Perceptions of Knowledge Gatekeepers:
social aspects of information exchange in an
organisation undergoing change

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Statement of Authentication

The work presented in this dissertation is to the best of my knowledge and belief my own work except as acknowledged and duly referenced throughout.

I hereby declare that this work does not include any material previously submitted for a degree or diploma, either in part or in full, at this or any other institution.

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List of Abbreviations

AGM  Acting General Manager
AIS  Accounting Information System
COTS  Commercial off the shelf software
CSM  Corporate Services Manager
DMNR  Department of Manufacturing and Natural Resources
ED  Executive Director
EQO  Engineering and Quality Officer
ERDMS  Electronic document and records management system
ETAM  Extended Technology Acceptance Model
GST  Goods and Services Tax
GTM  Grounded Theory Methodology
IS  Information Systems
KG(s)  Knowledge Gatekeeper(s)
mTAM  Modified Technology Acceptance Model
NAL  National Australian Laboratories
NIMBY  Not in my backyard
NSI  National Scientific Institute
NSL  National Scientific Laboratories
SDLC  Systems Development Life Cycle
SICAM  Social Influence and Change Acceptance Model
SMO  Scientific Measurement Organisation
SRE  System Requirements Elicitation
TAM  Technology Acceptance Model
TAM2  Extension of Technology Acceptance Model
TAME  Technology Acceptance Model Extension
TPB  Theory of Planned Behaviour
TRA  Theory of Reasoned Action
TRIM  Total Records and information Management
UPLM  Manager - UPLab
UTAUT  Unified Theory of Acceptance and Use of Technology
Abstract

This dissertation integrates theories of social influence, communication, groupthink, and cognitive dissonance to explain the role of a knowledge gatekeeper within an organisation during a period of organisational change. Relatively little research has been conducted on how the elements of social influence, groupthink, cognitive dissonance and communications potentially converge to enable the emergence of power during organisational change events. Of great importance during organisational change is the concept of the knowledge gatekeeper being instrumental in acting as a communication channel between individuals, groups and departments and the influence over what type of information, its quality, currency and pertinence passes through that channel. The change in this instance is the implementation of a new electronic document and records management system and the investigation describes how staff perceived the redistribution of power amongst staff members and the changing perception of the knowledge gatekeeper.

Grounded theory methodology, informed by phenomenology and the Technology Acceptance Model form a framework to explore the acceptance of change in the form of a new information system. Literature relating to information systems implementation is examined and related to the organisational change issues of resistance and counter-culture. The discussions are situated in the context of how concepts of communication, groupthink and cognitive dissonance relate to a framework for the acceptance of change and how this framework then relates to the situational analysis of the knowledge gatekeeper’s role. Stakeholder perceptions of an information system and the subsequent change within the organisation enabled the construction of a more complex model which incorporates the relevance of social influences for change acceptance.

This dissertation proposes the Social Influence and Change Acceptance Model (SICAM) as a means of conceptualising how a knowledge gatekeeper influences colleagues’ perceptions of events during organisational change. Insight into the dimensions of power, the use of workthink as a resistance strategy, and the effect of miscommunication during system requirements elicitation are offered for consideration. The main research findings can facilitate understanding of the issues that surround organisational change and knowledge gatekeepers, in particular the impact of information systems implementations on broader organisational changes. When seeking to understand how stakeholders react to social situations affecting change, SICAM can be transferred to broader situations, not just located within the information systems research arena.
Chapter 1
Journey’s Start

Introduction

This study seeks to understand whether users of a new information system considered the project a success or failure by investigating the interactions, inter-relationships, and relations of power within subcultures and to their changed environment during the implementation of an information system. The differing perceptions of people involved in system changes and their understanding of the processes undertaken during the implementation are discussed further in the following chapters.

During my time as a consultant implementing information systems (IS), I observed the reaction of staff to new IS and subsequent changes to business processes within their organisations. Some employees felt threatened by the new information system, especially if they perceived that the new system did not support their business activities, whereas others embraced the change. The changed environment caused by the new information system often caused a knowledge-shift and subsequent knowledge/power redistribution amongst staff. Some staff that shied away from the new system developed a not-in-my-backyard (NIMBY) attitude where they acknowledged that the new system was necessary for the organisation, but not necessarily suitable for the department where they were located. Often the staff who embraced the new system had more understanding of the underlying rationale than those who shunned it, and frequently the embracers tried to become knowledge gatekeepers (KGs), even if prior to the new system they were not so recognised thus transforming themselves into innovators (Yang and Wang, 2008; Macdonald and Williams, 1994; Davis and Wilkof, 1988).

In this dissertation, my definition of a KG is somebody who facilitates the dissemination of information to a group or the wider community and filters that information based on his or her perception of the context for dissemination.

My observation has led me to believe that KGs occupy pivotal positions within organisations owing to their willingness to cope with uncertainty and their ability to acquire new knowledge from their understanding of current issues. This allows them to facilitate a transformation of either a process or a situation. In some cases, I
witnessed staff reactions to the new systems which had an unexpected impact within the organisation with long-term staff resigning rather than use the new system, leaving staff who embrace the new IS to fill a KG role. Understanding the roles played by KGs during organisational change is important, as how those roles are conducted is crucial to the successful outcome of the changing environment.

Based on my observations, it was clear that there is always a person within a subculture who plays the role of a KG either deliberately or accidentally. Owing to what appears to be the exercise of the KG’s ability to cope with uncertainty and to find a workable solution to problems, the KGs appear to assume a position of influence within the group or organisation (Hickson et al., 1971). In some instances that role was grounded in longevity of employment and therefore an assumption of organisational knowledge. In others, it was based on the authority of the position held within the organisation, and the assumption that the person was able to propose a solution because of their position. In all instances, other staff within the organisation perceived these people as holding a higher level of understanding of the uncertainty of change irrespective of how that understanding was derived.

One way to lessen the social impact of change and to enhance ownership of the new system to the users is to engage them as participants in the systems investigation and development or evaluation process (McGill, 2004). It is during this evaluation phase that the project team must communicate with workplace communities to ascertain the user requirements for the new system. Organisations frequently form specific project teams from different disciples to carry out the tasks of selecting and evaluating a new information system; whether this is the classic development of a purpose built system or customisable off-the-shelf software (Dustdar, 2002). These groups are the technical development staff, the general users, and possibly external consultants, whose role it is to fill the knowledge gap regarding the systems under review by the organisation. Within these groups, some members may be recognised as having better knowledge of the systems process and/or knowledge of the current information system, and this perception of a higher level of knowledge places them in a position of power.

The impact of organisational change produces some altered perceptions of the workplace communities or interest groups, especially if new software provides users with a greater ability to access and share information than they had in the previous
system, or possibly, the reverse, by removing this ability and setting up more formal system policies. Changing this exchange of information affects other systems within the organisation, consequently causing the users to often display behaviours that lead to conflict as they operate in the changed environment (Robey and Farrow, 1982). Figure 1.1, below, depicts an interpretation of the interaction between the systems users and the organisation, and the outward flow of change as caused by the new system. These changes (and interactions) subsequently become bi-directional between the organisation and the system users as shown by the impact of the new system.

These workplace environmental changes frequently caused disputes within the organisation and amongst group members due to project task conflict and the differing goals needed to achieve success for the various subculture members (Wood et al., 2010). Subculture members who already felt constrained by this changed environment, on occasion provided misinformation to the project team, inadvertently or purposely. This misinformation sometimes took the direction of the ideal business routine or process as opposed to that actually used on a daily basis. As information
collected for the purpose of implementing new systems needs verification from other users of the system, this type of misinformation often causes a considerable waste of time by requiring further interviews and documentation leading to further verification. This affects the overall performance of the project team and others within the organisation in relation to the project and the outcome.

Information systems are an integral part of an organisation’s daily operations. If the users of a new system consider that support of their specific daily tasks is lacking, they may covertly boycott the system by not using it. The organisation, having borne a huge cost in time and money may end up with a white elephant, that staff avoid using.

My experiences, gained whilst consulting and implementing new IS and observing reactions such as resistance to the new systems and power redistribution have motivated me to undertake a systematic study of the power/knowledge relationship between KGs and staff members within an organisation (Remenyi et al., 1998). Social influence issues are specifically relevant to understanding staff interactions during organisational change, both as a set of circumstances themselves and as part of a study from the organisational change and IS perspective. The research focus for

Figure 1.2 Overview of Research Focus
(Developed for this study based on Tesch, 1990, p72)
this study is informed by grounded theory and phenomenology and based on reflection and the comprehension of meaning as derived from my consulting experiences and is depicted in Figure 1.2, above.

**Research Agenda**

Research studies have been conducted about IS implementations (for examples see Butler and Fitzgerald, 2001; Davis, 1989; Markus, 1983; Markus et al., 2000), groups, and/or teams (Barki and Hartwick, 1989; Cartwright and Zander, 1968; Forsyth, 1990; and Shibutani, 1955), and organisational change (Markus and Robey, 1988). Ward, Brown, and Massey (2005) have explored how influences within an organisation affect user attitudes when mandatory system usage is required. Szajna & Scamell (1993) discuss the effect of cognitive dissonance on IS user’s expectations. Miscommunication and poor interaction between system users and analysts are influences leading to unrealistic user expectations (Ginzberg, 1981). Literature regarding power within the wider organisational context also abounds (see for example Burnes, 2004; Clegg, 1989 and 1975; Whiteley, 1995), but there appears to be a paucity of research regarding how these issues converge to a power initiative within subcultures and how this is perceived by colleagues during change events in the organisation.

To contribute to a better understanding of how this convergence occurs, the following research objectives were developed to explain the interactions and perceptions of staff members related to the power relationships that emerge during organisational change.

**Research Objectives**

Economic, social, and political developments external to the organisation all contribute to change within an organisation (Senior and Fleming, 2006). Internal organisational change has a flow-on effect where the impact of one organisation’s change coincides with another organisation’s change efforts. As Orlikowski and Hofman (1997) argue, change is not a stand-alone situation and changes encountered within organisations owing to the introduction of technology and systems, and the relationships that form, provide a breeding ground for innovation and avenues for changes that, in many cases, are ignored by organisations.
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After an initial review of the literature, conducted in order to provide an adequate response to the complexities involved in IS and organisational change, the following research objectives were formed:

1. To develop an appropriate theoretical approach for explaining social and organisational issues surrounding IS implementation and organisational change;

2. To identify important issues surrounding organisational change that accompanies a new systems implementation;

3. To explore the relevance of power relationships between KGs and participants within the organisational environment;

4. To examine the communications gaps that may exist between the users and those who are gathering user requirements which could potentially lead to users having failed expectations of the new system.

These research objectives acknowledge that factors, such as communication, power and organisational change are relevant to the investigation. Failed expectations of IS and subsequent change resistance can occur for a variety of reasons and this study assumes that the main causes of failure can include the following social issues surrounding an IS implementation and subsequent organisational change:

1. Failure to understand the influence of KGs within an organisation and specific subcultures in particular;

2. Misunderstanding or failure to recognise that power struggles between opposing factions may occur during organisational change;

3. Misunderstanding or failure to recognise the importance of communication between technical staff and system users during an IS requirements elicitation process; and

4. Misunderstanding or failure to recognise staff members’ comfort zones in respect of their workplace environment.

**Research Question**

Recognition of the objectives and the factors identified above led to the formulation of the following research question as a basis for the investigation of information
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exchange and its relationship to KGs in an organisation undergoing change. The key research question for this study is:

**How does a knowledge gatekeeper’s role within an organisation affect the social aspects of an organisation during IS change?**

After a review of the literature, this research question was examined from perspectives drawn from my experience gained whilst implementing IS. This enabled me to deconstruct the research question and focus on different aspects of the system implementation and organisational change processes. The following contributory questions emerged from the deconstruction:

1. What is the depth of experience held by the research participant in relation to IS?

   Question 1 is the basis for evaluating a participant’s understanding of the role an information system plays within an organisation and for ascertaining the depth of understanding held by participants. This question is foundational to the study and gives relevance to the participants’ responses both in relation to their perception of KGs as powerbrokers and the new information system.

2. How does the introduction of a new or enhanced information system effect change to the working environment within an organisation?

   A new or enhanced information system nearly always causes a change to the working environment of an organisation by requiring the users to change their daily routine in some way, even if the change is relatively minor. Question 2 explores the perceptions of the participants in relation to change effected by a new information system and is relevant to the staff perceptions of the perceived usefulness and actual use of the new system and the communication about those perceptions.

3. How can understanding a KG’s influence within a subculture help in implementing IS?

   By understanding the KG’s influence during a period of change, future change professionals will be able to call on this insight to assist them in similar situations. This question inquires into the participants’ responses in relation to perceptions about change agents, power brokers, and the
emergence of organisational behaviours such as groupthink and cognitive dissonance.

4. Do the participants see the KG as an agent of change or as a facilitator?

It is important to determine whether the participants see the KG as an agent or facilitator of change. As an agent he or she will actively promote the change whereas a facilitator will act as a conduit of the change. By determining this perception about the KG, a team will be able to work with the KG to ensure a smooth transition from one system to another. This question is relevant to analyse the role of the KG as change agent, the social influence and organisational power, and insider/outsider perceptions of the selection committee’s actions.

5. Does understanding a KG’s role in organisational subcultures help in implementing IS?

A KG will hold a special place in an organisation’s subculture either because of longevity of service or a perceived higher knowledge of the business operations. The role of the KG in this instance can be pivotal for the success or failure of an IS development or implementation. This question is pertinent when exploring the responses caused by social influence and organisational power, and insider/outsider perceptions of the committee’s actions.

6. What do users perceive as the role of the KG in an IS development project and subsequent implementation?

The users’ perception of the KG’s role as part of the communication environment affects the change process as this perception links to the power knowledge relationships within teams and the organisation as a whole. The importance of this question is central to understanding the relationship between communication and social influence with respect to the KG role.

7. What, if any, is the personal influence of a KG during information exchange?

It is important to determine if the KG holds personal influence during the exchange of information, and if so, what type of information is disseminated. Equally important to understand is how the KG influences the timing of this information dissemination. If it is determined that there is personal influence
during information exchange, the exercise of personal power will be indicated.

8. Do the participants perceive the KG as holding a position of power within a subculture or organisation due to their knowledge?

This question gives relevance to responses concerning the change environment. By determining if the users perceive the KG to have a role of power within the subcultures and organisation as a whole during information exchange in a time of change within an organisation.

9. What were the participants’ perceptions of the communications process during the change event?

Understanding how the participants perceived the communications process during the implementation of the new system and subsequent organisational change and whether the communication strategy supported staff informational needs is important. This aspect highlights senior management’s need to understand the complexity of communications during the change process.

The above contributory questions were expected to provide the necessary evidence to answer the key research question “How does a knowledge gatekeeper’s role within an organisation affect the social aspects of an organisation during IS change” Figure 1.3 on page 11, shows the relationship of the contributory questions to the principle research question and the various conceptual analytical tools used for analysis of the case under study, which is presented in Chapter 5 of this dissertation.

Other questions arose during the interviews that revealed areas of related interest. These areas, when relevant to the central issue of this study were investigated for causal effect to the staff behaviour and attitude to change.

**SELECTING THE CASE**

To enable a study of the complexity as identified through the literature, it became apparent that the ideal organisation for the study was one whose IS were sufficiently entrenched that a change would affect the staff who used them and whose staff were observant of their workplace environment and the interactions of their fellow staff members. In addition the organisation would need to be willing to allow its staff
members sufficient contact time to enable them to interact with the researcher in the natural setting of their workplace environment (Lincoln and Guba, 1985). I considered that the organisation would need to be of a sufficient size to allow multiple perspectives of an event shared by all participants (Remenyi et al., 1998). Conversely, I considered the organisation should not be so large that the effect of the event on colleagues would not be observed by the participants. I contacted an organisation from my time as a systems analyst/implementation consultant and I was happy to discover that this site had recently installed and implemented a records management system and that staff were dissatisfied with the system. This was a site where I previously implemented an accounting information system (AIS) in the mid 1990s. For the purposes of this study, I will refer to the organisation as Scientific Measurement Organisation (SMO). The name has been changed to protect the anonymity of the organisation and participants, according to research ethics requirements.

After some discussion about the nature of my research it was suggested that I contact the executive director (ED), which I did, and subsequently made an appointment to discuss the viability of conducting research at that site. We met during December 2003 and I received permission to carry out research using the methodological tools that I had designed. The research tools used at this site were meetings and interviews with staff members and an anonymous survey. These tools assisted me to gain an understanding of the staff’s perceptions of KGs during systems implementation. As SMO had recently (2003) implemented the electronic records management system Total Records and Information Management (TRIM), which had affected other IS, the ED asked that I also take into consideration other systems used regularly by staff.

During the initial meeting we agreed on the ethics procedures and that I would forward the consent forms and invitations to participate via email to her attention for her to distribute the forms to selected staff. The ED selected staff who she thought would be able to assist the investigation and invited them to participate in the research. This method of participant selection afforded me the ability to remain at arm’s length from the process and gave me a good cross section of participants from each section of the organisation.
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Figure 1.3: Research Questions in relation to conceptual analytical tools (Source: developed for this study based on the research design)
However, there are two negative aspects to this method of selection. Staff possibly felt constrained to participate and there may have been others who would have liked to participate but felt that they could not volunteer as the ED extended the invitation only to specific staff members, chosen by her. There were 30 staff employed by the organisation and 11 staff members (including the ED) initially accepted the invitation to participate with one withdrawing prior to the start of interviews and surveys. From my observation and the willingness of those who did proceed to the interview and survey stage, this was the only incidence of constraint.

The organisation chosen for my research was, at the time of agreement, a self-determining statutory government body that tested and measured instruments and products for the public.

Due to the particular nature of the work undertaken by SMO, and the scientific research skills required of its staff, once employed by SMO staff tended to remain with the organisation for many years. According to my research records, the participating staff’s length of employment service ranged from one to over 30 years. Only two staff members who participated in the research were employed by SMO for less than eight years: one is the replacement for the records manager subsequent to the implementation of TRIM (one year) and the other the ED (four years). The majority of the participants have been at the organisation for over 15 years.

Due to my previous involvement with SMO, which was approximately nine years prior to the initial interview with the ED regarding this research, I effectively became a cultural insider rather than a social intruder (Shah, 2004; Bødker and Pedersen, 1991). This placed me in a better position to interact with the participants due to my inside knowledge of how SMO operated and the tasks that each department undertook (Shah, 2004). During the initial meeting, I had not named the staff who I had worked with previously, other than the person who was my main contact. Consequently, the ED chose a few staff members who had been involved with or were affected by the AIS implemented during my previous involvement with SMO. Due to the time lapse, I was not expecting any critical issues to arise through my prior association, but I did remind a few participants of my involvement with the implementation of the AIS. I recalled that not all
staff members at SMO were in favour of the AIS and if I was open about my prior involvement at SMO, I thought that this might alleviate any potential embarrassment if a colleague reminded them of that involvement.

Some participants had been involved with systems implementations prior to joining SMO, and whilst that experience was not directly related to IS, those experiences had given them an understanding of the implications and ramifications of changes to working environments. One participant had developed a system for SMO that changed the business processes in the laboratory, and one other participant had implemented IS at SMO that had changed the working environment for the organisation. These participants were all in different departments and were all on the software selection committee at some time or another, and therefore had their own ideas from their own experiences of how the committee should go about preparing and selecting the records management system software.

Although the research plan considered the importance of documentary evidence to corroborate the interview data, it was not forthcoming from the organisation, possibly due to the movement of staff to other locations and departments. On three separate occasions, I requested a copy of the systems requirements, and was told that I would be sent a copy. That documentation never eventuated. Therefore, this study had to rely on supporting documentation in the public domain, obtained from the organisation’s website and from general media.

**Research Significance**

Change is usually initiated or directed from the top of the organisation and encompasses the usual suspects of organisational restructure and supporting new strategies (Senge, 1996). This study investigates the consequences surrounding mandated change that caused staff resistance to the new system, how they rationalised their changing workplace and the power initiatives that emerged because of that change.

This investigation uses the Technology Acceptance Model (TAM) (Davis, 1985) as its framework to explain the resistant behaviours of staff at SMO. Whilst the original version of TAM was developed to predict users’ acceptance of technology, TAM is essentially a model of predicting acceptance of change as
this study will show by linking technology acceptance to organisational change acceptance.

Previous research using TAM or one of the many derivatives (as analysed in Chapter 2) have proposed that users’ attitudes to technology are associated with factors such as age, gender and job satisfaction. This study proposes that by focusing on detailed variables such as those mentioned above, researchers miss the insight gained by other social influences as linked to organisational change.

Within many organisations, there is no recognition of the impact, or lack thereof, of the human and/or social interaction among members of groups during an IS implementation. If this interaction and overt or covert influence from a particular group is not addressed, there is a high risk of the project failing.

From my observations gained when implementing IS in industry, when senior management structure changes, new consultants are called in with a view to putting things right without fully understanding how the current system works. In many organisations, management decides not only to implement a new system, but may also decide which system it should be without thorough investigation or the necessary expertise (Doherty and King, 2001).

This research project draws on themes of organisational change, power, communication and resistance, and as an outcome of the research, four areas of significance emerged, and became central in the dissertation. These areas are:

**Social Influence and Change Acceptance Model (SICAM)**

This model has been derived from this study and is based on a conceptualised view of the TAM. SICAM incorporates the elements of groupthink, dissonance, social influence, experience, and communication as emerged from this study.

**The Knowledge Gatekeeper and Social Influence: a Dimension of Power**

This area has explored the linkage between the KG, the gatekeeper’s social influence in workplace environments, and the emergent power associated with uncertain situations.
Workthink as Resistance

Workthink explores the relationship of behaviour amongst committee members and procrastination as resistance using a competing commitments strategy. This can mean that potential resistant behaviour is present if staff members continually miss staff meetings whilst citing valid work commitments.

Communications during Systems Requirements Elicitation (SRE)

This area discusses the importance of an effective communications strategy and the importance of those collecting the systems requirements from users to communicate at an appropriate level that is easily understood.

This investigation is a significant research project in that the methodology can be used for industry–based projects to highlight issues especially as related to introducing change through IS and help overcome them before they become a major problem, and within education to teach students of the issues that arise during these and related change projects. The contribution of this study is to the area of how social interactions impact change and will assist practitioners to understand how to harness those interactions and reactions for the benefit of the organisation.

Scope of the Study

The focus of this study is on the human aspects that surround a changing organisation during an information system implementation. The core issues of the study are those that a committee face when choosing and recommending an electronic records management system (ERMS), and how the subsequent implementation of the chosen software affected the users in the organisation. It is outside the scope of this study to investigate why organisations might require uniformity of systems for electronic storage of documents, nor does it seek to understand the arrangements made with third-party contractors for the IS implementation. However, the issues such as resistance and power redistribution that arise out of mandating uniformity of processes and potential miscommunication with any third-party contractor are central to the study.

Also outside of the scope of this study are the issues that surround organisational mergers. At the time of the data collection for this study, SMO was preparing to
merge with two other government entities with similar business objectives. A constraint of this study is that it is not possible to isolate particular factors that affect change from the wider issues. For example, whilst this study is not investigating issues of the imminent merger of SMO with other entities, the knowledge of the merger may have influenced staff behaviour. This study does not focus on this aspect of organisational change.

**Conclusion**

This chapter presents the framework for the dissertation by introducing the research approach and research agenda. Figure 1.4 below, depicts the flow of argument through this dissertation followed by a synthesis of each chapter’s content.

![Figure 1.4: Dissertation Structure](Source: concept developed for this study)

*Chapter 1 – Journey’s Start*

This chapter introduced the dissertation and outlined the scope and approach to the study. The research question and objectives were placed in
the context of the approach, as were the significance and limitations of the study.

Chapter 2 – Knowledge Gatekeepers as Organisational Actors

This chapter comprises a review of the body of literature in the fields of organisational change, IS, power, and KGs as they pertain to the context of a new information system within an organisation. It draws comparisons to, and contrasts with the writer’s observations and experience of organisational change associated with an IS implementation and places those discussions in the context of this study.

Chapter 3 – Constructing a Worldview from Multiple Perspectives

This chapter elucidates the design and chosen methodology of this study and its appropriateness to this field of research. The selected research paradigm is qualitative research that focuses on the perceptions of the KG’s role during an organisational change event: the implementation of a new information system. The complexity of the issues surrounding change involved staff participation, communication and resistance behaviour.

Chapter 4 – Twisting Paths and Oases of Thought

In this chapter, the discussion focuses on the analysis of the data collected from the participants and the iterations used to derive meaning from the data. It will discuss the participants’ interaction with the researcher and the methods used for analysing the data to arrive at useful information for explanation of the research questions.

Chapter 5 – ‘and it’s all working out fine!’

This chapter explores the meaning of the data analysed, and examines the relationships and interactions of power that emerged from the study. It also discusses these relationships to derive a meaning for the change environment at the organisation under study. The SICAM was created based on TAM.

Chapter 6 – Journey’s End

The final chapter draws together conclusions from the study, examines the implication for practice, and makes recommendations in the context of the
findings. The applicability of the SICAM is analysed in relation to the other main findings of this study.

