.

Based on the gaps found in the literature, the research questions of this study, introduced in chapter 1, were formed. The research questions are as follows:

Research question 1: What factors indicating distrust can disturb team dynamics and lead to a failed project?

Research question 2: What is the role of team leaders and managers in building trust within IT teams of successful projects? This leads to further two sub-categories.

- i. Trust between team management (leaders, managers) and team members
- ii. Trust of team members for each other.

Research question 3: What are the individual behaviours of team members that increase or decrease perceived levels of trust among team members in IT teams?

Research question 4: In what ways does trust facilitate higher team performance and project success?

The questions of this research were formed in accordance with the gaps found in the literature. Research question 1 was formed considering the evidence from the literature indicating that distrust hurts performance (Sabherwal 1999). However, Sabherwal did not include IT teams or discuss the factors of distrust that hurt performance.

The role of project managers and the importance of leadership has been cited in many studies (Smith 2004; Turner & Muller 2005; Baykasoglu 2007). All these studies have discussed team issues with respect to leadership, communication and trust. However, none of them have studied the role of managers in building trust within IT teams. Dirks (1999, 2000) and Dirks & Ferrin (2001) highlighted that the role of team leaders includes building trust within teams and for themselves.

Research question 2 was formulated to check the validity of their results in IT teams and research question 3 was formed based on the gaps earlier argued in this chapter.

The contradiction that exists between the negative and positive effects of trust in the literature led to question 4 (Dirks & Ferrin 2001; Langfred 2004). Question 4 investigates the influence of trust in IT teams and its importance, continuing on from the first three research questions.

The answer to these questions will fill gaps and will contribute to an initial model that is proposed by this study. The best way to keep the questions open for new themes was to conduct qualitative interviews in order to have an opportunity to explore factors and present them in a usable framework. The methodology adopted in order to answer the research questions is detailed in chapter 3.

Each participant measured project success based on “missing deadlines”, “missed requirements” and “spending more resources” and these are the measures used in this study, based on the information provided by the participants. These measures are similar to the measures previously proposed and validated in the literature, such as “budget”, “customer requirements” and “time” (Emam & Koru 2008; Jones 2000). The level of trust and team performance is the measure perceived by the participants who are project managers and project team leaders.

2.5 Summary

The current literature on project management indicates that team issues in relation to project failures and team success have overlooked the social aspect and there are very few empirical studies on the subject. The literature review finds that team performance is a composition of different issues, including people factors, task, organisation and leadership. Among all these issues, people factors are the least discussed. But issues such as task, leadership, etc., are also limited in the literature. Among the people issues, trust is one of the issues that does not have mutual agreement among researchers. Apart from the lack of consensus, limited empirical evidence has led to the aims of this research. This research aims to narrow the gap in

the literature by investigating trust through analysing individual behaviours within teams of IT projects.

There are four research questions as discussed in the previous section, each of which is a research aim. The main goal is to identify the importance of trust and its role in a team's performance, as well as how it is affected by the individual behaviours, and the role that project managers and team leaders play in developing trust within a team. This will be determined by analysing the answers from each of the sub-questions of each research question. Each research question has a series of sub-questions which is exploratory to the respective main question.

The outcome of this research is a framework based on the exploratory study that will help understand how trust influences project teams and why it is important. It will help understand the role of project managers and team leaders in building trust within teams. The framework will incorporate team leaders' and project managers' roles and the factor of individual behaviours. In order to achieve the aims of this research, in-depth interviews were chosen. The details on how the aims of this research were achieved are explained in chapter 3.

3. Research Methodology

This chapter presents the research approach adopted in this study for investigating trust in IT project teams. In order to achieve the goals of this research, as stated in section 2.1, data was collected through six in-depth, qualitative interviews and was analysed using content analysis. This chapter will explain how the aims of the study were achieved through the qualitative approach chosen.

- In Section 3.1, the research approach is discussed. It includes discussion on qualitative and quantitative research and why the qualitative approach was an appropriate choice to investigate the research questions.
- In Section 3.2, qualitative data collection methods are discussed, along with the reasons for selecting in-depth interviews for this study.
- Section 3.3 discusses the research design and the formation of the interview guide.
- Section 3.4 outlines the methodology selected to implement the research process, including data sampling, participant selection, data management and choice of data analysis.

3.1 Research Approach

The research questions formulated at the end of chapter 1 were related to IT teams' "trust issues", including real time experiences of project managers and team leaders. It was important to adopt an approach that was suitable for exploring the entire process. Klein and Myers (1999) suggested that interpretive research can help Information Systems (IS) researchers to understand human thoughts and experiences in social and organizational contexts; it has the potential to produce deep insights into information systems phenomena. The qualitative approach helps researchers study the phenomena in context and reveals rich and complex processes (Crotty 1998; Leedy & Omrod 2005). This study adopts the suggestion of Klein and Myer

(1999) and Crotty (1998). Therefore, a qualitative approach was selected as the research methodology.

The difference between qualitative and quantitative research is an epistemological one, epistemology being the theory of knowledge embedded in theoretical perspective (Crano & Brewer 2002; Crotty 1998). The qualitative approach adopts the constructionist view as the main epistemology and argues that meaning and meaningful realities are constructed by humans (Crotty 1998). The quantitative approach, on the other hand, adopts the objectivist view, which is that meaning and meaningful realities exist outside human consciousness (Crotty 1998). The models developed by qualitative researchers try to show richness and complexity (Sarosa 2007). That is why most qualitative researchers use research methods that directly interact with research subjects such as in-depth interviews and observation.

Qualitative inquiry is orientated toward exploration, discovery and inductive logic (Greenhalgh & Taylor 1997; Morse & Richard 2002). Important dimensions emerge from patterns of analyses found in the cases under study, without presupposing in advance what the important dimensions will be. The aim is to obtain a depth of understanding of human behaviour rather than quantity, as well as a thick, rich and deep interpretation and description of behaviours and issues.

The research questions also investigate the roles of project managers and team leaders in building trust between themselves and team members. It also involves individual behaviour and its effect on trust. Such complexity needs to be explored in its fullness. Any effort to reduce such complexity into numbers and figures could obscure the real picture (Sarosa 2007). Possible quantitative approaches, such as a survey, were considered but not chosen because they tend to prejudge the outcome (Sarosa 2007). This is discussed further in the next section. A qualitative approach is selected because it aims to gather a deep understanding of human behaviour and the reasons that govern such behaviour (Greenhalgh & Taylor 1997). As discussed before, a qualitative approach allows the researcher to study the phenomenon in its context and with all its complexity (Leedy & Omrod 2005).

Kaplan and Maxwell (1994) argue that the goal of understanding a phenomenon from the point of view of the participants and its particular social and institutional context is largely lost when textual data are quantified. The choice of research methodology influences the way in which the researcher collects data. Specific research methods also imply different skills, assumptions and research practices (Myers 2009). As it is the intention of qualitative research to study the phenomena in context, the method used has to enable interaction with the research participants (Crotty 1998; Leedy & Omrod 2005). Therefore, data for this research was collected through semi-structured interviews and content analysis was used, following case study methodology (Leedy & Omrod 2005; Yin 2002). The following section will give deeper insight into the selection of the qualitative method chosen.

3.2 Data Collection

The previous section describes why a qualitative approach was chosen for this study.

There are two kinds of interview techniques in qualitative research techniques – unstructured interview and semi-structured interview – and they are generally referred to as qualitative interviews (Bryman 2001). Structured interview is the preferred interview method for quantitative research and is commonly referred to as a quantitative interview. This study uses the semi-structured approach.

3.2.1 Unstructured and Semi structured Interview

In unstructured interviews, there are only a few questions that an interviewer asks and the interviewee is then allowed to respond freely, with the interviewer simply responding to points that seem worth following up. Unstructured interviewing tends to be very similar in character to a conversation (Burgess 1984; cited by Bryman 2001). This research had a clear focus which required an approach that allowed direction of the interview to be led by a pattern. Another reason for choosing the semi-structured approach over the unstructured was the number of participants in this research which were more than one and thus a semi-structured approach is recommended (Leedy & Omrod 2005; Creswell 2003; cited by Sarosa 2007).

3.2.2 Interactive interviews vs surveys, ethnographic methods, focus groups

Based on the requirements of the study described in section 2.1, which required team leaders and project managers' perspectives on individual behaviours, a non-survey methodology was chosen. Surveys restrict participant answers to predetermined categories to maintain objectivity in order to analyse it statistically (Creswell 2003; cited by Sarosa 2007; Leedy & Omrod 2005).

With ethnographical methods, monitoring is required throughout the length of the project. Ethnographical methods not only require setting up a control group but an experiment group, too (Crockett 1990). It would have required a team of at least five members with a team leader, and a manager with a real-time project of at least six months work to conduct ethnography for this study. It requires a heavy time investment which for this research was not possible.

An individual in-depth interview can be defined as: "An unstructured personal interview which uses extensive probing to get a single respondent to talk freely and to express detailed feelings on a topic" (Webb 1995; cited by Stokes & Bergin 2006). The in-depth interview method is suited perfectly to the issues involved in this study. It is an appropriate choice for many reasons which include time constraints, method chosen for the analysis and richness of the data. Due to the depth of data acquired from semi-structured interviews, a lot fewer subjects need to be involved. "Those who are not familiar with qualitative methodology may be surprised by the sheer volume of data and the detailed level of analysis that results even when research is confined to a small number of subjects" (Myers, 2000).

Coming back to the participants involved in this study, qualitative research required fewer subjects due to the depth of data from each interview. Due to the continuous interaction in interviews, data was validated by its face value allowing for more precise interpretation. It allows easier expression of non-conformity (Stokes & Bergin 2006) which improves the quality of the data.

3.3 Interview Design

The interview was designed with the nature of qualitative interviews kept in mind, the guide was prepared accordingly. Once research questions were formulated, they formed the basis for preparing the interview guide. The interview guide was then matured by putting questions that helped in answering the research questions. After the questions were formulated, validation was performed through a test run detailed in section 3.3.2.

Parts	No. of Questions	Purpose of Questions
A	15	Team building (Opinions based on facts) : knowledge + implementation + challenges
		Factor search (Opinions based on facts): Important element in resolving people issues/team issues.
B	20	The role of project manager and team leader in building trust across team.
		Diagnostics of weak trust: How trust is monitored by team leader and project managers
		Facilitation of strong trust in successful project
C	20	Trust and individual behaviours
		Individual behaviours and their characteristics
		Ratings based on past experience

Table 3. 1 Division of Questions

Some of the key points kept in mind while forming the interview guide were the principles highlighted by Bryman (2001), shown in figure 3.4. The research questions were formulated in a way that addressed each research question but there was a certain amount of order that flowed reasonably well from one question to another. It was also important to use language that was comprehensive and relevant to the participants.

With respect to the research question in section 1.2, pages 23, questions in part A helped in understanding the concept of team building foundation adopted by IT teams. These questions were not directly related to the research questions but formed a solid base for starting the discussion. Part B was designed to answer the second

research question whereas part C, the third research question. The last research question was covered by all the three parts of the interview questions.

This study was based on a qualitative content analysis focusing on a very controversial team issue – trust. The approach was a post-mortem of successful and failed team projects. A successful project constitute of a project that has met customer requirements, project timelines and the budget. All questions in the interviews were open-ended and the interview was divided into three sections as described in table 3.1.

The questions in part A highlight the importance of trust and the role it plays during the lifecycle of a project. Part A not only forms the foundation for the rest of the research goals but also helps in answering research questions described in section 2.1. The purpose of the questions in part A is best described in figure 3.1.

Figure 3.1 explains that questions in part A are related to team building foundations and their importance for team performance, from an interviewee perspective. The information that these questions intend to obtain are current practices adopted by team leaders and project managers to make their teams successful. While obtaining such information, these questions intend to reveal where trust stands among the incorporated practices of IT teams.

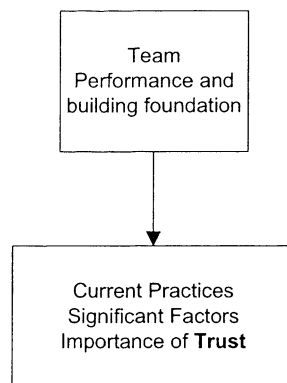


Figure 3. 1 Importance of Trust

Questions in part B probe into the role of project managers and team leaders in building trust within teams, how absence of trust disturbs team dynamics and how strong trust facilitates team and project success. This part defines a fine line between

teams with low and high levels of trust and the effect on team and project success. The overall concept is based on the people issues in teams. This part assists in answering the first and second research questions described in section 2.1. The purpose of the questions in part B is best described in Figure 3.2.

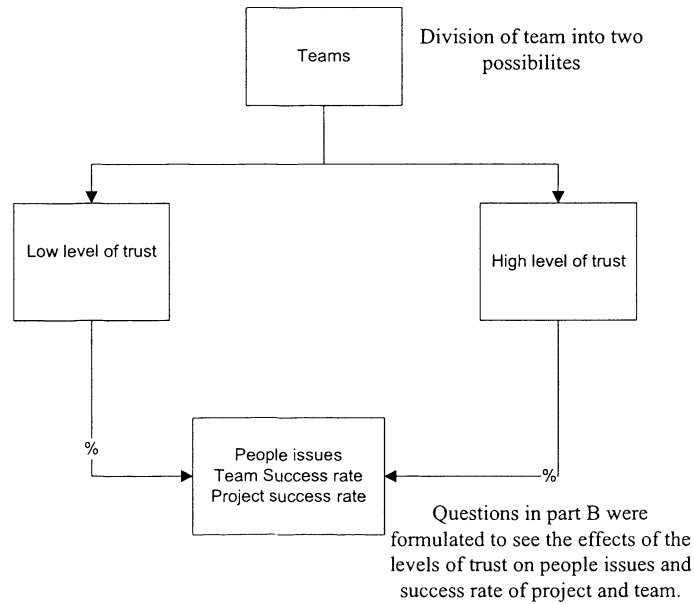


Figure 3.2 Team’s Trust

Questions in part C are based on factual data based on team leaders’ and project managers’ experience about individual behaviours and trust. This part assists in answering the third and fourth research questions described in section 2.1. The purpose of questions in part C is best described in Figure 3.3.

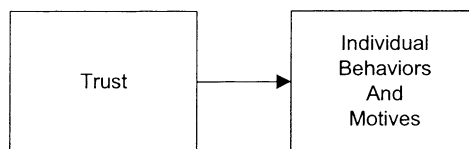


Figure 3.3 Trust and Individual Behaviour

The role of individual behaviour and management in the formation of trust will help in developing a better understanding of the role of trust in teams which is the key focus of the proposed framework.

The interview was based on the opinions and knowledge of team leaders and project managers based on their experiences in managing IT project teams. All the questions that were used as a guide in the interviews were kept open-ended. The questions were kept open-ended to get non - biased and in depth information.

Throughout the interview, participants were asked to recall real-time situations involving team issues, trust and people issues (individual behaviours) in this case. The reason for doing so was to get the depth of situations. It was followed up by further interactive questions. Overall the interview included introductory questions, probing questions, follow-up questions, specifying questions, direct and indirect questions as defined by Bryman (2001, p.318).

As the interviews were for a qualitative study, they were recorded and then transcribed later for analysis. This step was extremely important due to the detailed analysis required in qualitative research (Bryman 2001). Another reason for recording the interview was to capture the answers in their own terms and not miss anything by taking the risk of writing notes. Recording and transcribing interviews helps to correct the natural limitations of our memories and it allows data to be reused (Heritage 1984; cited by Bryman 2001). The interviews were recorded on a digital recorder that was directly transferred to the computer for any noise filtration in order to transcribe them for analysis.

3.3.1 Formulation of interview guide

The interview guide for this research was developed based on the suggested method by Bryman (2001) shown in figure 3.4. The diagram was slightly altered from the original suggested diagram because of the pilot study, as there was none in this case. A test run replaced the pilot study. This study does not include any pilot study because of the limited time resources, as this study was for a master degree. In order to remove the ambiguity from the questions in the interview, the interview was test run through my supervisor and colleagues who were also research students.

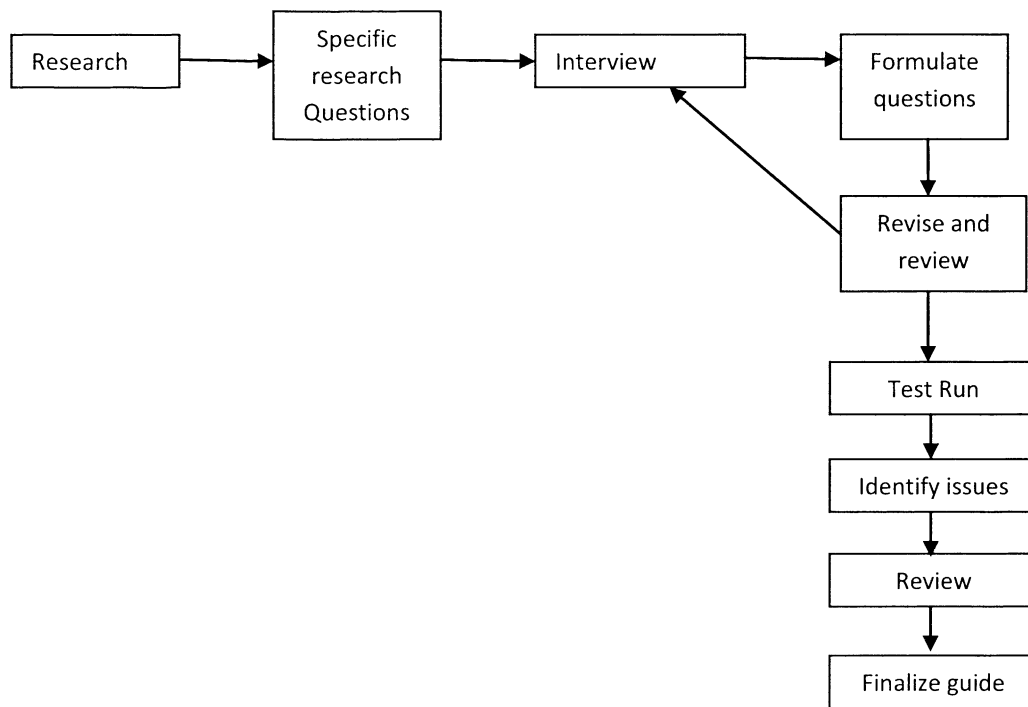


Figure 3. 4 Model for Interview guide

The questions asked in the last interview are in Appendix 3. The test run is presented in the next section.

3.3.2 Testing of interview guide

The major reason to do a test run on the questions was to:

- Time the interview.
- Review questions for ambiguity.