The following chapter presents an analysis of the literature pertaining to issues surrounding IS and organisational change.
Chapter 2
Knowledge Gatekeepers as Organisational Actors

Introduction

This chapter serves to relate influential actions of staff during the implementation of an information system to the contextual environment where they occur. During a period of change within an organisation, there are key staff members who hold influential positions due to their superior knowledge of the organisation’s systems and process. These people are the knowledge gatekeepers (KGs). I define a KG as somebody who can facilitate the dissemination of information to a group or the wider community. Supporting my experience and observation, Cranefield and Yoong (2007) suggest KG not only understands the organisational environment but also acts as a facilitator or gatekeeper to disseminate that understanding to fellow staff members. This process is bi-directional as each experience communicated by the KG to colleagues, also transforms or adds to his or her experience and understanding and increases a KG’s influence.

A KG can have two different but related aspects, the first as a communication channel having influence over what type of information passes through a channel, its quality, currency and pertinence. The second is that of a gatekeeper that decides what information passes through that channel (Swanson, 1987).

Based on the study of control mechanisms of food habits during wartime, Lewin (1951 [1943]) determined who controlled the food channels by identifying a person he called the gatekeeper. Lewin developed channel theory to explain the way in which food arrived at a family's table. This dissertation adapts the concept of the gatekeeper into an organisational context and the selection and implementation of technology that effects organisational change. From this perspective, it is possible to consider the KG instrumental in disseminating information as a communication channel between individual, groups, and departments.

The role of the gatekeeper is evaluated in the process of implementing a new information system in the context of this study. As suggested earlier, an information system is a computer-based system that contains routines made up of people, processes, software, hardware, and data, collected and stored electronically for later
use (Oz, 2006, p14). When users call on that data, the system transforms it into meaningful information through some method and presents it for use via either a report that can be printed, saved onto a disk or displayed as an on-screen report. Owing to the ubiquitous nature of information systems (IS) and their ability to draw users into developing ownership over the processes and data stored for dissemination, any change to the system environment can potentially generate feelings of unease or outright resistance from the users (Frantz, 2001).

User attitudes and reactions to new IS are major factors in staff acceptance of a new system as is user expectations (Taylor et al., 2001). One point often overlooked is that attitudes and reactions to change are influenced by how that change is introduced. There is consensus among authors evaluating the acceptance of new information system that one method of engaging staff interest and ownership of the new system is to work collaboratively with them during all phases of the system development cycle. IS literature discusses involvement or participation of end-users in a collaborative team atmosphere as a means to developing and implementing an information system that ensures end-user satisfaction (He, 2004; Guimaraes, Staples and McKeen, 2003; McKeen and Guimaraes, 1997; McKeen, Guimaraes and Wetherbe, 1994).

Butler and Fitzgerald (2001, p12) argue that:

...insufficient attention has been paid to the relationship that exists between user participation in systems development and the issue of organisational change surrounding the development and implementation of information systems.

In their study of IS development and the impact on organisational change, Butler and Fitzgerald noted that, “…participating users were fully aware of the favourable attitude that developers had towards their contribution and responded accordingly” (p20).

By working collaboratively with groups of users from areas that will ultimately use the new system, the developers and implementers can attempt to ensure a successful project outcome (Joshi, Sarker and Sarker, 2006; Glasson, 1995). However, collaboration is a complex process that involves multiple organisational issues, and these issues need consideration when investigating the implementation of an IS (Wells and Jones, 2005). The study by Boland (1978) found that the quality of systems developed with interaction between all stakeholders potentially produces a
higher level than does a system with the more traditional approach of interpreting user requirements (McKeen, Guimaraes and Wetherbe, 1994).

Contemporary organisations tend to have some form of computerised IS, with IS used on a daily basis (Boddy, Boonstra and Kennedy, 2005). As computer systems are central to most employees’ work environment, any change to the system could have repercussions on the separate user groups within the organisation (Markus and Robey, 1988). A threat perceived by both the users and KGs as a detrimental change to their work environment may cause both to withhold vital information from any systems analyst during the IS requirements elicitation phase (Luna-Reyes et al., 2008). (Refer to Figure 2.2 on page 23 to see where the requirements phase sits in the overall systems implementation.) The effect of withholding information has the potential of preventing the system from meeting organisational expectations after the completion of the implementation. On the other hand, many employees welcome a change to their working environment and willingly exchange information with the change facilitators in an effort to improve or enhance their immediate workplace. These employees may go on to become the KGs of the new system owing to their receptiveness of change and their willingness to engage with new technology and IS (Baxter, Connolly and Stansfield, 2009). A KG may share some of the qualities possessed by early adopters or champions of a new system or change such as leadership and power (Gattiker and Cater, 2009).

**Information Systems Implementation as a Change Factor**

There are many types of IS used by organisations for various purposes and the type of IS being discussed in this dissertation is an electronic document and records management system (EDRMS). An EDRMS is a specialised type of system that enables an organisation to keep its organisational records in an electronic format that is accessible by staff from any location and at any time of the day. In Figure 2.1 below, an EDRMS is categorised as being part of a group of specialised system, and shows the relationship of an EDRMS to other organisational IS. The EDRMS at SMO was central to the operations of the research organisation and its implementation was a focal point of disruption to the staff.

Many organisations are turning to the use of packaged software due to a perceived advantage of this software, and choose to implement commercial-off-the-shelf
software (COTS) as by doing so they often feel, erroneously or not, that if other organisations have used a software suite it means that the design and development expertise of the creator has been tested in the marketplace (Maiden and Ncube, 1998). Using COTS can be an effective strategy for organisations as off-the-shelf systems are often less costly and save more time from initiation to implementation than systems that are built in-house (Turban, Leidner, McLean and Wetherbe, 2006; Gregor, Hutson and Oresky, 2002). Organisations view COTS as a method of avoiding the issues involved in complex systems development as the configuration of a software shell as a COTS application is relatively easy compared to one that is developed to the organisation’s specific needs (McLeod and Schell, 2007; Sassi, Jilani and Ghezala, 2006; Smith, 2000).

Off-the-shelf software is developed to suit a broad range of organisations that will have differing requirements based on the type of industry in which they operate, and what governs the issues of time and cost for an organisation is the size of the organisation and the complexity of the implementation (Li et al., 2006). From system planning to deployment, nearly all the same functions need performing when implementing COTS, as with a custom-built system (Li et al., 2006). There are many phases and functions to the traditional Systems Development Life Cycle (SDLC). The traditional SDLC is used in complex systems development and each phase has distinct tasks that need to be undertaken. Figure 2.2 below, depicts the traditional

Figure 2.1: Interrelated Information Systems
(Jones and Wells, 2006 adapted from Turban et al., 2006)
phases of an IS project, but COTS systems have slightly different requirements, with varying complexity and all require some time devoted to system customisation. (Refer to Figure 2.3 on page 24.)

Figure 2.2: Traditional waterfall model of the systems development life cycle (SDLC) (Bocij et al., 2006, p324)

During IS development, and specifically the requirements gathering stage, systems analysts routinely discuss user requirements and attempt to ascertain the full range of business processes to be incorporated into a new system. It is at the requirements elicitation stage where there is potential for the KG to either facilitate the transfer of knowledge between two or more groups or prevent it from reaching those who need to know; in this case those who are gathering the new systems requirements. Critical knowledge about the organisational processes resides with systems users and this knowledge needs to be captured effectively to reflect the users’ needs and expectations. Due to a potential communication gap, the lack of effective information gathered by analysts never becomes apparent until the deployment of the system and the users discover that their expectations have not been met, (Ginzberg, 1981; Guinan and Bostrom, 1986).
Requirements for the new system is sought during the ANALYSIS stage of an IS project, and translated into system design during the CUSTOMISATION and CHANGEOVER stages. This study focuses on the changes that influence the outcome of the translation and interpretation of those requirements and the issues that arise when there is a misinterpretation or miscommunication of those requirements. As shown in Figure 2.3 above, there is a slightly different flow through the SDLC phases for a COTS implementation as the design and build phases are not required, and more emphasis is on the phases of comparison and evaluation through to changeover. In the case examined in this dissertation, SMO implemented the ERDMS as a requirement of federal government policy. The feasibility of the project was not seen as an essential phase by SMO staff as the decision had already been made that a new system was to be implemented. Organisations that purchase COTS without undertaking a feasibility study or undertaking the analysis phase after purchasing the software may not have the resources to move backwards and forwards between the various phases until the foundational work for systems customisation is completed, and therefore may decide to proceed with the project unprepared for all contingencies.
The literature on COTS discusses the importance of the requirements elicitation phase to ensure that the information needed to customise the system is as complete and correct as possible, and that the people who are participating in the project supply this information in a timely fashion (see for example Alves and Finkelstein, 2002; Pitts and Browne, 2007). Of equal importance is to ensure there are no misconceptions as to the reason why this information is required. COTS applications have different analysis activities to those of a traditional SDLC (Sutcliffe, 1996). Without a shared understanding of the need for the system, there is a potential risk of collection of incorrect or misleading information, and the error may not be apparent until the system is configured and ready for use. This may cause a setback in the project delivery date and a loss of time and other resources, leading to user dissatisfaction with the new system.

During the information requirements elicitation process (analysis stage) there are many opportunities for misunderstandings to arise. Two reasons are that not all staff members will share an equal understanding of the need for the new system, and there is potential for miscommunication if there is a difference in organisational and technical backgrounds (Coughlin, Lycett and Macredie, 2003). For example, if staff members have no knowledge of the requirements elicitation process, and the technical staff do not perceive any lack of comprehension amongst the staff, then miscommunication as to the rationale for the process may arise. A problem with implementing COTS software is that often the end-users will perceive a gap between the functions offered by the software package and those required by the staff to carry out their daily tasks (Wu, Shin and Wu, 2005). Technical staff do not always have the skill required to fill that gap, and remove the misunderstandings about the information requirements.

Even though it is widely recognised that collaboration is ideal between systems implementers and end users, there are still many instances where teams that develop new systems have little contact with those who will eventually be the users of the system (Alvarez, 2002). When gathering the requirement specifications and developing systems to support the business processes the development teams may only speak to certain key personnel as designated by management, who might not be KGs. This has the potential to isolate the end-users from the system and create resistance to technical change if those users feel that they are unable to control their
immediate work environment (McKeen, Guimaraes and Wetherbe, 1994). Technical change within an organisation often forces wider organisational change that enables staff to cope with issues surrounding change to their immediate environment. Internal economic, social, and political factors, all contribute to change within an organisation, which may then have a flow-on effect to industry in general through an organisation’s alliances and relationships with other organisations. The reverse is also true when there are major changes brought about by external forces. For example, a legislative change such as the Goods and Service Tax (GST) (in 2000) caused a change through all industry as the separate organisations changed internal processes to cope with the new governmental requirements (Laudon and Laudon, 2007).

As discussed, there are various phases and functions that organisations follow when deciding to replace or enhance an existing information system, (refer to Figure 2.2 on page 23 for a depiction of the processes at each phase). Smaller organisations may not clearly define each phase, as the organisation may not have the staff with the appropriate skill set or the resources to allocate to a dedicated project team (Chen et al., 2008). In larger organisations where resources are more readily available, team membership may consist of staff from different departments to ensure that each department’s needs are represented during the project. In either scenario, organisations may decide to employ external consultants or contractors to fill any perceived skills gap in the staff pertaining to a specific project. The downside of hiring external consultants is that the organisation is also hiring the consultant’s view of organisational processes and must therefore accept those views and assumptions along with the services offered (Howcroft and Light, 2008; Al-Karaghouli, Alshawi and Fitzgerald, 2005; Umble, Haft and Umble, 2003). The implication of having divergent views as to the purpose of the software lays the groundwork for miscommunication, unsuccessful requirements elicitation and ultimately project failure.

All phases of an IS implementation are important and all phases have their own specific set of functions that staff who are involved in the project need to be aware of and possess the necessary skills in order to reach a successful conclusion to the project. If an organisation has not clearly and correctly defined the problem they are attempting to fix with the new IS, the likelihood of a project failure is high, as the
resultant erroneous assumptions will flow through all phases and functions of the project (Hickey and Davis, 2004). The error can lie unrecognised during phases two, three and four (analysis, customisation and implementation) as the staff who are involved in the project team, either fulltime or on a needs basis, may assume that due to the nature of the queries, the technical team have collected the appropriate information. The reverse is also possible. The technical staff may assume that some members of staff are resistant to their efforts to extract the necessary information. If the correct information is not collected, and therefore the perceived problem is not solved, as Hickey and Davis (2004, p66) suggest, this “will almost certainly guarantee that the final project is a complete failure”. Misunderstanding the initial problem by those who make the decision can also exacerbate resistant behaviours in the staff affected by the system and similarly entrenched unfavourable attitudes by the technical staff.

Umble and Umble (2002) state that a major cause of project failure is lack of understanding the interconnectedness of the existing organisational systems, and not effectively managing the complexities involved in a systems implementation. Management may also initially assume that, as the COTS software already exists, detailed formal requirements elicitation and analysis are not as necessary to the same degree as they would be if the software were written for a specific purpose (Anomelechi-Onyeodi, 2007).

During the phase of requirements elicitation or information gathering, problems of miscommunication may occur (Coughlin, Lycett and Macredie, 2003), leading to misunderstanding between those who are attempting to gather the information required to customise and implement the system (the designers) and those who may feel that their personal workspace is eroded (the users). The conversion of the information elicited from staff during the analysis phase into language and diagrams that the project team understand can again cause problems, especially if those supplying the information do not fully understand or perhaps agree with the reason for the new IS.

Even though the basic principles are the same, there are different activities that need to be undertaken if an organisation is implementing COTS software, as opposed to designing and developing the software to suit their own requirements (Brownsword, Oberndorf and Sledge, 2000). A potential difficulty with implementing COTS
software is that many may make the assumption that a COTS implementation is relatively easy as the software development has already carried out the major project phases. The consequence of this assumption is the perception that the only tasks left to accomplish are installing the software on the computer system and training the users on how to use various functions. Fox, Lantner and Marcom (1997) suggest that COTS based development and implementation is significantly different from the traditional SDLC in that the software must be selected early in the analysis phase rather than as an outcome of that phase. Accordingly, they propose that development methodology must be tailored specifically to suit a COTS product.

Implementation consultants can be from independent consulting firms or they can be from the software vendor, with consequent difference in priorities between the consultant and the user organisation (Anomelechi-Onyeodi, 2007). This difference in the priorities of the project’s outcome can create a communications gap that maybe is as simple as holding different views as to the meaning of what a successful project outcome. This gap is especially noticeable if one perception is that a successful outcome is that the project is on time and within budget, and the other is that success is measured by how effective the new system is in supporting business processes. These two views are so disparate that there is rarely a common meeting ground, and this can lead to tension between staff involved with the project (Keen, 1981).

The COTS selection process can be confusing to staff who are unfamiliar with this type of software. Many staff in the position of selecting and evaluating alternative COTS systems “may not have the time nor the experience to plan the selection process in detail and therefore they may not use the most appropriate methods in the selection process” (Kontio, 1996, p202).

Further problems can be caused during the software comparison and evaluation phase if not enough attention is paid to the underlying reason why the organisation needs to implement a new system. Inexperience amongst staff who selects a COTS application can lead those involved paying more attention to what appears to be nice-to-have system features rather than essential features that support organisational operations (Comella-Dorda et al., 2002). Due to a possible lack of familiarity by those who are making the software selection there may be an over emphasis on some aspects of the software that have no relevance to the end-users and this may lead to dissatisfaction with the project outcome (Kontio, 1996).
This section has looked at the literature regarding IS and its impact on organisational change. The next section analyses literature surrounding the issues affecting the change, namely the power and political environment within an organisation.

**Organisational Power and Internal Political Environment**

Besides the technical issues mentioned in the previous section it is important to consider differing perceptions of what is sharing and collaboration as these can impede the exchange of information and knowledge (Pumareja and Sikkel, 2005). Differing perceptions can lead system users to believe that they are forced into a collaborative environment against their will. If this is the perception, the issues surrounding organisational change are affected by it. Those who oppose the change are likely to become political activists within the organisation and potentially use covert means to continue their resistant behaviour (Buchanan and Badham, 2008).

The perception of force can engender an equal amount of resistance to, and resentment of, sharing knowledge. Independent of being unconscious or conscious, this resistance can be interpreted as an act of defiance to the perceived forced collaboration (Johnston, Zablah and Bellenger, 2005). When coupled with the issues discussed in the previous section resistance can lead to the emergence of power and political situations that evolve from uncertainty during a new information system implementation. This resistance can be seen as an exercise in power that flows from the ground upwards as well as horizontal if the resistance flows to other areas within an organisation and is not confined to one department (Daft, 2007).

Hickson et al. (1971) explored uncertainty as power within the organisation and used the work of March and Simon (1958) and Perrow (1961) to support their argument that those with the solution to an uncertain situation are those who eventually become the power holders, due to their coping mechanisms and the reduction of uncertainty for others within the organisation. Clegg (1975) proposed that exploitation of uncertainty enables a person to set the rules for that situation, therefore possibly conferring power on them. Clegg’s (1975) proposal indicates that the solution to uncertainty is based on the rules that resolve the uncertainty and this links to the concept of coping with uncertainty and the power that emerges through supplying the solution for that situation. In a further study, Pina e Cunha, Clegg and
Kamoche (2006) propose that uncertainty is a lack of assurance about a given phenomena, and this corresponds with earlier studies.

**KNOWLEDGE GATEKEEPERS AND SHARING**

Within an organisation, knowledge is an asset and as each person’s knowledge is developed through different sets of experiences and learning situations, it follows that each person’s knowledge will be subtly different and has a different value as an asset (Wells and Brook, 2008). However, in many instances that knowledge is tacit (Wagner, 2006). Tacit knowledge is the sum of a person’s experience and learning, and is therefore difficult to translate into explicit knowledge and share with others (Tsoukas, 2003). In this context, a KG has a very powerful and influential position within a reference group (Jones, Herschel and Moesel, 2003). Colleagues will see this person as being necessary to the continued operations of the organisation, or at least the group, and therefore the KG retains competitive advantage through knowledge (Ford and Staples, 2008).

In a study on knowledge transfer, Cranefield and Yoong (2007a) suggest that the gatekeeper has many roles that can be played to effect successful transfer of knowledge. The roles that are relevant for this dissertation are those of facilitator, expert, translator and interpreter, with the most pertinent being that of facilitator. The discussion of gatekeepers and knowledge transformers in Harada’s study (2003) suggests that unless gatekeepers are also knowledge transformers, then the gatekeeper may not be able to contribute to the organisational activities in the same manner as those people who are perceived to be knowledge transformers. Harada’s view of the gatekeeper in this instance appears to be limited to that of a conduit only without interpreter or translator capabilities, whereas, as mentioned before, the KG might have many roles.

The KG, as facilitator, has the potential to prevent, as well as facilitate the dissemination and sharing of information in a timely manner. Due to the uncertainty in changing environments, no group within an organisation is completely independent of the need to share information; and even top management relies on gatekeepers for access to organisational information, thereby conferring on the gatekeeper informational power (Clegg, 1975). Under conditions of organisational uncertainty, a KG has the potential to communicate misleading information or to foster misconceptions amongst groups who are involved in an organisational change.
event (Bordia et al., 2004). Because of this potential, this position is powerful within an organisation.

Management may appoint holders to the KG position and therefore they would hold a position by authority. Colleagues may also see them to be natural leaders within their work environment and even though not appointed to a position of power within the group, the KG and the group itself is empowered by reason of their knowledge (Vishwanath, 2006). A natural KG may be an employee who has been with the organisation for some time and understands the business processes currently in use, and those processes whose genesis or mutation derives from previous systems. The holders of the historic knowledge are often in a powerful position, even more so in some cases, than those appointed to a leadership role by management. This double function as KGs might generate conflicts and affect the process of implementation and subsequent organisational change.

How the KG acts as a broker of information or knowledge between groups during organisational change is an important point to consider. A simple definition of information is that of processed data given meaning through interpretation and understanding, whereas knowledge is information transformed by experiential context (Wells and Brook, 2003). As the position of KG has influence over communication channels during this time, power is inherent in this position, and the position has the capacity to exercise power. In the context of this dissertation, the definition of power is influence that can overtly or covertly cause someone to potentially act against their own best interests. This definition is based upon that of Lukes (1974, p27).

This makes relevant a second definition of a KG: a person who is perceived to be knowledgeable in context, and whose actions and opinions strongly influence the course of events. If staff within the organisation perceive the KG to hold both knowledge and power, relationships amongst groups during the change become more concentrated than they would normally be, as each group seeks to validate their own beliefs against those of the gatekeeper and events surrounding the change (Shibutani, 1955). There is potential in this situation for multiple gatekeepers to emerge and for information to be exchanged between different groups through these gatekeepers, thereby increasing the power of the positions.

In this context, Hiley’s (1984) position on knowledge and power is very relevant:
Considering the process of implementation involves sharing information, it is important to evaluate how it happens and how the position of KG is relevant for a successful outcome. Sharing information happens in many ways: explicitly via the written word, the spoken word, visual media, or tacitly via unspoken methods (Debowski, 2006). By being assimilated into experience, information is converted to knowledge. Sharing tacit knowledge is difficult in that the context or situation provides a medium for sharing (Fernie et al., 2003). For example, when working with a group or team, information or knowledge as *know-how* is transferred between members of those groups or teams through observing colleagues’ behaviour or replicating their actions. In this instance, the context or situation is a *learning* one, and the process would be similar to that depicted in Figure 2.4 below, which shows that there are many opportunities for misunderstanding to occur, particularly when integrating new knowledge with existing and collaborative efforts (Wells and Brook, 2004). Resistance to the new knowledge or learning situation potentially causes the cycle to be broken, which potentially leads to further misunderstanding. Transfer and assimilation of knowledge in other situations is discussed later (see Figure 2.7 on page 47, Figure 2.8 on page 50, and Figure 2.9 on page 55).

Social settings for knowledge exchange facilitate the sharing of tacit knowledge amongst those who already have in common such factors as language and communication, interests, and a shared knowledge base (Nonaka, 1998). Converting tacit knowledge to its explicit form is a process that happens during requirements elicitation prior to implementing a new information system.

Two KG roles that assist this process are those of the translator and interpreter, and both these roles can be combined in one person. During the transfer of knowledge difficulty may arise at the individual level due to the selection of the wrong terms to explain the meaning, leading to the wrong interpretation of that meaning (Cranefield and Yoong, 2007b). This miscommunication can lead to problems at a later stage of the systems implementation.

Hoarding knowledge sometimes appears as a tactic used by staff members to make them appear indispensable, as a competitive advantage within the organisation, or as a means of exercising power (Beazley, Boenisch and Harden, 2003; Milne, 2007;
Robbins et al. 1998). If knowledge is not shared willingly and openly within an organisation, the holder of that knowledge may still be recognised as knowledgeable, even if the perception is a negative one, especially if that person appears to be withholding information from colleagues.

![Figure 2.4: A Model of Collaborative Learning (Wells and Brook, 2004)](image)

In the case of knowledge hoarding, people who withhold knowledge may cause resentment for continually throwing up barriers that prevent others from realising their full potential as individual employees by causing them to devote time and resources to regenerate that knowledge (Beazley, Boenisch and Harden, 2003). By extension, if knowledge of a certain process is located within a group or a subculture within the organisation then that group may exercise a high degree of politics in the workplace. Supporting this view of how power operates Filion and Rudolph (1999, p6) suggest that:

...a fundamental principle of power (and domination) is its invisibility. It has to disappear in order to be efficient, to make the will realised. It has to be silent to persist.

Therefore power in the organisational context can be silent and invisible and can be transferred from one person to another, along with knowledge. If the knowledge holder shares information and/or knowledge with another, that power transfers silently along with the information or knowledge to the next knowledge holder. In
this way, KGs may arise depending on the organisational context demands of the situation.

Foucault discusses a post-modern expression of the nature of power and states, “power is not essentially repressive. It plays a directly productive role; it comes from below; it is multidirectional, operating from the top down and also from the bottom up” (1977, cited in Introna, 1997, p128). In recognition of this bi-directional quality, power allows the acknowledgement of the existence of members of the organisation or groups who may have differing perceptions as to the KG’s role and its position as power broker. This perception may depend upon whether the person has been appointed to that position by management or whether colleagues perceive that person as a natural KG. These differing perceptions may cause different interactions among the groups, and therefore the responses from the other groups may not have the expected outcome. In the manner of the saying birds of a feather, flock together a programmer for example, may have different perceptions of who the gatekeepers are within a group to that of an analyst or a systems implementer, and therefore different perceptions of the gatekeeper role. The programmer might seek out a connection with the KG’s knowledge of programming, the analyst with analyst skills, and so the flow will be through those connected with the project.

At this stage when good communication is so important, there are many opportunities for misunderstandings to arise, and groups can start defending what they perceive as their territory (Wells and Fisher, 2007a). If staff feel that a new information system is an infringement upon their personal workspace then resistance to the technological change is likely to be high. Staff often personalise their work environment by adding wall decorations and photographs of family and friends (Forsyth, 1990). By doing this, they are marking their territory by giving their workspace more individuality (Haynes, 2007). A person can expect to occupy his/her workspace on a permanent basis whilst they hold a particular job (Forsyth, 1990). Likewise, a person usually performs the same tasks while they hold a particular job, and over time will develop their own work systems to perform those daily tasks. This gives the person ownership over both the space and work tasks. My observation is that a workplace is a primary type of territory as defined by Forsyth (1990) where individuals have control of a space on a relatively permanent basis, and the owner of the territory is likely to defend it if the owner perceives any transgression. This
concept of territoriality and ownership applies also to work systems developed by group members over time as they personalise their work environment.

Whilst a group or an individual may not actively prevent others from using the new IS, they may consciously or subconsciously supply misleading information to the systems analysts in order to protect their own personal workspace by delaying the new system (Buchanan, 2008; Swan et al., 1999). Dissident groups are more likely to voice their opinion of events than are groups or individuals who hold a neutral view of the event, and therefore the dissident voice is more likely to influence colleagues within the group’s proximity. Therefore, it is important to understand this territoriality in relation to the nature of the power held by the dissident groups rather than those who have neutral feelings regarding any changes to their workplace environment.

**USER REACTION TO CHANGE**

It appears that there is still a lack of recognition of the impact on the social interaction among members of groups during and after an IS implementation. Nor are the implications of the changes necessarily well understood by those organisations that recognise the impact (Ishman, Pegels and Sanders, 2001). If a group perceives the impact to be adverse, and that particular group has overt or covert influence within the organisation, then there is a real risk of that project failing (Harley et al., 2006). The failure to recognise the effect of the perceptions of staff during this transition period has serious implications when trying to manage the various subcultures within an organisation.

Clegg et al. (1997) suggest:

> Lack of attention to the human and organisational aspects of IT is a major explanatory factor [with regard to the high levels of system failure] and is manifest in the poor management generally, poor project management, poor articulation of user requirements, inadequate attention to business needs and goals, and a failure to involve users appropriately, (cited in Doherty and King 2001, p148).

The initiative to implement a new information system often causes considerable disruption, leads to substantial organisational change, and causes employees to feel displaced (Hartwick and Barki, 2001). This is especially the case if there is a lack of communication from senior management informing employees of the need for, and benefits of, the new system (McNish, 2002). When a major change to a personal workplace environment is the factor causing the change, pockets of user resistance
will often develop. These resistors of change can have influence over the behaviour of others within the workplace, either individually or collectively (Wells and Fisher, 2007a). Those implementing the new systems do not necessarily consider the flow-on effect of these changes to other organisational groups and this again will cause anxiety within given staff groups if they find their daily work processes changing. There are many voices raised during a period of organisational change: acquiescent, dissident and neutral and for user expectations to be met. All voices should be heard.

The difference between organisational and user expectations and the final version of the product delivered as ready for use has been recognised as the cause of many conflicts and exacerbated what may already be a volatile situation between end-user expectation and designer/developer interpretation. Robey, Smith and Vijayasarathy (1993, p8) proposed that:

Conflict resolution and, to a smaller degree, participation are positively associated with project success. This is to be expected because the success of a project is largely dependent on the extent to which incompatible goals are resolved by consensus among project members.

There has been a growing recognition in recent studies of the importance of understanding the impact on employees of new systems within an organisation, and the need to propose models to predict user acceptance of the technology. One model I found useful to evaluate for my study is the Technology Acceptance Model (TAM) (see for example, Davis, 1985; Davis, 1989; Davis, Bagozzi and Warshaw, 1989; Jackson, Chow and Leitch, 1997; Venkatesh and Davis, 2000; Venkatesh et al. 2003). TAM enables a researcher to explore acceptance of new or enhanced technology by focusing on the user’s perceptions of the system, their intention to use the system and eventual acceptance through actual use of the new system.¹

One of the human and organisational aspects involved in organisational change acceptance is power. A failure to understand the implications of power enacted by a staff member who has influence over teams and the social relations within those teams can lead to failed IS projects and/or loss of key staff members. Therefore it is important to expand TAM to include the dynamics within the groups and the emerging politics, which reflects the group culture and the groups’ reaction to the change engendered by the new system.

¹ Refer to the overview of TAM and the various extensions of the theory starting on page 57
INFORMATION SYSTEMS AND RESISTANCE TO CHANGE

Resistance to a new information system is not an unrecognised phenomenon and many studies investigate this issue (Goodwin, 2005; Markus, 1983, Markus et al 2000; Randolph and Main, 2005). Resistance can emerge in different forms. It may be in the form of denial and passivity (dissociation) from the changing workplace. Also prevalent are rumours and other miscommunication, and active resistance by developing shadow systems. Shadow systems can present themselves in two forms: a network of employees that shadows the legitimate network (Griffin, Shaw and Stacey, 1999) and a shadow information system that replicates in part or full, the functionality of a legitimate system of the organisation (Behrens and Sedera, 2004). Other resistant behaviours can include inaction, claiming a lack of system training, avoiding meetings relating to the change on the basis of other work commitments (workthink), hidden agendas during meetings (covert action), and a lack of cooperation with the technical team implementing the system. If staff hold competing commitments they can often be perceived as being resistant to change without the underlying reason being investigated to determine to real cause (Kegan and Lahey, 2001). If resistant behaviours are not managed properly within an organisation undergoing change, they can lead to increased negative perceptions of the new system (Amoako-Gyampah and Salam, 2004; Wells and Fisher, 2007a). A number of researchers suggest that lack of effective user involvement in the implementation process of the new system can lead to poor engagement with the project and increase staff resistance to the new system (Davenport, 1998; McCredie and Updegrove, 1999).

Social influence, as perceived to be held by certain individuals within an organisation, plays a large part in communicating resistant behaviours within an organisation during a change event because of the potential that those individuals have of inducing behaviour and attitudes in those around them. Randolph and Main (2005) and Davenport (2000) suggest that announcement regarding the need for change should be clearly communicated to all levels of the organisation in an attempt to engage the systems users and therefore promote acceptance of the new system. Amoako-Gyampah and Salam (2004) posit that training and communication influence the users’ beliefs about the benefits of the implementation, and affect the
users’ perceived ease of the systems use. This in turn affects how the system is ultimately accepted and used.

When considering social and political aspects of an organisation, emphasis on the relevance of relations of referent power in the interaction between organisational subculture members and the role of KG during that process is almost mandatory. The potential adherence of those members to private agendas, if acting as Janis’s (1972) mindguard, whether it is their own personal interests or those of the group they are representing, can lead to instances of the groupthink phenomena. Janis (1972) defined the mindguard as somebody who takes unto themselves the role of protecting the group from adverse information that might threaten group complacency regarding the group’s decisions, in that the mindguard is the person who facilitates the flow of information into the group. Groupthink occurs when members of a group feel pressure (internal to the group) to arrive at consensus, creating the illusion of unanimity, and with the consequences of promoting potential cognitive dissonance and conflicts. Groupthink is a reaction whereby a group maintains its boundaries and rejects outside influence, thereby maintaining the status quo (Janis, 1972). Cognitive dissonance is the behaviour displayed by a person as they rationalise two opposing beliefs (Festinger, 1957). Groupthink and cognitive dissonance are potentially symptoms of resistance to change; therefore it is important to understand the dynamics of IS implementation. The next section explores their relevance.

**Cognitive Dissonance and Groupthink**

Festinger (1957, p13) defines dissonance as two elements that do not fit together, or to be more precise, “these two elements are in a dissonant relation if, considering these two elements alone, the obverse of one element would follow from the other”. In a situation where a person considers alternatives to reach a decision, dissonance often arises where a person regards both alternatives meaningful and viable, and dissonance remains until the decision is rationalised. However, if a person considers the context of a situation, information or knowledge irrelevant, then they would disregard it and there would not be any instance of cognitive dissonance. Refer to Figure 2.5.
Cognitive dissonance can be defined as an inherent contradiction between beliefs and actions, which emerge out of the relationship between the perspectives of individuals and their capacity to express their views, in this case, publicly in groups. This potentially leads to conflict within the group and “the open expression of disagreement in a group leads to the existence of cognitive dissonance in the member”, (Festinger, 1957, p261). If the cognition is irrelevant, then there is no dissonance, but if the cognition is relevant to the situation, then the group member changes attitude to resolve the dissonance.

In this situation, group members will often give public support to a decision but privately the members might hold dissenting views (McCauley, 1989). This raises self-censorship whereby the committee member has doubts about the validity of his or her view. If multiple group members are withholding their views, this will give the appearance of unanimity within the group (Janis, 1972, p198), both of which are elements of groupthink, a relevant concept I will expand upon later. This situation can often lead to misjudgement in relation to decisions, as members of the group are often reluctant to voice dissenting opinions to the norm. Especially vulnerable to groupthink are groups that have strong social connections and similar interests. This
can lead the group to insulate itself from outside opinion and perceive those outside opinions to be adverse to the group’s wellbeing.

Cognitive dissonance can be displayed by groups (as an entity), as well as individuals, especially when social influence is applied to bring about a change in behaviour or attitude (Matz and Wood, 2005). For example, where groupthink emerges, the group may publicly support a decision that privately the group (collectively as well as individually) believe to be ill considered, especially if one’s commitment to the group is called into question (Jones and Roelofsma, 2000). The emergence of cognitive dissonance as part of group dynamics in the process of IS implementation relates to the groupthink phenomenon. Janis (1972, p9) defines groupthink as:

...a mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when members’ strivings for unanimity override their motivation to realistically appraise alternative courses of action.

Janis (1972) identified eight symptoms that occur in groupthink situations; illusion of invulnerability, collective rationalisation, illusion of morality, excessive stereotyping, pressure for conformity, self-censorship, illusion of unanimity, and mindguards. Of these symptoms, Forsyth (1990) directly links the mindguard to the gatekeeping function.

According to Janis (1972, p41), the mindguard suppresses negative information that he or she perceives may cause the group to reach another conclusion to that which the mindguard sees as the aim of the group. Using the definition of Janis’ mindguard as a comparison the KG does not necessarily prevent information reaching the group. In the context of this study a KG is a person who stands at the confluence of information flows and acts as a conduit for that information, interpreting it, as the situation requires. He or she might facilitate the flow of information whether positive or negative to the situation. There will be instances where the KG will function as a mindguard if the KG perceives that the information is detrimental to the group reaching what he or she feels is the best decision for the situation. The KG can act as a politician, managing (or manipulating) the flows of information and knowledge to reinforce his or her power position in the organisation in order to achieve benefits for his or her group (Morgan 1998). However, KGs can be holders of different kinds of power according to their involvement as appointed team leaders or due to their recognised expertise. The power dynamics, in which the committee operates, links to
the role of expert power, referent power, or charismatic power of KGs. In this study, authority legitimated the position of KG as the project leader was appointed and management considered him the expert on the process. Referent power was held by the subgroups within the committee (French and Raven, 1968, p267), which formed around special departmental interests based on sub-groupthink. Sub-groupthink as a behaviour can be likened to that of referent groups as those who tend to think and behave in the same way or share the same experiences, and tend to gravitate towards each other’s company and potentially form groups. Once within a group so formed, the members will compare their beliefs and opinions against other members, especially if those beliefs and opinions are threatened by influence from outside the group (French and Raven, 1976).

Another symptom of groupthink as defined by Janis (1972) is apparent unanimity, where each member of a group may accede to another member’s opinion. This links to cognitive dissonance, as the group may give public support to a decision but after rationalisation, privately reject it. In the context of this study, groupthink highlights the relationship of each actor to the selection committee as a group and the department (or group) that the actor is representing. This position confers power on that actor by placing them at the junction to govern information channelled between the groups.

It is possible to find multiple cases in which the action of implementing new systems is considered to be a poor result or a complete failure by the users. To understand the impact it is important to assess other issues surrounding the implementation. For example, group and organisational dynamics will play a large part in whether the users ultimately accept the new system or reject it.

**Knowledge Gatekeepers and Group and Organisational Dynamics**

This study looks at the relationship of actions and reactions to KGs and the dynamics within the organisation considering the framework proposed by Lewin (1951). When discussing means of changing perceptions of food suitability, Lewin (1951) suggested changing the frames of reference in how people viewed food types. He argued that people view a certain type of food as being only suitable for a particular meal of the day, and that changing perceptions of the food includes a changing perception of the channels by which that food arrives. He theorised that food moved through the channel in stages (gates) and he named the person who decides whether
food enters a channel “the gatekeeper” (p176). In the context of this dissertation, Lewin himself suggested food channel gatekeepers could be translated to an organisational context of change where the forces of change often cause new forms and alliance structures to emerge. To bring about social change the gatekeeper role is changeable, and the change agent in this instance is either by influence or by replacement (Lewin, 1951). In other words, change the gatekeeper entirely, or change the amount of influence held by the gatekeeper.

The relationship of the KG’s influence, according to the bases of social power (French and Raven, 1968), is represented in Figure 2.6, below. Figure 2.6 depicts the KG at the centre and as the holder of social influence based on the flow of social power. Reward and expert power have been linked together, as has legitimate and referent power. Included in Figure 2.6 is the addition of informational power proposed by Raven and Rubin (1976) as an extension of the French and Raven (1968) study. Raven and Rubin claim that informational power is socially independent of influence as it is the content of the communication that is influential, not the communicator. I do not entirely agree with that claim, as I perceive trust in the communicator having a great deal of influence over the reception of that information. This dissertation takes the terms influence and power to be those as defined by French and Raven (1968), in that the influential behaviour of one or more persons will affect another’s behaviour or attitude, whereas an individual’s power can be defined as the potential to influence another’s behaviour or attitude. This differentiation is similar to that of Lukes’ given on page 31, in an earlier section of this chapter. The distinction between social influence and power is crucial to this study as will be demonstrated during the analysis and discussion of the data.

In a discussion on the movement of information through news media channels for dissemination, Westly and McLean (1968) propose that the gatekeeper acts as a filter or encoder in deciding what information travels through the channels. They also claim that the gatekeeper selects information based on feedback from recipients of the information, thereby establishing an informational relationship between the KG and the recipient. Therefore, it is important to recognise that a KG has informational power due to both the influence over the informational content, and by satisfying the recipient’s need for that information.
Figure 2.6: The knowledge gatekeeper's relationship to social power
(Developed for this study based on French and Raven, 1968)

If a KG is appointed to a position where they are acting as a bridge between two or
more groups, then the perception might be that the KG possesses legitimate power
and it is the perceived quality of the knowledge possessed by the KG that governs
the amount of authority that the KG holds. On the other hand, if the KG has a
leadership position conferred through the perceptions of the group or groups within
the field of influence based on the quality of knowledge held, the KG is in a far more
powerful position due to the ability to communicate or withhold that knowledge. As
Buhler (1988, p4) states, “There is power in terms of who one is allied with. There is
great loyalty to the other group members”. In any case, KGs are able to act
politically for their own advancement or for the advancement of a specific group.

During the introduction of change into organisations, groups can occasionally try to
influence the changes to suit their own interests. Accordingly, many situations arise
where conflict emerges and groups “…experienced negative emotional reactions to
perceived disagreements and interference with the attainment of their goals” (Barki
and Hartwick, 2001, p198). Power relations play an important part in the way that
the change decision is reached and in the subsequent management of that change.

When exploring the issue of uncertainty of power in changing environments where
even top management are dependent on gatekeepers of information, Clegg (1975)
Perceptions of Knowledge Gatekeepers

refers to Galbraith’s (1967) argument that differing departments of specialists (gatekeepers) are loci of power, and therefore “portals of power” (p47) and that power emerges through uncertainty within those portals.

As a counter action to the power player, resistance is an important element (Introna, 1997), and therefore it is necessary to evaluate the dynamics of the process and the politics involved. It is useful to point out that in some cases the benefits for the group are not necessarily detrimental for the organisation as a whole, even if the views held by the group might be opposite to the views and interests of other groups or more powerful people in the organisational structure. In that sense, the resistance to the decision taken by an appointed KG is not necessarily a resistance to the change but to the direction of the change.

Butler and Fitzgerald (2001) state that having the participation of various members from different departments of an organisation will help to ensure that the outcome is successful and that the process will benefit from the differing viewpoints. It follows that if the participation is voluntary, then the likelihood of a successful outcome increases. In the event of change, it is important not to ignore political dimensions and the relationship influences.

In a context of multiple professional groups affected by the systems implementation it is probable that the decision taken by a committee will affect each group differently taking into consideration there are different needs coming from different subcultures or social fields of activity, (Bourdieu, 1984). In this context it is crucial to the role of the KG to act as the conduit of information and interpretation between groups in the decision making process. The KG’s power enables a control of the flow of information in both directions from the committee to the group(s) and from the group(s) to the committee. The KG’s position therefore confers power on the holder of the position by placing them at the junction to govern information and channel it between the groups or individuals. The KG not only has influence over the flow of information that passes to the group or organisation as a whole, but also over the perception the group members have of that information and therefore the subsequent reaction to the outcome of that information. The KG stands at the crossroads of communication channels between groups and departments within an organisation, and has “influence over the sources of information, norms, and attitudes” that passes through that channel (Brockriede, 1970, p27). This view points
to the relevance of the KG and the importance of understanding how the KG affects the social issues that surround implementing organisational change.

During a change initiative, a symptom of groupthink becomes apparent: pressure for conformity, where group members who express views contrary to those of the group majority are viewed as being disloyal to the group (Cartwright and Zander, 1968). This symptom has overtones of dissociation as each group member becomes a victim of the illusion of unanimity by not expressing their private concerns publicly (Cartwright and Zander, 1968). Groupthink might then lead to polarization or groups (subcultures) within groups and this polarization can lead to factions forming within the group, leading to sub-groupthink situations (Forsyth, 1990).

Groupthink environments may lead to political decisions being made by representatives of groups who are promoting the group’s own agenda during committee meetings. The impact of group members’ perceptions on the interaction can be attributed to what is called in this dissertation *workthink*. The term *workthink* is defined as the act of apparently agreeing to a particular action but citing prior commitments in order to be absent so that the participant can return to a task that he or she perceives to be more important than the reason for meeting as a group (Wells and Coronado, 2007). Workthink behaviour can have significant impact on the success of the IS implementation if participants in the meetings are not giving the meeting topics consideration due to being distracted by events that they consider to be more important, or decisions are delayed due to the lack of a quorum. In the same sense, Parris (2002) suggests that mixed signals from senior management can result in dissonant behaviour by causing work team tasks to be shelved in favour of other supposedly more important tasks. As the wish to avoid a situation and the temptation to rate other tasks as more important than the *official* ones increase, dissonant reactions reduce (Festinger and Aronson, 1968). I interpret workthink as a form of resistance in which delaying decisions and the manipulation of tasks would provide opportunities to build up coalitions with other committee members who did not attend the meeting.

As mentioned before, groups or sub-groups tend to defend their *own territory* and in the case of IS it is possible to connect territory to a group’s special interests regarding what they perceive as their own information needs and ownership of that information (Forsyth, 1990). In light of this, the interpretation of groupthink as a
“psychic prison” (Morgan, 1998, p186) makes sense as the group or individual cannot see past those personal needs. How these instances impact on the success or failure of systems implementation depend on the characteristics of the organisational culture in terms of structures of authority and processes of decision-making (Osburn, 2008). Group dynamics play a large part in systems development and implementation, more so if the group forms specifically for that aim. In other words, if the development process does not occur, then there would be no reason for the existence of the group (Tesch et al., 2009).

A role the KG plays within a team as a team member is to assess the necessity for, and monitor the flow of, information to other members of the team. The KG acts as a conduit of information/knowledge and the flow is bi-directional. If the KG is also the holder of knowledge or a subject expert, and not merely someone who has assumed the role as a power play strategy, the KG’s role may be defined by expertise and may act as interpreter of information between disparate groups within an organisation. Figure 2.7, below, represents the KG as interpreter, as a link in a communication chain. The link may or may not also be an explicit holder of knowledge or a subject expert. The KG facilitates communication between these links on both an organisational and individual level by enabling the transfer of ideas and beliefs that support the acquisition and development of knowledge.

Within an organisation, groups are connected through common interests, such as the members who work within the same department, or they may have contact through the organisation’s daily business processes. During the daily interaction within a workplace environment, social relationships are developed, which can influence the individual staff member’s perceptions of events that surround those daily business processes. Organisational structures can create a shared environment where a common understanding of the meaning of events can translate to knowledge. The role of the KG is an integral factor in organisational communication, and therefore can ease (or not) the transfer of ideas and beliefs across different staff subcultures in times of organisational change (Wells and Fisher, 2007a; Wagner and Newell, 2006).
Group members can subconsciously display behaviour and attitudes that cause other group members to assign roles to them (Mennecke, Bradley and McLeod, 1998). Two behavioural aspects of group interaction that concern this study are those where a gatekeeper brings social influence to bear by manipulating individual group members (power) and gatekeepers who maintain and monitor group communication channels. These two aspects are not mutually exclusive and may extend beyond immediate proximity into the wider community of the organisation. The third major aspect within a group or organisation pertinent to this study is that of the role of change agent. Again, this role does not exclude a combination with either or both of the prior two behavioural aspects.

In a discussion of key personnel and the concept of the gatekeeper and the organisational promoter, Hauschildt and Schewe (2000) suggest that these roles are not mutually exclusive as the gatekeeper may also be the promoter of innovation. They link the innovation process to that of a power promoter, process promoter and technology promoter to arrive at the gatekeeper concept. For this dissertation, a
change agent is defined as someone who has the influence within an organisation to cause staff acceptance of change through advocacy. Change agents may be KGs themselves or they may align with a staff member perceived by colleagues to be a KG. Using the communication channels and influence accessible to the KG within the organisation, change agents can further organisational or personal agendas (Swanson, 1987; Lewin, 1951).

**Organisational Communication Channels**

The KG is in a strategic position at the crossroads of various communication channels. These channels can be between the KG and staff in different departments, IS development project team members, senior management, external consultants or in fact anyone who is a stakeholder in the project and uses the organisational information channels to gather or disseminate data in relation to the new system. These information channels and the person or persons who decide on the channel content can be seen as comparable to the already mentioned 1943 study of Lewin about the conflict that arises around the decision of which food to buy with limited funds (1951). Lewin proposed that the decision channels contain gate sections that are governed either by impartial rules or by gatekeepers. If the decision-maker is a gatekeeper, an individual or a group, then that individual or group is ‘in power’ to make the decision between what is in or out of the channel. The adaptation of his ideas to other areas was seen by Lewin himself, “…similar considerations hold for any social constellation, which has the character of a channel, a gate, and a gatekeeper” (p186). Lewin applies the concept of movement through channels to other situations, such as “news items through communication channels in a group, movement of goods, and the social locomotion of individuals in many organisations” (p187).

For the purposes of this study, Lewin’s (1951) concept of food movement through channels translates to an information channel and the perceived value of the information/knowledge that flows through that channel. As discussed by Swanson (1987, p131) in relation to the concept of information-channel disposition, “an information channel is any medium by which a message may be transferred from a source to a receiver”. If the information/knowledge passes into the channel through a gate, its value increases if there is a conflict of information choice as the information user rationalises that choice. Swanson also suggests that individuals within
organisations practice discretionary use of these channels, and further proposes that an individual’s attitude to the information channel value is associated with the actual use of the channel in an organisational context. The channel user experiences cognitive dissonance owing to the need to rationalise the value of one information channel over another.

According to Pettigrew (1972) the gatekeeper has a strategic advantage over communication channels involving a competitive decision-making activity. He further suggests that the placement in the communications structure needs to be linked to other forms of political access, such as the necessary skills to exercise the power inherent in their position in the organisation.

In a discussion of Lewin’s work, Katz and Lazarfeld (1955) transfer the gatekeeper theory into the personal influence sphere in a communications context and rename the gatekeepers who influence informal groups in a face-to-face manner as “opinion leaders”. They claim:

…situational, structural and cultural elements are as important in determining the selection of individuals who will link their peers to some relevant environment, as they are in determining the patterns and the key communications within the group (p118).

Katz and Lazarfeld (1955) also consider suggest that some individuals act as agents to relay external messages to members within a group and that this relay function is a major function of the opinion leader, further tying the concepts of opinion leaders and gatekeepers. While an opinion leader has some similarity to a KG in that they link others to information, the opinion leader influences those in close proximity and in face-to-face contact through referent power. The question Katz and Lazarfeld (1955) asked of their respondents was “do you know anyone around here who keeps up with the news and whom you can trust to let you know what is going on?” (p140). This question seems to accord with the opinion leader tapping into personal information networks, and appears to be reactive as an information channel, rather than proactive to passing information into that channel as I imagine a KG to be. Swanson’s (1974) information channel disposition correlates with Katz and Lazarfeld’s use of channel theory in that an opinion leader would have great personal influence of individual attitudes to information channels and their discretionary usage.
To give an understanding of my perspective of how a KG interacts with the organisational environment surrounding them, I have adapted Katz and Lazarfeld’s discussion into an IS setting as depicted in Figure 2.8, below, by including a depiction of a gatekeeper in a power position within a group and hence into the organisational community.

The gatekeeper in Figure 2.8 stands at the nexus of both communication and interaction between IS users in an organisational environment. In this capacity, the KG can be seen as the interpreter of user requirements and the power holder to facilitate (or not) the dissemination of those requirements. From the representation in Figure 2.8 it is possible to identify opportunities for miscommunication between staff within an organisation, if the communication channel flows through the KG. This view also supports Swanson’s concept of information channel disposition and discretionary usage, as personal influence might also flow over those channels.

In the context of miscommunication and information channels, it is relevant to consider the role of informal channels of communication such as rumours that
potentially support resistant behaviour (Wells and Fisher, 2007a). For the purposes of this dissertation, the definition of a rumour is that of informal group discussions disseminated in an effort to make sense of a condition or situation.