The test study was done through friends and colleagues in order to estimate the time for the interview and to remove any ambiguities. The pilot study was not done with real participants because of time constraints and limited resources. Secondly, it wouldn't have helped if the participants were not professional, so the outcome from the pilot study would not have helped.

3.4 Data Sampling

The data was collected using in-depth interactive interviews. It allowed the participants to describe what was meaningful to them using their words rather than being restricted to predetermined categories in questionnaires. Moreover, interviews provided high credibility and face validity and allowed the researcher to probe the data in detail.

3.4.1 Participant Selection

The target population for this research was team leaders and project managers working in IT project teams. Selection of the project team leaders was based on their experience of managing team projects, with a minimum of five years. The reason for choosing five years as a minimum for experience was to obtain substantial information from each of the interviews. Interviews with the team members were not in the scope of this research.

About 6-10 IT team leaders or team managers were required for the sample. Sometimes data becomes redundant due to large sampling (Morse 1989). As expected in any study, there are limitations. The qualitative approach is concerned more with the detail of the sample than with representation of the population (Creswell 2003; cited by Sarosa 2007; Leedy & Ormrod 2005; Morse & Richards 2002). Therefore, sample size is important but it has to be just enough to represent data. This study, however, is not based on demographic variables for which this sample size would be smaller. Moreover, it is not forming a theory which requires a larger sample. A sample size of 6-10 subjects is adequate for this kind of hypothetical or critical case sampling (Sandelowski, 1985). This study proposes a framework based on the experiences of team leaders and project managers on IT teams' trust.

By far the most important criteria in the selection of the participants was their involvement in reporting, and that they were involved in IT team projects. Being involved in reporting to the managers means they are interacting with team members and therefore know the issues involved with the teams. Mainly, the team leaders and project managers included in this study were involved in IT team projects of more

than three people with a project length of three months. They were part of IT projects excluding infrastructural projects, such as application implementation or projects involving networking. Projects involving application development were ideal for this study as they are complex in nature. Selection of project team leaders was based on their experience of managing team projects. All potential participants were approached through personal contacts and supervisor's contacts.

3.4.2 Data Management

The data were in the form of sets of words recorded on digital tapes secured with a password. All participants were coded with identifiers which were password protected and were not disclosed for any other research purposes, thus ensuring the anonymity of the participant. For participants, authenticity identifiers were stored. The data were archived to be used for future studies and the participants were aware of it. The participants will have access to their own data under the Privacy Act.

This research involved the experiences of team management, which included comments about team members' performance, behaviours and their experiences. As such, this research presented minimal or no risks. There were no potential risks involved in participating in the research. To ensure minimal risks, the questions did not refer to any particular situations, all questions were related to references discussed by the participants or situations which participants were willing to talk about. Questions revealing the identity of any particular person were not asked. The results from the study were presented from the analysis done and did not reveal any personal information that can potentially or psychologically harm participants or any person referred to by the participants.

3.5 Data Analysis

The objective of this research was to investigate the importance of trust through analysing the role of team leaders and project managers through individuals' behaviour. The secondary objective was to investigate how the absence of trust among team members can affect team dynamics leading to a failed project, and how strong trust helps project success. Face-to-face interview sessions with the participants were chosen due to the analysis method (content analysis) chosen for

data collection. Content analysis helped in drawing effective conclusions from qualitative data and, as it is vigorous and has depth, it also limits the number of subjects for the research. In order to avoid bias, the text was analysed three times, twice by two different people – the researcher and supervisor – and a third time by a computer using Nvivo. The details of the computer analysis are given in section 4.4.

3.5.1 Content analysis

Content analysis is a research tool used to determine the presence of certain words or concepts within texts or sets of texts (Krippendorff 1980; Weber 1990). Considering the type of data (transcripts), content analysis was an appropriate option and that is the reason this study opted for it.

To conduct content analysis on a text, the first step normally involves identifying the answers to the research questions; then the scope of the data used for analysis is defined, which in this study were interview transcripts. The text is coded or broken down into manageable categories on a variety of levels – word, word sense, phrase, sentence, or theme – and then examined using the content analysis qualitative approach.

Data was organized using digital tapes and content analysis was used to analyse the data. As all the interviews were recorded and written notes were also made to help record aspects of the interaction that the audiotape did not pick up, for example, facial expressions or gestures. The tape recording was transcribed for viability and readability of data. The data was then thoroughly studied for analysis. Bogdan and Biklin (1998) emphasize that the central questions or hypotheses must shape your coding scheme. Therefore, the initial focus of this research was not the predefined codes but the research questions which needed to be answered and which served as a guide for the data, although the process was inductive. As the emphasis was on answering the research questions, the unit of analysis varied. The detail on the results of the content analysis is provided in chapter 4 and the sample coding process in appendix 2.

It is recommended, when using qualitative approach, that the selection of the data collection method and the analysis method should be strongly related to each other

(Morse & Richard 2002). It was important to have the right type of data (interviews in this research) which was most suitable to address the research questions. Moreover, the analysis method also required data in a particular format which not only aids in analysis but improves the outcomes (Morse & Richard 2002; Greenhalgh & Taylor 1997).

A detailed description of how the data from the interviews was analysed, and the steps performed by the tool and the researcher are given in section 4.4.

3.6 Ethics Consideration

The research design and questions need to be cleared by the UTS Ethics Committee prior to conducting the actual research. It addresses concerns related to the safety, and privacy of the participants and any risk/harm associated with the research. Ethics approval was granted for this research and the clearance number was UTS HREC REF NO. 2008-199A.

Anonymity and the confidentiality of participants' responses was protected to the fullest possible extent, within the limits of the law. Participants' name and contact details were kept in a separate, password-protected computer file, apart from any data supplied by the participants. In the final report, participants were referred to by a pseudonym. Any references to personal information that might allow someone to guess a participant's identity was removed; however, it should be noted that the number of people we sought to interview was very small, so it is possible that someone may still be able to identify a participant.

4. Data Collection and Analysis

In this chapter, the entire process of data collection is highlighted including participant selection, the invitation process and data analysis. The process of transcription and how the data was managed is also explained in this chapter. Some of the topics, such as participant selection and management of data, were discussed in chapter 3 in terms of their planning and reasoning but in this chapter, the actual data collection and analysis process is discussed.

- In Section 4.1 the entire data collection process is discussed, including the interview process.
- Section 4.2 contains a discussion of the transcripts, the use of open codes and descriptions of the codes extracted from the data and their interpretation.

4.1 Data Collection

This section includes the information relating to the participations' selection, interview process and data storage. The process was conducted between August 2008 and November 2008.

4.1.1 Participation selection

A list of around 150 software companies within Australia was compiled from an Internet search. The companies were initially contacted through email and telephone to see if they would be willing to participate and, if they agreed, were sent the invitation letter. A sample of the invitation letter is in appendix 2. The rate of response was very low and it was hard to get them to participate in the research.

Some companies were approached through my supervisor's contacts and finally the required number of participants (six) was confirmed for the research. The decision on the size of sample for the research is argued and justified in section 3.3.1. The participants' selection criteria are also explained in section 3.3.1.

From 150 potential participants, only six agreed to participate and that was through reference. With the rest of the 144 participants, there was no response either by

email or returned call. The six participants who accepted were then followed up with the interview process described in the next section.

Among the six participants, three were project managers and three were team leaders in their respective companies. The distribution was not done deliberately and it did not have any effect on the results.

4.1.2 Interview process

For each of the six participants, an appointment was made via email for the interview. The interview place was decided based on mutual agreement and participants' convenience. Two interviews were conducted in the participants' business premises while the other four were conducted at a local coffee shop. The following steps were taken while interviewing participants:

- The time and place for the interview was decided via e-mail. Once decided, participants were sent confirmation prior to the day of the interview along with any further clarification. The invitation letter also included a brief description of the study. The invitation letter sent to the participants is included in Appendix 2.
- Prior to the interview, written consent from the participants, as well as an authorized company representative, was taken. The company representative's consent assured safe and authorized involvement of their employee's participation in this research. The written consent forms are included in Appendix 3. The signature on consent forms was taken on the day of the interview once the participant understood the concerns regarding recording, privacy and anonymity, in accordance with the procedure detailed by UTS HREC.
- The participants were informed that the interview would be recorded prior to the interview and this was mentioned in the invitation, too. The participants agreed to record the interview uninterrupted. There was no sensitive extraction of information in the interview, so the recording continued non-stop.

- Notes were also taken during the interview.
- After the interview was finished, participants were informed that they could contact us to learn about any progress related to the study and publications. A letter thanking them and detailing this information was also sent out to the participant. A sample of the letter can be found in Appendix 3.
- The average time for the interview was an hour and 10 minutes. Additional notes after the interview were also made to summarize the interview experience and any general observations.
- Two different recording devices were used for each interview to get maximum quality, and for preventive measures. The recordings were made with an Olympus digital voice recorder model no: VN-3100PC and the recorder on my Hp Pocket Pc. Both the recordings produced highly satisfactory results.

During the interview process, some of the questions seemed redundant. However, they provided verification of the information provided by the interviewees and helped them to recall their experiences further. Moreover, the repetitive answers also helped in the data analysis process to gain perspective, consistency of patterns and validation of the information.

4.1.3 Data storage

The recordings were stored in Express Scribe and the same software was used for transcription. The software provided by the recording device vendor (Olympus device used for recording interviews) was not used. All recordings were saved in Express Scribe and any additional copies on the computer and on the digital devices were deleted. The audio files were then transcribed. Microsoft Word was used to store the transcripts of the data for further analysis. The analysis was done using Nvivo™ 8 from QSR. This software was also used by Sarosa (2007) for his qualitative research. The details of the software are given in section 4.2.

The list of the participants who took part in the research was stored with their corresponding code in a Microsoft worksheet using Excel 2007. Access to all these

files was kept on personal computer only accessible to the researcher. The coding scheme used for the participants was P- I to P- VI. The letter 'P' (for participant) was added before the Roman numerals from 1 to 6. From that point on, the participants were referred to by these codes.

Once the interview audio files were transferred onto the computer, they were stored in Express Scribe. Express Scribe allows the user to transcribe the data while it plays the recording. The recording can be easily controlled through the function keypad. Once the transcripts were ready, the participants were contacted to verify the content. The identities were then removed from the original transcripts and participants' names were replaced by their corresponding code.

According to the requirements set by UTS Research Ethics, all digital data was stored in a personal computer and was only accessible using a password. All measures have been employed to protect the privacy and confidentiality of the participants' data and their identity.

4.2 Data Analysis

4.2.1 Content analysis

The interview guide was designed to answer the research questions. Once the interviews began, the transcription was started. Due to the limitation of time, the transcription of the interview data was started immediately after the first interview. The analysis of the individual transcripts and extraction of codes also began once the transcripts were verified by the participants.

The step-by-step process followed in order to analyse the data is described in this section. The steps to understand and analyse the data gathered from the interview transcripts are given below. The whole process is defined and explained in figure 4.1, inspired by the framework approach designed by Sarosa (2007).

1. Open coding and Mapping of Participant's Responses to interview question.
2. Identification of themes from the data.

3. Relating new themes from the data to the relevant literature

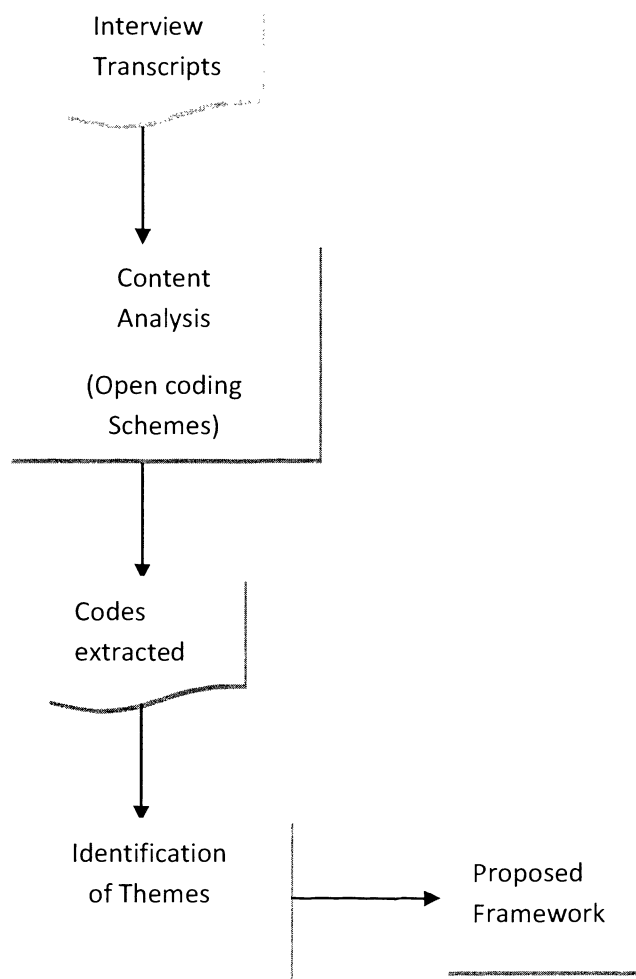


Figure 4.1 Framework for Data Analysis

4.2.1.1 Open coding analysis of participant's responses

The level of content analysis was phrases and the context of the sentences. In some cases, frequencies of words were important to identify patterns and themes within the data which helped in answering research questions (Leedy & Ormrod 2005; Neuendorf 2003; cited by Sarosa 2007). For enhancing the readability of the output from the content analysis, the data was generalized so that the results could form a framework as proposed in this research.

As to the coding in the process, it generally produces labels or data that point to the original questions (Morse & Richards 2002). Descriptive coding was initially applied to the transcripts to highlight relevant phrases, words or sentences to the research aims. Descriptive frequency is the process of labelling phrases, words and sentences from the interview transcripts using relevant words that you are looking for (Miles & Huberman 1994; cited by Sarosa 2007, Morse & Richards 2002). As there is no relationship between the individual codes or labels, they are called open codes. Once the open codes are created, patterns can be identified (Sarosa 2007).

Another process that corresponds with the creation of open codes is the mapping of answers from the participants to the research questions. There are answers or sentences which are recognizable patterns and they directly map to the research questions. According to the interview guide described in chapter 3, the interview was taken in three parts, each constituting different parts of the proposed model. The mapping was done by categorizing the data into each different part.

Open coding was conducted by reading the individual interview transcripts. Using Nvivo, important phrases, words and sentences were highlighted that were believed to have answered the research questions, or contributed to answering the research questions. The highlighted text was mapped to the research questions and then was compared to other interview transcripts. The answer to the follow-up questions was also identified at this stage. After the answer to each of the questions in the interview guide was identified, the transcript was double-checked to see if there was anything left, and whether there might be new themes emerging from the data. A sample of the coding process is in Appendix 2.

All interviews were conducted in English, and the transcripts were kept in their original forms.

4.2.1.2 Identification of themes from the data

The approach followed in identifying the themes from the data is similar to the approach followed by Sarosa (2007), but altered according to the requirement of this study. Sarosa's (2007) research approach was qualitative, using content analysis which is similar to this study's approach. The only change made compared to

Sarosa's (2007) study was the omission of gap analysis which could not be used in this study. The approach is based on case study methodology as follows:

- Multiple responses at certain instances were grouped together and were coded accordingly.
- Specific facts that were examined that related to study were also indicated.

The patterns emerging from the data were identified by comparing codes extracted from each of the individual transcripts (Sarosa 2007). The codes were then grouped together for comparison with the other transcripts. For example, one of the research questions was related to the role of project managers and team leaders in improving trust within a team. Each transcript was scanned to find the responses and then similar responses were grouped into categories. As a result, different categories were formed to answer one research question. The categories from each of the transcripts were then compared to find similarities. The same process was conducted against all the research questions. A sample can be found in Appendix 2.

4.2.1.3 Identification of new themes

Semi-structured interviews allow recognition of new issues apart from the aims or topic of the study. As the structure is kept open-ended, and participants are free to express their experiences and comments, it is highly likely that new themes will be found in the data. These themes may or may not be relevant to the research topic. Any new themes relevant to the research were incorporated in the analysis and contributed to the proposed model, discussed in Chapter 6. The themes that were not relevant to the research topic were considered as potential for future research.

4.3 Summary

In this chapter, the details of the actual process of data collection in the field and the process of analysing the results were discussed. This chapter included details on participant selection, how the interviews were conducted and how the data was stored and managed. Transcription details were also included in this chapter. The ethical concerns were also highlighted through each of the data collection processes including participant safety, privacy and anonymity.

The analysis part of the chapter was described in terms of how data was handled and then analysed. The coding schemes were described in the analysis part of the chapter. In the next chapter, findings from the study are discussed in detail and the formation of a proposed model is presented.

5. Trust and IT Teams

This chapter discusses the findings based on the analysis of the interviews. This chapter gives a summary of all interviews with the participants, discussing the components of the framework later introduced in chapter 6 along with the results of the study.

5.1 Interview: Summary

For the purpose of analysis, the interview transcripts were divided into three different parts and were formed as the main components of the framework introduced later in chapter 6. The three parts are:

- Role of project managers and team leaders in building trust for themselves and within teams.
- Individual behaviours affecting trust.
- Effect of trust on other team issues.

These classifications were based on the themes emerging from the interview data and the research questions. This section also includes the process by which various themes were extracted from the interview transcripts. By explaining each of the above components, factors relating to them were highlighted which helped in understanding their influence on teams and their importance in IT teams. This study has found a strong relationship between these components. Later, using these components, a framework was developed that is introduced and explained in section 6.2.

5.1.1 Role of project managers and team leaders in building trust

The results included in this section are the roles of project managers and team leaders in building trust in IT teams. This section highlights common themes extracted from the interview transcripts which can affect team performance or project performance. The effect of “trust” in teams, producing a positive effect on its performance, is evident in the literature and is also supported by the studies of Shen and Chen (2007) and Peslak and Stanton (2007).

All the participants in this study were either project managers or team leaders involved in software development teams. The average experience in managing development teams was eight years, with an average team size of at least five members. Their direct association with teams did not only involve technical work but also involved making sure that the working relationship between the team was maintained. Some of the roles pointed out by the participants are:

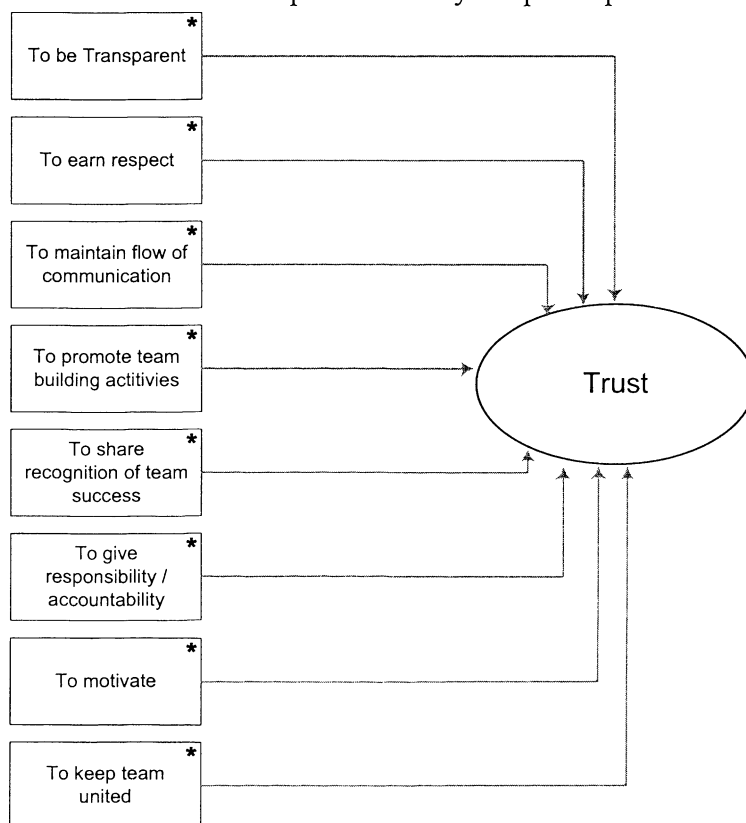


Figure 5. 1 Roles of Project Managers and Team Leaders

The results of the role of team leaders and project managers in building trust are summarized in table 5.1. “P” in table 5.1 stands for participants. These roles were formulated through the common themes found in the analysis of the interview transcripts. The coding sample can be found in Appendix 2.

	Role of Project Managers and Team Leaders						Types of Trust	
	P-I	P-II	P-III	P-IV	P-V	P-VI	Leader trust	Team trust (among members)
To be Transparent	X	X		X		X	+	
Earn Respect	X	X				X		+
Maintain Flow of Communication	X	X		X	X	X	+	+
Promoting Team Building Activities		X	X	X	X	X	+	+
Sharing Recognition of Team Success	X	X	X	X			+	
Giving Responsibility/Accountability	X		X	X		X	+	
Motivation		X		X			+	+
Keeping the Team United	X						+	+

Table 5. 1 Role of Project Managers and Team Leaders in building trust

Table 5.1 introduces the role of team leaders and managers in building trust among members and for themselves. The first refers to team trust and the later as trust in leaders. These types of trust were introduced by Dirks (1999, 2000). Therefore, the result of the analysis found that the role of team leaders and managers is to build trust for themselves and between the team members.

The following sections give a detailed description of how project managers and team leaders play an important role in improving trust for themselves and within IT teams. The sections will explain two concepts: the role of team leaders and managers in gaining the trust of his or her team, and in building trust between team members. The explanation will then lead to answering the two parts of research question 2 in chapter 6.

5.1.1.1 To be transparent and earn respect

P-I suggested that trust has no practical implementation and is built from the respect within a team and that respect comes from a good working relationship. It is

important for team leaders and project managers to earn respect in order to build trust (P-I). The trust is not only for the team leaders but between team members.

Among leadership qualities, summarized by Bubshait and Farooq, “visibility and accessibility” slightly relate to the role found in this study (Bubshait & Farooq 1999) but these qualities are not referring to “trust” in teams. A simple understanding suggests that being open and transparent eases team members’ comfort zone which then helps them to trust their leaders and managers. *This refers to trust in team leaders.*

“..If you work with somebody, you naturally have a mutual respect and your work relationship starts to build up and that builds trust...”

P-I believes that trust is not something that can be related to objectively. He said that the level of trust between people is very sensitive and gets easily affected by even the smallest negative incident. He referred to this as falling behind one’s expectations.

“Guys with less experience are blown away with people who have more than 10, 20 years experience and they immediately respect them for that but then over time, their opinions change when they think they can do better than them and that’s where trust starts to deteriorate.”

P-I thinks management is a bad word when it comes to managing teams and he didn’t like to use it. He preferred leadership because people respect a leader. One way is to become a leader and earn respect. This has been reflected by Erdem’s (2003) study which shows that team members respect their team leaders because they trust them at their word.

P-I: *“...If you lead your team as a leader, they will move in that particular direction, they will follow you and when they start following you they implicitly trust you...”*

P-I related respect as a role of managers because he felt that they have to act in a certain way so that their team gets the good vibes and respects them. He believed that it is important for project managers and team leaders to have a certain level of respect to gain trust from their team. It becomes crucial when a project is facing

challenges like meeting deadlines and, in situations like these it is best for management to accept their mistakes as leaders and be truthful as this will earn them respect.

P-I: "I don't believe in gimmick, it doesn't work and it's NOT a way of gaining trust because as soon as you know the project is running behind schedule, the members of the team realize that it's not their fault, because the work they were put on actually should have taken two weeks but they were given only one."

To be transparent and earn the respect of team members is the key for gaining trust and it is in the hands of leaders says P-VI. According to P-VI, being clear about the plans and being transparent is very important.

P-VI: "I am very transparent with each of the team members, everybody gets the same information. I feel that they as a result feel that I am not choosing one over the other and that's really important in the working environment."

P-II also said that setting a good example as a team leader is very important for building trust.

P-II : "For trust, well I have to set a good example as a team leader and they will follow me and when they see me doing, like, extra hours or changing work habits as the work presents itself, they will see and will be encouraged to do the same."

P-VI: "As far as the team's trust towards me is concerned, I try to be open and transparent. My role is to make sure they understand that everyone is equal in terms of skills and as a team member. It is important for them to understand that I play fair and don't do any favours."

Other than to earn respect, respect of team members for each other, and for their experiences and capabilities, is also important. *This refers to trust between team members.*

P-I : *“I think respect plays a very important role and in fact it is highly fundamental because if you work with somebody then you naturally have a mutual respect and you work with them very well and this builds trust and I think a good working relationship eventually builds up trust”.*

Earning respect and being transparent are the roles of project managers or team leaders, but they are also good leadership qualities. Leadership effects on project performance have been extensively cited in the literature (Thamhain 2004; Thite 2000; Bubshait & Farooq 1999). All these studies have emphasized the importance of leadership in IT projects and have accepted a particular leadership style cannot be decided for all projects. The findings of this study indicate that “respect” and “transparency” are leadership qualities for gaining trust in IT teams. Kloppenborg and Patrick (1999) identified “behaviour” competency for successful leadership. Among characterization of “behaviour” in Kloppenborg and Patrick’s study (1999), social virtues relate to “respect”, “trust” and “cooperation”. “Honesty” and “integrity” were defined as some of the few traits of leadership (Kirkpatrick & Locke 1991; cited by Turner & Muller 2005). Therefore, this research does not negate the literature but provides a different dimension, which the literature refers to as “social virtues”. Among the qualities of leadership, these virtues are “positive attributes” for gaining trust within IT teams and are a crucial role of a project manager or a team leader.

5.1.1.2 Maintaining flow of communication

A general consensus among all the participants indicated that it is important to maintain the “flow of communication” to build trust between managers and members for each other. This refers to trust for the team leaders and manager. Communication is evident as a key success factor not only in IT projects but in nearly all kinds of projects, and the literature has a very strong consensus on it (Brodbeck 2001; Hall, et al 2007). Therefore, it is not surprising, and the results of this study show, that team leaders and project managers need to encourage communication in order to improve trust.

After careful investigation, this study has identified “maintaining flow of communication” as an important role for project managers and team leaders. It is

important for them to monitor individual's issues to make sure everything is running smoothly. Problems of communication are still reported in software projects (Hall, et al 2007). Recently, attempts have been made to identify poor communication (Dyer 2006; Hall, et al 2007). Among the tactics "volume of communication", "encouraging face-to-face communication" contributed to the ingredients of good communication in teams (Fussell, et al 1998).

The attributes of communication that contribute to trust found in this study are grouped into three themes:

1. Random conversation as a pre-emptive measure for avoiding conflicts or issues that can affect trust.
2. Random conversation to understand a team member's personal issues.
3. Using communication to solve problems in order to facilitate trust such as:
 - Increasing comfort.
 - Understanding where everyone is coming from.
 - Understanding each other's mentality and personality.
 - Removing uncertainties.
 - Knowing team members' strengths and weaknesses.

The above categories are themes from the interview transcripts. This section explains how communication can be used by project managers and team leaders to build trust. It is important to note that the above categories are not ways to improve communication. The following text will discuss in detail how these themes were extracted from the interview transcripts.

P-I: "One of the things we do regardless of the project going good or bad is to keep track of what's happening at an individual level. The way I do it is by having random conversation."

The random conversation P-I is referring to is communication and the key is to talk to each member in the team. These are pre-emptive measures by project managers, that is, to constantly monitor individuals for their body language or any signs that can indicate that they are upset. In these cases, the role of a manager or a team leader is to open communication channels which will allow team members to open up.

P-IV also suggested that using communication to control trust can be the key and it is a crucial role of a project manager or a team leader. Although trust between members is difficult to control, opening up communication can really help. *This refers to trust within team members.*

P-IV: "My role is important for maintaining trust? Yes, yes, although that's really difficult to control...I would always ask and would always probe, to see if there are any trust issues, and then make them communicate with each other and with me and try to mediate a solution for it."

Another thing P-IV pointed out was that managers should use their instinct to see if any team member has trust issues with them or with any other member in the team.

"If a team member sees that I trust them then you hope that they would trust too, but if they question your opinion or seems that they don't trust then it should be tabled."

"...I can see that if my team members are not comfortable with each other, I would immediately raise it and say, 'you don't look comfortable, what are your thoughts', I would always ask and probe to see if there are any trust issues and I try not to ask questions that have a yes or no answer and then eventually try to come up with a solution."

Communication helps in solving trust issues, and it is important that communication flows well within a team so that everyone in the team understands what other members are like and understands their personality which will help in building trust between them.

P-II: "Well, communication is one thing that people should know what other people are doing on what's happening around. Being open to communication

to get insight into to other people's mentality is another thing which is also part of building trust."

Therefore, through communication team leaders and project managers not only present their positions but help team members to understand each other. Using communication as a tool to understand each other's personality can also be beneficial. Rushmer (1997) explains how communication can help in knowing each other's strengths and weaknesses.

Communication increases the level of understanding between the members and team leaders. Managers and leaders should use communication cleverly.

P-V: "Personally at team level, you need to make sure you control the communication level so that nothing goes wrong between them so that they understand your stand and everybody else's in the team."

P-IV pointed out that all uncertainties should be tabled out. This helps in strengthening working relationships, which means strong trust.

P-IV: "I would make sure and ask questions about their uncertainties, I would actually ask questions and then would ask their thoughts on it...This allows them to surface their opinions on table ...When their uncertainties are clear...they allow themselves to trust"

Another important use of communication is to understand each other's strengths and weaknesses and make sure you don't pin them.

P-VI: "one way to put it is that they should trust each other well enough to understand what each member is capable of and this can be achieved through communication".

An interesting aspect of communication highlighted by P-I was the "sit downs" as he suggested. This is where collectively as a team everyone communicates about each other's achievements, the problems they might have and, if they didn't do so well, and what their hurdles were.

P-I: *“We sit down with each of the resources and work out what they thought worked well and what didn’t work well, which is obviously kept in confidence between the managers, and in that way we actually address problems that who didn’t get along with who and problems like that for example a person A had problem respecting or trusting person B, or person C found person D aggressive etc. and that lead us to solving the problems.”*

Although communication is widely accepted as a positive attribute in the literature, this study helps understand how the role of management can improve trust through communication .Moreover, this study does not only recognize communication as a means of gaining trust, but also defines the tactics of communication that can improve trust.

5.1.1.3 Promoting team-building activities

Encouraging team-building activities is one of the crucial roles played by the managers and team leaders to help build trust between the team members. Team building activities in the literature are mostly related to evaluating team performance. These studies have attempted to measure team performance before and after team-building activities are imposed in order to assess any change in skills or attitudes in the team (Rushmer 1997; Holden 1990; Bubshait & Farooq 1999). The instances of team-building activities were consistent in all the interview transcripts and were considered important for building trust. *This refers to trust between members.*

P-VI: *“My role is to build that level of trust in the team to encourage activities that will make them dependent on each other. Activities that will make them understand each other’s skills and thus they will have respect for each others’ work”.*

P-VI: *“My role is to make sure the team collectively can depend on each other’s work. I do that by encouraging team-building activities like lunches, organizing games or any activities that interest them outside of work.”*

P-V: *“Team-building activities need to be encouraged. Everyone likes to play games like poker or anything. The manager has to drive the interest to build the team.”*

P-IV: *“I try and also like my team particularly plays soccer as team-building activity, which is really good. A couple of times I have gone out for drinks, and then we have drinks. When we release a major version of a product and I organize the team to go out for lunch. That’s just really builds the team and teamwork together and it also lets people see what they are outside of work.”*

P-III: *“I promote a lot of team work, group work and I try to do outside of work, organize stuff for my team, I find that socializing outside of work but still under the umbrella of being a team, you can build this trust over the time but not just myself and team but everyone.”*

P-II: *“I think it helps team members trust each other, if they are put in an environment where they depend on each other and that trust forms naturally for example we play soccer together for team building exercise and obviously there is a dependency within the team and that blooms in the office.”*

P-III believes that trying to encourage activities within a team will build trust and is better than forcing trust between them. Quite often when a particular member has difficulty in doing any task, rather than directly helping them, managers should ask someone else in the team to help. If there are two members not getting along managers should try and encourage those two to work together but if there is anger between them, one should not encourage them to work together. P-III said that it is important to encourage teamwork in a situation where there is less comfort and there is a situation of a new guy getting along. If they don’t like each other, it’s not a good idea to get them to work together. *This also refers to trust between members.*

P-II: *“Team-building exercises such as activities that promote social interaction, indoor soccer etc. It helps in knowing other team members and it helps in building trust.”*

The emerging themes within team-building activities were “getting to know” and “being dependent”. Rushmer (1997) suggested that “getting to know” is more than simple socializing and it involves a task-oriented element. Moreover, Rushmer also explained that if there is no “communication” and “getting to know” within a team, there would be no awareness of each other’s strengths and weaknesses. This shows the importance of communication in team-building activities for understanding each other skills.

Through closer examination, it clearly shows that “getting to know” and “being dependent on each other” has to be imposed by team leaders or project managers through team-building activities to promote trust within teams.

5.1.1.4 Giving team members responsibility/accountability

Another role of project managers and team leaders is to “giving responsibility” and “accountability” which creates confidence and a sense of responsibility, and which strengthens trust and improves team performance. This role describes the qualities of a good leader /manager in delegating the work load among members and gaining the trust of team members. This role refers to the initiation of trust which suggests that trust comes with trial and error. Kloppenborg and Petrick’s study (1999) suggests it is “justice” in terms of a manager’s ability to assign work and resources. This study has found that it is just not the matter of “justice” but also a matter of adopting an approach where members would feel “responsible” or “accountable”. One of the reasons recent studies don’t debate this issue is because there is no contradiction. “Credibility” is one of the terms used in Thamhain’s study (2004) which is seen as a positive trait in a team environment. The result of this study extends the role of credibility as a role of managers to promote trust in teams. *This refers to trust in team leaders.*

Giving team members some sort of responsibility shows them that they are being trusted and they in return make sure they maintain it, says P-IV.

P-IV: “I make some of my team members accountable for certain areas and by me giving them accountability, they can say I trust them to do that and so they make sure that work is delivered, so it’s both ways.”

It is the most productive way a manager could lead a team. It not only gets work done but builds trust, too, which is good for teams and for future projects. *This also refers to trust in team leaders.*

P-IV: *“By me putting my confidence in them, that then creates that level of trust so that’s not only just the accountability, but they see if I have confidence in them, then they have confidence in themselves, and they trust themselves which is really important too, because if they don’t trust themselves, they won’t be productive.”*

P-VI: *“...a certain degree of accountability can help build trust within a team. When a team member realizes that he has been assigned to work that holds a certain degree of responsibility. In other words, they understand that I have confided in them and as a result they make sure that they don’t disappoint me which strengthens trust between them and I.”*

P-I indicated trust as a cornerstone and he also believed that giving accountability builds trust.

P-I: *“When you assign someone a work load with a given time-frame, you assume and trust that this individual is capable enough to achieve or will try his best to achieve it. Sometimes trust can end up being violated as they end up not doing the work. Sometimes with bad people it happens and then it has to be addressed and there is a process of doing that, too, but trust obviously is very important.”*

P-III also stated that giving team members responsibility for work shows that they are being trusted and they try to maintain it by fulfilling their responsibilities which also gets the work done.

P-III: *“I think giving the team member a certain degree of responsibility also shows that we trust them and then they will comply with it.”*

The key themes were “accountability for work” and “responsibility for work”. They are interrelated and, from the analysis of this study, were highlighted as a key role of management to promote trust within the team. Research identifies it as “confidence” in one another, and a strong relationship has been shown between trust and

confidence (Mayer, et al 2005). It is quite obvious because trust is confidence that the behaviour of another will conform to one's expectation in the good will of another (Hart & Saunders 1997). Moreover, mutual dependence generates a shared sense of security (Adam & Okudan 2000).

5.1.1.5 Sharing recognition of milestones achieved

Sharing recognition gives a very strong signal to the team. They feel a sense of achievement and they feel that they are being appreciated for the work done. They also gain a strong sense of respect for their leaders which builds trust. "Sharing recognition" is the main theme which correlates to the "accomplishment" and "recognition" found by Thamhain (2004) as a strong influence for teams. A closer examination of the transcripts shows that "responsibility" and "accountability" increase trust, which is a positive trait, and it supports Thamhain's study.

P-III: "After the project is delivered or a milestone is achieved and we see that it is benefiting clients for whom we did the project, then it's a reward itself. We acknowledge the work and it motivates hard work in the future project plus it gains trust for managers and sense of security".

P-II: "I am a firm believer in giving credit where it is due; I don't think that generally recognizing team effort is enough. That's the way people acknowledge their success and it is very important and they realize that they are given credit for their good job. If you don't give out credit, you will lose trust".

P-I: "When a team does well, it is universally recognised by the company and individuals who do well are also recognised and one way of doing is we reward with annual bonus as this is the best way to support and encourage".

P-IV believes that when someone does a really good job, an employee of the month should be nominated if not awarded. If one of the team members has done an excellent job, they should be given credit for it. P-IV suggests that although only one person gets the employee of the month, nominations should always be made to recognise the work people have done.