**Informal Channels of Communication**

In a discussion of rumours and interpersonal communications, Allport and Postman (1947) propose “…a rumour public exists wherever there is a community of interest” (cited by Katz and Lazarfeld, 1955 p94). This dissertation does not take the stance that rumours (in this instance) were circulated deliberately to mislead or misinform colleagues. The rumour public and community of interest were the staff affected by the organisational change and disseminated by the informal networks within that organisation. Katz and Lazarfeld (citing Festinger, Schachter and Back, 1950) on rumour networks discuss how friendship acts as a link in a communication network and explore the existence of active communication channels between friends.

Festinger et al. (1948) describe the effect and spread of a rumour and its aftermath on group structure and group functions. When discussing the outcome of this rumour, Festinger et al found that three principles emerged, the principle of external control, the principle of cognitive unclarity and the principle of integrative explanation. The first principle contends that rumours will germinate in situations where people have no control over developments that affect them; second, that rumours will evolve in situations that are unstructured; and, thirdly, issues surrounding the central theme of the rumour will be distorted so that they are consistent with the rumour. In conjunction with the effect of the rumour, they found that resistance emerged in response to a change in activities in a neighbourhood community.

Similarly, it was visible in the research reported in this dissertation that negative perceptions fuelled staff resistance and a form of that resistance became rumours or other forms of informal communications. Burke and Wise (2003) suggest that rumours and gossip bring about a sense of social cohesion and give staff a forum to voice their uncertainty concerning organisational events.

Bordia and DiFonza (2004) have also reported the phenomena of *dread* rumours as a form of unofficial communication between staff members, which promotes active resistance to new systems and any phenomena that causes radical change to a workplace environment. These rumours can be about any aspect of the new system
such as the usefulness of the system or the lack of support or training on how the new system is going to replace or support daily work activities. These dread rumours can surface in the form of hidden agendas, political power plays, and lack of cooperation with those implementing the new system.

Bordia and DiFonza linked the momentum of the rumours to the level of anxiety felt by those participating in spreading rumours. In such situations, it has been reported that employees often fear the loss of the ability to control their immediate workplace environment (Randolph and Main 2005). Dread rumours play a significant part in highlighting the fear of staff to changes in the work environment (Wells and Fisher, 2007b), particularly when the rumours are propagating amongst reference groups, groups by which an individual (or other groups) will frame their response to events and from which shared perspectives derive (Shibutani, 1955). By exchanging information, referent groups attempt to provide explanations to change events where the communication about those events is seen as lacking. Supporting the stance that referent groups are a source of influence when predicting attitudes to new technology, Rice and Aydin (1991) found that when predicting staff attitudes to new system, social information exchanges can account for a degree of influence. They suggest that, due to organisational complexity, other issues beside social information play a role in influencing attitudes to a new information system.

Staff who are feeling anxiety tend to exchange information and compare their perspective of the situation with other groups or individuals (Shibutani, 1955), and these discussions could start other rumours circulating (Michelson and Mouly, 2002). It is extremely difficult to halt a rumour, especially if it is a dread one, once the discussion starts (Wells and Fisher, 2007a). Dread rumours are not the only outcome of discussions between groups or individuals during organisational change, though they are certainly the ones that seem to spread more rapidly and have longevity, compared to those that have more of a basis in fact. This observation is especially applicable if the communication for the rationale for change is perceived as being untrustworthy. Rumours circulate throughout the organisation as an attempt to provide an explanation to the change event, and therefore can have the effect of drawing staff together to face what they see as adversity. Crampton, Hodge and Mishra (1998) discuss one of the benefits of rumour as fulfilling a social function and how they can act as an accelerator to combine the groups into a unified resistant
Perceptions of Knowledge Gatekeepers

front to the change. Conversely, it is possible that management may also leak information in an effort to test staff reaction to a proposed change. The extent to which this information circulates as rumour indicates the depth of feeling staff have of the proposed event.

Tension between the users of the old system and the implementers of the new is also reported in the literature, particularly when there is a perceived gap of the role each are playing in the project (Yang and Wu, 2003). Tension is often associated with a perceived lack of communication, with differing views held by the staff affected by the change (Wells and Fisher, 2007b). Therefore, it is important that the rationale for change needs to be conveyed to all levels of the organisation - clearly and accurately in language easily understood by those at all levels of the organisation (Frantz, 2001). As Butler and Fitzgerald (2001) indicated, the level of communication between the user and technical staff is a factor for success during change surrounding a new information system. Similarly, Amoako-Gyampah and Salam (2004) discussed the effect of the influence of both training and communication on the shared beliefs users formed about the benefits of the new system, which in turn affects the perceived benefits of the system and the resulting adoption and use. Therefore, appropriate communication can positively affect the perceptions of users and minimize the level of staff resistance and impact of rumours in an organisation.

The literature presented in this section reinforces the importance of the roles that social information, social proximity, and social influence play in how people perceive new information system, and therefore a changing environment.

**Organisational Change and Acceptance**

Change is an ongoing process in any organisation and changes due to the introduction of new technology or processes, and the ensuing relationships formed from those changes, provide a breeding ground for innovation and further avenues for change. Change literature appears to concentrate on organisational change as led from the top, and involves discussion of changing the organisation as a whole through changing or enhancing an organisation’s core competencies (see for example, Prahalad, 2008). Whiteley (1995) suggests that changing core values of both management and staff will produce a change in the organisation, whereas, Pettigrew (1987, 1979) suggests organisational change is brought about through
changing culture and or processes. This dissertation examines the problems from the perspective of those affected by change and identifies four main areas of contribution to theory and practice that offer insight into the implications that change initiatives have on those most affected by change: the staff. These areas are:

- Social Influence and Change Acceptance Model (SICAM);
- The Knowledge Gatekeeper and Social Influence: a Dimension of Power;
- Workthink as Resistance; and
- Communications and Systems Requirements Elicitation (SRE).

As discussed in an earlier section, organisational change initiatives often cause staff affected by the change to resist the change. Therefore, there is a need to develop strategies that predict change acceptance and the subsequent acceptance by staff of that change.

As mentioned earlier Davis (1985) developed a TAM to explain resistance to new IS. Since then many have extended the initial model to include other independent variables such as experience, relevance, gender, age, and social influence. In this section, the various extensions to TAM are examined and a conceptual model is proposed that incorporates these and other variables in a framework that is useful to explain organisational change itself not just change engendered by the introduction of new IS. By viewing TAM in all its transformations through the lens of organisational change, it can be seen as a model of change acceptance, not exclusively a model of technology acceptance. As change and the subsequent flow-on affect often causes staff uncertainty, it is relevant to look at the overall issues rather than focussing on one small area, as a means to explain staff behaviour.

In the context of change, a KG can often act as a catalyst for the change, especially if the KG perceives that there is a problem to be solved or an opportunity that a new information system can offer. By recognising the opportunity, and having the ability to influence others to take up that opportunity, a power struggle can occur between opposing factions, that is, those who agree that there is an opportunity and those who do not. Opposing factions can fail to understand the extent of the influence of the KGs within an organisation and the influence within participating groups, and therefore underestimate the KG’s ability to use covert social influence. This power struggle may ultimately cause project failure and leave stakeholders with an incomplete organisational change, and with a system that does not meet
expectations, especially when the new system is the change agent. Supporting this argument, Volkow (2002) suggests that often organisations fail to understand that technology itself will not necessarily bring about a desired change to people’s daily work environment. Orlikowski (1996) proposes that organisational influences affect IS development rather than planned organisational change, and that situated change is further affected by organisational influences. Situated change is that which users make to the immediate work environment to improve daily tasks. Ciborra (1996) suggests that improvised organisational change has the potential danger of selecting daily processes that staff have devised to improve their own work environment, embedding knowledge from a novice, rather than a KG.

If change facilitators or agents and management impose an improvised solution upon staff that disregards improvements staff have made to their work environment, the staff can become disenfranchised in regards to the new system that is replacing work practices of which the staff claim ownership, creating some resistance towards the new system (Qureshi and Davis, 2007). On the other hand, a KG is actively involved as a conduit in the development and implementation of the system (as showed in Figure 2.7, page 47, and Figure 2.8, page 50).

Figure 2.9: Knowledge gatekeeper acts as a conduit for change
(Source: concept developed for this study)
The KG can take on the role of interpreting technical requirements for the benefit of the users and, in turn, interpret the user requirements into technical language for the systems technicians. Decisions regarding the structure and organisation of a project team can have implications on the collaborative process in an IS implementation. Figure 2.9 above, represents the position of the KG as a conduit of change, acting as an interpreter between the organisational staff, the internal and external forces for change, and, conversely, the opportunity for change the information system offers. This figure corresponds with my understanding of the circuitous nature of organisational change and the bi-directional of the relationships that the KG can influence.

**Technology Acceptance Model and Change Acceptance**

As mentioned in the introduction to this section, the TAM (Davis, 1985) can be seen as an instance change acceptance. It is one of the most influential models used to predict user acceptance of IS as it incorporates elements that address behavioural and attitudinal change. This model has become widely used and modified by other researchers to represent their findings for research on reactions to new technology (Benbasat and Harki, 2007). Whilst TAM is a variance model, and this study follows the definition of a process theory (Markus and Robey, 1998) the variables of TAM are pertinent for this study as they address issues that are affected by social influence.

Presented here is an overview of TAM and the most significant variations as they apply to this investigation. The original model developed by Davis in 1985, is represented by Figure 2.10, below. Davis’ model was based on the work carried out by Fishbein and Ajzen (1975) to develop the Theory of Reasoned Action (TRA). TRA proposes that behavioural intentions are at the base of individual behaviour and are a function of attitude or subjective norms that frame the behaviour. Attitude, the positive or negative feelings one has towards behaviour, relates to one’s belief regarding the effects of that behaviour. Whereas Davis’ TAM looked at technology acceptance from an individual’s view as to the ease of use and perceived usefulness of a system, TRA incorporates the element of subjective norm. Subjective norm is an individual’s perception of how referents feel about the behaviour and the appropriateness of the individual’s behaviour when compared to the referent. The
more important the referent, the more important the referent’s opinion will be perceived and therefore the more the influence it will be on subsequent behaviour.

![Diagram of Technology Acceptance Model](image)

**Figure 2.10: Original Technology Acceptance Model as developed by Davis, 1985 (p24)**

The TAM as depicted above (Davis, 1985) suggests that an individual’s intention to use a system flows from the perceived usefulness and perceived ease of use of that system and that this intention is associated with actual system usage. Both TRA and TAM have behavioural elements which assume that once the intention to act has formed there will not be any constraints placed on those actions.

**Technology Acceptance Model and Perceived System Functionality**

As an extension to the original TAM Davis, Bagozzi and Warshaw (1989) developed the model shown at Figure 2.11, below, which directly links perceived usefulness to behavioural intentions. This study claims that computer usage could be reasonably well predicted based on intentions. The perceived usefulness of the system was a major factor in determining intentions with the ease of use only a secondary factor in relation to intent. They found that after the initial learning period of using a new system had passed, and the user had assimilated the system processes, the overall usefulness of the system was the major determinant for intention to use. The participants in their research (MBA students) were possibly more computer literate than industry counterparts, and therefore their results are not completely representative and generalisable to other contexts. To my mind, relating *perceived ease of use* to *perceived usefulness* is a flaw in both versions of TAM. The
connection seems to be an unsubstantiated presupposition. This observation is supported by Klopping and McKinney (2004) who propose that evidence for linking the two is inconsistent. In my view, the perceived ease of use will only relate to perceived usefulness if the user is inexperienced with IS and therefore may be unable to differentiate between the two. Once a user has the knowledge to evaluate the new system based on experience, he or she will be able to understand the difference. Using an accounting information system (AIS) as an example, the experienced user will understand that while the system may appear to lack ease of use, as there may be more processes that need to be considered over a paper-based system, the perceived usefulness of being able to easily access company accounts would far outweigh what to others is an onerous process (Hernandez, Jimenez and Martin, 2009).

![Diagram](Figure 2.11: Technology Acceptance Model (Davis, Bagozzi and Warshaw, 1989, p985))

In a further study of the validity of TAM as a measurement for predicting user acceptance, Davis (1989) found that there is a more significant relationship between usefulness and usage than between ease of use and usage. According to Davis, people are prepared to cope with a system that they initially find difficult to use if they perceive that there are benefits to them such as functional usefulness. Davis posits that while a difficulty to use the system can discourage use, it is the provision of critically needed functions that win the day, as nothing will compensate for a system that lacks day-to-day functionality. Presumably, the difficulty with using the system will reduce over time as people become familiar with it, or just give up. Davis suggests perceived ease of use may be an influencing factor on usefulness, rather than being parallel, and therefore the chain of causality flows: ease of use > usefulness > usage. This flow may change with time and experience as the users’ perception of what is an acceptably easy to use system changes, especially with advances in how systems are developed (Venkatesh and Davis, 1996).
Technology Acceptance Model and Experience and Knowledge

Experience with IS determines whether a user will perceive a system as easy to use, as they can call on their knowledge or experience of prior systems usage, and place it in the context of the new system. Szajna and Scamell (1993) found in their study of user expectation and user perceptions of an information system that expectation influenced perceptions but not system usage. Thus, knowledge gained from experience may frame user intentions towards the new system (Fishbein and Ajzen, 1975). Szajna (1996) conducted a study using TAM from two different perspectives; pre-implementation and post-implementation. Szajna’s study supports the claim that experience determines both an individual’s intention to use and their usage behaviour. From a pre-implementation perspective the findings show that the more a system is perceived to be easy to use, the more likely a person is to use the system. This implies that once a person has experience of the new system, the person starts looking for other measures of usefulness, rather than how easy it is to use. The findings from Chau’s (1996) study, using a simplified version of TAM without the attitude construct, correlate with Szajna’s in that Chau found that at the beginning “ease of use” influenced the user’s perception of usefulness, and that the user’s intention to use the system is only influenced by “near-term usefulness”. Near-term usefulness is defined as how the system could improve job performance or job satisfaction, not necessarily, how the system could improve long-term career prospects (long-term usefulness).

Another element to consider under the experience variable is suggested by Venkatesh and Davis (1996). According to them, computer self-efficacy (knowledge and experience) influences technology acceptance and therefore the rejection of a new system may tie in with the lack of understanding of how to use the system rather than the lack of system functionality. From those findings, they suggest training interventions to be a significant influence with assisting staff who have little or no experience with IS in order to eventually accept the new system. Venkatesh (1999) has linked training to intrinsic motivation and belief as a method to increase user acceptance of new systems: “training provides users with conceptual and procedural knowledge necessary to put the technology to effective use”... [and] ...“suggests that appropriate priming of users increases the salience of perceived ease of use”
(p241 and p254). This again highlights the importance of knowledge and experience as components of user acceptance of technology.

Taylor and Todd (1995) discuss the relationship of experience to the technology acceptance and usage and the relevance to TAM. This again implies that a user’s experience is a major factor when determining how the user perceives an information system, and that the longer a system is used, the more accepting of that system the users become. They also suggest that communication plays a significant part in technology acceptance, especially for inexperienced system users. This supports my contention that experience and communication are major factors in gaining technology acceptance within an organisation.

**Technology Acceptance Model and User Involvement**

Jackson, Chow and Leitch’s (1997) study incorporated situational and intrinsic user involvement into TAM and they suggest that user involvement be separated into psychological and participative components to enable system developers to understand the impact those factors have on systems development. In an earlier study, Swanson (1974) has indicated that there is a positive link between involvement and appreciation of the new system, which supports Jackson, Chow, and Leitch’s claim regarding intrinsic involvement. Intrinsic involvement also plays a significant part in shaping perceptions of the new information system, as those that participate tend to believe that the system is useful for their daily work (Jackson, Chow, and Leitch, 1997; Barki and Hartwick, 1989).

![Figure 2.12: Technology Acceptance Model Extension (TAME)](based on Jackson, Chow and Leitch, 1997, p363)
Jackson, Chow, and Leitch (1997) also raise the possibility of conflict (resolved or unresolved) as being an element of user acceptance of a new system, especially in relation to whether the system features meet the needs of the user, and assumes that if conflict is absent then the user regards the system easy to use.

**Technology Acceptance Model and Social Influence**

In an effort to explain what they see as missing elements of TAM, Malhotra and Galletta (1999) introduced the importance that social influence of peers has on the adoption and usage of IS. They acknowledge that prior research has found difficulty in determining whether referent influence or one’s own attitude has more foundation in usage intention. Rather than use subjective norm from the TRA, they based their investigation upon the processes of social influence as determined by Kelman (1961, 1958). Kelman’s findings of the three processes of compliance, identification, and internalisation moves social influence into the area of power and states that acceptance of influence will occur as a combination of three functions:

- the relative importance of the anticipated effect;
- the relative power of the influencing agent; and
- the prepotency of the induced response.

Malhotra and Galletta (1999) claim that when social influence induces compliance the effect is a negative attitude towards the new system, and when identification and internalisation are present the feeling towards the new system is positive.

There is further support for the premise of experience and social influence (subjective norm) as factors of technology acceptance in the extension of TAM developed by Venkatesh and Davis (2000). This version of the technology acceptance model, identified as TAM2 (Figure 2.13) specifically introduces (amongst others) two new factors in addition to experience: subjective norm (social influence) and voluntariness.

These factors are particularly relevant for this dissertation research. Igbaria and Iivari (1995) also developed an extended TAM, which specifically includes the self-efficacy determinants identified as experience and organisational support. They have created a more flexible model by the addition of other factors that effect user acceptance.
A significant difference between TAM (1989) and TAM2 (2000) is that TAM2 no longer has external variables that affect the “perceived ease of use”. This is, in my opinion, a serious flaw as experience and subjective norm (social influence) must have bearing on a user’s perception of how easy a new system is to use.

The purpose of TAM2 is to develop the constructs pertaining to perceived usefulness and to understand the addition’s effects on users’ perceptions over time as they gain more experience with an information system. As mentioned previously, Venkatesh and Davis (2000) have also incorporated into their model internalisation, identification and compliance from Kelman’s (1958) work. They found that subjective norm affected perceived usefulness via internalisation and identification (image) as people used the system to gain status and influence within their work group. They also established that organisations who introduce new IS through mandatory use (compliance) are likely to have less success than those who use social influence to achieve their aims.

Venkatesh (2000) carried out further investigation of the TAM constructs and extended the determinant of the perceived ease of use construct. This is a significant
step forward in the flexibility of TAM and highlights behavioural experience as a major factor in understanding perceived ease of use and its relationship to behavioural intention to system usage. To explain this stance, Venkatesh suggests that individuals change their behaviour to account for the assimilation of new information as has been discussed earlier in relation to sharing information and its effect on new understanding (in the section on KGs and sharing starting on page 30, and Figure 2.4, on page 33).

![Figure 2.14: Unified Theory of Acceptance and Use of Technology (based on Venkatesh, et al. 2003, p447)](image)

Venkatesh et al. (2003) transformed TAM and other IS theories into another entity entirely “Unified Theory of Acceptance and Use of Technology”, (UTAUT) represented in Figure 2.14, above. In the new model, the authors have incorporated performance expectancy, effort expectancy and social influence as directly related to behavioural intention. The authors suggest that age and gender control performance expectancy, and a previous study supports this claim (Venkatesh and Morris, 2000). Another important point to note with UTAUT and the later studies using TAM is that the research participants are from the business world and therefore fellow researchers can place some confidence that the results will have meaning for them in the real world, whereas participants in earlier studies were students, who may or may not have had business experience.
Wixom and Todd (2005) propose that the research streams of user satisfaction and technology acceptance should integrate, as this integration would assist in better understanding the issues that surround the design and implementation stages of IS. The authors found user satisfaction is related directly to intention to use the system, and that other factors such as completeness, accuracy and currency of the data contributed to user satisfaction via the perception of information quality.

**Technology Acceptance Model and Communication**

Using the basic tenets as described for TAM (perception and behavioural intent) Bhattacherjee and Premkumar (2004) have developed a two-stage theoretical model of cognition change Extended Technology Acceptance Model (ETAM). The authors have now included communication as a construct in their model. They found that attitude perceptions fluctuated with time across the contexts of technology and usage, with the change dominant during early IT usage, rather than the later stages. Presumably this is because the users become more experienced with the technology and their attitudes towards using it become settled.

To be effective, the rationale for a new system needs to be communicated clearly to all concerned if overall system acceptance is required (Fisher, 2006). In an extension of Fisher’s study, Wells and Fisher (2007a) found that a method of communication during change is that of rumours circulated by those affected by the change. In a discussion on informal communication in the form of rumour and the effect, they found rumours had an effect on the perceived usefulness of a new system and that rumours heightened staff perceptions and attitude towards use, or the lack thereof, of a new information system as shown in Figure 2.15, below.

The rumour activity (as depicted below) in Wells and Fisher’s study centred on staff shared beliefs about the new system which were affected by perceived usefulness and perceived ease of use of the system. This focus on shared beliefs links back to a groupthink environment, as discussed earlier in this chapter, and exacerbated by the rumours.

After a review of the literature and models discussed above, and in an effort to conceptualise the specific issues particular to the research undertaken at SMO, the Modified Technology Acceptance Model (mTAM) (Figure 2.16, below) has been developed. There are issues of social influence, groupthink, cognitive dissonance,
Perceptions of Knowledge Gatekeepers

knowledge (experience) and organisational context surrounding user acceptance of a new information system that mTAM incorporates.

![Diagram of the Extended Technology Acceptance Model with Rumour Activity](image)

**Figure 2.15: Extended Technology Acceptance Model with Rumour Activity**  
(Wells and Fisher, 2007a, p4)

*Technology Acceptance Model and the Proposal of mTAM*

These issues are central to understanding the interaction of IS implementation and organisational change. Drawing on the earlier work of Wells and Fisher (2007a), which indicates that groupthink as communication emerges as a factor of resistance during change, the addition of a groupthink environment to explain the resistant behaviours based around the perceived usefulness and perceived ease of use of a new information system is valid. Power has been added to the mix as discussed previously, and the KG has been added as the conduit (or filter) of information that flows to the groupthink environment. A cognitive dissonant environment has been added to explain resistant behaviours that surface as staff members rationalise the benefits of the new system and their consequent usage of the new system.

Experience was added previously to TAM and is retained as the mediating factor between the groupthink environment and subsequent system usage as staff relate past experience to the current situation. Context is added as an additional influence as each organisation will have different requirements that cause a change.
It appears that the very flexibility of TAM enables researchers to readily modify the model and it is perhaps because of this that TAM has been called one of the most powerful and influential computer usage models (McFarland and Hamilton, 2006; Chau, 1996; Igbaria, Guimaraes, and Davis, 1995).

My views support those of Bagozzi (2007), who considers that TAM and UTAUT in their current states (basic and evolved) is a “hotchpotch” of elements:

TAM is a remarkable model and has had an incredible effect on empirical research for a long time. On the one hand, it is too simple and leaves out important variables and processes. On the other hand, recent extensions of TAM (e.g. the UTAUT) have been a patchwork of many largely un-integrated and uncoordinated abridgements.

Benbasat and Barki (2007) give additional support for my stance on the need for an integrated model. In their paper discussing the various directions TAM has taken over the years, they theorise that TAM has become almost a “one size fits all” researcher model due to the constructs that have been added over the years. They note that with TAM evolving into UTAUT the model has almost devolved to Theory of Planned Behaviour (TPB), which in itself is an extension of Theory of Reasoned Action (TRA) and thus completing a circle of evolution/devolution. For example, whilst Davis, Bagozzi and Warshaw (1989) acknowledge that there are external...
factors that affect the perceived usefulness and perceived ease of use, they do not link external factors to other elements as does the mTAM with the addition of the organisational environmental context affecting behavioural intention to use and actual system usage. mTAM acknowledges the influence of referent groups on forming individual perceptions and attitudes with the inclusion of the groupthink environment and social influence and the KG, which is linked to cognitive dissonance as a mediating factor on actual system usage as the user rationalises behavioural intention to use the system. mTAM includes experience (knowledge) as a moderating factor affecting perceptions within the groupthink environment and the eventual actual system use. mTAM acknowledges the role played by cognitive dissonance as the affective variable.

Unlike many previous studies that use TAM (or a variant thereof), where the data has been self-reported via surveys and questionnaires, mTAM contributes by using more in-depth qualitative data which was collected via extensive unstructured interviews.

The issues discussed in this chapter make the concept of mTAM relevant for this study, and mTAM will be used in the following chapters to explain the issues surrounding the Total Records and Information Management (TRIM) implementation and subsequent use as discussed in this dissertation.

**Conclusion**

This chapter has comprehensively explored the many roles a KG plays within an organisation during a time of change, and the social influence and power that clings to those roles. The literature presented in this chapter pertains to IS and user reactions to change brought about by new or enhanced systems. It includes discussion of involvement or participation of end-users in a collaborative team atmosphere as important for developing and implementing an information system that ensures end-user satisfaction and how group dynamics can reflect the group’s culture and reaction to change. Various technology acceptance models were explored for issues that will explain the reaction of staff at SMO to the new information system and subsequent organisational change.

TAM was originally developed as a model of prediction of user behaviour across differing types of end-users. With the subsequent additions to TAM by other
researchers, the original model has become a list of user issues surrounding a new information system and most models have become quite specific as to the determinants required to explain the authors’ stance. A new model, UTAUT, also slants heavily to explicit components of social influence. mTAM, the conceptualisation presented here, draws on elements of cognitive dissonance theory: groupthink and gatekeeper theory incorporated into a communications/power framework. The literature on the various versions of TAM has led to the development of mTAM for use when analysing the situation at SMO.

mTAM borrows these other discipline’s theories to provide a clearer explanation of the issues observed in any organisation, rather than using a current variation of TAM. Prior research has proven that the two constructs of perceived usefulness and perceived ease of use are antecedents to behavioural intention to use, and that intention is an antecedent to actual system use. The relationship between these two constructs exists as has been discussed in this chapter, and there is an assumption that these constructs will be part of any variation of TAM and applicable for any organisation. What will be different for each organisation is the breakdown of stressors, which most likely would be different for each organisational context. Therefore, using a TAM that has been broken down into the individual components is not appropriate, as each organisation will have different forces/stressors that arise during an IS implementation. Whilst there will be the usual suspects of resistance to change in its variations, there may be other issues that fuel the resistance.