When asked whether sharing recognition of project success creates trust, P-IV's response was:

P-IV: "I'll speak to my director and speak to all the other team members and say like this is who I think we should vote for this month and make sure that everybody is on the same page, just so the person can get recognised for their job well done and also that then builds up their confidence and they are happy. So whenever they do a great job I make sure that they are aware of it and I always try to reward them in some sort of way."

Following are the roles of team leaders and managers distinctly pointed out by the participants:

5.1.1.6 Keeping the team members motivated (P-II)

P-II indicated if there is no working trust relationship with the rest of the team then team members spend an awfully long time in thinking what other members think of them rather than concentrating on their work.

P-II suggested that if there is less trust in the team, the role of team managers becomes crucial. Their role starts with motivating team members. When team members are motivated, they get the work done and it also improves trust within a team.

"When you are able to concentrate on your work, you are motivated in getting your work done otherwise you will be thinking of how you will survive in the environment where there is no trust. So your motivation hinges from how you get your job done to how will you survive in the environment."

Therefore, team leaders and project managers can also build trust through motivating their team members. Motivation has been consistently cited in the literature as a key success factor in projects, and as a leadership role (Bubshait & Farooq 1999; Wang et al 2005; Kerzner 1997; Sotiriou & Wittmer 2001). According to Dirks (2000), the role of team leaders is to build trust, and thus motivation. This study confirms his results in the IT domain. When team members feel enthusiastic about a project, they are motivated and their work performance is improved which then improves the

work environment and trust. Therefore, the presence of trust makes it easier for the team leaders and managers to increase motivation within their team which becomes difficult if there is no or less trust in a team.

As argued in the literature review in chapter 2, the relationship between non-technical factors and people issues has been studied only minimally. This study shows that motivation is a crucial role of managers and team leaders when there is absence of trust in IT teams and it can be the start of a working trust relationship. However, it is not the only solution and further investigation is needed. This is also discussed for future work in chapter 6.

5.1.1.7 Keeping the team united (P-I)

Keeping a team working together is one of the key challenges. It is not an exact science and to a certain degree it cannot be predicted that resource A will work together with resource B. Based on past history, if they are put together again even then it cannot be said with 100% certainty that they will work well together. This is a key challenge, and the challenge is the fact there is no exact science.

P-I: “You just have to trust the team as opposed to the individual at times because if teams are successful, team members will trust each other but if it is not everything goes wrong and this is where the role of project manager is important to make sure that the team should stay together.”

Bubshait and Farooq (1999) summarizes the factors that influence high-performance team and it included “team unification” as a key leadership attributes.

This study shows that “keeping the team united” can also serve as disaster recovery when there is no trust, and can be crucial to team and project performance. It is important to have trust within a team to keep the team united. Trust within a team helps team leaders and managers to incorporate unity within a team. Here, trust acts a moderating effect, the effect introduced in the study by Dirks (1999, 2000).

5.1.2 Trust and individual behaviours

Individual behaviours pointed out in this section are highlighted by the participants. Overall, individual behaviours in this study are based on their effect on trust, team

and project performance. This section summarizes each of the six transcripts indicating their discussion on behaviours and the motives behind them. Support for individual behaviours and trust has been found in psychology literature (Akhter 2004; Sutherland & Tan 2004). However, this study shows a strong relationship between trust and individual behaviours in IT teams, supported by the psychology literature (Hassanein & Head 2004; cited by Lumsden & McKay 2006).

The behaviours discussed below are the combination of positive and negative effects on trust, regardless of order. An important thing to note are the people issues (motives) which give rise to similar or different individual behaviours. The result of this study shows that negative individual behaviours affect trust negatively. Through careful examination, this study shows that these behaviours are triggered by individual personalities and their personal issues.

The results are summarized in table 5.2 below.

Individual Behaviours	Participant	Nature
Frustration	P-I	Negative
Compassionate	P-I	Positive
Deception	P-I	Negative
Transparent	P-IV	Positive/Negative
Idle talk (Gossiping)	P-II	Negative
Naughty behaviours	P-III	Negative
Irrational Behaviours		
1. Inappropriate work attire	P-I	Negative/positive
2. Unnecessary disturbance	P-IV	Negative
3. Bad odour	P-IV	Negative
4. Playing practical jokes	P-V	Negative
5. Immature attitude	P-VI	Negative

Table 5. 2 Individuals' behaviours and trust

5.1.2.1 P- I:

Frustration

Frustration as indicated by P-I relates to a team member's behaviour. In the scenario referred to by P-I, the issue was a clash of seniors and juniors in relation to their

experience. As expected in software development, there are always newer technologies that come in; there are obviously people who have done it before and people who have not. The problem arises when people who have done it before don't allow room for younger, less experienced people, or people who are not familiar with the technology, to learn these technologies. The more experienced people believe that this wastes their time and as a result feel frustrated because they think their work productivity is challenged.

P-I: "... seniors, which we call them now, feel frustrated because they think their productivity is compromised so rather sharing their knowledge, they would go ahead and do the work of the other person where overall performance of the team appeared on level, but it leaves the less experienced developers guarded and defensive and when we asked them to update in terms of productivity they were forced to lie".

P-I explains that in this case, the project was safe but it failed as a team. Situations similar to this can pose serious risks to any project and they indicate a lack of trust and dependability. They compromise the quality of work and projects can suffer from missed requirements. This usually happens when one or two persons end up doing more than their allocated work. This forms the relationship between team members' behaviour and performance. See figure 6.2.

P-I: "If someone ends up doing too much work then what it does is, it compromise the quality of what we do and then system suffer from missed requirements or we end up with part of the application that don't meet the requirement or simply was of poor quality and then it cause a lot of pressure to the team."

The reason frustration has a negative effect on trust is that it blocks communication channels within a team, which hurts trust and team performance (Fussell et al 1998; Dyer 2006).

5.1.2.2 P-I: Compassionate

P-I refers to this behaviour as a natural behaviour for any human, which is to sympathize in certain circumstances when a genuine reason is presented. These

circumstances can be missing work due to illness, death or sickness in a family which results in missing work or delayed work.

P-I: *“What happens is here, we give the person benefit of doubt of uncontrollable circumstances so it’s up to the project manager to enquire why it happened and normally other team members will accommodate and allow project manager to address the situation because they do not want to have conflict.”*

P-I: *“Yes, when there is genuine reason that someone is having difficulty, it is natural for other team members to compensate the work.”*

It is the natural behaviour of compassion that allows team members to trust their manager’s judgment and let them decide. There are people issues like these beyond one’s control that allow team members to trust their fellow members and managers.

P-I: *“It as give and take which is if they help anyone, the other person will help them in return”.*

This behaviour has a positive effect on trust.

5.1.2.3 P-I Deception

Deception is another behaviour indicated by P-I. Being untruthful is one of the behaviours not liked by team members, leaders or managers. It blocks fellow members’ ability to trust the person who is lying.

P-I: *“It happen in a timely manner but the biggest problem is lying rather than hygiene because sometimes people lie to give an impression that they have achieved a certain level of success in the past and you often find it that it happens in recruitment process and then once they start working we realize that he/she is not as competent as they claimed to be.”*

Being untruthful is basically not trustworthy behaviour, which leads to distrust. The analysis of the interview transcripts shows a strong relationship between lying and its negative effect on trust.

5.1.2.4 Irrational behaviours

There were different irrational behaviours extracted from the transcripts. They are all grouped in this section. The reason they were considered important was that they raise complaints which are believed to affect the working relationship between members and trust. They are the following:

P-I Inappropriate work attire

Sometimes people are good at what they are hired for but some of their habits can annoy other team members and this blocks their communication, and where there is no communication, there is no trust. They are all interrelated.

P-I: "For example there was this guy who was a cross dresser although he was very good at what he did but he did affect other people performance but there was no way I would change the person. Instead I would make sure that other people who are affected by it understand why he is like that"

Complaints can improve trust between managers and members but that is not the case when members complain about each other. However, it can only improve if they trust their manager's judgment.

P-I: "It does affect trust, but you see when someone complaints to me about another individual and when I try to help them I can improve trust between me and the person who I helped."

When a manager tries to solve the problem, depending on how he/she resolves it, trust can consequently improve between that person and the manager. But with the trust between the individual team members it comes down to them and how they deal with the situation.

P- IV: Unnecessary disturbance

P-IV has experienced a situation in which there was a guy who was extremely noisy when he talked over the phone and P-IV's team was struggling to cope with it.

P-IV: *“Even I struggled; I couldn’t concentrate, so I in the meetings would ask questions to everybody else, that is this guy really loud, are you guys affected by the noise that this guy makes.”*

In this case, everyone was really disturbed by his voice and everyone agreed so it was escalated and was resolved.

Another similar sort of a problem was about a guy who had bad body odour and it was annoying for the other team members.

P-IV: *“One of the gentlemen, I guess, it was personal, ahm, he just smell basically, if try to put it nicely bad body odour and I guess as a team it was noticeable, it was hard not to notice, we spoke to our boss, he didn’t do anything about it.”*

Later, after a series of complaints, it ended up with the Chief Executive Officer (CEO) and the CEO called the contractor CEO, who then came down to the person and the next day he stopped smelling. It was the general consensus that he would get offended and that he would know who had complained about him but he was okay. There was nothing ever said to him directly and everything was normal but because it went up to the channel, no names were mentioned. He worked with many people and he might not have guessed who complained about him.

P-IV: *“Yes, if a person knows who made the complaint, it could eventually affect the relationship but it really depends on what person is like. I try to make sure, if there is a complaint, we address it and get over with it.”*

In situations like these P-VI said that,

P-VI: *“Complaining happens all the time, one has to make sure it doesn’t go down to the person who we are complaining about, and it all depends on the person itself as well and how he takes it but definitely it does bring out the grudges.”*

P-IV Transparency

One of the key behaviours pointed out by P-IV was transparency. Lack of transparency just leads to suspiciousness, such as:

P-IV: “when somebody is not exposing things and is a bit secretive, naturally the other person would questions why is this person not telling me everything and why this person is trying to be funny towards me and then it affects trust.”

Now with the affect on trust it comes down to the individuals. But the solution P-IV suggested came down to pulling the person aside and speaking to them about it.

P-II Gossiping:

There was a manager A, who was not a good performer and used to gossip a lot and this was a generally agreed view of him among all the team members. Members of the team just lost the respect for A.

P-II: “A friend of mine who still works there says if he had to work with 'A' in charge he might have to switch the job. So, A is not good at the job which is obvious from the history of A's projects and who is still there interestingly enough! And secondly, A's behaviour was not so professional.”

So apart from team member A's annoying behaviour, what the team was most annoyed about was the continuing of A's work. Most of these behaviours affect teams when nothing is done about them. Most team members are tolerant of cultural and religious issues but “as for behaviours like these it tends to be huge.” Dirks & Ferrin (2001) suggested that past performance of leaders indicates future performance. Here, participants were indicating they didn't want to work with A because of A's poor past performance.

When these problems occur, managers should try to solve them. When it comes down to other team members, they need to understand and be patient until it is solved and that is why trust is important. But if someone is not ready to open up, nothing can be really done. Sometimes, behaviours can lead to a series of other behaviours such as, in this case, the gossiping of one person leading to the annoyance of others.

P-III Naughty behaviour

P-III had one team member approach him about another team member playing practical jokes on him. This particular incident related to stopping his mouse from working.

P-III: "It will definitely affect the relation and bonding of the person who made the complaint and the person who the complaint was about and ultimately it affect the level of trust between them. There is nothing you can do as a team leader to solve that".

So, there is always a possibility for the level of trust between members to crash and, in some situations, the team leader can be helpless. This is referring to team trust and performance being disturbed by individual behaviour, presented in figure 6.2.

P-VI: Immature attitude

P-VI indicated the casual attitude of a team member in one of his teams. The problem was that this member was a hard worker and when it came to delivering the results, he was quite efficient. When it came to discussing solutions in the team meetings, he had a strange way of taking things in a non-serious manner that troubled other members.

P-VI: "I in fact got many complaints regarding this. Situation like these are very crucial to handle as it was being manoeuvred by a single team member and it was affecting other member's work. So I had to pull this person aside and make sure he understood what's going on."

P-VI further elaborated that situations like these makes it harder for a person to resume their relationship once they know that a particular person has filed a complaint against him/her. It is simple human nature. Therefore, sometimes behaviours can lead to serious grudges and can affect trust.

The problem was then solved by P-VI making a personal complaint to this person.

P-VI: “But yes definitely, it is hard for a person to resume their relationship once they know that particular person has filed a complaint against him/her. It is simple human nature.”

5.1.3 Effect of trust on team success

The previous two sections of the results showed that there was a strong relationship between individual behaviours and trust. The findings of this study showed that in order to control and minimise the effect of the negative behaviours on trust, the role of project managers and team leaders is important. The findings of this study also discussed different ways that project managers and team leaders can improve trust within IT teams. This section of the results has discussed why trust is important for team success and it also highlights why the role of project managers and team leaders is important in maintaining trust within a team.

The discussion in this section is divided into two subgroups to address the research question that will be discussed in a later section.

1. Importance of trust in team success.
2. Role of trust in solving issues at an individual level/team level.

5.1.3.1 Importance of trust in IT team success

The importance of trust in team success was one of the factors commonly recognised by each of the participants, but interestingly enough in different ways. It is obvious because it is difficult to have a working relationship without trust (Castro 1994). It was seen in the interviews that teams worked towards work-trust relationships. However, the means of building trust was considered more important, i.e., communication, motivation, and so on. This is the summary of what each participant said about essential components for team success. Concluding remarks are in the answers to the research questions in section 6.1.

P-I: “The key for me in terms of team success is an understanding between members and level of respect between members of the team.”

P-II: *“Basically you need right people, and second for people to get along with each other, be comfortable or be able to talk to each other.”*

P-III: *“Communication is the probably the most important, use communication to catch up say once in every couple of days and there is sense of involvement from all team members...”*

P-IV: *“Team success really is not up to one person, it’s up to the team that everybody need to be motivated to achieve team success and for each team member needs to have responsibility and be held accountable for and need to have that motivation and drive to achieve that goal.”*

P-V: *“There are various things like competition, you have to have right people, and people have to have the right attitude and a good manager who can lead.”*

P-VI: *“...everybody to have the same direction, some sort of motivation going on and of course it’s important for everyone to work as a team, ahm getting along and understanding an each other position is also very important.”*

The important thing is to set up an environment for the team where they can give required performance. All the participants had different views but “getting along”, “motivation”, “understanding” and “right people” were the common themes. Interestingly enough, these are supported by the literature as successful elements of trust (Castro 1994). With working relations, it was also indicated that good working relationships build “trust” within teams, which is very important. This can be related to the study done by Dirks and Ferrin (2001) who believed that trust is moderating factors emerging from themes, for example, “respect”, “communication”, “involvement”, “competition”, “right attitude”, “same direction” and a “good leader”.

P-I: *“I think a good working relationship eventually builds up trust. You cannot tell who will trust who. So we assume that if two people can work well together they also trust each other.”*

Getting deeper into the discussion, “a working relationship” and “getting along” turned out to be among the most important factors, and in order to achieve both of these “flow of communication” was considered very important.

P-I: “We are more interested in making sure that the members who are on the team actually can work together which is very important as with technical stuff you will learn anyway.”

The key challenge is that there is no exact science of who will work well with whom, although this can be learned from trial and error. Although it is very important that the team works together well enough to succeed, you can’t use the best team all the time. Teams change and that is the key challenge.

P-I : “When it comes to people working together and getting along, it involves personality and yes there is no exact science in when it comes to evaluating personalities.”

This is where the role of managers or a team leader is important, to make sure there is enough communication that team members get to know each other better, organize team-building activities so they can learn to depend on each other, and consequently work towards a working relationship based on trust.

P-IV: “I think communication is important to know where they are coming from and at the same time where I am coming from and it solve many problems.”

An ideal team would be where every team member understands each other in terms of their strengths and weaknesses. The answer to the question of where trust stands in teams was rather overwhelming.

P-IV: “Trust is important, I mean trust at various levels, when I ask any them to get me an estimate on work; I trust them that they will give me an accurate and something that will not blow out of proportion.”

P-I: *“Trust is a corner stone because in simplest form, when you assign someone a work load with a given time-frame, you assume and trust that individual is capable enough to achieve or will try his best to achieve it.”*

P-II: *“Of course trust is also important because if there is no trust, team member will not respect me and will not regard the solution I will give to the problems that will come up within a team.” - Referring to leader’s trust*

P-V: *“It depends on the knowledge level that other people trust varies and because of that reason your manager has to know your capabilities and then they have to control the communication flow to make sure that they maintain the trust within the team and themselves.” - Referring to leader’s trust*

P-VI: *“Team bonding and how well they get along with each other is important, one way to put it is that they should trust each other well enough to understand what each member is capable of.”*

A few obvious themes from the discussion were “team bonding”, “work relationship” and “getting along” and they all refer to trust in teams. One obvious indication is that “getting to know” each other is people’s way of indicating they want to communicate and learn about each other (Rushmer 1997). It is very clear why all these have been considered important elements for team success. When you trust someone to do work and they fail to comply, trust deteriorates, which can lead to a negative effect of trust.

P-I: *“Over life time of the project, their opinions are changed and they think they are better than seniors and that is when trust starts to deteriorate.”*

This happens when expectations are not met but that does not mean that trust is not important. The importance of trust can also be judged through its absence and the problems that can occur, for example:

P-V: *“It gets really ugly if trust is not there. Normally it happens when member start pinning other member in lieu of competition and it leads to manager taking action and then start every one defensive mode.”*

This is explained by Dirks & Ferrin (2001) who point out that high trust yields cooperative behaviour and low trust leads to competitive behaviour. This study confirms his prediction in the IT domain.

P-V: *“Usually with low level of trust, issues happen at personal level such as self esteem, you get more personal attack and quality of the work is low. There is less feedback in low level of trust.”*

P-IV: *“It can lead to a, the team can be a little bit dysfunctional if they don’t trust each other, things would progress much slower”*

P-II: *“Let’s say person A does not trust person B in doing their job based on their past experience with them. Person A will not only do their job but also an extra piece of work which overall affect the project.”*

P-III: *“Obviously in teams with low level of trust is going to have a lot more conflict.”*

P-VI: *“The team would not perform well if they don’t trust each other, the quality of work will be comprised and they will not be able to finish the project.”*

This is also where project managers and team leaders play an important role to mediate and control the flow of communication to make sure they maintain the level of trust.

P-VI: *“By insuring that communication is there and that 'everybody knows where everybody’s at and having that regular workshops together and making sure that I don’t favour one over the another or like that and that will make sure trust is within the team.”*

P-IV: *“Making sure all communication links are flowing properly and keeping the team’s morale high can solve this problem but then again all these are to keep the team together.”*

The result of this study showed that trust itself does not have any negative implications. However, managers have to control the level of communication when there is no trust among the members.

5.1.3.2 Role of trust in solving issues at the individual level/team level.

When team members are encouraged to participate in team-building activities, they are basically learning to depend on each other, which eventually lead to a better working relationship. When their working relationship is good, they start trusting each other and the flow of communication is smooth.

P-II: "Trust plays an important part in solving any issues related between team member and how would I rate it, well I would give it a very high rating."

P-II: "When you trust someone, you don't question their actions or activities, or you are not thinking they would do anything that will be adverse to me. Just instantly all problems go away."

Trust not only improves communication but helps team members to stay motivated. It is in the absence of trust that all sorts of problems occur, such as communication problems, arguments or disagreements. Dirks & Ferrin (2001) explain that motivation is easier when trust in the team leader exists. Therefore, efforts at motivation in order to improve performance have little effect where trust is low.

P-III: "If there is no trust then all sort of problems occurs; there are communication problem, problems of argument or disagreements."

P-IV: "Trust is one of the factors affecting project success but there are also other factors that it is affecting like communication, motivation and then project success."

Other than communication and motivation, there is stress.

P-VI: "When trust is present within a team, it allows all communication links to flow smoothly and ultimately it reduces individual stress level."

Trust also helps in changing individual behaviours. A general consensus among participants was quite affirmative: it works in so many different ways. If a team member exhibits a strange behaviour for some reason, it is trust that allows other members to understand and compensate for his work.

P-III: "I think there is always going to be a degree of comfort when it comes to covering other members. And it also comes down to trust. In my team if whatever reason if any member in my team is unable to perform, the other member would chip in."

Other than trust between members, trust in the team for managers and leaders is important as this will help them accept the decision they make when they solve issues at the individual and team level.

P-I: "It plays a very important role, if there is a problem and individual trust the senior who will solve the problem and trust their judgment the issue will eventually go away and if they are not able to solve it, they also have to trust me that whatever solution I put in place."

5.2 Summary

Chapter 5 discussed how themes of this research were extracted from the interview transcripts in reference to the research questions. It included an explanation of the components which will later form the framework. The three main components discussed were related to the role of project managers and team leaders in building trust, individual behaviours affecting trust and the effect of trust on other team issues. The individual behaviours found in this chapter that can affect trust, and consequently projects, were frustration, compassion, deception, transparency, idleness, gossiping, inappropriate behaviours, inappropriate work attire, unnecessary disturbance, bad odour, playing practical jokes and an immature attitude. The role of managers and team leaders in improving trust within teams and the team members found in this study were to: operate with transparency, earn respect, maintain the flow of communication, promote team building activities, share team/project success, motivate team members, and keep the team united. This discussion helped in

organising our results which leads to answering the research questions and the formulation of the framework that is presented in the next chapter.

6. Results and Discussion

This chapter answers the research questions and presents the framework proposed by the study. The breakdown of individual sections is given below:

- In section 6.1, the research questions, which were introduced in chapter 1 along with the discussion, are addressed.
- In section 6.2, the framework proposed by the study is explained.
- Section 6.3 is a summary of chapter 6.

6.1 Research Questions

The discussion on how various themes were extracted from the interview transcripts is given in chapter 5. It highlighted various aspects of this research, however, it is important to address the research questions separately to make it clearer. This section will address each research question separately leading to the formulation of the framework. The research questions were introduced in chapter 1. They were:

- 1:** What factors indicating distrust disturb team dynamics and lead to a failed project?
- 2:** What is the role of team leaders and managers in building trust within IT teams of successful projects? This leads to two sub-categories.
 - i. Trust between team management (leaders, managers) and team members
 - ii. Trust of team members for each other.
- 3:** What are the individual behaviours of team members that increase or decrease the perceived level of trust among team members in IT teams?
- 4:** In what ways does trust facilitate higher team performance and project success?

Research Question 1: What factors indicating distrust can disturb team dynamics and lead to a team failure? This study has found various disturbances in team dynamics due to the absence of trust.

The analysis of the interview transcripts also found various factors indicating distrust that can lead to team failure. The sample coding process is in Appendix 2 and table 6.1

Team dynamics	Participants					
	P-I	P-II	P-III	P-IV	P-V	P-VI
Less Communication			X	X		X
Low Quality of work	X	X		X	X	X
Disagreements/conflicts	X	X	X		X	
Low Rate of solving issues	X	X				
People leaving	X					
Counterproductive/defensive	X	X				
Low Levels of Competency /willing to succeed	X					
low feedback	X					
Less Motivation				X		X
Disrespect				X		X

Table 6. 1 Problems with absence of trust

includes various factors found in the analysis indicated by each of the participants, where ‘P’ in the table indicates “Participant”.

The most common themes were “less communication”, “low quality of work”, “conflict” and “counterproductive”. The solid support of trust for commitment and communication is found in Castro’s (1994) study on trust. Moreover, Heathfield (2002) emphasized that trust is necessary for being able to rely on feelings, taking risks, cooperation and believable communication. Although the Heathfield research was for the business environment, it provided strong support for the results found in this study.

With “quality of work” it begins with team members re-checking other members’ work because they don’t trust their work output. This gives them less time to spend on their own work, which affects the quality of the work they produce. Overall the team becomes “dysfunctional” which leads to problems like “communication”. “Doubling of work” leads to “less quality of work” which makes other team members “defensive” on their part. When these problems occur, the team lacks a

“sense of direction” and then they start to lack “motivation” and then it all leads to failure as team. Therefore, trust is moderating these factors, which then impacts on performance.

P-IV: “Trust can be the underlying problem and then it can spawn other issues so lack of trust can then cause a person to be in confided in their thoughts, behaviours, and not be open to suggestions, so I think trust can be the foundation of other problems.”

The approach of this study was for managers to be able to identify elements that can show absence of trust because absence of trust can hurt performance (Sabherwal 1999). The results of this study show pre-emptive measures are better than dealing with trust problems. The literature has been successful in identifying the benefits of trust and its effect on workplace attitudes, behaviours and performance (Golembiewski and McConkie 1975, Jones and George 1998, Mayer et al. 1995). The results of this study do not negate any of the benefits of trust provided in the literature.

The negative effect of trust is found in self-managing teams in which monitoring is required (Langfred 2004). However, in IT teams where level of dependency between team members is higher, the negative effect refers to absence of trust (Castro 1994). There were no negative effects of trust seen in IT teams in this study. Having said that, it was not the aim of this study to discover any negative impact of trust in IT teams, but it presents potential for future work as discussed in chapter 7.

Research Question 2: What is the role of team leaders and managers in building trust within teams?

The roles of managers and team leaders in improving trust for themselves and between team members was summarised as: to be transparent, earn respect, maintain the flow of communication, promote team building activities, share team/project success, motivate team members, and keep the team united. According to Dirks & Ferrin (2001) this then impacts the team leaders’ attempts at improving motivation and keeping the team united, included in figure 6.1.

The roles mentioned before are also summarized in table 5.1 introduced in chapter 5. These roles have been discussed when they were extracted from the interview transcripts in section 5.1 and were cross referenced with the literature.

Most of the roles defined to build trust are common among the leadership qualities grouped together in the literature (Bubshait & Farooq 1999). However, they were in relation to general management and the perspective of trust and teams was not included in them.

With respect to the relationship between trust and project success, it has been seen to have a positive effect (Peslak & Stanton 2007; Erdem 2003). The results of this study support this finding as all the factors pointed out were critical to teams and project success, and confirmatory questions were asked from the participants.

P-IV: "I don't feel that it's only the trust alone, it is a player a key player but I think there are few other thing as well that will affect project success. Trust can be the underlying problem and then it can spawn other issues".

P-VI: "Ahm, to a certain extent it does, whenever a project requires an immediate action and on urgent basis, the project is suffering".

P-I: "Yes, the actual cost of the project will go up and it does at times otherwise another option we have is to move member from other teams onto the project but that depends on how deep the team is suffering".

Therefore, any disturbance in the team dynamics was seen to affect projects, too, and the key themes were "hiring new resources", "time wastage as a result of reassigning work", "team member leaving". These were the themes that resulted in project disaster as a result of trust issues. For the measure of project success each participant based it on "missing deadlines", "missed requirements" and "spending more resources". All these were affected if team performance was suffering.

Research Question 3: What are the individual behaviours that increase or decrease the level of trust among team members in IT teams?

The motives behind these behaviours are normally investigated by project managers and team leaders. “Probing” makes them understand the reason for a team member’s irrational or genuine behaviours. The irregularity in the issues shows that different issues can lead to different behaviours. The real challenge for team leaders and project managers is to monitor the behaviours which are visible. The ultimate challenge would be to monitor these behaviours and know the reason for it (Erdem 2003). Dirks & Ferrin (2001) stated that high trust leads to cooperative behaviour and low trust leads to competitive behaviour, as indicated in section 5.1. So this study confirms another claim by Dirks & Ferrin in the IT domain.

P-I: *“You know you always have to try your best to see into the issue to solve the problem and its part of the HR policy to find out the root cause whether it is a family issue or whether there is another complaint but they has to be a visible sign for it”*

P-II: *“Some people are not just very wise; sometimes people tend to get attention in this way. Everybody behaves differently so we try to communicate to find out and then team members understand the reason he was acting funny but when someone is not ready to open up so we can’t really help.”*

The individual behaviours which affect trust are discussed in this section. The summary of these behaviours was introduced earlier in table 5.2.

All these behaviours were seen to have positive and negative effects on trust. The only relationship this study was able to set up with the literature was “manage conflicts”, mentioned as a leadership strength (Bubshait & Farooq 1999), as all the behaviours tend to test a team’s resistance level and how managers deal with them and how they raise conflicts. Conflicts in organisations arise for many different reasons, one of which is interdependent work (Jameson 1999; Cohen et al. 2004). Moreover, IT projects are mainly teamwork which has a lot of work interdependencies among its members (Castro 1994). Due to a lack of empirical evidence on conflict and how it affects trust, it is hard to say whether this study contradicts or agrees with the fact that negative individual behaviours can give rise to conflicts. This study recommends future work to explore this aspect.

Kloppenborg and Petrick's (1999) study showed "intellect" as one of the attributes of project managers and team leaders. They define intellect as an ability to foresee risks which are not defined in their study. The only downside is that their study is based on their experience and does not have any empirical evidence. The results of this study clearly show that negative individuals can negatively affect trust and consequently team performance and project performance. It is important for team leaders and project managers to monitor these behaviours in order to ensure they maintain trust within their teams.

Research Question 4: In what ways does trust facilitate team success?

These are summarized below:

1. "With teams of high level of trust, the conflicts are mainly disagreement on how the project or a certain module should be run," – P-III. Trust helps them to solve problems quickly. "The rate of solving problem in high level of trust is comparatively higher," – P-I. And, "they solve problems because they trust each other enough to accept each other arguments," – P-III.
2. "Trust can be an underlying problem and it spawns other issues." – P-IV. With presence of trust, team just doesn't have to face with other problem that lack of trust creates. It facilitates them to communicate and managers make sure they get motivated enough to get the work done.
3. "Outside of trust there are issues like competency, ambition that can affect performance of the team. So even if the team has high level of trust, team can still suffer. – P-I". Trust keeps the working relationship intact, which helps the team to survive.
4. "Trust however, plays a crucial role because it can have ripple effect on other issues like communication and motivation in the team which again are very important for a team success." – P- VI. This has been backed up by Dirks & Ferrin (2001).

Therefore, presence of trust maximizes performance because the team has high levels of “communication”, “motivation” and fewer “conflicts” and “disagreements”. It is also supported by the literature (Bubshait & Farooq 1999; Castro 1994; Heathfield 2002). The detail on this literature can be found in chapter 2.

6.2 Formulation of a Framework

In section 2.3, the research questions were introduced. After the analysis of the interview transcripts, answers to all four research questions were discussed. There are a number of relationships found in the analysis. Each of the research questions discussed earlier results in relationships which can help to formulate a framework. These relationships were found when the analysis was done. Refer to appendix 2 for a sample of the coding process.

- The relationship between the team members’ behaviour, people issues and the role of project managers and team leaders. This relationship refers to the importance of the role of project managers and team leaders in understanding people issues that arise in IT team projects in order to control team members’ behaviours.

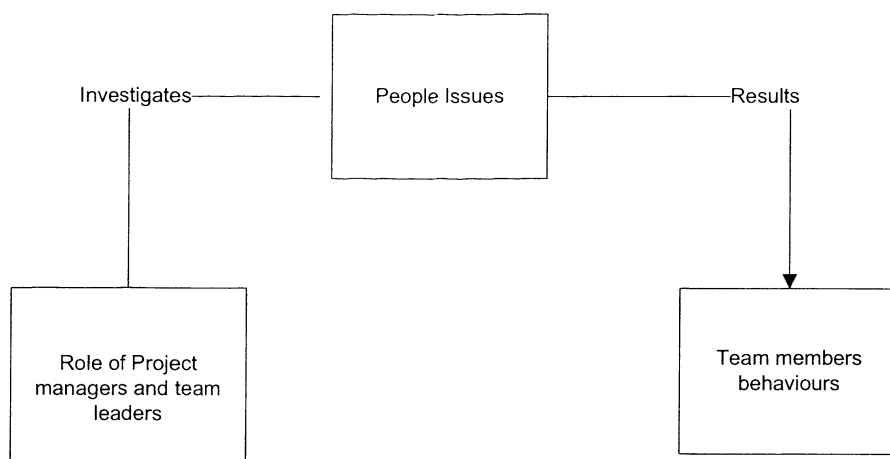


Figure 6.1 Role of management and individual behaviours

- The relationship between individual behaviours and team performance, which is directly seen in the analysis in the previous section and in the answer to research question 3.

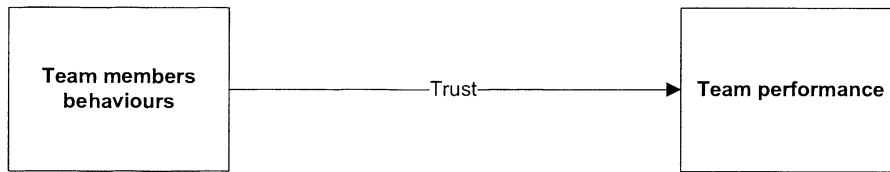


Figure 6.2 Individual behaviour and team performance

- The relationship between the role of project managers, team leaders and team performance which is answered in research question 2. The role of project managers and team leaders in improving trust affects team performance and is shown in the findings of this study.

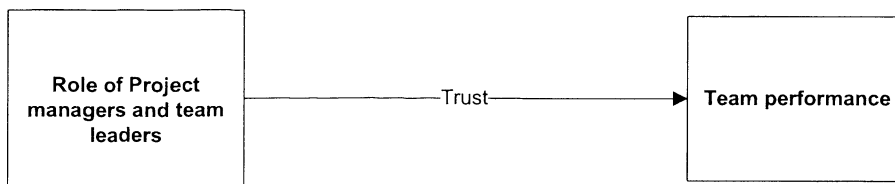


Figure 6.3 Role of management and team performance

Figures 6.1, 6.2 and 6.3 show a strong relationship between the roles of project managers', leaders' and team members' behaviour. Another important aspect shown is the relationship with team performance where 'trust' acts as a central element. These relationships are combined to formulate the framework presented in figure 6.5.

- The relationship between team performance and project performance is supported by the literature (Bubshait & Farooq 1999; Belassi & Tukel 1996).

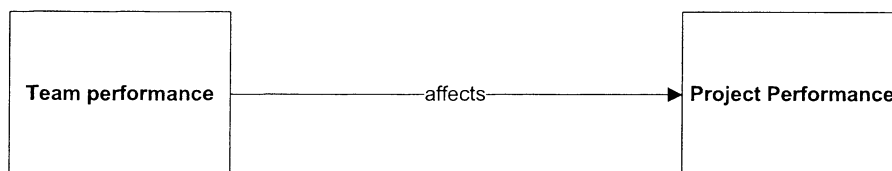


Figure 6.4 Team performance and project performance

The answers to the research questions identified the importance of trust and how trust influences IT project teams and the role of project managers and team leaders in improving trust within teams. This includes individual behaviours that affect trust within a team. The analysis identified trust as a central element to the factors found in this study. In order to show how various factors influence trust, and how without trust teamwork will be negatively affected resulting in project failure and poor quality, a potential framework is proposed. This framework is explained in the next section.

The framework proposed by this study indicates trust as a central element of the factors found in this study related to team members' behaviours and the role of project managers and team leaders within IT teams. In the previous section, some of the factors related to individual behaviours, project managers and team leaders affecting teams' trust were elaborated but these factors do not explain how they affect trust. The framework introduced by this study answers this question.

The findings introduced earlier in section 6.1 found various potential relationships between the factors which lead to proposing a potential framework. The formulation of the framework is strongly related to the answers to the research questions and the relationships found by answering them. Each answer relates to a component in the framework presented in figure 6.5. The validation of this framework is not in the scope of this study. It requires further investigation, which is recommended for future work. Despite this limitation, it holds significance as this proposition is based on qualitative analysis and its quantitative validation in future studies would be a great empirical contribution to the IT literature.