The following chapter presents the research methodology deployed in the study, and then places the methodology in context for discovering the depth of participant reactions to change.
Chapter 3
Constructing a Worldview from Multiple Perspectives

Introduction
The aim of this research is to discover a means of identifying those within an organisation who act as knowledge gatekeepers (KGs) and their social influence on the course of events during organisational change. To achieve this aim, this study investigates the experiences of staff during the implementation of an electronic records management system that took place between 2003 and 2004. The relevant events were the processes involved with the formation of a project committee to select record management software and the subsequent issues that arose due to the implementation of that software. Important factors for this study were the social aspects of the interaction amongst the group members whilst part of the team and the communication by the team with other stakeholders of the project. The committee consisted of staff from various sections of the organisation and included staff members who reported directly to others who were also on the committee.

The reporting structure within the organisation and its reflection within the committee members, introduced the element of power and social influence to the committee. The existence of hierarchical substructures was reflected in the social dynamics within the committee. Individuals draw their pointers for behaviour from those around them and interpret these indicators as a norm for their own actions or reactions to events. These indicators can come from either the larger community or smaller social groups as proposed by Shibutani (1955). At the research organisation, staff went through a series of changes and the change to the information system was but one event enclosed in what others saw as the major change. This was the change from being a self-determining entity, to becoming part of a larger government department. Due to the organisational change, a number of daily tasks now needed authorisation where previously the staff themselves held the authority. These changes led staff to an environment of uncertainty in which common tasks were re-assessed daily as to the suitability for the new system.

This chapter sets out the research paradigm, design and methodology used in this study, and discusses each in relation to its appropriateness for this type of
investigation. This chapter includes a discussion of my research philosophy, which relates to the research paradigm of interpretivism, and different types of research that are appropriate for this kind of study are discussed briefly. The chapter contains a brief profile of the research organisation and the participants and describes the data collection and the data analysis method used for the investigation. It then concludes with a summary of topics covered.

**Background to the study**

The pseudonym Scientific Measurement Organisation (SMO) has been chosen to protect the anonymity of the organisation and staff. At the time of this study SMO was a self-determining statutory body of the Federal Government of Australia. SMO was located in Sydney, NSW, with a workforce of between 30 – 35 employees. It is interesting to note that as a sign of the changing environment that for a relatively small organisation, not even the ED could state definitively how many employees were at SMO. Due to the nature of the work, employees stay at SMO long-term and at the start of this study, the participants had been with SMO between 1 and 35 years, with the majority having more than 15 years of service.

My involvement with SMO began in 1995 when I implemented a financial accounting package (AIS) for the corporate services division of SMO. Not only did this accounting information system (AIS) hold details about the financial transactions, but it also held details about laboratory projects and enabled the staff there to track those projects from initiation to completion. The implementation for the AIS was relatively complex. I was on site for approximately 6 – 8 weeks and during that period, I became very familiar with the operational set-up within this organisation at that time. At that time, I was a consultant, hired to implement an AIS as well as train the staff in the new procedures. This responsibility encompassed understanding the current business processes that the staff used on a daily basis as well as the comparative processes in the new system and managing that change through training. After the completion of the main project, I returned to the organisation approximately three months later to implement the payroll module of the system. Once that was finalised in mid 1996, I had no contact with the organisation until 2003, when I contacted the corporate services manager (CSM) in relation to this study.
The CSM advised me to contact the executive director (ED) as SMO had recently completed an installation of Total Records and Information Management (TRIM). The feeling amongst staff was that ‘something was missing’. I agreed with the CSM that SMO might be a worthwhile investigation. At the initial meeting with the ED in December 2003, I received permission to carry out my study at SMO. We agreed upon the methods of data collection and the scope of my investigation. The ED agreed that I could observe the staff interacting with each other and using the software, conduct interviews and questionnaires and I was to have access to organisational documentation.

There was no constraint on how I could collect the data and the ED herself suggested that I also look at the other changes happening within the organisation. However, the ED selected which staff members were to participate. I had originally proposed that I circulate an information sheet and informed consent documents to all staff members and then ask for volunteers, but as mentioned in Chapter 1 the ED asked me to forward the documents to her and she would choose the participants, based on her knowledge of who was involved in the implementation of the new systems.

When I first met the ED, I had mentioned my previous involvement with SMO, but I had not named staff who I had worked with at that time other than the CSM who was my entry contact to SMO for the research. The ED chose six staff members who had been users of or were affected by the system previously implemented. The three remaining participants who had been long term employees would have known of the AIS implementation, along with the ED and the subsequent acting general manager (AGM), made a total of 11 participants over the period of the data collection phase. Unfortunately, as the Ed invited staff on my behalf to participate in the study and therefore removed any chance of the participant being purely volunteers.

Due to the time lapse between my previous involvements with SMO, I was not expecting any critical issues to arise through my prior association, but I did remind those participants who I had met previously of my involvement with the implementation of the AIS. I did this in order to show integrity and trust on my part. I did not want them to find out about my prior involvement from anyone else in the organisation in case something adverse about the AIS emerges during the interviews that might possibly make them uncomfortable at any future meeting with me.
The data collection took place over a period of two years and involved three interviews with the participants who were involved over the full period, with each interview being one year apart. The initial interviews were general in nature, with the second and final interviews being specific, and based on an analysis of the prior responses. I was surprised to find that the participants had not discussed these questions to any great length amongst themselves; and in fact, some participants did not know who else had agreed to discuss this study with me. One participant withdrew before the start of the project, whilst two others withdrew after the first round of interviews. The remaining participants were not aware that some other participants had withdrawn.

In July 2004, the research site was incorporated into a larger government department (refer Chapter 4 for a discussion of the case study) and whilst the merger with two other entities was expected by the staff, the changes flowing from this merger were put in place a lot quicker than had originally been forecast. The second and third interview sessions took place after the merger, which resulted in staffing changes, including for example the ED who had authorised my research at SMO and my contact from some years ago, the CSM. Together with these staffing changes there were a number of changes to reporting authority brought about by an organisational restructure.

During the course of the data collection sessions, SMO staff went from belonging to an independent government organisation, to being part of a large government bureaucracy. Their daily information systems (IS) changed as did the executive management. In fact, staff that I retained contact with do not report to the CEO, but to the general manager of business services. The staff reported a move from a quasi adhocracy to a bureaucracy with what they felt as an impingement on their territory.

Identification of the KGs and the roles that they play in organisational change can provide understanding of the situation and facilitate the change transformation by smoothing out issues before they arise.

**A Qualitative Approach**

I began this research journey with a preconceived notion of what I would find based on my observations over the last 12 years. My observations had led me to believe that resistant behaviour amongst staff at the organisations where I implemented
accounting (AIS) was based solely on a dislike of the new system. Initial discussions with my research supervisors convinced me that there were discrepancies in my recollections which led to assumptions of what I would find between the results and the reality of differing perceptions. I chose the grounded theory method (GTM) as the iterations undertaken throughout the course of the research would enable me to approach the research problem from different angles and search for comparisons and concepts within the data. This in turn generated further concepts for comparison until data saturation was reached (Whiteley, 2004; Goulding, 1998; Strauss and Corbin, 1998). Given that the investigation was looking into the perceptions, experiences and interaction of people during a major change to their work environment, I incorporated a broader perspective informed by phenomenology, with a focus on the social relationships of the participants (Mingers, 2001; Patton, 1990). The inclusion of a phenomenological aspect in the analysis method supported the complexity of relationships as evidenced in the data (Goulding, 2004).

Figure 3.1, below, gives an overview of the research approach, and the chosen research design and process. An explanation is included in this chapter emphasising the rationale of their use for the study.

To bring focus on to the importance of my theoretical perspective Table 3.1 below, presents a comparison of positivist and interpretivist theoretical approaches. This
comparison appeared in MIS Quarterly as part of an article, by Weber (2004) and offers support for my stance for choosing qualitative research.

<table>
<thead>
<tr>
<th>Metatheoretical Assumptions</th>
<th>Positivism</th>
<th>Interpretivism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ontology</td>
<td>Person (researcher) and reality are separate.</td>
<td>Person (researcher) and reality are inseparable (life-world).</td>
</tr>
<tr>
<td>Epistemology</td>
<td>Objective reality exists beyond the human mind.</td>
<td>Knowledge of the world is intentionally constituted through a person’s lived experience.</td>
</tr>
<tr>
<td>Research Object</td>
<td>Research object has inherent qualities that exist independently of the researcher.</td>
<td>Research object is interpreted in light of meaning structure of person’s (researcher’s) lived experience.</td>
</tr>
<tr>
<td>Method</td>
<td>Statistics, content analysis.</td>
<td>Hermeneutics, phenomenology, etc.</td>
</tr>
<tr>
<td>Theory of Truth</td>
<td>Correspondence theory of truth: one-to-one mapping between research statements and reality.</td>
<td>Truth as intentional fulfilment: interpretations of research object match lived experience of object.</td>
</tr>
<tr>
<td>Validity</td>
<td>Certainty: data truly measures reality.</td>
<td>Defensible knowledge claims.</td>
</tr>
<tr>
<td>Reliability</td>
<td>Replicability: research results can be reproduced.</td>
<td>Interpretive awareness: researchers recognise and address implications of their subjectivity.</td>
</tr>
</tbody>
</table>

Table 3.1: Comparison between Positivism and Interpretivism (Weber, 2004)

As the study focuses on perceptions of how others regard KG roles and ways of interaction during information exchange it demands a qualitative research paradigm. A qualitative approach consisting of in-depth interviews allows the researcher/observer to build a series of platforms from which they can observe and analyse the reality as defined by those observed (Whiteley, 2004).

In that approach, there are various advantages to using the interpretive perspective, such as the inclusion of the research participants and the self-reflective nature of the research design, as opposed to the positivist. I have researched the participants’
perceptions of a particular event, and each participant will have a different view of that event based on his or her own world experience; therefore each view is a platform to gain further understanding of the next participant’s view. Many consider it a disadvantage when using the interpretive perspective as the researcher is not separate from the reality of the participant and therefore there may be bias when interpreting the participant’s response. To overcome this bias the researcher must objectify the data and thus remain external to the interpretation by recognising the potential of bias and actively questioning the data (see for example Schwandt, 2000). If the researcher attempts to remove all bias there is potential to lose insight into the event being studied (Strauss and Corbin, 1998). During the course of this study, analysis and assumptions were discussed with participants to check the data for interpretation validation.

The interpretivist methodology of studying experiences contrasts with that of the positivist researcher who studies the so-called reality of the situation and who stands at arms-length from both the phenomenon under study and the participant’s views of that event. Therefore a positivist researcher takes an objective view of the data collected by necessity. Whilst an objective view may confer validity and reproducibility according to the stated frame of research, there is no defensible argument to ascertain that the researcher is able to reach such objectivity. In the study of perceptions and subsequent subjective judgments involved in understanding the process of systems implementations, objective positivism falls short and has the risk of misrepresenting interpretation as ‘truth’. Having been involved with the research organisation some years prior to the start of this particular study, rapport between the participants and me as the researcher, was quickly re-established. This apparent rapport appears to have enabled me to elicit a deeper level of detail in a relatively shorter period of time than a positivist approach would allow, without engaging the participant so closely.

An interpretive approach assumes that researchers bring to their investigations a worldview that consists of their cultural background and the way that they see experiences and events around them. This perspective implies that the researcher will adopt particular views of the event or experience being investigated (Denzin and Lincoln, 2000a, p18). Contrary to this view a positivist approach assumes that different observers will discover and describe similar events in similar ways with the
(taken for granted) view that reality is out there to be discovered as if the position of the researcher is able to be suppressed by the systematic application of a method.

In an interpretivist approach, recognition is that the observer goes some way to creating the data through interaction with the participant. This has implications for the researcher, as there is potential for the researcher to influence the perceptions of the research participants through interactions (Creswell, 2007). Lincoln and Guba (2000) suggest this kind of approach is anti-foundational and as such constructivists may negotiate truth in relationships as members of a community. A positivist researcher’s perception of reality claims to be objective and assumes that all members of society have one worldview of the real world as all members share the same meaning of reality. (Sarantakos, 1996, p34). For understanding the reality under study, I consider it is to be represented in the mind and determined by the experiences, i.e. reality is what people see it to be.

In this dissertation, I have researched the participants’ perceptions of a particular shared experience, and using a qualitative frame, the assumption is that each participant will have a different view of that experience based on his or her own worldview. Each view is a platform to gain further understanding of the next participant’s view. It is my belief that the researcher and participant are indelibly bound by the reality of the event or phenomenon being studied and, therefore the researcher will be calling on his or her experiences to bring understanding to the data collected from the participants. However, bracketing, (removing personal assumptions) enables the researcher to find points of conflict in the data and identify what misfits. (Janesick, 2000).

As previously discussed in this chapter, it is my belief that when undertaking interpretive/constructivist research the knowledge, views, values and ideologies of the researcher must in some way impact on the study. If the participants know those underlying characteristics, then there is a possibility that this could elicit a deeper level of detail in a relatively shorter period. A challenge for me as the researcher was to recognise that any discussion of any experience transforms that experience with the translation of the meaning of those experiences. In an attempt to remove researcher assumptions from the participants’ responses, the participants were asked to relate their experiences in an unstructured narrative and then the same questions
were asked of each participant to elicit their responses to specific events (Van Manen, 1990).

The theory of knowledge is epistemology and knowing what people know is at the nexus of what people believe as truth, and gained through experiences from events that happen throughout their lives (Chalmers, 2003). There is an assumption that reality exists in the world, whereas knowledge is held in the mind (Warmoth, 2000). From this assumption, this study is building on reconstructed understandings experienced through a shared event, where participants are relating what they perceive to be the truth as they see it. Therefore, the experiences undergone during the shared event link in some way to prior experiences and are meaningful to the participants, individually or collectively. Social constructivism reasons that knowledge comes from the sharing and interpreting of ideas amongst groups or communities. This is not to mean that individual people cannot have ideas, but that to disseminate meaning of those ideas links directly to the social context of our experience (phenomena) and are not held in an independent objective world (noumena) (Warmoth, 2000).

The selection of this approach as being appropriate to the case considers that a constructivist interacts with and creates the data and analysis through sharing the research participant’s view of the experience (Charmaz, 2000). Part of the relationship that an interpretivist/constructivist has with the respondent is based on trust and this trust between researcher and respondent allows the participant to tell his or her own story as they see it, without being bound by what may be seen as restrictive behaviour or actions on the part of the researcher. Both the researcher and participant are able to build an environment that facilitates the respondent sharing their experiences of a particular event with openness (Charmaz, 2000, p525). Of course, what seems like open communication between the researcher and participant may have hidden qualities that are not apparent to the researcher at the time of their interaction, and this point needs to be scrutinised through reflection on the event.

In Table 3.2, below, I present the primary approaches of four different qualitative research methodologies that are applicable to this investigation and a discussion of these different methodologies follows.
Table 3.2: Primary Characteristics of Four Qualitative Approaches
(Developed for this study based on Creswell, 2007, p78)

The research focus for this study is based on the perspective derived from three main research foci: reflection, the discovery of regularities within data and the comprehension of meaning within text or action. The relationship between the research foci and research approaches chosen for this study are represented in Figure 3.2, below.
**PHENOMENOLOGY**

Phenomenology is the study of phenomena without preconceived theories about the cause of the phenomena (Spiegelberg, 1975). Creswell (2007) posits that phenomenology describes the common experiences of a group affected by an event. I have chosen to use a research methodology informed by phenomenology as one aspect of my worldview when interpreting the data in this study. Phenomenology (both reflective and interpretive) permitted me to integrate reflective practice into the research process thereby enabling me to approach both the data, and conclusions drawn from differing perspectives. Similarly, through iterations inherent to the grounded theory approach I was able to sort and categorise the data for comparison until the theory emerged. In the next section, I will present how these approaches were integrated in the research of the case study.

The experience under study was a shared event of the implementation of a new information system within an organisation undergoing change. This experience was shared amongst a group of staff members who have perceptions of that particular event. Whilst I did not share in that particular event with the participants, the essence
of that experience has emerged through observation of participant reactions to the experience in a series of in-depth interviews and using reflective processes. This extraction of meaning is a challenge for the researcher as the data takes on its own meaning based on the context in which it was gathered, (perception) and the integration of the researchers understanding of that context (experience). Therefore, reflecting on the nexus of perception and experience transformed the lived experience into new meaning (Van Manen, 1990).

Interpretive (hermeneutic) phenomenology requires that the researcher immerse himself or herself in the research process, and call on prior experience and understanding when interpreting the data (Geanellos, 2000; Geanellos, 1998). Interpretive phenomenology claims as its main themes of interpretation; the meaning of text, the meaning of action, and that every form of human awareness is interpretive and cyclical in nature (Klein and Myers, 1999). This is similar to the basics of grounded theory methodology.

**Grounded Theory Methodology**

Grounded theory methodology (GTM) requires the researcher to commence without any preconceived ideas and not allow any bias to filter the data (Glaser, 2004), and the term GTM refers to theory that emerges from the dialogue between theoretical assumptions and the collection of data Creswell (2007). There is no prescriptive method for collecting data for GTM though theories emerging from data analysis drive the data collection iterations (Strauss and Corbin, 1998). A basic tenet of GTM is the requirement that the researcher does not undertake an extensive literature review prior to commencing data analysis (coding) (Glaser, 2004). Strauss and Corbin (1998) propose that it is counterproductive for the researcher to read extensively on the topic prior to the investigation, as it is unlikely that the researcher will know what problems and theoretical concepts emerge. They further suggest that researchers can immerse themselves so deeply in the literature that he or she can lose sight of the problem or event. By conducting iterative literature reviews, the researcher uses the literature itself as an interpretive tool as and when insight about the data emerges from the literature.

GTM requires the researcher to compare data collected from a variety of sources and by comparing the data and noting any issues that arise, allow a theory about the phenomena studied to emerge. The theory emerges through an iterative methodology.
that arises from the data. I chose this as one method to study perceptions of people in a given historical situation. Llewellyn (1997) claims “that the main goal of grounded theory is to develop a conceptualism of interrelationships inductively derived and systematically verified through ongoing analysis”. Llewellyn’s statement represents clearly my understanding of GTM and validates its use in this research setting as it has many variables not only of the interrelationships of the participants, but of the events themselves being studied.

The events that occurred at the research site during the software selection and subsequent change within the organisation were in some instances themselves iterative. For example, scheduled meetings where the topics were revisited on many occasions with new viewpoints being brought to light each time. Through the life of the software selection process the committee membership changed and this membership change brought new perceptions and opinions to the table for exploration. In some instances, the new members’ viewpoints were in direct opposition to those already expressed by sitting members of the committee, which again needed further exploration. Please refer to Figure 3.3, below for a schematic interpretation of GTM. GTM has specific phases that researchers work through.

![Figure 3.3 Textual analysis methods within grounded theory methodology](image)

*Figure 3.3 Textual analysis methods within grounded theory methodology (Developed for this study based on Dick, 2002)*
Figure 3.3 shows the links between each phase. For example, within the phase(s) *Coding* there are three distinct types of coding: open coding where the initial concepts are identified within the data, axial coding where the interconnectedness of the concepts are discovered, and selective coding where the core categories are discovered and the emergent theory is refined and relationships derived (Scott, 2004). Whilst the process is iterative and circuitous, it is by no means as simple as Figure 3.3 may suggest, as this diagram shows only the major phases and GTM enables the researcher to build into the process reflexive practice.

In the literature, it is possible to find two approaches to GTM: objectivist and constructivist. As mentioned before, an objectivist approach assumes different observers will discover and describe similar events in similar ways whereas a constructivist approach recognises that the observer goes some way to creating the data through interaction with the participant and both confer meaning on it. (Charmaz, 2000). I chose the constructivist approach as being more appropriate to this case considering the importance of recognising the impact of the viewer into the process in which he or she is involved:

A constructivist grounded theory recognises that the viewer creates the data and ensuing analysis through interaction with the viewed”. and, “What a viewer sees shapes what he or she will define, measure and analyse. (Charmaz, 2000, p524).

The blending of constructivist grounded theory and phenomenology (in the sense that was explained earlier) becomes an effective method to study perceptions of people in a specific case of organisational change. Whilst on one hand GTM tends towards the analytical aspects of discovering a connection between events, which are then sorted into categories from which the theory emerges, phenomenology looks at the experiences of those who lived through the events. Phenomenology as a reflective/interpretive methodology supports the value of using the GTM research method for this study as this setting has many variables not only of the interrelationships of the participants, but also of the studied events themselves.

The identification of categories (constructivist approach) as represented by the participants and subsequent connections between those categories falls within the iterative cycles of GTM, which enabled me to use reflective practice during the coding, memoing and sorting phases of the research. Both GTM and phenomenology as research methodologies look for patterns or themes and commonalities of connectedness within the data, and the use of this strategy is suitable for a study that
is looking at the interaction of people during a major change to their work environment and the experiences that they shared. At the same time, there were other events because of this implementation, which enabled me to draw further support of my choice. As Charmaz (2000, p522) states:

…we tend to look at slices of life. Like other forms of qualitative research, grounded theories can only portray moments in time. However, the grounded theory quest for the study of basic social processes fosters the identification of connections between events.

It is my position that any interaction between the researcher and the participant has some bearing on the data collected, particularly if the researcher gains the confidence of the participant and therefore is able to gain a deeper level of insight from the data, leading to a deeper insight into the phenomenon being investigated. Strauss and Corbin (1990, p23) propose, “a grounded theory is one that is derived from the study of the phenomenon it represents”. The perceptions of the KGs in the study are drawn from description of the events the staff experienced during the implementation of TRIM software and related to me over a period of two years. Its analysis and construction of interpretive models were using my own experience in such situations in a reflective dialogue with other interpretations.

**Research Design**

The research tools used to gather data were one-on-one conversational interviews (as defined by Van Manen, 1990), and available online documentation. The documentation was used to verify timelines and events as narrated by the participants. An interview can be viewed as a form of conversation where one participant has a specific agenda to extract information about an event or experience. As with any conversation, all participants in an interview create a reality from the information gathered in the interview situation which is influenced by the interviewer’s characteristics (Denzin and Lincoln, 2000b). It is difficult for the researcher to gain answers to interview questions that are free of bias and ambiguity due to the relationship (good or bad) that forms during the interview. Intended or unintended agenda are likely to influence the representation of events.

As it was my intention to draw out each participant’s personal experience and perception of the SMO change event, I determined that a conversational semi-structured one-on-one interview was appropriate (Creswell, 2007). Following the recommendation of Patton (1990) an interview guideline was compiled prior to the
first interview sessions and this was used as a basis for ensuing conversations with each research participant (refer to Appendix 4 on page 229, for the interview guidelines). At each interview, and after a conversation designed to draw out the participant’s perceptions of the event being studied, the interview began with the same set of questions regarding his or her experiences during the information gathering stage and on into the implementation of TRIM. During the interviews, as the participants relaxed, the discussions became more open and the guideline questions were used as a basis for conversation, whilst letting the participant expand on aspects that were relevant from their own perspective. Yin (2003, p60), in a discussion of the art of questioning a research participant, says that the art of good listening is an equally good skill that must be present during interviews.

Each interview lasted an average of 45 minutes and, based on the participant’s responses, a general conversation ensued around the original question. An amended set of questions were used for each subsequent session, based on the findings in the previous set of interviews. Despite the constraints discussed elsewhere in this dissertation, such as the changing organisational nature of SMO and some staff accepting voluntary redundancy, I was able to collect data from 21 interviews over two years, totalling 17 hours of interview time. The SMO conversational interviews were recorded to enable accurate transcriptions and to access easily the data for analysis (Creswell, 2007, p.133). Figure 3.4, below represents the research process for this study.

Owing to the rapport already established with the continuing participants, and as a result of my prior involvement with SMO, any hesitation on the part of the respondents was overcome quickly (Creswell, 2007, p133). After the interview, I wrote my notes on the interaction with each participant to monitor my observations of the participants’ reactions to each question. These observations informed each analysis cycle and formed a basis for the next coding iteration as suggested by Creswell (2007, p140).

All participants who joined the study were directly involved in or affected by the TRIM selection, as either members of the selection committee or general staff member who was affected by the change of information system, and therefore shared the phenomena under investigation (Creswell, 2007, p128). According to Creswell (2007, p131) to be able to obtain the depth of data required for a phenomenological
study it is recommended to include approximately 10 participants in the study required. This number of participants was achieved at the time of the investigation; from SMO employed staff, there were 10 who initially were chosen by the ED. However, one chose to withdraw prior to the interviews commencing. The ED joined the study as a participant, and this brought the number back up to 10, but accepted a redundancy package and left before the data collection was completed.