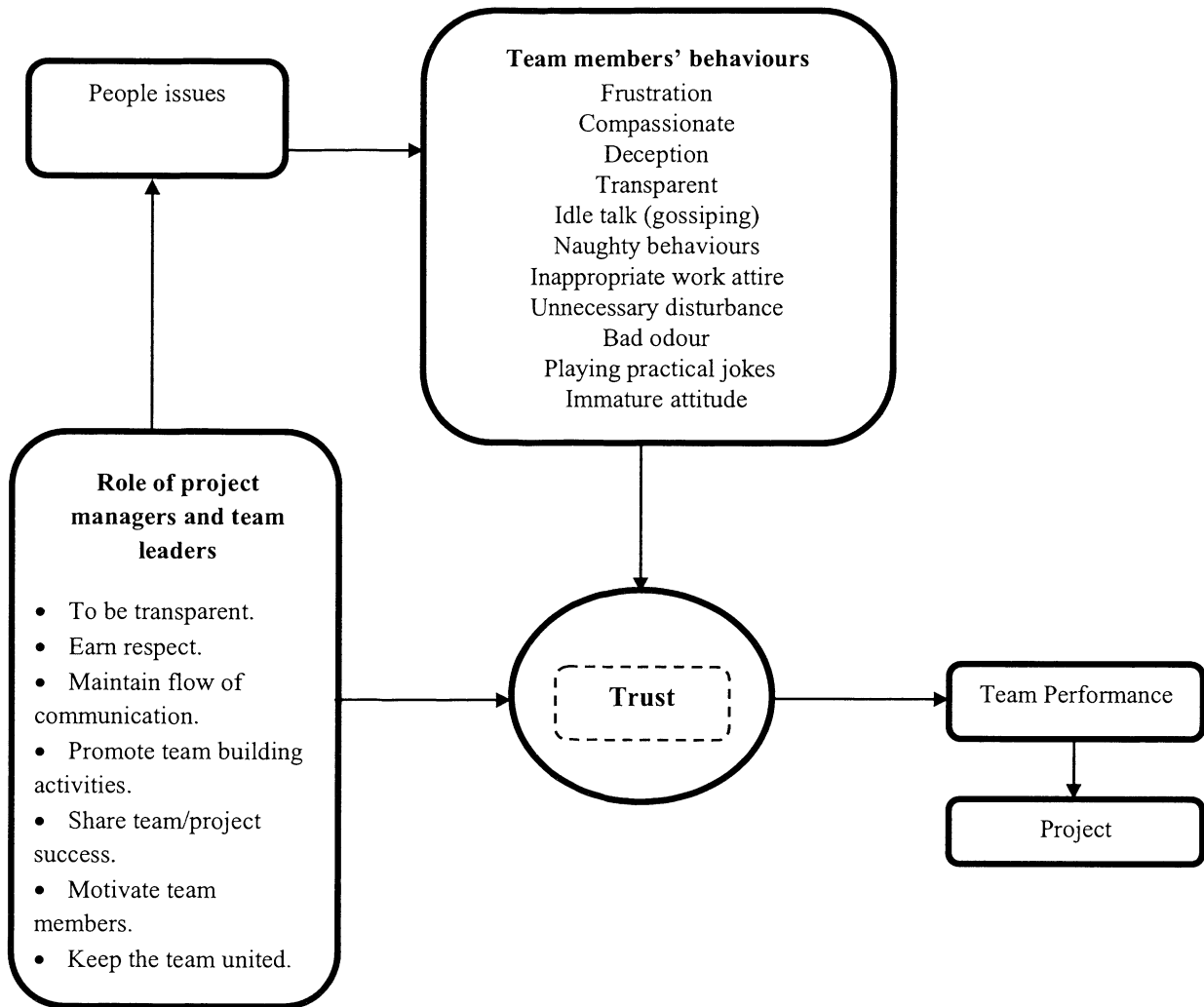


Figure 6.5 Framework for understanding trust in IT teams

This study supports the relationship between team members' performances with team performance and the effects on project success. Whilst the study has identified important factors which influence positive teamwork, more studies are required to validate the relationships and effects of these factors in the framework that is proposed by this study. The framework formulated and proposed by this study, after combining the relationships found in the analysis, is in figure 6.5. The model proposed by Peslak and Stanton (2007) includes factors related to emotions, processes and personal processes in the team affecting project success. However, this study focuses on trust and factors affecting trust and consequently team and project performance.

The individual behaviours found in this study are not in contrast to the findings of Peslak and Stanton (2007). The factors related to team members' behaviours and the role of project managers and team leaders are related to each other and they are pointing to the central element, which is trust. Without trust in the team, teamwork will be affected resulting in poor or good team and project performance, as shown by the outward arrow from trust.

The strength of trust depends on the balance between the role of managers, team leaders and team members' behaviour. The role of team leaders and project managers also involves an investigation into people issues to minimize the effect of individual behaviours on trust. Trust, on the other hand, acts as an "underline" for other team issues such as "communication", "motivation", "stress" "ambition", "sense of direction", etc. This refers to trust as a moderating factor, discussed in research question 1 and section 5.1.3.1, which is also backed up by Dirks & Ferrin (2001).

The role of project managers and team leaders in the framework indicates the importance in building or improving trust within teams. It also reflects the importance of the role of project managers and team leaders in investigating people issues that occur in a team to decrease the effect of individual behaviours. Individual behaviours, as concluded in this study, can be the result of a personal issue or habit.

Individual behaviours listed in figure 6.1 show the effect of a personal issue on trust. The description of its negative and positive effects is given in table 5.2.

The framework indicates the importance of trust and how team leaders and managers can help in gaining trust while controlling individual behaviours. Individual behaviours are a result of different people issues. Trust is one of the team issues categorised as a people issue (Bubshait & Farooq 1999). The relationship between individual behaviours and trust has the potential to be explored, which has been debated already in chapter 1 and 2.

The support from the literature to some of the aspects in this framework can be found in the form of non-technical factors influencing teams and trust. These factors and their sources are summarized in Table 2.1. The relationship between team performance and project performance is supported by the literature (Belassi & Tukel

1996; Bubshait & Farooq 1999). Belasis and Tukul's revised model clearly indicates team members' performance is a key success factor of a project. This study supports the relationship between team members' performance with team performance.

6.3 Summary

In chapter 5, findings from the semi-structured interview analysis were discussed. The findings were grouped into three sections. The discussion started from the role of team managers and leaders in building trust. It also described the best practices of the interview participants. The discussion then led to individual behaviours that can increase and decrease levels of trust. In the last section, the discussion was further divided into explaining how trust influences teams. After the findings were discussed, chapter 6 answered the research questions introduced in chapter 1. The chapter finally presented the model proposed by the study. The study's contribution, implications and future work are discussed in chapter 7.

7. Conclusion

This study was an insight into the role of project managers and team leaders in understanding how trust is built in IT teams to facilitate project success. In the process of this investigation, six semi-structured interviews were conducted. It was argued that trust in IT teams, one of the people issues, was not discussed enough. It was also argued that there was no framework developed to help understand the importance of trust in IT teams for achieving project success. This chapter summarises the study and is divided into the following sections:

In section 7.1, a summary of the thesis is presented.

In section 7.2, the findings and a discussion of the thesis are given.

In section 7.3, the limitations and future work of the research are discussed.

7.1 Summary of the thesis

In chapter 1, a review of the purpose of the study was given. It started with a background and then the research problems were identified which led to the aims of this study. The problems that were identified were:

- The overall concept of trust has not gained solid consensus among scholars and practitioners because trust is ‘elusive’ and difficult to understand (Lee 2003).
- Trust has a positive affect but it is not backed up by empirical evidence (Dirks & Ferrin 2001).
- Trust has gained controversy due to the fact that elements of ‘over trust’ were seen to have a negative impact on performance (Erdem 2003).

It was argued that the relationship between trust and team performance was inconclusive (Dirks & Ferrin 2001). As trust originates from people within team issues, studies on trust generalize it as one of the team issues, ignoring the core element – people. Moreover, IT literature lacked empirical studies on trust. The research problems were reviewed in section 1.3.

The literature review in chapter 2 showed that a different approach was required in order to understand the research problems. Therefore, two different aspects of literature were reviewed, factors related to project failures and factors related to teams. The review on project failures was done to understand the factors related to projects' success and failure and to understand projects' success link with teams' success and failure. The review on teams was done to understand team issues and their relationship with people working in those teams. In section 2.2.2, part of the psychology literature was reviewed to understand trust and its relationship with individual behaviours in order to map it with IT literature on teams.

The review on project failure and the criticism with the literature was that:

- The focus was on technical factors rather than non-technical factors.
- Most of the studies could not be generalized.
- Non-technical studies which were related to the causes of project failure lacked empirical studies on issues related to people, such as trust, communication, conflicts, stress, etc.

The criticism revealed from the review of team literature was:

- Most of the factors were discussed in the light of a project manager's abilities and solutions applicable to project managers, including leadership styles (Wang et al 2004; Turner & Muller 2005).
- Issues discussed which related to team members were not discussed in depth, considering their importance, and hence lacked empirical evidence (Smith 2004; Cohen & Bailey 1997).
- The people side of team management was least discussed in the literature. Analysis of teams was somehow controversial with a very limited number of empirical studies on trust (Cooke-Davies 2002).

The literature review confirmed the gap in analysing trust. It showed a direct effect on the 'people' factor, as trust is strongly related with people working in teams

(Erdem 2003). The review showed a potential research strength in investigating team trust in IT teams.

Chapters 3 and 4 detailed the research design, actual data collection and the analysis. The qualitative approach used in this research was also described in these chapters, along with the design of the semi-structured interviews. Participation selection, interview process and data management was also described in these chapters. In chapter 3, the research methodology was described and justified. In chapter 4, the actual process of how the interview transcription was analysed was described. The content analysis approach for the interview transcripts corresponds to Sarosa's approach to content analysis (Sarosa 2007).

In Chapters 5 and 6, the results of this study were presented and discussed along with the answers to research questions 1 to 4. Finally, the model proposed by the study was also presented. In the next section, the summary of the results and discussion is presented and answers to the research questions are revisited.

7.2 Summary of the key findings

This research was justified on three grounds: the need for analysis of trust within teams of IT projects today, the need to investigate social factors related to IT teams, and the lack of empirical research on trust in IT projects. This research added to the understanding of trust in IT teams through an investigation into the role of management and team members' behaviours.

The findings from the analysis of this study made it possible to answer all four research questions, which are detailed in chapter 6, followed by the model proposed by this study. This research followed a qualitative approach (humanistic). As such, there are no hypotheses designed for this study. However, the results are cross-referenced with the literature to show this study's perspective in order to gain depth.

The summary of the key findings are:

- The study has formulated various individual behaviours that can affect trust, and consequently the project, such as frustration, compassion, deception, transparency, idle talk (gossiping), naughty behaviours, inappropriate work

attire, unnecessary disturbance, bad odour, playing practical jokes, immature attitude.

- The role of managers and team leaders in improving trust between themselves and the team members was summarised as: to be transparent, earn respect, maintain the flow of communication, promote team-building activities, share team/project success, motivate team members, and keep the team united.
- Absence of trust can be seen with less communication, low quality of work, disagreements/conflicts, low rate of solving issues, people leaving, counterproductive/defensive, low levels of competency/willing to succeed, low feedback, less motivation, disrespect.

The research questions also included how absence of trust can change team dynamics. The findings of this study indicate that “less communication”, “low quality of work”, “conflict” and “counterproductive” are among the negative effects which can occur due to the absence of trust in IT teams. The findings of this study indicate that absence of trust has a negative effect on IT teams.

The framework indicates the importance of trust and how team leaders and managers can help in gaining trust while controlling individual behaviours. Individual behaviours are as a result of different people issues. Trust is one of the team issues categorised as a people issue (Bubshait & Farooq 1999).

The framework proposed by this study incorporates the effects of individual behaviours on trust. The findings of this study present various dimensions of individual behaviours triggered by people issues, which are controlled and managed by team leaders and project managers. Due to the strong relationship between the roles of management, individual behaviours and people issues as indicated by the results of this study, they were key elements in the framework.

The framework introduced by this study indicates the importance of trust as a central element within teams and that without trust teamwork will be negatively affected, resulting in project failure. Moreover, the framework encompasses the role of project

managers and team leaders to help in understanding role of trust within a team, highlighting loyalty, communication management, motivation, etc. IT projects are governed by teams involving individuals with different behaviours, making trust an important factor for their work efficiency.

“Conflict resolution” is identified in the literature as a key leadership attribute (Bubshait & Farooq 1999). However, while resolving conflicts was recognized by the participants as important for trust, their focus was more towards opening up communication when conflicts occur. Therefore, it was not recognized as a separate role for improving trust because conflict resolution was covered by communication.

The relationship between the managers, leaders and the rest of the team is characterized by the Australian workplace environment and it could be different in other countries. Therefore, most of the findings in this study could vary from the study of other countries and also within Australia, given that a very small sample size is used.

This study presents various dimensions of individual behaviours and trust in IT teams. The empirical importance of studying trust in IT teams is its biggest achievement. The thesis also linked the effect to team performance, which is directly seen in the analysis. The link between team performance and project performance is supported by the literature (Belassi & Tukul 1996; Bubshait & Farooq 1999). Belassis and Tukul’s revised model clearly indicates that team members’ performance is a key success factor of a project. This study supports the link between team members’ performances with team performance.

7.3 Contributions of the Study.

Major contributions of this research are:

1. Improved understanding of trust in IT teams.
2. Introduction of a framework explaining how trust influences IT teams through the role of project managers and team leaders, and how trust influences project success. The framework is not validated yet and is included in the limitation of the study.

3. Understanding of individual behaviours associated with trust that can affect team dynamics.
4. Highlighting the importance of trust to help project managers and team leaders to prepare their teams for better performance.

Some other contributions of this study are:

- The results of this study support the findings on trust with those presented by Dirks (1999, 2000) and Dirks & Ferrin (2001). However, their studies were outside the IT domain. Hence, this study is a contribution to the knowledge because the results of these authors are also relevant in the IT domain.
- The three papers (Dirks 1999, 2000; Dirks & Ferrin 2001) in combination argue that trust acts in two different ways on team performance: as a direct or “main” effect (direct causal relationship) or as a moderating effect on intermediate factors. In the second, trust does not directly influence team performance but influences other factors that then do impact team performance. The evidence of this study supports this argument. Again, this study is a contribution to knowledge as this argument holds true within the IT domain.
- Work done by Dirks & Ferrin (2001) makes the argument that most research to date assumes that trust has a direct impact on team performance. It appears that, in fact, most of the impact is via intermediary factors. The present work concluded that this argument holds true in the IT domain which is another contribution to the knowledge.
- The three papers noted above (Dirks 1999, 2000; Dirks & Ferrin 2001) also argue that trust has an impact on the motivational attempts of team leaders. Where trust of the team leader is high, motivational attempts by that leader tend to be successful. Where trust of the leader is low, motivational attempts are less successful. This, then, impacts team performance. The evidence

presented in this study supports this argument – another contribution to knowledge as the current work is within the IT domain.

7.4 Limitation

This research holds many limitations that are:

- The sample size used in this study. The research needs a quantitative study with a large sample to solidify its findings. The research method (semi-structured interviews) was chosen keeping in consideration how it supported the content rather than the size of a sample (Morse & Richards 2002). The limitation in Morse and Richard's research was that it focused more on the details of the sample; it does not allow the results to be generalized in other contexts. The aim of this study was to focus only on IT teams, as argued in section 3.3.1. However, attention was paid to the research design, data sampling and later on analysis, as discussed in chapter 4; thorough details have been provided for other researchers to be able to conduct similar research for different contexts.
- The subject selection for this study. This study only interviewed project managers and team leaders and did not include team members. Team members were not included because the scope of this study didn't require their feedback. The study did not include validation of the framework, which is intended for the future work. Once the framework is validated, team members' feedback will be taken.
- The semi-structured interview technique. The answers that were given by the participants were based on their experiences, which depended on how well they could recall their experiences, and was based on their perception. It was likely that their answers might have drifted from what actually happened. The interview guide was designed to keep this limitation in mind and various questions were asked to verify their answers.

- The data analysis, which is influenced by researchers' backgrounds and bias. In order to overcome bias, transcripts were also interpreted by my supervisor and a friend. This was covered in section 3.2.1. There were strategies suggested to overcome bias that included seeking objections on the initial analysis from the participants (Creswell 2003; cited by Sarosa 2007). The results from the initial analysis were sent to the participants and there were no objections.
- Another limitation was that this study did not measure the importance of trust and the effect of trust. This study does not include the importance of trust in IT teams because it was not in the scope of this study.
- The framework introduced by this study has practical implications, too. The scope of this study was not to validate the framework. This study was an exploratory study, so the framework includes components based on that. It needs to be validated before it can be applied. Another option would be to test it with a large body of quantitative data, possibly involving students doing IT projects, which could produce a further enhanced model.
- Various factors related to the role of the project managers, team leaders and individual behaviours are identified in this study. However, with six participants, this study cannot be considered as truly representative for all IT teams in Australia. The framework introduced by this study shows factors identified through the study which affect trust but it is not conclusive as to whether this list of factors is complete and cannot be considered as representative of all IT teams. Furthermore, the targeted companies involved in this research may have posed unique problems.

7.5 Future Work

The limitations of this study give potential for the following future work:

- This study is based on the gap that exists in the current literature. This study alone is less likely to fill the gap but hopes to contribute to it. This study points to other potential work. This study has identified a framework that can

help team leaders and project managers understand how trust influences IT teams and why it is important. Although the framework verifies its findings through the support of its data and the literature, it could be tested to see if it is applicable through seeking viewpoints of team members involved in IT projects. Moreover, it could be tested in other countries or other contexts to expand its practical application. This study only interviewed managers and team leaders, but collecting data from individual team members can further strengthen the framework.

- The study's qualitative approach has provided an in-depth analysis into IT teams. However, future studies, by gaining the viewpoints of other stakeholders involved in teams, can provide a more enhanced framework. Future studies can involve even more participants to gain more depth.
- This study is involved with trust as a core people issue arising from team issues, and how it influences IT teams. Future studies could explore issues like communication, stress, conflict, and how they influence IT teams. This study can be used as a guideline to analyse other team issues involving people. Hence, an enhanced framework can be initiated to improve the management of an IT team's performance.
- Another example would be the negative impact of trust on some of the teams (Erdem 2003). The aims of this study did not include testing whether these negative effects occur, but the review of trust did not see any negative effects in IT teams. As trust in IT teams lacks empirical evidence, as argued in chapter 2, it was difficult to come to a conclusion. Thus, future studies could be undertaken to understand whether any elements of trust can have a negative impact on team performance.
- This study mentioned "motivation" as a key role of team leaders and project managers, which is supported by the literature, too, as discussed in chapter 2. This study provides a dimension that motivation can improve trust in IT teams but it is not the only solution or a quick fix. It can help leaders and managers to manage issues to some extent but it depends on how seriously a

team is suffering. Future studies to investigate the aspect of motivation to cure distrust in IT teams hold strong potential.

- Future studies can involve more participants to give a more complete picture of trust in IT teams. Such studies could involve multi-dimensional teams with software development and other disciplines within software development. Another such study could involve virtual teams within different, or the same, domains.
- Future studies in continuation of this research could involve validating the framework proposed by this study. The validation would involve data collection from the managers of IT teams other than the one used in this study. Furthermore, it would also involve other stakeholders such as team members. The validation would also involve application of the framework in real team scenarios.
- The model only incorporates an analysis of trust. It can be enhanced by other team issues such as stress, conflict, communication, etc., with a similar approach to the analysis.

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Appendix 1: Interview Guide

Demographics Question:

Name of participant:

Company Name:

Position:

Record on the number of teams managed:

Record on the average number team members managed:

Experience in managing teams:

The following questions in this section will explore the importance of trust in current practices of team work. The answer will explain the knowledge of team managers and team leaders and will found the base for the rest of interview questions.

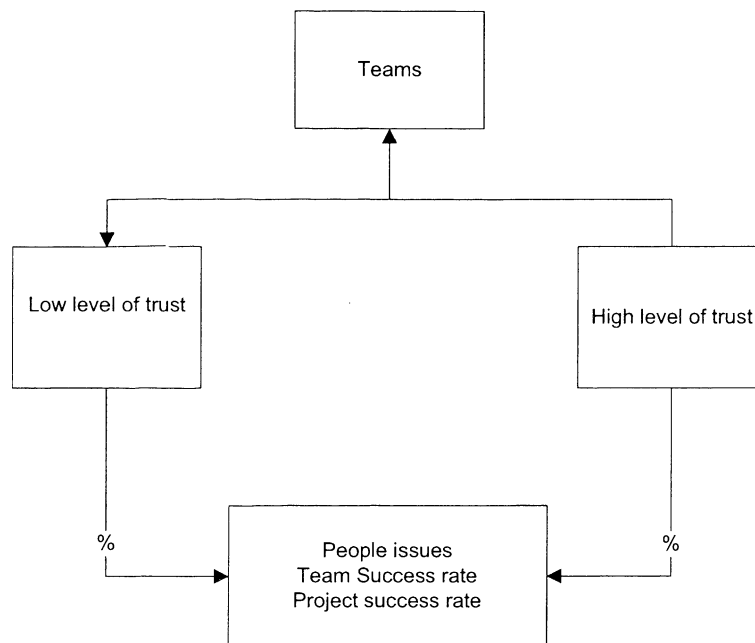
1. What do you think are essential components for team success?
2. Working and getting along with other team members present various challenges; can you highlight some of these challenges?
3. Can you recall any team member's personal issue that affected team performance? For example any team member performing well due to any personal issues at individual level?
 - Did the team success suffered? How?
 - Does it affect project success? How?
 - With respect to solving these issues, how and to what extent do you think team success criteria plays part in it? Or a matter of fact which plays the most importance part e.g. communication, stress, trust etc.
 - What role does individual member play here and to what extent it is important in resolving these issues?
 - Now can u recall any issues in which the team success was badly affected?

The following questions are based on perceived level of trust in IT teams. The questions are looking for team leader's judgment about trust among team members and the role of individual behaviour in formation of trust.

1. What measures do you take at the start of the project to build trust between you and the team? Please answer this question with respect to motivation, reward, communication, etc.

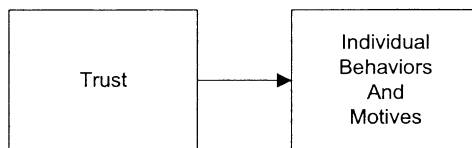
- a. How does it help team member in trusting each other? If it does not, what measures do you incorporate in order to help team member's trust for each other?
 - b. Do you share recognition of project success with entire team? How do you relate it with trust?
2. How do you know when there is a lack or presence of trust within a team?
- a. To what extent the role trust play in solving issues related to team members?
 - b. To what extent trust help in solving team issues. E.g. Communication problem, conflicts
 - Do you think absence of trust can lead to major team problem i-e Disturb team dynamics?
 - In what ways it affect project success overall? Do you its substantial affect?

There are two kinds of teams, one with higher trust and one with lower.



3. What sort of problem occurs in teams due to low level of trust compared to high level of trust?
- a. Do you investigate or followed up into any of the issues?
 - i. Yes. Did you find out the root cause and made sure it didn't come up again.
 - ii. No. Do you think it is necessary to find the root cause in order to minimize their impact?

- iii. To what extent these issues are solved compared to team with high level of trust?
- b. Does it affect team performance resulting in delayed or over budget work?



- 4. When we talk about individual member role, to what extent do you think individual behaviors help in gaining trust for each other within a team?
- 5. Do you recall incident in form of complaint or any other issue raised about another team member about their general unusual behaviour?

IF YES

- a. How do team members react to the situation?
 - b. Does it affect their work?
 - c. Does it affect their bonding and relationship?
 - d. Does it affect their work in which they are able to cover or compensate work for them?
 - e. Does it ended up in lower trust levels and affect performance of the team?
 - f. Do you think positive individual behaviours likely to have positive effect on trust?
- 5. Do you think if team has high level of trust, it is unlikely for different negative individual behaviours disturb other team members?
 - 4. Let's talk about a certain individual behaviours from previous account. Did u ever find out the cause behind the behaviours?
 - 5. How would you rate following from scale of 1 to 10.
 - i. Individual behaviour resulting as a result of personal issues.
 - ii. Negative individual behaviours affect trust.
 - iii. Trust helps in changing individual behaviour.

Appendix 2: Sample of Coding Process

Sample of Free Codes Extracted from P-IV Interview: The highlighted text is done using Nvivo, which believed to be the answers of the question asked.

ORIGINAL P-IV Transcript:

Question: What do you think are essential elements for team success?

Participant: Okay, for team success some of the main components that I think are really necessary is for everybody have the same understanding, that everybody need to be on the same page, basically everybody needs to understand what the ambition is and then at my end to try and make sure everyone is motivated in achieving that vision, the direction needs to be clear and defined for everybody. Team success really is not up to one person, it's up to the team that everybody need to be motivated to achieve team success and for each team member needs to have responsibility and be held accountable for and need to have that motivation and drive to achieve that goal.

Question: Working and getting along with other team members present various challenges; can you highlight some of these challenges?

Participant: Well notably, the personality different can be a bit of a challenge. Its importance for each team member to understand what other members are like; what sort of characteristics they have and try to work with those characteristics. Some of the recent challenges I have had is like one of the person to be more domineering and not allowing other team members to voice their opinion and their concerns. Always trying to finish their sentences, always trying to backing them up and say their opinion and not allowing them to communicate. One way I have gone about it is to tell that person to let the other personal finish their own sentences and letting their opinions out rather than saying by yourself.

Question: When it comes to members working in a team, what happens when the decision of forming up a team goes wrong during the course of a project?

Participant: Okay, what happens is that in every project there are modules and I always divided my project into components so if I think that a person I have chosen to lead is not leading properly and I feel that they are not suitable or I feel that may be its best for somebody else to involve then I have few ways of going about that because you don't want to compromise the relationship with the team leader and if it's the key player it important to make sure there is a bit of relationship between the leader but slowly I would try and introduce senior developers and give responsibility

to other team members, share the work load , so that the accountability is among different member rather than one. So the team member is the problem, I would talk to them about it and then see how to go about it. I think it's important that it should be talk through.

Question: Can you recall any team member's personal issue that affected team performance? For example any team member consistently late or a particular team member not performing well due to any personal issues at individual level?

Participant: Okay, ahm, one, and I have got a particular example. Every morning we have a 15 minute meeting at 9:15, just to catch-up on what they did yesterday and what they want to accomplish today and what hindrances they had preventing them from achieving their goals. One of the team member had issue with it, with the timings. He preferred to come later and because I have imposed that these meeting should held every morning and at that time it didn't suit him. I generally conduct performance reviews before my team members, and I try to do that twice a year. That's where we go through their performance, it part of that process, trying to understand their motivation, to understand how did they do and how did they think I behaved towards them so it's not just on their performance. That person, we sat down and he mentioned that those early start are a bit of a problem and I mentioned that he has been coming late. I did mentioned that he has been coming late before and he said yes give me few weeks and he'll get use to it and I gave him few week but he was still coming in late , so I spoke to him about that and asked him the problem and try to understand where he was coming from. Turns out his social, outside of work he goes out on the weeknights and he comes home late. Ahm, i told him...because if the problem is with the whole team then I would have addressed it but if it's just one then unfortunately he has to abide by the timings and come in at the same time. That also questioned his motivation for work too.

Question: Do you think the team success suffered would suffer?

Participant: Ahm, to a certain extent it would affect team success as in this case he is dragging the ball a bit but I think if I don't address it and I let it go and if I don't talk to him about it and he is not meeting the rest of his timeframes and targets it would definitely affect the team success but if he meets his deadlines then it doesn't mean too much as long he is involved in all the other team work.

Question: What do you think, how other team member reacts to situation like these?

Participant: In such cases, I held a meeting between other team members, and say this is what my problem is ; this is what I have noticed and try to discuss with everybody to see what their thoughts are , what their feelings are and then I outline why I need this to happen and then we try to come to a solution so, my management style is not to try and impose things on them because I think we need to work as a team , so try to come up with a balance.

Question: With respect to solving these issues, which team success criteria plays do you think play crucial part in it?

Participant: Well the person realizes themselves because they them not attending, they don't know whats happening and I don't stop the meeting and I don't reschedule it so if he is not there, we still continue but the show must go on , we go without him as the majority of them are there. Throughout the meeting I would just say this person is not there so we don't know, the other team member would understand. I just make sure that the majority are on the same page. I think relationship is extremely important with team member and I think what happens with team members outside of work can impact their behavior at work and that's why I ever notice that they have an issue or they are falling behind , if I sense or conceive that something is wrong , I would pull them aside and say how you going and is there something you want to talk about , I would say that I have noticed that you have been tense lately or you haven't really been communicating as much and we chat about it and try and work together and yeah coming to a point where we are at same level or understand and at the same time getting the work done. Being able to communicate openly with them and being able to be transparent so they have to understand where I am coming from but at the same time I have to understand where they are coming from and a good example is my father's illness, and that really affected the team and some people would say that it's a personal issue, you shouldn't communicate. Because I lead a team, it's really important for me to tell them whats happening outside of work to me, because that's not only will affect my performance but when I first found out about my father's illness, I couldn't, I knew my performance would deteriorate because I was so upset so I make sure that they knew, and some of my work hours changed and they knew about it and then once it was okay then I told them now it's back to normal again. So that's why I think communication is important to know where they are coming from and at the same time where I am coming from. And yeah trust is important, I mean trust at various levels, when I ask any them to get me an estimate on work; I trust them that they will give me an accurate and something that will not blow out of proportion. Yeah I will question it but there's always an element of questioning that I do as a project manager. I will always question them, and their answer would let me trust them but generally I do trust them.

Question: What measures do you take at the start of the project to build trust between you and the team? Please answer this question with respect to motivation, reward, communication, etc

Participant: Okay, so when it comes to building the trust, I think I am very clear for what my plans are and I table it and because I am very transparent with each of the team member, everybody gets the same information, I feel that they as the result feel that I am not choosing one over the other and that's really important I think in the working environment. I make some of them accountable for certain areas and by me giving them accountability, they can say I trust them to do that and so they make sure that they do that item of work is delivered, so it's both ways.

Question: How does it help team member in trusting each other? If it does not, what is your role in team member's trust for each other?

Participant: My role is important, yes, yes, although that's really difficult thing to control. However, if the person sees that I trust that person then you hope that they would, if that person questions or seems that they don't trust then I like it to be tabled in the forum, like say in the meeting I have got two developers there , and I can sense just from their behavior , their facial expression that they are burping , I can see that they are uncomfortable and I would immediately raise it and say that , you don't look like that you are comfortable with it , so whats your thoughts on it, so I would always ask and would always probe , to see if there are any trust issues , and then make them communicate with each other with me and try to mediate a solution for it.

Question: Can you highlight any other factor other than communication or sharing responsibility that can play an important role in building trust between you and the members?

Participant: Ahm, by me putting my confidence in them , that then create that level of trust so that's not only just the accountability , but they see if I have got confidence in them , then they have confidence in themselves , and they trust themselves which is really important too , because if they don't trust themselves , and they are not confident in themselves then that reflects totally on what they do and to the other team members so I think that's the foremost thing, they got to trust themselves , they got to be confidence in them , and it flourishes in the team.

Question: Apart from you, how do you know when there is a lack or presence of trust within a team? Possible answer: Conflicts rate, friendly environment, late work etc.

Participant: I probe, I will ask question and make sure they are tabled, what their uncertainties are, I would actually ask question and then would ask what their thoughts are on this, how you feel about it, I make sure that my questions are not just yes or no or direct to do this or do that, I try and ask how do they feel about certain

thing, what their thoughts are and that then allows them to surface on table their opinions.

Question: To what extent trust helps in solving issues related to team? E.G communication, stress.

Participant: Yes, if you think someone is lying or you don't know whether they are telling the truth, and then therefore you don't know whether you can trust them and then it reflect all bunch of things so I think it really important that you communicate for and have that trust for each other.

Question: To what extent the role trust play in solving issues related to team members? E.g. individual problems (anxiety, late comers, culture etc).

Participant: Ah, yeah, and I think that's where the whole communication, making sure that where everybody is coming from , ahm, I try and also like my team particularly play soccer on as team building activities , which is really good. I loved to join them and one day I will join them because it's really nice and important outside of work. A couple of times I have gone out for drinks, and then we have drinks. When we release a major version of a product and I organize the team to go out for lunch. That's just really builds the team and teamwork together and it also let people see what they are outside of work.

Question: So sharing recognition of project success with entire team also builds trust?

Participant: Absolutely, ahm when someone does a really good job too, we have like employees of the month, I always put forward my thoughts were. Ahm, because it's a big company and we have different teams, and we are only a small team and if I feel that one of my team member have just done an excellent job, I'll speak to my director and speak to all the other team members and say like this is who I think we should vote for this month and make sure that everybody is on the same page , just so the person can get recognised for their job well done and also that then builds up their confidence and they are happy. So whenever they do a great job I make sure that they are aware of it and I always try to reward them in some sort of way.

Question: Do you think absence of trust can lead to a major team issue?

Participant: It can lead to a, the team can be a little bit dysfunctional if they don't trust each other, things would progress much slower, but by insuring that communication is there and that 'everybody knows where everybody's at and having that regular workshops together and making sure that I don't favor one over the another or like that and that will make sure trust is within the team. Communication and being transparent is very important but at the same time making sure that people are recognised for their jobs and for the good work that have done and that's one of

the I guess that's one of the factors affecting project success but there are also other factors that its affecting and then project success.

Question: What sort of problem occurs in teams due to low level of trust compared to high level of trust?

Participant: The team would be doubling up on work, one person would be doing one thing, and the other person would be doing another thing, sometimes they would be working on the same thing without even realizing it or if you one team member has developed something and the other team member doesn't like it, they would go and re-write it so that's some of the trust issues that I can foresee happening. Also, if they don't trust each other they won't work together as well because that would be a hindrance, they'll just disrespect each other and respect I think it's also very important. So failing to trust, and when I say trust I don't say you trust someone with life on it, you just got to have a certain level of trust in that person to live up.

Question: Did you investigate or followed up into any of the issues?

Participate: I guess one of the example would be , ahm, one of the example that I have come across is recently my team lead had total control over the team member , and he was there before I joined the company so I automatically as a project manager then started to manage their task and responsibilities. The team leader in the beginning and naturally all team members because I was quite new , they would question and they lacked the trust but my me showing them and explaining them in doing something and then whooping the rewards, they realized that she is not actually making our life difficult but helping us. So then that trust grew and through each of the different work, project, items and processes we tackled, they can see that I am not making their life difficult , it is all process improvement, it is all for the bettering the their skills also and then bettering product as a whole and project as a whole.

Question: Do you think there is difference in the rate of success between the team of high level of trust than the low level of trust?

Participant: Ahm, yes but I mean with trust I think it's not just trust but their respect and make sure that that I can trust and trust a person for what he is doing but I don't necessarily think that what he is doing is right. So, but I think you believe it is right, so it's that also. So, I don't feel that's its only the trust alone, it is a player a key player but I think there are few other thing as well that will affect project success. Trust can be the underlying problem and then it can spawn other issues so lack of trust can then cause a person to be in confided in their thoughts, behaviors, and not be open to suggestions, so I think trust can be the foundation of other problems. And if you can address that you can prevent other problems from causing but not just trust alone it could be underlying issues that could be apparent like other personal issues

that they might have. The person I feel, they all have different personality and one person might be a pessimistic and think might not trust anyone so he might always think that, oh that person is lying, they might be that type of person too, so trying to understand what other member characteristics are and trying to work with that.

Question: How do you deal team member's personal issues?

Participant: I basically chat to them about, Either we go out for coffee , talk about it or pull them aside in the meeting room and say that I have noticed this and if there is something they want to talk about , trying to make sure that communication channels are open so they feel comfortable to talk to me about it . Ahm I think when I do that and I am the kind of person that don't get offended very easily , you need to be very open minded and understanding, understanding where they are coming from and making sure they are comfortable enough to talk to me about it.

Question: Do you recall any conflicts within team resulted in form of complaint about a team member about their general unusual behavior?

Participant: Okay so, we have actually experienced that, ahm, where we sit there is one of the guys who works for another team and he is extremely noisy when he talks over the phone and all my team sit along one row cubicles there and this guys voice just project and my team member said that they struggled to concentrate and even I struggled, I couldn't concentrate , so I in the meetings and that whys we have these meetings, I say anyone has any concerns, someone would raise or if I noticed and it was me, I would say I would ask questions to everybody else, that is this guy really loud , are u guys affected by the noise that this guy makes , and then I try to ask them, and sometimes no one say anything and everybody is quiet and then I would go and ask individually or as a group, what do you think? And ask opinions and I go and make sure that I get an answer from each of them and if they all agree I would try to escalate and try and resolve the issues. Within the team, yes actually, within the team one gentlemen, I worked in the XYZ Company, we worked with contractors and project contracted people from India, so they came to Australia, they came to our workplace and they sat in the same area that we like Australian were sitting in, ahm, we worked with them. One of the gentlemen, I guess, it was personal, ahm, he just smell basically, if try to put it nicely bad body odour and I guess as a team it was noticeable , it was hard not to notice , we spoke to our boss, he didn't do anything about it, and he was like may be tomorrow he will be okay and then the next day and then for a week we struggled and started getting headache and so I basically went on to spoke to my boss , our director and said that can't work next to him , I just found this meeting room and that's where I will be working from unless you speak to him or you try sought it out because I can't concentrate and I have got a headache every day , he really really smell, I wasn't trying to be mean but he got complains from others that were sitting around. Yeah my boss ended up telling the CEO and then the

CEO called the contractor CEO and that went down to him and in the next day, he didn't smell, he just stopped smelling, it was fantastic. We thought he would get offended and we thought that he would know that we are the one who were complaining but he was okay even to this day, I still talk to him by email, he is back in India. I never said anything to him and we talked about thing we normally did but because it went up to the channel , I don't think any names were mentioned and he worked with many people, but he might have thought it could be any one, as we didn't explicitly mentioned to him directly.

Yes, if a person know who made the complain, it could eventually affect the relationship but it really depends on what person is like. I try to make sure, if there is a complaint; we address it and get over with it. I try and whenever I speak to the team and if someone's complain , I say this is what happened and don't hold grudges , we will resolved and we will move on.

Question: To what extent do you think individual behaviour helps in gaining trust within a team?

Participant: Ahm, being very transparent so when somebody is not exposing things and is a bit secretive, naturally the other person would questions why is this person not telling me everything and why this person is trying to be funny towards me and then it affects trust. Yeah and ahm, I guess it really depends on the person and trying to understand what person is like, if his behavior is positive , it wouldn't affect trust that much but again someone might wish good thing but then it depends a person might take it negatively and think that I don't trust him.