Documentary evidence is a stable, unobtrusive source of evidence that may be viewed repeatedly (Yin, 2003, p87), and with this consideration in mind, I obtained supporting organisational documentation from the SMO website and other publicly accessible information from the Internet. I used this information to ascertain the historical timeframe of the change and the context of the issues surrounding the organisational changes within SMO. This documentation was also relevant to understand the organisational environment in which the specific change was
happening, and as a crosscheck of the participants’ information regarding the
timeframe of the major change of SMO devolving back to become part of a federal
government department. News media documentation from online databases was used
as a means of further crosschecking the historical details from both the research
participants and the information freely accessible from the Internet.

When the restructure mentioned earlier became effective, I had interviewed all
participants. Due to the change in organisational structure and determination, the ED
and CSM left SMO before the second and third round of interviews, and one other
participant withdrew from further interviews. The AGM of the new organisation
chose to participate in the investigation, which gave the study an added richness for
the data collected during interviews two and three. As the research continued, and
due to changed organisational duties, not all participants took part in all interview
sessions. Due to the change of organisational restructure in July 2004, I was unable
to access the organisational documents other than those freely available to the public.
This put constraints on the various types of data available and subsequent
comparisons of the outcome with the original system specifications to that collected
via the interviews and questionnaires. This is a weakness of organisational
documentation as stated by Yin (2003, p86), but this weakness was overcome by the
detailed analysis of the whole complexity of the interview data.

When preparing the research design, I needed to consider at what level the data
would be analysed. For example, a unit of analysis can be an individual, a group as a
comparison to other groups, or an organisation (Patton, 1990). Given that the sample
for this study consists of individual employees out of approximately 35, the unit of
analysis for this study is at the individual level, and both phenomenology and GTM
are applicable for use when researching at the individual level. The participant’s
observations and recollections were reduced to thematic contexts such as interaction
and collaboration, perception, power and politics, thereby placing the individual’s
experience within those contexts. (For a detailed list of the thematic context please
refer to Appendices 6, 7, and 8 starting on page 235).

The research questions were designed to elicit the participants’ attitude and
perceptions to the issues surrounding an organisational change event of a new
information system. The focus of data collection was on how each participant
perceived and experienced the phenomena of the new information system, (Patton,
1990, p166) and each interview transcription was analysed for themes and concepts to determine the overall picture of how each participant viewed the KG’s role within the organisation. Each participant’s perception of that role affected the organisational environment during the IS change.

The mode of analysis used in this study is exploratory content analysis and Figure 3.5, below, depicts the iterative nature of analysis undertaken. The interview transcriptions were analysed to ascertain overt and covert meanings attributed to the participant’s answers. To assist with the qualitative analysis of the data collected from the research organisation, NVivo software from QSR International Pty Ltd was chosen as a data management tool for the analysis. NVivo is software specifically designed for use by qualitative researchers, and enables deep levels of analysis through setting relationships between nodes and categorising the text to the nodes. NVivo enabled the development of deep coding structures using participant attributes and the drawing of relationships between those structures. The initial coding nodes developed in NVivo formed the sub classifications and MindManager software was used to graphically map concepts and themes that emerged from the data and show the relationship of those concepts.

Figure 3.5: Iterative data collection and analytical process
(Source: concept developed for this study)

Figure 3.5, above, shows the connection between data collection and data analysis for the three phases used for this investigation. The analytical framework is a
mixture of GTM processes and Carney’s (1990) ladder of analytical abstraction (as cited by Miles and Huberman, 1994, p92).

It is important to clarify that the processes undertaken for this study are not as linear as shown in Figure 3.5, as each step along the research highway has many twists and turns, and it is impossible to separate clearly each phase from that which comes before or follows it. By analysing the data in this manner, I was able to draw conclusions and interpret these conclusions through iterative processes, using NVivo and MindManager.

**Rigour and Trustworthiness**

Regular meetings with my dissertation supervisors were held to review the data collection and findings (Lincoln and Guba, 1985). Patton (1990, p461) proposes that there are three issues of creditability for qualitative research:

1. Rigorous techniques and methods for gathering data;
2. The creditability of the researcher; and
3. Philosophical belief in the phenomenological paradigm.

This research has used as its primary data source the interviews collected at SMO over a period of two years. The participants were from a variety of departments within SMO and included the executive director, departmental managers and administrative assistants. Information collected during the interviews has been verified against information collected from external media publications (Lincoln and Guba, 1985). Effectively this is methods triangulation as described by Patton (1990) as multiple data collection methods were used to generate data. During the second and third round of interviews, member checks were performed to ensure that the participants’ representations were interpreted correctly (Lincoln and Guba, 1985). Comparison and cross-checking of the data generated by the interviews was undertaken to ensure consistency of data collected over the period of collection is the second method of triangulation as proposed by Patton (1990).

As stated earlier in this dissertation, I was previously involved with the research site when acting as an information systems consultant. My prior involvement with SMO was known to the participants, and I can not recall any situations that may have caused an adverse reaction in the participant to my presence.
Intellectual rigour has been applied to the study by consistently applying a pragmatic view of the data consistently, by incorporating experience and understanding as the instrument in the interpretive process (Patton, 1990).

**Ethical Considerations**

Some ethical concerns arose in the process of developing this research. The ethical researcher needs to guarantee and protect the anonymity of both the organisation and the individual participants from public exposure. There is a need to obtain informed consent from the participants and ensure confidentiality of data gathered through researcher interaction with the participants. It is equally important for the researcher to acknowledge that participants have the right to withdraw at anytime from the study if he or she feels so inclined. This study follows the ethical utilitarian framework as suggested by Flinders (1992) which includes informed consent, avoidance of harm and confidentiality.

Participants had the right of self-determination in that they had the right to choose whether or not to participate in the research. Therefore, a basic right of the participants is that of informed consent. With this in mind, an Information Sheet (Appendix 1) for participants and an Informed Consent form (Appendix 2) were constructed and submitted to the University’s Research Ethics Committee for ethical clearance.

The second consideration in the framework is avoidance of harm. The conditions of interest to this study are those to professional reputations if one was to be perceived as indiscreet. For example, participants may lose professional standing amongst peers because of the disclosure of organisational information.

The third consideration of Flinders’ (1992) utilitarian framework is that of confidentiality. The intention of this particular point is to protect participants from unwanted stress or embarrassment on publication of the research findings. Following these three considerations both, the organisation and the participants’ names as appearing in this study are pseudonyms.

Based on these ethical principles, I received approval from the University’s Research Ethics Committee, and I approached the organisation that was a potential research partner for this study. The ED granted me approval to undertake my investigation at SMO and suggested that I also include another IS recently implemented there UPL-
SOFT. The ED requested that I forward the *Information Sheet for Participants* and the *Informed Consent* form to her and said that she would distribute these forms amongst the staff for consideration. Subsequently the ED informed me that she had recruited 10 participants and that she had the signed consent forms ready for my collection. There are implications of control exercised by the ED, and this possibly explains why one participant withdrew shortly after the announcement of the ED’s resignation, and before the first interview session. The ED chose staff from numerous departments, all of whom were in some way affected by the system at SMO, including some who were on the software selection committee.

The *Informed Consent* form made provision for staff who wished to withdraw prior to interviews taking place. One such participant did withdraw at this time. At all times staff were assured of anonymity and whilst some staff gave permission via their consent forms to use their names when writing up the research, I have chosen to substitute all names and the organisation’s name to preserve the anonymity of all staff.

The data collected via interviews from SMO is in electronic form and consists of tape recordings of interviews, electronic transcriptions of recorded interviews, and documents collected from the Internet. These documents are stored securely from public access to preserve the identities of the research participants and preserve the integrity of the data.

**Theoretical Framework**

This study is exploratory research looking at the issues that surround the implementation of an information system in an organisation undergoing change. The basis for the theoretical framework for this study was presented extensively in Chapter 2 under the technology acceptance model (TAM) and change acceptance section. TAM is a variance model that measures the causal agency between usefulness, ease of use and system use. This study follows the path of process theory as it investigates the emergent perspective of causal agency where complex social interaction have an unpredictable influence on the usage of information systems (Markus and Robey, 1988). Ramiller and Pentland (2009) suggest that phrasing research in terms of variables presents problems when offering advice on the results...
of the research: they further posit that focusing on variables imposes limitations on how the social world is presented.

Here are highlighted mTAM’s main components as relevant to the understanding of the specific case: knowledge gatekeeping, groupthink, cognitive dissonance, social influence (power) and knowledge (as represented by experience). The initial literature search regarding IS and organisational change led me to the evaluation of the TAM, originally developed by Davis 1986 and revised by Davis, Bagozzi and Warshaw (1989) to explain the degree to which new technology is accepted by system users and issues that may arise due to the new technology.

The Modified Technology Acceptance Model’s (mTAM) (Figure 2.16, page 66) applicability to this study is that it addresses the issues of attitudes and behaviour of users affected by new technology which is essentially the same as anyone who is affected by change and their behavioural intentions to accept the change.

**Conclusion**

The basis of this study was to identify those staff members within SMO who acted as knowledge gatekeepers and the social influence they had on the change events that took place between 2003 and 2004.

I have developed an interdisciplinary approach that contains components drawn from communication theory as it relates to gatekeeper theory: and dissonance theory, as it relates to the phenomena of the staff behaviour in an organisational setting. I am situating this in the framework of the modified TAM as discussed earlier in this chapter and in more detail in Chapter 2. Within this frame, I have moved towards using phenomenology as the research approach to study the events, whilst maintaining a constructivist stance based on grounded theory as the epistemological perspective. Chapter 4 presents the data collection and analysis of the case at SMO within the framework proposed in this chapter.
Chapter 4
Twisting Paths and Oases of Thought

Introduction
This chapter presents the analysis of the data collected at Scientific Measurement Organisation (SMO). The events that were the focus of this study were the processes involved with the formation of a project committee to select record management software and the subsequent processes undertaken to implement that software. Also of importance were the social aspects of the interaction amongst the group members whilst part of the group, and the communication by the group, with the other stakeholders of the project. The committee consisted of staff from various sections of the organisation and included staff members who reported directly to other staff who were also on the committee. This reflection of the organisations reporting structure within the organisation introduced an element of power and its forces into the committee dynamics. In this study, territorial boundaries were drawn at the various workaround processes each department had developed to facilitate their own work practices for the systems which the various departments perceived to be their own.

The existence of mini hierarchies within this smaller version of the organisation highlighted the social dynamics within the committee. Within this situation staff members were faced with differing social relationships that they needed to interpret in order to participate in the committee meetings (Llewellyn, 1997). This led staff to place that interpretation in a context that fitted with their experience. Individuals reference their behaviour from those around them and interpret these references as a norm for their own actions or reactions to events. These indicators can come from either the larger community or smaller social groups. At SMO, staff were going through a series of changes that affected their workplace environment and therefore, in the context of this study, the larger community can be seen as the organisation itself.

During the investigation, I met with the participants and collected data from interviews in three iterations between April 2004 and April 2006. Some participants elected to be involved in one interview only and chose the survey as an alternative method of transmitting their reflections and perceptions of the events under study. During each interview the participant related to me his or her perceptions and
reflections on the process of the information systems (IS) implementation recently undertaken by the organisation.

The first interview guideline was based around the main research question and the nine subsidiary questions as laid out in Chapter 1, with further questions pertaining to sub-issues, which further deconstructed each question. Refer to Appendices 4 and 5 starting on page 229 for a full list of the question guidelines and prompts.

A review of the literature and informed professional experience lead to the research questions and the interview guides. During the subsequent conversational interviews the participants were aware of my reference to the prompts during the interviews, though they did not read the prompts. Each question initiated further discussion during each interview and led to unstructured conversations, thereby eliciting further information and perceptions from the participants. Each question framed its context to the research thus enabling the participants to give a considered response. The analysis of the evidence drawn from the first round of interviews, pointed to the need to broaden the interview discussions. Subsequently two more interview sessions were held to elicit deeper meaning of the topics initially discussed.

The interviews resulted in a rich collection of data that shows the existence of power relations amongst the staff in general, and the committee in particular, during the selection and implementation process. The display of power in this situation points to established communication channels within, and between organisational subcultures, and it is important for this study to understand the knowledge gatekeeper’s (KG) influence over those channels. The interviews revealed that the interrelationship of power/knowledge within the committee, and the use of that higher level of knowledge, led the project in a direction with which not all committee members agreed. This dissonance, between actuality and proposal points to the interpersonal conflicts within the committee, and appears to be similar to that reported by Barki and Hartwick: members “experienced negative emotional reactions to perceived disagreements and interference with the attainment of their goals” (2001, p4).

The following case derived from interview data, and was verified where possible, from stories in the media.
In 2000, a report commissioned by the Federal Government recommended that a National Scientific Institute (NSI) be established comprising National Scientific Laboratories (NSL), National Australian Laboratories (NAL) (part of a larger research organisation) and SMO. Subsequently, in 2003 the Federal Minister responsible for the Department of Manufacturing and Natural Resources (DMNR) announced that the NSI would be established from July 1, 2004.

At the time of the announcement, NAL was already part of a government department and was therefore not a statutory body. The other two organisations (NSL and SMO) were self-governing statutory bodies, and therefore would change organisational classification when amalgamating as part of NSI. The creation of NSI and the amalgamation of the three entities had major organisational change implications as each entity operated in a somewhat different way to the others. NAL had a very hierarchal structure, in contrast to the other two organisations. NAL required a PhD as an entry-level qualification for scientific staff, whereas SMO staff were represented as ‘people who know their job’, irrespective of whether they had a postgraduate or undergraduate degree. This information was not available for the third organisation.

Besides the different entry criteria, there were daily operational issues as well. For example, as SMO was a self-determining statutory body staff did not need to seek the approval of the Supply Department within the respective government department for such things as travel. Prior to the merger, they needed the approval of the SMO executive director (ED) for such activities; the approval procedures were relatively simple with a fast turnaround. After the merger, different procedures were introduced. For example, a staff member had to apply for travel documents from the Supply Department and was told the process could take up to two weeks, whereas previously staff received permission to travel from their supervisor. Most of the travel was to visit client’s premises at the client’s request, usually at short notice. As the clients subsequently reimbursed SMO for the travel expenses, staff at SMO felt that drafting travel applications was an unnecessary burden on their time. Staff could see no reason for the additional layers of authority, and this became another point of disgruntlement. Eventually the DMNR changed the procedures for SMO staff in such incidences and allowed them to return to their old procedures.
In June 2004, the ED announced that she would not be the CEO of the new organisation, which meant that SMO staff would have to become familiar with a third managerial style in less than four years. This occurred even though the staff had been assured that there would not be any change to the work environment and that procedures and processes would remain the same. A few days before the merger took place, the corporate services manager (CSM) and two other staff members in that department accepted voluntary redundancy.

The eventual location of NSI was also an issue. There was indecision as to whether the current location of SMO would be retained or whether NSI would move into office accommodation elsewhere. The business services section of SMO did move to another location and took up accommodation as NSI. Their offices are located in part of a larger research organisation’s offices. At the new location, SMO (NSI) staff office accommodation is dispersed over different floors and building sections, and based on later internal communication, it appears that they still do not often mix. The testing laboratories remained at the original SMO location, though they became a NSI laboratory. The result was that some laboratory staff who had worked together for some years were relocated and assimilated into a larger work force, even though they retained their identity of working for NSI.

In 2000, the then ED of SMO retired after 18 years and a new one was appointed. Around this time, the federal government mandated that federal government departments and affiliated organisations would move towards electronic transactions and storage of records. As a consequence of this announcement and, as the new ED knew that it was just a matter of when, not if the merger would happen, she decided that SMO should start working toward creating a means of storing their records electronically before the merger. At the time of this decision, the organisational records at SMO were mostly paper-based and in the care of one person who was happy for the records to remain in a filing system that some within the organisation felt were archaic. The paper-based records were stored in a Compactus, a mobile lockable modular hanging-file storage system, to which staff, other than the records manager did not have after-hours access.

Once the ED made the decision to move to electronic record keeping, she asked for volunteers from the staff to join a selection committee to investigate search for and evaluate appropriate records management software. The corporate services section
received overall responsibility for this project, with the IT manager appointed as project manager as the ED had determined the project was to be an IT project. The committee consisted of six volunteer staff members and one representative (not a volunteer) from the DMNR.

**Selection Committee for Records Management Software**

Initially the committee met regularly (weekly) to discuss the needs of the organisation and the users, though the meetings reduced to monthly after it became apparent that a decision satisfying all requirements could not be reached. Each department was looking after their own staff’s interests. The system as proposed was a document storage system whereas one department wanted more of a document tracking system (without storage of the documents) similar to that which they currently used at that time. The members from the various sections represented the users within their own department and subsequently one department shied away from participating in the software selection. The project manager recommended that the committee consider Lotus Notes and Total Records and Information Management (TRIM). The announcement was made that SMO would be amalgamating with other government departments to form NSI by the time that the committee felt that it was at the stage to start evaluating specific software. NAL, one of the departments who would be forming NSI, was already using an earlier version of TRIM and had been doing so for about 14 years. Eventually SMO decided to go with the product TRIM, though a later version to that used by NAL.

The use of TRIM to store records was a major change in daily business processes for the staff. Prior to TRIM staff saved their records onto a document server and each staff member was able to determine where their records were stored, and in which folder. Documents were stored in folders with departmental titles and thence in subfolders with staff names as titles. This structure was based on the organisational hierarchical chart. Therefore, staff felt that they could always find a document even if they only had the briefest of details to go by, as long as they knew who had created it.

The IT manager interviewed consultants who were experienced with TRIM implementations to find the most suitable for SMO requirements. The consultant had the responsibility for carrying out the full project requirements of information gathering, requirements gathering, liaising with the users, and determining the folder
structure used in implementing the system, and training the users. The IT manager was the overall project manager and the consultant reported to him.

Based on the information received during the interviews, around the time of the records management software selection, the IT manager proposed that SMO replace their accounting information system (AIS), which it had been using since 1996 and implement a less complex system. The AIS was not only used to produce the monthly accounts, but was also used to track documents for one department, and store information for another. The proposal was that SMO use a standard accounting system to produce the invoices, which totalled around 10 per month, as in the view of the IT manager the AIS would be redundant after the implementation of the records management system. The data revealed that the service charge for maintaining the AIS was becoming costly and SMO decided that this cost could go towards supporting TRIM.

The proposal for a new accounting system was accepted, and the change happened around the time that the TRIM project started. This change appears to have caused staff to become unsettled as some considered that they were losing a major information resource in the AIS, replacing it with a system that, as they perceived it, only met the basic requirements. At the time of the replacement, corporate services staff had been using the AIS for 10 years and therefore it held 10 years worth of administration history. Staff were very familiar with the methods of retrieving information from the AIS and for some staff this system change became ‘another element to deal with’. By the time that these changes were starting to gain momentum SMO staff appeared to be change weary and less inclined to actively participate in the change initiatives (McConachie, 2001).

At this time, because staff were losing the AIS and its ability to track the projects from initiation to completion in the UPLab, a staff member from the UPLab proposed that he develop a Microsoft Access database (UPL-SOFT) to track the projects in much the same manner that the AIS was doing. Both proposals were approved by the ED and the transition to new systems started fairly soon after the approval. Another technology change at SMO was an enhancement to the communications systems involving telephone systems and e-mail storage. This enhancement enabled staff greater flexibility and retrieval of stored voicemail and email messages, including off-site access.
These changes were of varying complexity and staff at SMO needed to come to terms with the change to the daily processes in a relatively short time, plus the overall change in management direction and organisational status.

**RESEARCH PARTICIPANTS**

Approximately 35 staff were employed at SMO in the various departments involved in the change. For this study, the ED recruited 30% [11] of the SMO staff taking into account the involvement of participants from the departments and considering their involvement in the selection of the ERDM. The researcher did not participate in selecting the participants.

<table>
<thead>
<tr>
<th>Position</th>
<th>Age</th>
<th>Dept</th>
<th>Gender</th>
<th>Years employed</th>
<th>IS experience prior to SMO</th>
<th>Prior involvement with IS</th>
<th>Participated in interview sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manager (CSM)</td>
<td>51-60</td>
<td>Corp. Services</td>
<td>M</td>
<td>10-14</td>
<td>Grant Mgmt System</td>
<td>End user</td>
<td>1</td>
</tr>
<tr>
<td>Executive Director (ED)</td>
<td>51-60</td>
<td>Exec</td>
<td>F</td>
<td>2-5</td>
<td>No</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td>IT Manager</td>
<td>40-50</td>
<td>Corp. Services</td>
<td>M</td>
<td>15-20</td>
<td>No</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td>Admin Officer</td>
<td>40-50</td>
<td>Corp. Services</td>
<td>F</td>
<td>10-14</td>
<td>No</td>
<td>N/A</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Engineering &amp; Quality Officer (EQO)</td>
<td>31-35</td>
<td>UPLab</td>
<td>M</td>
<td>6-9</td>
<td>Quality System</td>
<td>Writing procedures</td>
<td>1, 2</td>
</tr>
<tr>
<td>Policy Officer</td>
<td>40-50</td>
<td>Policy</td>
<td>M</td>
<td>10-14</td>
<td>Quality System</td>
<td>Advice and development</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Project Scientist</td>
<td>Not disclosed</td>
<td>Policy</td>
<td>F</td>
<td>15-20</td>
<td>No</td>
<td>N/A</td>
<td>1, 2</td>
</tr>
<tr>
<td>Records Manager</td>
<td>Not disclosed</td>
<td>Corp. Services</td>
<td>F</td>
<td>&lt;2</td>
<td>Yes</td>
<td>Project leader and analyst</td>
<td>1, 3</td>
</tr>
<tr>
<td>Acting GM (AGM)</td>
<td>51-60</td>
<td>Exec</td>
<td>F</td>
<td>&lt;2</td>
<td>No</td>
<td>N/A</td>
<td>2, 3</td>
</tr>
<tr>
<td>Manager (UPLM)</td>
<td>40-50</td>
<td>UPLab</td>
<td>M</td>
<td>15-20</td>
<td>No</td>
<td>N/A</td>
<td>1, 2</td>
</tr>
<tr>
<td>Lab Staff 1</td>
<td>51-60</td>
<td>UPLab</td>
<td>M</td>
<td>10-14</td>
<td>No</td>
<td>N/A</td>
<td>1, 2</td>
</tr>
</tbody>
</table>

**Table 4.1: Participant Attributes**

The participant group consisted of staff that were on the selection committee (four) and general staff affected by the change of systems. Table 4.1, above, identifies the
characteristics of the participants relevant to the study, and each participant’s level of experience with IS. Whilst the majority of participants did not have any IS development/implementation experience prior to joining SMO, all participants were familiar with the SMO systems prior to the implementation of TRIM. When relating the above list of participant attributes to the interview data, it is interesting to note that the two participants (EQO and the UPLM) involved in the proposal and development of UPL-SOFT, as the alternative to TRIM for UPLab, had experience with systems prior to their employment at SMO. They both therefore had some exposure to other views on IS development and appropriateness of structure.

The participants for this research study were chosen by the ED of the research organisation, though those selected did have right of refusal to participate. Even though I was not able to be involved in the research participant selection the ED took into consideration the requirements of my study as explained to her in December 2003. Those requirements were based on prior research conducted as a pilot study at the beginning of this research, in an educational context and published as journals and conference papers (Wells and Brook, 2008; Wells and Brook, 2004; Wells and Brook, 2003).

**Participant Qualities Relevant to the Study**

Based on the findings of the pilot study it was important that the participants were observant not only of his or her environment but also of their own reactions to events happening around them. The participants would need to be able to communicate their reflections on past events as well as link those reflections to their own interactions with fellow employees and their working environment. The participants also needed to be confident and willing to describe the events and their perceptions of those past events. Of the participants, six were scientists involved with the quantitative investigation of instruments submitted for testing and the other participants worked in administrative and scientific positions. Given the nature of employment of the participants and the investigative skills required to carry out their daily tasks, I accepted that the proposed participants fulfilled the required characteristics.

**Organisational Reporting Structure of Participants**

The participant group consisted of staff that were on the selection committee and general staff affected by the change of systems. Four of the participants were from
the Corporate Services Department (CSD): Administration Officer, Records Manager, IT Manager, and the CSM. The CSM had overall responsibility for the implementation of TRIM. The Manager, UPLab (UPLM) was the manager of the UPLab and the Engineering and Quality Officer (EQO) and Lab Staff are staff members of that laboratory. Both the UPLM and the EQO were on the TRIM selection committee. The ED was neither a member of the selection committee nor a user of the system though she was instrumental in implementing the system in keeping with government policy. After the merger of the three entities, the Acting General Manager (AGM) of SMO (a participant) held this position for six months and prior to this was the deputy director at one of the associated organisations. AGM was not involved with the original implementation of TRIM and had not been involved with a systems implementation previously. The project scientist was not a member of the selection committee but was a user of TRIM. The Policy Officer had been involved with the implementation of a quality system at a previous place of employment, and that involvement was as an advisor. Figure 4.1, below, is an organisational chart showing the interrelationships between the participants of this research and their respective departments.

As can be seen in Figure 4.1 above, the IT Manager was both the TRIM project manager and a selection committee member, and reported to the CSM, who was not
on the selection committee. Both were participants in this study as were the records manager and one administration officer from CSM. The manager of the laboratory services division was not a participant of this study, but two staff members reporting to him, the UPLM and the EQO were participants. The EQO reported to UPLM as per Figure 4.1, and both UPLM and the EQO had a high level of understanding of IS. The EQO was the person who proposed and was given permission to develop the UPLab system.

The next section presents the data analysis of the interview sessions in three separate sub-sections following the data collection process undertaken between 2004 and 2006.

**Interview Analysis**

To understand fully the participant responses it is important to understand the environment surrounding the requirements elicitation tasks undertaken by the committee, so that the results can be analysed in context. It is crucial to understand who within the committee had influence on opinions and the extent of that influence, and if there was a major source of influence within the group, how that influence was exercised is a significant part of the analysis. The participant’s understanding of who holds organisational knowledge, and how that knowledge was shared within the organisation is crucial to the study, as is the participant understanding of the nature of a KG, and the role within the group. It is important to highlight whether the participant has observed a KG within the team and if so, whether that person exerted influence upon the group to realise an outcome that others within the group did not favour.

Semi-structured interviews were used to draw out the participants’ understanding of IS issues and group influences during a time of organisational change. Grounded theory method and convergent interviews as proposed in Chapter 3 were used, and in this section I present a discussion of the three interview sessions and observations about the interview data. To delve into the data and extract deep meaning, Strauss and Corbin (1990) suggest that sensitivity and insight are required to see beneath the obvious to discover new meaning to events during an organisational change. This suggestion was followed throughout this chapter to extract meaning from the interview transcripts. The interview transcripts were coded and classified into sub-
groups using NVivo software to uncover the concepts and relationships between the responses. The significant issues and summary analyses as shown in the tables in the chapter were produced with a matrix search of the data using NVivo software. The row and column titles of tables are the core categories as emerged from the data (Galal, 2001).

**First Interview Session Responses and Analysis**

It is possible for someone to wield influence on a group and that group’s behaviour without being recognised by members of the group as a KG (Abrams and Hogg, 1990). This is a question asked of the participants to ascertain if there was influence by an external entity that was not seen as holding specialised knowledge. Can a group be forced to collaborate during the implementation of an information system? If it can be, can the knowledge shared during this period be trusted as there might be members of the group who have different perceptions of the outcome of the implementation. Do you need to trust the person you are sharing your knowledge with, and more specifically, do you need to trust the source from where you gain your knowledge?

*Appendix 4* (page 229) includes the full list of questions, used as guidelines and prompts sorted into issues. The initial literature search revealed issues such as organisational change, collaboration and leadership would figure heavily in participant perceptions in the context of IS, as proved the case at SMO. Table 4.2, below, presents the overall number of references per department for each issue.

**First Interview Nodes and Data**

A matrix search of the data was performed in Nvivo to ascertain the correlativity between the data coded at the issue node and the department. Staff working in corporate services and UPLab displayed the most concern about the IS, presumably because one department (corporate services) was leading the change implementation and the other (UPLab) were fighting against TRIM and eventually proposed another system for that department.

Conversely UPLab appeared to be least affected by the organisational change even though the data demonstrates dissatisfaction with the TRIM implementation. Given that only two of the participants were from the policy department, the high number of references made during the relatively short interviews indicates that there was a
high level of concern regarding the new information system and the subsequent organisational change. Table 4.2 below, shows that staff in corporate services and the UPLab were most concerned about the IS and this is reflected in the resistant behaviour from both departments. UPLab staff indicated that another area of major concern for them was the collaboration and teamwork of the committee, with the expressed doubt as to the likelihood of success being attained with the project.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Department</th>
<th>Corporate Services</th>
<th>Executive</th>
<th>Policy Dept</th>
<th>UPLab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaboration &amp; Teamwork</td>
<td></td>
<td>24</td>
<td>5</td>
<td>13</td>
<td>19</td>
</tr>
<tr>
<td>Information Systems</td>
<td></td>
<td>126</td>
<td>23</td>
<td>68</td>
<td>84</td>
</tr>
<tr>
<td>Knowledge Gatekeepers</td>
<td></td>
<td>20</td>
<td>0</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>Leadership</td>
<td></td>
<td>14</td>
<td>2</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Organisational Change</td>
<td></td>
<td>63</td>
<td>14</td>
<td>47</td>
<td>15</td>
</tr>
<tr>
<td>Trust</td>
<td></td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 4.2: Department and issue reference matrix from the first interview data

A matrix query in NVivo revealed the number of data sources at the nexus of each issue and classification and exhibited in Table 4.3, below.

<table>
<thead>
<tr>
<th>Classification Issue</th>
<th>Change</th>
<th>Communication</th>
<th>Group Dynamics</th>
<th>Knowledge Gatekeeper</th>
<th>Power &amp; Politics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaboration &amp; Teamwork</td>
<td>8</td>
<td>6</td>
<td>16</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Information Systems</td>
<td>22</td>
<td>16</td>
<td>22</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Knowledge Gatekeepers</td>
<td>9</td>
<td>2</td>
<td>13</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>Leadership</td>
<td>6</td>
<td>1</td>
<td>12</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>Organisational Change</td>
<td>18</td>
<td>9</td>
<td>20</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Trust</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 4.3: Classification and issues as per the first interviews
When analysing the data the classifications emerged as common concepts and themes from the participants. Participants expressed major concerns regarding change and IS as well as IS and group dynamics. Again, the high scorers within Table 4.3 were the issues that attracted the most concern amongst the participants and these were IS and organisational change.

The apparent non-issue of trust in both Table 4.2 and Table 4.3, contradicts the emotion behind the response excerpts as presented in Table 4.4, on page 105. This table presents data extracted from interviews with all participants as noted in Table 4.1, on page 98. The number of references and reference sources was extracted from each classification at the convergent point of the individual issue node. The number of indicators for each department shows who held most concern about the issues that emerged during the interviews. Table 4.4 (page 105) presents the main points from an analysis of the data extracted from each node. Some issues span more than one classification and node in the analysis, and those issues are central to the resistant behaviour of the staff at SMO. Each issue is discussed following Table 4.4.
Table 4.4: Significant data collected at each issue node and classification for first interview round

<table>
<thead>
<tr>
<th>Classification</th>
<th>Change</th>
<th>Communication</th>
<th>Group Dynamics</th>
<th>Knowledge Gatekeeper</th>
<th>Power &amp; Politics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Collaboration &amp; Teamwork</strong></td>
<td>• Staff did not have time to understand the “big picture” and change itself was not a focus of the group.</td>
<td>• During requirements gathering, staff was not really aware of the rationale for the new IS.</td>
<td>• People were invited to volunteer to be on the selection committee.</td>
<td>• The committee negotiated the differences between departments in the requirements stage, which became the basis of the conflict.</td>
<td>• Forced compliance</td>
</tr>
<tr>
<td><strong>Information Systems</strong></td>
<td>• Staff was reluctant to be involved with the change and the committee chose to undertake the system requirements gathering themselves.</td>
<td>• Communication regarding system requirements appears to be lacking, with some staff claiming not to have been consulted.</td>
<td>• All areas affected by TRIM represented on the committee.</td>
<td>• The committee were seen as the gatekeepers, with other gatekeepers being located within departmental groups.</td>
<td>• The committee was not seen as collaborative as two people appear to have decided that SMO would implement TRIM.</td>
</tr>
<tr>
<td><strong>Knowledge Gatekeepers</strong></td>
<td>• Conflict of views as to why the information system was changed</td>
<td>• No formal communication channels and system requirements gathered informally.</td>
<td>• Differing points of view between departmental groups</td>
<td>• Conflicting views as to the KG identity.</td>
<td>• A few people claimed to be the KG, and it was noted that the committee were prevented from making a full evaluation of TRIM.</td>
</tr>
<tr>
<td><strong>Leadership</strong></td>
<td>• A great deal of dissatisfaction arose due to the change in office layout.</td>
<td>• The departmental managers requested staff to note what their requirements were for the new system, and then collated responses.</td>
<td>• There were conflicting views as to who was the leader for the TRIM project.</td>
<td>• Different people would take the lead as situations arose where specialised knowledge was required.</td>
<td>• One person claimed all leadership roles, and also stated that no other person cared to take up the leadership, due to the quality of information supplied.</td>
</tr>
<tr>
<td><strong>Organisational Change</strong></td>
<td>• SMO was starting to run out of time to get all changes implemented.</td>
<td>• There was never any feedback invited about how people felt as a result of these changes.</td>
<td>• There were different dynamics between the sub-cultures, moving from the local network to TRIM. UPLab have their own system, and wondered why they needed TRIM.</td>
<td>• Unable to identify the people responsible for record keeping in associated organisations.</td>
<td>• Rationale for new system unclear to staff and new system imposed without consultation.</td>
</tr>
<tr>
<td><strong>Trust</strong></td>
<td>• Staff did not trust that the system would be easy to use. They were sceptical.</td>
<td>• People were quite happy to give information, but were doubtful that they would see the benefit of that information.</td>
<td>• There was not a great deal of trust between the members and the implementation teams/groups.</td>
<td>• Because they were very protective about their information, staff were forced to comply with the request to transfer their documents to TRIM.</td>
<td></td>
</tr>
</tbody>
</table>
Collaboration/Teamwork

During the transition from the old system to TRIM, staff involved were required to collaborate with others to achieve their goals. There did not appear to have been a focused attempt to involve the organisation as a whole in such a major undertaking as a change in the central information system. Figure 4.2, below, represents the issues surrounding the committee’s collaboration as perceived by staff. From the issues highlighted in Figure 4.2, the bi-directional influence of those issues indicates that staff at SMO did not view the change favourably. Data reveals that staff attempted to keep within their own individual group environments as a means of dealing with the change.

![Figure 4.2: Collaboration & teamwork issues arising from first interviews](source: concept developed for this study)

Participants appeared to understand the basics of collaboration but as the CSM commented, ‘collaboration did not occur between the different departments as they did not “see the big picture” in relation to how the change would affect each department’. Participants who were also committee members acknowledged that their understanding of IS at the beginning of the TRIM project increased due to the
implementation, although that was not their objective for being on the committee. The process for selecting the committee appears to have been a general invitation to staff in all affected departments, though it was noted that the term of ‘volunteer’ should really be ‘volunteer before being volunteered’. This perception raised the issue of conflict of purpose. Within the matrix presented in Table 4.4, the nexus of group dynamics and power and politics, participants commented that the appearance of volunteering for the committee was slightly blurred as there was a feeling that ‘you couldn’t say ‘No’ as you would look terribly uncooperative’.

The committee decided that each department would supply their own requirements for a new system, hence the differing perception that the consultation process involved all staff, and the contradiction revealed in the data was that some staff were not involved at all. This indicates a lack of realisation amongst the committee members of the various methods used by the departments and that not all staff members were consulted during the requirements process. This suggests a lack of experience amongst the staff as to who should be consulted in situation such as a systems change. It also appears that each department decided on their own methods to elicit user requirements and therefore there was no attempt at consistency.

**Information Systems**

The data point to failed expectations from the staff who visited an associated organisation to see TRIM in operation, and that the reality of the implemented software was not what SMO expected. Staff were concerned about a perceived lack of consultation of their needs for TRIM as many thought the software was unnecessary and they were happy with what they had. This indicates informal discussions about the perceived usefulness of the software and its appropriateness as further data reveals that staff perceived TRIM as being too difficult for such a small organisation. Other staff related that new software was necessary because ‘corporate services changed their system’, and as the former system was also used by the laboratory to store information, this led to the development of UPL-SOFT. These perceptions support data that indicates that communication pertaining to the rationale for both the system and the extent of the organisational change was lacking.

The changes to the IS at SMO are the set of circumstances around which the elements of this study interact. SMO underwent a major change in their IS over a period of time that influenced the organisational culture. The implementation of the
systems at SMO appears to have been unsatisfactory to the majority of participants interviewed for this research. Figure 4.3 below, is a graphical depiction of the data shown in Table 4.4, on page 105. The data reveals that the issues surrounding the TRIM implementation had significant impact on SMO staff perceptions of that software and its usability and appropriateness for SMO. The data reveals that the staff were resistant to changing systems from the start and did not want to be involved with nor had confidence in the new system.

![Figure 4.3: Information systems and the issues emerging from the first interviews](Source: concept developed for this study)

Individual perceptions as to communications during the requirements elicitation process appear to be in agreement that the communication channels were very informal and that there was no process in place to research and capture the necessary process that needed to be transferred or changed to suit the new software. There was a good deal of uncertainty surrounding the implementation of TRIM and subsequently the system UPL-SOFT. Perceptions of some staff were that informal consultations held with staff were a mechanism to stop complaints, and as one participant observed, the complaints did not stop.
The data has revealed that prior to the TRIM implementation few staff at SMO had a complete idea of what implementing an information system as complex as TRIM. Communication within the SMO organisation appeared to be lacking and the data showed that not all committee members consulted with the staff within their own departments. Data on the way that the requirements gathering were undertaken revealed the lack of experience with systems implementation tasks. A further confusion to both committee members and staff in general, was that no clear leader with appropriate knowledge could be identified. There appears to have been minimal communication between the affected groups.

At the nexus of power and politics and IS issues reveals a high level of resistance amongst the staff members as they ‘considered it [TRIM] a minefield’. Committee members reported that they had the perception that they were only there to rubber stamp a decision made sometime during the evaluation phase, but not communicated to the committee. The perception was that one person had made the decision and the ED then supported this decision. It is interesting to note that the ED commented during her interview that she stepped in after approximately one year and made the decision to go with TRIM, as the committee were taking too long [12 months] to reach a solution. This reluctance to make a concrete decision can be interpreted as resistance to TRIM, or at least to the selection committee process. This resistance, coupled with the fact that two committee members were promoting another system for their department, supports previous comments about committee members from different departments approaching the task of software evaluation with their own hidden agendas.

The data shows that the project manager held discussion groups with SMO staff to inform them about the new software, but not all participants seem to recall those meetings or any outcome from them. During the evaluation phase of alternative IS, two committee members were actively promoting the development of in-house software for the laboratory. The ED approved this proposal, and subsequently UPL-SOFT was developed and implemented. This action sent a message to the other staff that the ED was not confident that TRIM would satisfy the organisation’s recording keeping requirements.
Knowledge Gatekeepers

Participants had a reasonable understanding of the role of a KG, and, some named the records manager from the paper based system as a KG, and linked that position and role, conceptually to the records manager of the electronic system. Participants identified the KG as one who decided what records are stored in the system, irrespective of whether the system is paper-based or electronic. A definition offered during the first interview sessions was that ‘a KG is one who educates people’, and this definition views that the perception of a KG is as one who disseminates information with a view to increasing knowledge. The issue of communications in this classification discloses that KGs are thought to be the ones who understand the organisational processes and can therefore transmit each department’s requirements, regardless of whether this is the case or not. One of the committee members expressed doubt as to whether they, the committee, had spoken to the right people at an associated organisation when asking for information, as the information given to them led them to believe that TRIM would be appropriate for the electronic records management system at SMO.

Data also revealed that two members of staff undertook the role of KG in relation to collating the user requirements and then gave that information to the external consultant hired to do the actual implementation of TRIM. Neither of these two staff members were recognised as having system implementation experience or an understanding of the capability of TRIM. It was also noted that staff were withholding knowledge from the requirements process by claiming that there was a conflict of purpose. In the issue of group dynamics, the data discloses that the perception of the KG role rotated amongst the committee members depending on the topic under discussion. Specifically in relation to the theme of KG, the problem of identifying the KGs within SMO became elusive, and this links to the evolving nature of the KG based on the topic at hand, though the data also indicates that no one was surprised that a particular committee member displayed the knowledge he did about IS.

The data points to the influence held by the KG owing to being at a communications crossroads, especially in relation to direction and setting the agenda for the project. It was revealed by the project manager that after the requirements gathering phase an external consultant was hired to undertake the implementation. Senior management
chose not to wait until the employment of a permanent record manager who understood and had experience with TRIM. Figure 4.4, below, shows the issues that affect the KG from data extracted from the interviews.

Data indicates that perception of the KG role did not change during the different phases of the systems implementation: this observation was not borne out by all committee members. Data also suggested that communication between the three organisations, as a result of their merging in a relatively short time after the first interview sessions was lacking, as SMO staff did not know that a version of TRIM was already in use at one of the other organisations.

Within the KG issue, the project leader said that he ‘took people out to see the new system’, and observed as to whether the staff tried to adapt the system to the way that they worked. The implication was that he expected the staff to find a way of making TRIM work for them, rather than first ensuring that the software was appropriate for the organisation’s business processes. This implication is supported by a comment from a committee member that ‘it seemed that we were trying to shoehorn what we had into TRIM’.

![Figure 4.4: Knowledge gatekeepers and the issues emerging from the first interviews](Source: concept developed for this study)
One of the participants, the IT Manager, claimed the role of KG in relation to hiring the external consultant for the implementation, and the Records Manager for that position. In addition, he claims the role of being KG for all systems at SMO due to his knowledge and his ability to facilitate a solution. The linkage between a KG, influence and the implementation of the new system stands out as a main ingredient to the events at SMO. There are contradicting views on the identity of the KG in this instance, as a committee member also named himself as the committee KG and another committee member also held the same view as to the identity of the KG. These contradicting views indicate conflict within the committee between representatives from the UPLab and corporate services departments; and potential resistance of ideas and problem solutions proposed by the representatives of those departments. The research participants reported they did not generally notice any change in the role of the KG because of the systems implementation or whether the KG role changed during the implementation.

**Leadership**

As mentioned above the committee members and general staff had differing views as to the identity of the KG, and from the analysis of the data relationships represented in Figure 4.5, below, it is equally clear that SMO staff were uncertain as to who was the official leader of the project. In relation to leadership of the IS change, the issue of dissatisfaction with the change in this classification produced some interesting data in that there are two major views that are in direct opposition to each other. Whilst the SMO executive did appoint a leader for the project, other members of the committee took on that position during the systems evaluation period. The data reveals that the uncertainty regarding leadership also flowed over into SMO staff identifying the KG for the project. This ambiguity appears to have caused unrest amongst the staff in relation to the new IS.

In addition to confusion over who lead the systems change initiative, participants reported another issue that was causing discontent. This issue was the change in office layout. Prior to that particular change, staff had separate office accommodation. The ED took the view that having staff share an office would generate communication between staff, and therefore the new layout had shared office accommodation. The staff view was that the shared accommodation requirement was an infringement on their ability to conduct work duties without
interruption, and this particular change became a source of resentment and added to resistent behaviours that influenced other change initiatives, such as the new records management system.

The issue of leadership and communication also appears to have caused concern to the staff members at SMO. Whilst staff acknowledged that they were asked to supply their requirements for the new system, their understanding of what happened with this information after that is unclear. There appears to have been a communications gap between staff and the senior staff at SMO in relation to the rationale for the requirements and the usefulness of those requirements. One participant claimed not to have seen any of her requirements in the new system. The group dynamics issue in this classification reveals that the committee and/or management had failed to communicate to general staff who held the leadership of the project, and only one participant, other than the ED who had appointed him, labelled the IT Manager as the leader. The only participant who correctly identified Muhammad as the leader was, in fact, the IT Manager himself. This indicates that the leadership of the group had either not been successfully communicated to staff at SMO, or that staff did not perceive the IT Manager as the leader even though he had been appointed to that position.

![Figure 4.5: Leadership issues arising from the first interviews](Source: concept developed for this study)
With respect to the issue of KG, three people were named as holding that role. In this section on leadership the role of KG is linked with being an innovator, perhaps because the direction SMO was taking by implementing the new system was an innovation for that organisation. The issue of power and politics uncovers the influence that the project leadership held, though within the same interview the IT Manager claimed the most important roles and then later in the interview downgraded his involvement to that of an advisor.

Two conflicting views emerged under the classification of leadership: one is a visionary view of the future at SMO and the other is clearly a disgruntled one regarding the change to the work environment. Neither are mutually exclusive.

**Organisational Change**

The previous sections present data to support the premise that SMO did not fully comprehend the extent to which the workplace environment would change and the effect that change would have on staff. Data reveals that staff were beginning to become very dissatisfied with the organisational change surrounding them at SMO. Figure 4.6 below, represents the issues that emerged from the data. Staff showed scepticism regarding an announcement that nothing substantial would change at SMO and that no jobs would be lost. In fact, shortly after the first interviews one of the participants accepted voluntary redundancy and therefore further observations from that staff member were lost to this study. Adding fuel to staff dissatisfaction was the already mentioned change to the physical layout of the offices, which ‘comprehensively pissed most people off’, and according to the interview data, staff made strong representation to the ED that the new office layout was inappropriate. The staff saw the change at SMO as a paradigm shift in systems and thinking, which is consistent with other comments that were made about five different changes over a relatively short time, some of them minor, but they added up to a major environmental change.

Staff reacted to this chain of changes by becoming more resistant to any change that they considered foisted upon them. The gist of the data from the first interviews gives an overall appearance of rising panic at the thought of all the tasks that still needed to be accomplished before 1st July 2004, which was the designated day of change from a self-governing statutory body to that of a business unit as part of a large federal government department.
The effect of the change to TRIM seems to have faded slightly into the background as bigger issues took precedence. Most staff at SMO had not worked for a government agency and therefore there were expectations that the added hierarchical layers of management would be more frustrating for them. Another participant commented about the process of a simple task ‘such as booking a flight to visit a client now took weeks’ (Lab Staff 1), with added layers of authorisation needed from headquarters, instead of the time it took to make a phone call after permission from the manager at SMO. Whilst this opposition was against a change in the daily business processes, the effect was to focus the resistant attention on TRIM, as this software was seen as central to individual working environments.

Another aspect of the organisational change that staff experienced was the upcoming change to the organisational culture. According to reports, SMO hire their staff based on experience and a relevant academic degree, and then enabled the staff member to be reasonably autonomous in their daily tasks, whereas the organisations that were merging with SMO were more bureaucratic in nature.
Resistant behaviour was shown in relation to TRIM by some staff claiming they ‘were on holidays’ when discussions were held about the changes that TRIM would bring to SMO, and therefore claiming that they did not know about any discussions or TRIM demonstration sessions. The project leader insisted that these staff members were present during general discussions and that the demonstrations were held on different occasions to take into account staff being absent from the workplace or unavailable due to other commitments. This show of resistant behaviour indicated that staff were unwilling to engage with the new system. In addition to this, unwillingness by management to elicit feedback from staff about the changed environment indicated one of two things: either they felt helpless to solve the problem of managing the change at SMO, or that they did not perceive that there was a problem to resolve.

The UPLab staff were dissatisfied with the thought of being compelled to use TRIM, and by the time TRIM was fully implemented the UPLab had developed other software, which they perceived as filling their storage and reporting needs. UPLab only used TRIM for a very brief time and it appears that the usage was a stopgap, as the AIS software they had originally used, had been removed from the SMO suite of IS. The AIS software also drew a fair amount of criticism from UPLab staff during its life at SMO, and interestingly, the in-house developed UPL-SOFT contained a large number of the same functions as the AIS software, including almost one complete module from AIS. This indicates dissonance amongst the UPLab staff through saying and acting out one belief but incorporating into a system designed by one UPLab staff member and used by others, functions that they had previously disparaged. UPLab staff were also reluctant to contribute any work towards TRIM once it had been established that UPL-SOFT had permission to proceed.

The data about the group dynamics revealed staff at SMO were used to working in isolation, hence the communication between the varying groups within SMO was minimal. The new ED established teams to investigate different issues to encourage teamwork amongst the staff. At the same time, she instructed the managers to take on the role of support to staff, which was contrary to the one they had with the prior CEO, who adopted more a hand-on role. As an indication of a reaction to change, some staff had been employed at SMO for approximately 30 years and the average length of service of the participants was 10 years, (refer to Table 4.1 on page 98 for
details of individual participants), and making what they saw as a radical change to their work environment was difficult. The change in role directed by the ED, indicates that not only did SMO staff need to cope with changes to their working environment and organisational status, but also to what they perceived as their reason for being at SMO in the first place.

The issue of power and politics at the organisational change nexus reveals that the project leader spoke to the ED after a period of evaluating TRIM. It was decided at that meeting that TRIM was the appropriate choice, and based on that decision; the project leader started recruiting people from different departments for selection committee membership. This data supports the observations that the selection committee was convened to approve an action already decided, and not as claimed, to be actively involved in making the selection. It is at this stage that people started to display resistant behaviours to TRIM, which were countered with the comment ‘listen darling, we are going to have a new system and we want to build it together’. This perception of the TRIM project timeline confirms other participant’s views that the decision to implement TRIM had been made some time before convening the committee, and implies that the communicative process within SMO was lacking.

It was significant that SMO was acting in haste by trying to change internally and implementing an IS for which they were ill prepared, whilst also simultaneously trying to incorporate the merger with two other entities. Interpretation of the data suggests that SMO had decided to implement the latest version of TRIM in the belief that the federal government would not force them to revert to the earlier version in use in the federal government department.

Trust

From the matrix shown in Table 4.4, on page 105, it is obvious that staff at SMO had little or no trust in the efficacy of the new system as represented in Figure 4.7, below.

One participant claimed that there was no problem with sharing information at any stage; it was just that the staff did not know what was required. Another said that, occasionally, once the information was handed over, people lost sight of where it went and its use within the new system. SMO staff appeared very cynical after a
demonstration of TRIM and reported that on leaving the demonstration, informal discussion resulted regarding the lack of ease of use of TRIM.

According to the data, there was an implication that staff had immediately taken a stance on the ease of use and its usefulness to the organisation. There was also a clear indication of informal discussions amongst staff regarding TRIM and its reliability. Staff were generally very protective about their own information, and feared that by transferring it to TRIM they would lose it and be unable to retrieve it when required.