Question: Some of the behaviors are as a result of a person's nature or personality but some are result of a personal problem which can be new and temporarily. What are your thoughts on it and how do you deal with those behaviors?

Participant: In situation like that, I would definitely pull the person aside and speak to them and suggest that they should work from home or take a couple of days off so they don't affect the team. Any behavior that affect the team or project, I try to isolate and try to address it by trying to talk about it and try to come to a solution that can satisfy both the parties, myself and the person and then try to action that solution. If he wants to work from home so be it, I will approve it to work from home. Just so that it doesn't affect the team and the project. I think and once that happens, then I communicate with rest of the team and say this is the situation and this person will be working from home few days, they are having few personal issues.

Question: You mentioned team building activities in your discussion. Do you implement these in project planning? What the general consensus of other Australian companies?

Participant: Ahm, most companies do, in the few companies I have worked for, they do and once a month a company that I worked for, they did it for once a month, they did it on Friday, you work half day and play the other half and the responsibility each month was on a different person to organize it. That then has to be supported by the organisation. No the customers doesn't pay for it but what I do it that I encourage those sort of activities and I factor it in the schedule , just for contingency , to leave a bit of hap, so the employee or team participate in things like that. If they play soccer on Tuesday, I know that played soccer on Tuesdays' and I know they will be out for two hours so I make sure I plan according to that and I actively support them on that. So whenever they come back I would say how they went, things like that.

Question: You can never predict or pre plan trust in the team. Ideally you would want to select team member that you know will trust each other. So you think there could be a solution for building trust that could be implemented before a project begins?

Participant: That's a good question! In the planning processes , in the initiation stages of the project where everybody has responsibilities of certain module and everybody getting involved and communicating what their view is on that module. So I guess it spending more time together and communicating more both outside and inside of work I think facilitates trust more.

PART A: Questions in part A helped in understanding link between trusts with other team issues. The reason for not explicitly asking whether trust is important was to avoid any biasness.

1. What are the Essential Components for Team success?
 - A. Okay, for team success some of the main components that I think are really necessary is for everybody have the same **understanding**, that everybody need to be on the same page, basically everybody needs to **understand** what the ambition is.
 - A. Then at my end to try and make sure everyone is **motivated** in achieving that vision, the **direction needs to be clear and defined** for everybody.
 - A. Team success really is not up to one person, it's up to the team that everybody need to be **motivated** to achieve team success
 - A. For each team member needs to have **responsibility and be held accountable** for and need to have that **motivation and drive** to achieve that goal.
 - A. **Give responsibility to other team members.**
 - A. **Share the work load**, so that the accountability is among different member rather than one.
2. What are the challenges of working in an IT team?

A. Well notably, **the personality difference** can be a bit of a challenge. Its importance for each team member **to understand what other members** are like; what sort of characteristics they have and try to work with those characteristics.

A. So the team member is the problem, I would **talk to them** about it and then see how to go about it. I think it's important that it should be **talk through**.

3. People issue affecting team performance.

A. One of the team members had issue with it, with the timings. He preferred to come later and because I have imposed that these meeting should held every morning and at that time it didn't suit him. Turns out his **social, outside of work he goes out on the weeknights and he comes home late**. If the problem is with the whole team then I would have addressed it but if it's just one then unfortunately he has to abide by the timings and come in at the same time. That also questioned his motivation for work too.

Q. Does this affect his performance?

A. **Definitely**.

A. I think relationship is extremely important with team members and I think what happens with **team members outside of work can impact their behaviour at work** and that's why I ever notice that they have an issue or they are falling behind

4. With respect to solving these issues, which team success criteria plays do you think play crucial part in it?

A. Throughout the meetings I would just say this person is not there so we don't know, the other team member would understand. I just make sure that the majority are on the same page.

A. I would pull them aside and say how you going and is there something **you want to talk about**, I would say that I have noticed that you have been tense lately or you haven't really been communicating as much and we chat about it.

A. **Being able to communicate** openly with them and being able to be transparent so they have to understand where I am coming from but at the same time I have to understand where they are coming from.

A. And yeah **trust is important**, I mean trust at various levels, when I ask any them to get me an estimate on work; I trust them that they will give me an accurate and something that will not blow out of proportion. Yeah I will question it but there's always an element of questioning that I do as a project

manager. I will always question them, and their answer would let me trust them but generally I do trust them.

- A. Trust can be the underlying problem and then it can spawn other issues so lack of trust can then cause a person to be in confided in their thoughts, behaviours, and not be open to suggestions, so I think trust can be the foundation of other problems.

PART B:

1. What measures do you take at the start of the project to build trust between you and the team
 - A. When it comes to building the trust, **I think I am very clear** for what my plans are and **I table it** and because **I am very transparent** with each of the team member, everybody gets the same information.
 - A. **I make some of them accountable** for certain areas and by me giving them accountability, they can say I trust them to do that and so they make sure that they do that item of work is delivered, so it's both ways.
 - A. By me **putting my confidence in them** , that then create that level of trust so that's not only just the accountability , but they see if I have got confidence in them , then they have confidence in themselves , and they trust themselves **which is really important too , because if they don't trust themselves , and they are not confident in themselves then that reflects totally on what they do and to the other team members.**
2. You mentioned team building activities in your discussion. Do you implement these in project planning? What the general consensus of other Australian companies?
 - A. Ahm, most companies do, in the few companies I have worked for, they do and once a month a company that I worked for, they did if for once a month, they did it on Friday, you work half day and play the other half and the responsibility each month was on a different person to organize it. That then has to be supported by the organisation. No the customers doesn't pay for it but what I do it that I encourage those sort of activates and I factor it in the schedule , just for contingency , to leave a bit of hap, so the employee or team participate in things like that. If they play soccer on Tuesday, I know that played soccer on Tuesdays' and I know they will be out for two hours so I make sure I plan according to that and I actively support them on that. So whenever they come back I would say how they went, things like that.
2. How does your role help team member in trusting each other?
 - A. My role is important, yes, yes, although that's really difficult thing to control. However, if the person sees that I trust that person then you hope that they would, if that person questions or seems that they don't trust then **I like it to**

- be tabled in the forum**, like say in the meetingand **then make them communicate with each other** with me and try to mediate a solution for it.
- A. I basically chat to them about, Either we go out for coffee , **talk about it** or pull them aside in the meeting room and say that I have noticed this and if there is something they want to talk about , trying to make sure that **communication channels** are open so they feel comfortable to talk to me about it.
- A. So that's why I think communication is important to know where they are coming from and at the same time where I am coming from.
- A. In the planning processes, in the initiation stages of the project where everybody has responsibilities of certain module and everybody **getting involved** and **communicating what their view is on that module**. So I guess it **spending more time together** and **communicating more both outside and inside of work I think facilitates trust** more.
3. What sort of problem occurs in teams due to low level of trust compared to high level of trust?
- A. The team would be **doubling up on work**, one person would be doing one thing, and the other person would be doing another thing, sometimes they would be working on the same thing without even realizing it. (Low quality of work).
- A. If you one team member has developed something and the other team member doesn't like it, they would go and re-write it so that's some of the trust issues that I can foresee happening. (Low quality of work)
- A. Also, if they don't trust each other they won't work together as well because that would be a hindrance, they'll just **disrespect each other and respect I think it's also very important**. So failing to trust, and when I say trust I don't say you trust someone with life on it, you just got to have a certain level of trust in that person to live up.
- A. The team leader in the beginning and naturally all team members, they would question and they lacked the trust but my me **showing them and explaining them** in doing something and then whooping the rewards, they realized that she is not actually making our life difficult but helping us.
- A. It can lead to a, the team can be a little bit **dysfunctional** if they don't trust each other, things would **progress much slower**.
4. Team leader role in understanding team members issues.
- A. I can sense just from their behaviour , their facial expression that they are burping .I can see that they are uncomfortable and **I would immediately raise it and say that** , you don't look like that you are comfortable with it , so what's your thoughts on it, so I would always ask and **would always probe** , to see if there are any trust issues

PART C:

1. Individual Behaviours and its affect on trust and teams performance.
 - A. Okay so, we have actually experienced that, ahm, where we sit there is one of the guys who works for another team and **he is extremely noisy** when he talks over the phone and all my team sit along one row cubicles there and this guys voice just project and my team member said that they struggled to concentrate and even I struggled. Within the team, yes actually, within the team one gentlemen, I worked in the XYZ Company. One of the gentlemen, I guess, it was personal, ahm, he just smell basically, **if try to put it nicely bad body odour and I guess as a team it was noticeable, it was hard not to notice** **Yes, if a person know who made the complain, it could eventually affect the relationship but it really depends on what person is like. I try to make sure, if there is a complaint; we address it and get over with it.**
3. To what extent do you think individual behaviour helps in gaining trust within a team?
 - A. Ahm, being **very transparent** so when somebody is not exposing things and is a bit secretive, naturally the other person would questions why is this person not telling me everything and why this person is trying to be funny towards me and then it affects trust.
4. Some of the behaviours are as a result of a person's nature or personality but some are result of a personal problem which can be new and temporarily. What are your thoughts on it and how do you deal with those behaviours?
 - A. In situation like **that, I would definitely pull the person aside and speak to them and suggest that they should work from home or take a couple of days off so they don't affect the team. Any behaviour that affect the team or project.** (Communication- Role of Team leader code 5C)

From P-IV , we extracted 10 free codes which are grouped into different categories.:

1. Essential for Team Success

- a. Understanding.
- b. Motivation or Drive
- c. Clear and unified direction/goal.
- d. Responsibility
- e. Effective Team leader.
- f. Communication.

2. Challenges in IT teams

- a. Maintaining Communication
- b. Understanding different personalities.

3. Team member's issues affecting behaviours and team performance

- a. Social commitment.
- b. Family disturbance/sickness
- c. Stress

4. Factors helping in solving team member's issues

- a. Communication
- b. Trust.

5. Role of team leader in building trust between them and members

- a. To be Transparent.
- b. To give responsibility/accountability.
- c. To effectively communicate.
- d. To motivate

6. Role of Team leader in building trust between members.

- a. Maintain flow of communication
- b. Team Building Activities.

7. Factors relating to distrust disturbing team dynamics

- a. less communication
- b. low quality of work
- c. lack of motivation
- d. disrespect.

8. Individual Behaviours Negative/Positive affecting trust in teams

- a. Transparency
- B.Unnecessary Disturbance
- C.Bad Odour (Irrational Behaviour).

9. Team Leader role in People Issues.

- a. Investigate/communicate.

The codes were then classified to their respective table. This process was done was all the transcript. The final results are in Table 5.1, Table 5.2 and Table 6.1 which are then converted into a model introduced in Figure 6.5.

Code 3 and 9 shows a relationship between Team leaders who investigate people issue which can affect member's behaviour and their performance. This is represented in figure 5.2 and 6.1.

CODE 4 5 6 shows relationship between the role of management and team performance which is represented in Figure 6.3

Appendix 3: Invitation Letter for Participation



Faculty of
Engineering and Information
Technology

PO Box 123 Broadway
NSW 2007 Australia

T: +61 2 9514 2000
F: +61 2 9514 1807
www.it.uts.edu.au

UTS CRICOS PROVIDER CODE 00099F

Dear Sir/Madam:

My name is Mahwish Ali and I am a student at the University of Technology, Sydney.

I am conducting research into IT team dynamics and issues relating to the human behaviours that can compromise team performance. Another concern is how individual behaviours are recognised by team leaders and how it compromises team performance. The results from this interview will be analysed in order to answer the research questions. Your contribution will be highly valued and will help me to formulate the result of this research. Conducting the interview and its data is solely intended for research purposes. It will be assured that data remains private and not to be used for any other purpose without written consent.

All questions in the interview will be open-ended. The interview is divided into three parts. The first part is related to teambuilding foundations. The second part contains questions about team leader's experience relating to team members and their issues. The third part is based on investigating individual behaviour and different characteristics.

The interview will take approximately one hour which can vary depending on your answers. As the content analysis is chosen for data analysis it is very important for the interview to be recorded and permission will be taken beforehand.

If you are interested in participating, I would be glad if you would contact me to discuss further.

You are under no obligation to participate in this research.

Yours sincerely,

Mahwish Ali

Level 3, Building 10, 235 Jones Street, Broadway 2007

Hours: Mon - Fri 9am to 5pm

Phone: 9514 4447

mahwishb@it.uts.edu.au

NOTE:

This study has been approved by the University of Technology, Sydney Human Research Ethics Committee. If you have any complaints or reservations about any aspect of your participation in this research which you cannot resolve with the researcher, you may contact the Ethics Committee through the Research Ethics Officer (ph: 02 9514 9772, Research.Ethics@uts.edu.au) and quote the UTS HREC reference number. Any complaint you make will be treated in confidence and investigated fully and you will be informed of the outcome.

Appendix 4: Sample Consent Forms



Faculty of
Engineering and
Information Technology

UNIVERSITY OF TECHNOLOGY, SYDNEY

PO Box 123 Broadway
NSW 2007 Australia

CONSENT FORM

Intended for Participant use

T: +61 2 9514 2000
F: +61 2 9514 1807
www.it.uts.edu.au

I _____ (*participant's name*) agree to participate in the research project 'Impact of personal issues on trust and its affect on team performance' and UTS HREC approval reference number is 2008-199A being conducted by Mahwish Ali Bhatti, Level 3, Building 10, 235 Jones Street, Broadway 2007, ph. 9514 4447 of the University of Technology, Sydney for her Masters in Computing Science.

I understand that the purpose of this study is to analyse individual behaviour associated with trust, the motives behind it, and the role of individual characteristics in it and to study its overall effect on team performance in IT projects.

I understand that my participation in this research will involve sharing my knowledge about team projects and team members I have led or managed. I also agree to the following information being provided:

1. Details of the type and nature of projects I have worked on.
2. Record on the number of teams and team members I have managed
3. My experience in managing teams.

I am aware that I can contact Miss Mahwish or her supervisor Dr. Bernard Wong, P.O Box 123, Broadway 2007, ph. 9514 1825 if I have any concerns about the research. I also understand that I am free to withdraw my participation from this research project at any time I wish, without consequences, and without giving a reason.

I agree that Mahwish Ali has answered all my questions fully and clearly.

I agree that the research data gathered from this project may be published in a form that does not identify me in any way and that research data will be used for this research only.

Signature (participant)

Signature (researcher or delegate)

NOTE:

This study has been approved by the University of Technology, Sydney Human Research Ethics Committee. If you have any complaints or reservations about any aspect of your participation in this research which you cannot resolve with the researcher, you may contact the Ethics Committee through the Research Ethics Officer (ph: 02 9514 9772, Research.Ethics@uts.edu.au) and quote the UTS HREC reference number. Any complaint you make will be treated in confidence and investigated fully and you will be informed of the outcome.

UNIVERSITY OF TECHNOLOGY, SYDNEY

CONSENT FORM*Intended for organisation use*

T: +61 2 9514 2000

F: +61 2 9514 1807

www.it.uts.edu.au

I _____ agree and understand participation of my company or employees of my company in the research project 'Impact of personal issues on trust and its affect on team performance' and UTS HREC approval reference number is 2008-199A being conducted by Mahwish Ali Bhatti, Level 3, Building 10, 235 Jones Street, Broadway 2007, ph. 9514 4447 of the University of Technology, Sydney for her Masters in Computing Science.

I understand that the purpose of this study is to analyse individual behaviour associated with trust, the motives behind it, and the role of individual characteristics in it and to study its overall effect on team performance in IT projects.

I understand that the participation of my company's employee/s in this research will involve sharing information related to their team projects and team members involved in it. I understand that personal record of employee/s participating will not be revealed in the outcome of this research. I also agree to grant access to the following information that will assist in improving research data:

- Employee's record on the type and nature of project he/she has worked on.
- Employee's record on the number of teams and team members he/she has managed
- Employee's experience record in managing teams.

I am aware and understand that my grant to above information will only be valid once consent has been taken from the participants involved in this research. I understand that any of the above information will not be related to any employee or this company in this research.

I am aware that I can contact Miss Mahwish or her supervisor Dr. Bernard Wong, P.O Box 123, Broadway 2007, ph. 9514 1825 if I have any concerns about the research. I also understand that my company is free to withdraw participation from this research project at any time I wish, without consequences, and without giving a reason.

I agree that Miss Mahwish Ali has answered all my questions fully and clearly. I agree that the research data gathered from this project may be published in a form that does not identify me in any way and that research data will be used for this research only.

_____ / / _____

Signature (Authorised represent of participant's company)

_____ / / _____

Signature (researcher or delegate)

NOTE:

This study has been approved by the University of Technology, Sydney Human Research Ethics Committee. If you have any complaints or reservations about any aspect of your participation in this research which you cannot resolve with the researcher, you may contact the Ethics Committee through the Research Ethics Officer (ph: 02 9514 9772, Research.Ethics@uts.edu.au) and quote the UTS HREC reference number. Any complaint you make will be treated in confidence and investigated fully and you will be informed of the outcome.

Appendix 5: UTS HREC Ethics Approval

08 September 2008

Dr Bernard Wong
CB10.04.354
School of Software
UNIVERSITY OF TECHNOLOGY, SYDNEY

Dear Bernard,

UTS HREC 2008-199 – WONG, Dr Bernard (for BHATTI, Ms Mahwish, MA Student) – “The impact of people factor on trust and its overall affect on team performance”

Thank you for your response to my email dated 17 July 2008. Your response satisfactorily addresses the concerns and questions raised by the Committee, and I am pleased to inform you that ethics clearance is now granted.

Your clearance number is UTS HREC REF NO. 2008-199A

Please note that the ethical conduct of research is an on-going process. The *National Statement on Ethical Conduct in Research Involving Humans* requires us to obtain a report about the progress of the research, and in particular about any changes to the research which may have ethical implications. This report form must be completed at least annually, and at the end of the project (if it takes more than a year). The Ethics Secretariat will contact you when it is time to complete your first report.

I also refer you to the AVCC guidelines relating to the storage of data, which require that data be kept for a minimum of 5 years after publication of research. However, in NSW, longer retention requirements are required for research on human subjects with potential long-term effects, research with long-term environmental effects, or research considered of national or international significance, importance, or controversy. If the data from this research project falls into one of these categories, contact University Records for advice on long-term retention.

If you have any queries about your ethics clearance, or require any amendments to your research in the future, please do not hesitate to contact the Ethics Secretariat at the Research and Innovation Office, on 02 9514 9772.

Yours sincerely,

Professor Jane Stein-Parbury
Chairperson
UTS Human Research Ethics Committee