Under the classification of power and politics, another indication of lack of trust was clearly stated. The strategy of removing the old storage servers from the SMO network, forced staff to use TRIM. Staff were under the impression that they would no longer have access to their documents once TRIM was fully functional, even though the project manager referred to this point as being incorrect. There was a strong perception of forced compliance amongst the staff and data indicates two main areas of concern amongst the participants. One, the staff had been threatened
with the loss of their documents unless they transferred them to TRIM as the document servers ‘were being turned off’. Secondly, comments were made in relation to serving on the committee, and indicated that any staff refusing to serve on the committee would be viewed as unprofessional; implying that membership of the committee was not voluntary.

The data show a clear barrier to trust amongst the committee members as data from other issues has shown that some committee members had separate agendas and requirements for the outcome of the software implementation. In that context, an important point to note was that there were committee members who were simultaneously promoting the development of an in-house laboratory system whilst serving on the committee to evaluate TRIM’s applicability to SMO’s business processes. One participant linked the implementation of TRIM to increased document security though there had not been any mention of any security breach at SMO.

First Interview Conclusions

After coding and analysing the data from the first round of interviews it seems that whilst the data showed that the participants had very strong views on the change processes and communications amongst staff about TRIM, the data did not fully explain why there was a feeling of dissatisfaction amongst staff regarding the implementation of TRIM. Following in Table 4.5, page 120, there is a summary of the findings from the first interviews. The row and column titles of Table 4.5 are the core categories from NVivo, and the analysis was produced with a matrix search of the data. Lack of positive pointers within the data made it necessary to visit the research site to gather further data. The second visit focused on gathering data regarding the interactions amongst the selection committee members, and the leadership displayed by persons therein.
Table 4.5: Summary of analysis from the first interviews

<table>
<thead>
<tr>
<th>Classification</th>
<th>Change</th>
<th>Communication</th>
<th>Group Dynamics</th>
<th>Knowledge Gatekeeper</th>
<th>Power &amp; Politics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaboration &amp; Teamwork</td>
<td>• Staff attempted to stay within their own workgroup environment.</td>
<td>• Confused awareness of the rationale for TRIM.</td>
<td>• Status of &quot;voluntary membership&quot; of committee blurred.</td>
<td>• KG role did not change.</td>
<td>• Membership of committee not really voluntary.</td>
</tr>
<tr>
<td>Information Systems</td>
<td>• Staff resistant to TRIM, as they had no confidence in TRIM.</td>
<td>• No clear indication that all SMO staff where involved in the user requirements specification.</td>
<td>• Lack of information system project management experience.</td>
<td>• All departments affected by TRIM represented on committee.</td>
<td>• Two committee members actively promoting an alternative system for their department.</td>
</tr>
<tr>
<td>Knowledge Gatekeepers</td>
<td>• Resistance to changing office environment.</td>
<td>• Staff withheld knowledge of processes.</td>
<td>• KG role taken up by different people at different times depending on the topic under discussion.</td>
<td>• Confusion as to who was KG.</td>
<td>• Influential as gatekeeper of communications.</td>
</tr>
<tr>
<td>Leadership</td>
<td>• Resistance to changing office environment.</td>
<td>• Informal channels of communication regarding user requirements.</td>
<td>• Staff uncertainty as to who was leader of project.</td>
<td>• Staff thought that committee had a general idea of their role.</td>
<td>• Project leader held influence with ED.</td>
</tr>
<tr>
<td>Organisational Change</td>
<td>• Lack of understanding of the extent of change due to TRIM. Office layout caused upset. Staff unhappy about changing work practices.</td>
<td>• Staff sceptical of TRIM benefits Management avoidance of staff feedback. Lack of consultation.</td>
<td>• Staff used to working within departmental groups and in isolation from other colleagues at SMO.</td>
<td>• TRIM acting as &quot;lightening rod&quot; attracting resistance.</td>
<td>• UPLab given permission to develop departmental alternative to TRIM.</td>
</tr>
<tr>
<td></td>
<td>• Staff sceptical about TRIM.</td>
<td>• Willing to share information if staff could see benefit. Rumours regarding usefulness of TRIM.</td>
<td>• No trust between committee members. Members had own agenda.</td>
<td>• Staff protective of own information.</td>
<td>• Project leader and ED decided on TRIM and committee &quot;rubber stamped&quot; that decision.</td>
</tr>
<tr>
<td>Trust</td>
<td>• Staff sceptical about TRIM.</td>
<td>• Willing to share information if staff could see benefit. Rumours regarding usefulness of TRIM.</td>
<td>• No trust between committee members. Members had own agenda.</td>
<td>• Staff protective of own information.</td>
<td>• Forced compliance in using TRIM.</td>
</tr>
</tbody>
</table>
SECOND INTERVIEW SESSION RESPONSES AND ANALYSIS

This section presents an analysis of the second round of interviews, and further observations about the data. The first round of interviews was successful to a point. What did work in those interviews was the semi-structured nature of the interview guide as this enabled an informal interview environment and appeared to facilitate conversational interaction between with the participants. Following Lincoln and Guba’s (1985) strategy of capitalising on the interaction between the researchers and participant, the second round of interviews were also semi-structured, and a guide similar to that for the first interviews was used (refer to Appendix 5 page 231 for the second interview session guide).

Even though the data extracted from the first interview sessions proved inconclusive in explaining the actions and reactions of SMO staff, those interviews highlighted a lack of communication and leadership throughout the requirements elicitation phase and subsequent systems implementation. The first interviews also revealed that power and political behaviour affected the outcome of the project. A second round of interviews focusing on the committee itself, and the interaction amongst the committee members, enabled a deeper understanding of why the participants’ perceptions were as reported in the data.

The emphasis in this second round of interviews was on the importance of understanding how the selection group functioned and whether the members had autonomy in their decision-making processes and task performance. The leader of the group could potentially exert power that would have a great deal of internal influence on the final software selections. Also crucial to understand was who amongst the selection committee members carried the most influence, and how that personal influence was used in determining the software selection. Conversation about communication featured heavily in the second sessions, and the communication strategy for disseminating the project goals and change issues to staff members of SMO was a consideration to determine whether SMO staff had a clear understanding of how TRIM would affect those who were required to use it. A better understanding of the behaviour and perceptions was reached by investigating the committee’s social structure and interaction; who was in a power position to influence decisions, and whether staff perceived the actions of the project manager
as effective or not. The focus on those issues was the basis for the determination of NVivo nodes and coding of interviews.

**Second Interview Nodes and Data**

By the time of the second session interviews, some staff members in corporate services who were either a participant and/or a committee member had either left the organisation, or were unavailable for further contact due to a change in duties. The majority of the participants who continued with the research project were committee members, and the data indicates the appearance of groupthink as behaviour, particularly the symptoms of mindguard and pressure for conformity. These behaviours will be discussed later in the sections following Table 4.8, on page 124.

A further matrix search of NVivo was performed to ascertain the correlativity between the data coded at the issue nodes and the departments from where the respondents were located. Table 4.6 below, presents the overall number of references per department for each issue that emerged from the second sessions. The additional interview data shows major concerns emanating from the participants and references the issue of management as opposed to those about leadership from the first sessions. The Policy Department and UPLab are heavily represented in all three issues, whereas Corporate Services Department’s perceptions are reflected mainly under the issue of management.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Department</th>
<th>Corporate Services</th>
<th>Executive</th>
<th>Policy Dept</th>
<th>UPLab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Committee Structure and Interaction</td>
<td>0</td>
<td>1</td>
<td>41</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Social Influence</td>
<td>2</td>
<td>0</td>
<td>16</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td>24</td>
<td>20</td>
<td>26</td>
<td>32</td>
<td></td>
</tr>
</tbody>
</table>

*Table 4.6: Department and issues reference matrix from second interview data*

A matrix query in NVivo revealed the number of data sources at the nexus of each issue and classification and presented below in Table 4.7. As can be seen from the matrix below, when analysed from the perspective of each classification, the issues that arose at SMO reflected a similar distribution in Table 4.6, with heavy emphasis on the management issue.
New data that emerged from the second sessions revealed that the committee met for approximately 12 months before the ED and project manager made the decision to implement TRIM, and again it was emphasised in the second interviews that the committee was pressured to agree with that decision. An extraction of data at each node from the second interview analysis is presented in Table 4.8 (page 124). The discussion of the analysis of the data from each issue follows, and as with the first interview section analysis, some issues span more than one classification.

### Committee structure and interaction

By understanding the internal relationships and dynamics of the committee and the committee’s interaction with other SMO staff, the context of the committee’s decisions can be placed in the proposed Modified Technology Acceptance Model (mTAM) framework from Chapter 3. It is equally important to understand how the committee functioned and whether the members had autonomy in their decision-making and task performance. One important point to note is whether there were any direct or indirect supervisory relationships amongst the committee members and if so what affect those relationships had on decision-making.

Members from all departments affected by TRIM were represented on the committee though not all hierarchal levels within SMO were represented. There were staff members who were not consulted and this was commented upon by a participant claiming that she could not recall her requirements for TRIM being sought. This is in direct contrast to other participants’ comments claiming that requirements from all staff were sought.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Change</th>
<th>Communication</th>
<th>Group Dynamics</th>
<th>Knowledge Gatekeeper</th>
<th>Power &amp; Politics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Committee Structure &amp; Interaction</td>
<td>3</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Social Influence</td>
<td>4</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Management</td>
<td>13</td>
<td>3</td>
<td>10</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 4.7: Classification and issues emerging from the second interviews
<table>
<thead>
<tr>
<th>Issue</th>
<th>Classification</th>
<th>Change</th>
<th>Communication</th>
<th>Group Dynamics</th>
<th>Knowledge Gatekeeper</th>
<th>Power &amp; Politics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Committee</td>
<td>Structure and</td>
<td>• The committee met for approximately 12 months, before</td>
<td>• It was not clear to staff how the requirements were shared with the person who was implementing the new system.</td>
<td>• The decisions made by the committee were seen as autonomous.</td>
<td>• Committee lacked skills to evaluate complex software such as TRIM.</td>
<td>• Pressure was put on the committee to reach a quick solution.</td>
</tr>
<tr>
<td>Interaction</td>
<td></td>
<td>the TRIM decision was made.</td>
<td></td>
<td></td>
<td></td>
<td>• There were committee members who felt they had minimal influence with ED.</td>
</tr>
<tr>
<td>Influence</td>
<td></td>
<td>• Lack of communication was slowing the project down.</td>
<td>• There were managers and staff on the committee where there were reporting lines.</td>
<td>• Project leader appointed due to IT knowledge, but assumed by committee to have been so as he would lack “bias as not a manager”.</td>
<td>• Doubt that any dissenting views would be heard</td>
<td>• Project leader seen as an influential person.</td>
</tr>
<tr>
<td>Management</td>
<td></td>
<td>• No formal tasks were allocated to particular committee members.</td>
<td></td>
<td>• Small committee/team without the opportunity of calling on others to fill then skills and knowledge gap.</td>
<td>• Requirements were sought in terms of the ideal daily tasks, rather than actual daily tasks.</td>
<td>• There appears to have been certain groups within the committee whose agenda was different from that stated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No formal authority to carry out recommendations.</td>
<td></td>
<td>• The committee felt that the aims of the project were clearly communicated and shared within the committee members, though the perception was that the committee had not communicated well.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A timeline was established for staff training on the new system, and the cut-off date of the old.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.8: Significant data collected at each issue node and classification for second interview round.
Committee members interviewed disclosed that whilst they thought they had the authority to give an appraisal of the software, they were unsure as to what credence would be given to their collective opinion if that contrasted unfavourably with that of the ED.

This perception confirms comments from prior categories that certain committee members felt that they were there to rubber stamp a decision that was made prior to the committee convening. The committee considered that the goals of the project were clearly stated within the committee but when pressed to relate those goals, those staff interviewed could not recall them.

Committee members only acknowledged that they did not have experience in evaluating and selecting software of the complexity of TRIM. This lack of experience is a significant weakness of the committee, as they had no way of appraising system functionality and relating that to SMO business processes. A significant strength that the committee possessed was their knowledge of the organisation as the majority of committee members had been at SMO for more than 10 years. The lack of communication between the various departments, (previously commented on), appears as a weakness as without communication it is unlikely that those committee members collating the requirements specifications would have any in-depth understanding of each other’s requirements, therefore potentially missing substantial linkages where stored information could benefit all departments. Another weakness in the committee’s knowledge of IS becomes apparent in the fact that SMO tried to adapt the daily tasks to suit TRIM. As cited previously, one committee member reported it seemed as though staff were being asked to be flexible and developed workarounds for their processes: ‘shoehorn what they had into TRIM’.

Participants reported that there were members of the committee whose agenda was different to the rest of the committee in relation to TRIM. Others have disclosed during the interviews that staff from the UPLab were protesting the use of TRIM for that department. UPLab staff considered that as they had been given permission to develop UPL-SOFT specifically for their needs, there was no need for them to be involved in determining the requirements and subsequent implementation strategy for TRIM. There is evidence in the data that the issues of TRIM versus UPL-SOFT were a major point of tension between committee members, and when one UPLab staff member decided that TRIM was a decision already made, he withdrew from the
committee. Presented in Figure 4.8 below, is a graphical depiction of the bi-directional influences that shaped the committee members’ interaction, and subsequent behaviour of staff at SMO in general.

There was a view held by two participants that there was a split amongst the committee members as they felt that they had been ‘railroaded’ because the project leader was pushing to get the project completed. There were discrepancies between how management and the committee viewed the project. Management wanted the project completed in as fast a time as possible and the committee wanted to take things a bit slower. It is noted that there was conflicting data as to how long the project took overall, with one person recalling that the time taken was six to ten months, and others recalling that the time was twelve months. However, in any case, the duration of the project was lengthy, further highlighting the committee’s inexperience. The process only ended when the ED, took the recommendation of the project leader and decided to go with TRIM.

Interviews revealed that the committee considered that they all shared the same objectives; but the reality was that whilst some members were there to protect their
own working environment, some others felt as though they had been wasting their time on a process already decided.

One interviewee reported that, even though membership of the committee was fluid, there was a core membership of four people. When the project was officially finalised these four were the only ones remaining on the records management selection committee.

**Social Influence**

As mentioned earlier in Chapter 2, page 42, this study uses the terms social influence and influence as distinct from the term power when discussing some aspects of behaviour at SMO. External influence on the selection committee could have led the members to make a software selection that did not entirely suit the business practices of SMO, as opposed to making a decision through the exercise of authoritative power. It is important to understand who, amongst the selection committee members, carried the most social influence and whether that person was the legitimate leader of the committee. One of the participants on the committee claims that the committee members were not de-motivated by the leadership. This raises the question then, of why when the meetings changed from Friday 3pm, to Thursday and subsequently Wednesday, many started a pattern of not attending due to other commitments, even though the other work commitments of the members had been provided for by changing the meeting times. Explicit resistance and the lack of interest in attending the meetings indicates that staff were feeling pressure to comply with a decision that had already been made prior to the convening of the committee, and that committee members felt that the time spent attending the meetings was an imposition on their time when other matters were more pressing.

The influence exercised during the requirements gathering phase reveals the opportunity was taken to change business process from the actual daily tasks to those considered more appropriate to TRIM. It is not clear from the data how, when or if this change in focus on the daily tasks was communicated to the staff affected by the new system. Staff demonstrated resistance to the process through slow or no responses to direct requests for information between the different groups. A comment from the project leader also reveals that staff were not necessarily happy to be on the committee, and that his ideal team membership would comprise staff
selected by him rather than those who had volunteered. Figure 4.9, below, depicts how perceptions and behaviour were mostly negatively affected by social influence.

When the participants were asked about pre-existing authority structures within the committee, the focus shifted to the project leader and the response was that, as he was not anybody’s manager, any perception of pre-existing authority structure was not valid. The data discloses the assumption that the IT Manager was made chair of the committee because he did not have staff reporting to him, and therefore could remain bias-free. This assumption is in direct contrast to the reason given by the ED, which was that the position of project leader was based on his IT knowledge as the project was considered organisationally as an IT project. Supporting the evidence from the data, Figure 4.1 on page 100, shows that the committee was comprised of staff members where authority structures did exist, even if those structures were nominal. According to the data, the leadership of the committee appears to have been effective in that an outcome was reached, and the committee was not de-motivated by the leadership. As mentioned before, other data contradicts this view and
therefore the implication is that the committee’s de-motivation, as evidenced by not attending meetings, was caused by other issues in force at the time or that other outcomes would have been preferable, such as not implementing new software.

The issue of power and politics reveals that the committee were doubtful as to the extent of their influence in reaching an appropriate solution. One committee member indicated that his expectations of the process did not deliver SMO the system that he thought they were getting with TRIM and that this may have influenced his view of the software. It was also acknowledged that members on the committee did not have influence with the ED, and again this may have influenced their view of their participation as members of the committee.

### Management

It is important for this study to understand how the participants viewed the management of the TRIM project. Ascertain whether a clear understanding of how the new system would affect those who were required to use it would go some way to explaining the resistant behaviour at SMO, the data identifies the issue of project management skills or lack thereof. The ED appointed the IT manager as project leader, and as has been indicated in an earlier section of this dissertation, other committee members took the lead in discussions if it was felt by those present that they had more knowledge of the topic under discussion.

Participants acknowledged that no-one on the committee possessed the complete set of skills necessary to manage a project of this complexity, and SMO did not offer the committee members any support in preparation for the tasks ahead of them. The implication behind this could be that the SMO executive considered the committee to be without substance or any real authority to make a selection of appropriate software. This view supports other comments in prior sections that committee members thought that the software had already been chosen and the committee did not have the authority to question that decision. The committee appears to have been very informal in structure in relation to the allocation of project tasks and the only consistent task allocated to the committee was the requirements gathering from each of their own departments and the collation of that information.

One participant commented that the committee were unlikely to have been involved with the development of the project goals, though those on the committee claimed to
have been aware of those goals. This implies that staff did not receive effective communication regarding those goals and this would explain why there were conflicting views as to what was expected to be accomplished.

The data reveals ‘it was generally known’ that SMO was amalgamating with two associated entities on July 1, 2004 and this had been public knowledge for some time. Documents in the public domain confirm that this change had been well publicised in the media and federal government reports (Bailey, 2003; McLennan, 2003; Wade, 2003; Williamson, 2003). The ED hired an external consultant who held in-house seminars on topics such as change management and teamwork. It is possible to interpret from the interviews that it is likely that the organisation did not understand the complexity of the change, or the impact of so many changes happening within a relatively short time.

The project leader engaged an external consultant to undertake the implementation of TRIM. The consultant scrutinised the system specification collected by the committee and re-interviewed the staff as to their requirements and business processes for TRIM. This implies that the consultant ensured that the data collected by SMO staff was complete and in a form to enable implementation of TRIM. The group training sessions were held in a large meeting room at SMO and took the form of demonstrations rather than hands-on training. Participants considered that training sessions held at SMO for TRIM were inadequate for their needs, as the training assumed a higher level of understanding of the technology than SMO staff possessed. This lack of communication about the software further encouraged resistance by the staff as they were left feeling as though they were still struggling with a major change that had been inadequately communicated.

The project leader thought that this training was adequate and commented that they were ‘getting used to it before we attacked them with more complexity’. When staff complained about the lack of training, one-on-one training was arranged to try to smooth out any problems. Some staff indicated that the transition was smooth and this can imply either that they had more hours training or that they held a good understanding of TRIM.

Figure 4.10, below, depicts the relationship of the issues that emerged pertaining to the management of project and the frustration felt by some staff on the progress of the TRIM project.
Conversations with the participants disclosed that, whilst the committee was unskilled in project management, they were not given the opportunity of calling on anyone [internal or external] that may have assisted them with their task. When asked who else would have the skill to manage the process, one participant named himself, and as an alternative a staff member from his department. When asked what he would do differently, the project leader replied, ‘I would choose the team myself, instead of asking for volunteers….and by doing this, the project would run more smoothly’. His feeling was that this group would communicate more easily with each other than did the committee, because,

…the communication between this group of people will be much easier than having volunteers only who are basically….maybe wanted it to be in it to slow the process or make the process harder than what you think.

The significance of this comment supports the perceptions of other committee members who reported a conflict of interest between the roles of evaluating the software and implementing it as soon as possible.
The changeover from the old system to TRIM was perceived to be ill-managed, although those involved in managing the transition felt that the method of communication to staff was reasonable. One participant claimed that the change ‘wasn’t done in a sort of shocking or surprising way’, and staff reported that they felt powerless to control access to their documents.

**Second Interview Conclusions**

The data from the second interview round has revealed that social influence and power was perceived to be exercised during the evaluation and implementation of TRIM. The implication of the conflict of interest held by some committee members in relation to the implementation of TRIM points to hidden agendas and the exercise of power and influences to achieve one department’s aims: permission to develop software specifically for that department, thereby removing the need to use TRIM. (See Table 4.9, page 133, for a summary of the main issues emerging in the second interviews). The row and column titles for Table 4.9 are the top level categories from the NVivo analysis and were produced with a matrix search of the data.

The importance of the data collected in the second session has confirmed the appearance of groupthink and cognitive dissonance as evidenced from the first interview sessions. Groupthink was evident by the lack of dissenting voices, thereby giving the impression of apparent agreement to implementing TRIM, whilst holding private reservations about TRIM’s appropriateness. Cognitively dissonant behaviour was displayed as the committee members rationalised opposing beliefs in the efficacy of TRIM, and acknowledged belief that SMO had need of records management software.

Highlighted in this section is the fact that inexperienced staff members undertook a major change, or at least staff members who had not dealt with such wide-reaching change undertook the management of a major organisational change. There were no formal processes in place to inform the staff of actions or behaviours that senior management expected of them, and power play and influence appears to have been overlooked or completely ignored at the senior level.
<table>
<thead>
<tr>
<th>Issue</th>
<th>Classification</th>
<th>Change</th>
<th>Communication</th>
<th>Group Dynamics</th>
<th>Knowledge Gatekeeper</th>
<th>Power &amp; Politics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Committee Structure and Interaction</td>
<td></td>
<td>Committee met for approximately 12 months before a decision was reached.</td>
<td>Committee uncertain as to autonomy in decision making. Committee members could not recall goals of project.</td>
<td>Committee members had different agendas to those states. Some committee members felt “railroaded” into accepting TRIM</td>
<td>Committee lacked skills to evaluate complex software such as TRIM.</td>
<td>Management wanted a quick solution, whereas the committee wanted to take things slower.</td>
</tr>
<tr>
<td>Social Influence</td>
<td></td>
<td>User requirements were new processes, not current daily processes.</td>
<td>Staff resistance via slow communication between affected groups.</td>
<td>Committee meetings not attended by most members after the first few weeks, even though meeting times had been changed to accommodate differing needs. Pre-existing authority structures within committee.</td>
<td>Project leader appointed due to IT knowledge, but assumed by committee to have been so as he would lack “bias”.</td>
<td>Committee uncertain as to their authority. Some committee members felt they had no influence with ED.</td>
</tr>
<tr>
<td>Management</td>
<td></td>
<td>Data reveals that no-one on the committee possessed the project management skills for TRIM implementation. Conflicting views on expectations. Staff training time-line established</td>
<td>Project goals not communicated with general staff. Group training sessions held, with little hands-on training at individual level. Staff resistance ensued. No opportunity given to committee to call on expertise that they lacked.</td>
<td>ED hired external consultant to foster teamwork and collaboration between departments.</td>
<td>Conflict of interests between committee members. Forced compliance in transition to TRIM.</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.9: Summary of analysis from the second interviews
THIRD INTERVIEW SESSION RESPONSES AND ANALYSIS

To confirm the data collected during the first and second interview sessions, a third session was held, as a means of applying control to the interpretation of the data. The results of the analysis from the first two sessions were the focus of discussion with each participant. As mentioned in an earlier section, by having the participants verify that the representation of the data as collected is correct will ensure that the interpretation is accurate.

The interview structure for the final round was different to the first two sessions. The third session was completely unstructured in the interaction with the participants. Even though this session was more of an extended conversation with the individual participants, strong confirmation of issues still emerged and these became the final top level coding nodes for the third iteration. For this session only four participants were available by the time of the third interviews, these participants were key respondents (refer to Table 4.1, on page 98).

Third Interview Node Attributes

Three main issues emerged from the third round of interviews: knowledge, communication, and power and politics. The following sections present a discussion of these issues. Table 4.10 (page 140) shows the three core categories of knowledge gatekeepers, communication and power and politics as emerged from the data and sorted into a matrix against previously derived core categories.

Knowledge Gatekeeper

The stated aim of the Records Manager was to have all staff properly trained and working within their ‘own little window’ of TRIM, rather than have all staff able to access the system as a whole. This strategy was formed so that staff were not daunted by the complexity of the system. The Records Manager perceived TRIM as a quasi knowledge management system, rather than an electronic document management system, and the significance of this perception is that a knowledge management system would be expected to also capture staff expertise, not just organisational records. This perception would also have some bearing on how TRIM was structured internally, and possibly led to misconceptions as to TRIM’s role at SMO. Other staff members held very different views, as they perceived the TRIM structure as constantly changing and therefore their knowledge of the system
becoming constantly out of date, leading to further frustration with TRIM. Participants reported they were being made inefficient by the new system in what they perceived as a constantly changing system environment. It was indicated during the interviews that some staff, no matter how much they were encouraged to use TRIM, simply would not. The training sessions were highlighted as a poor means of transferring knowledge of how to use TRIM.

A number of participants named a particular committee member as having made a great contribution to the selection process for TRIM and noted that he had a great deal of influence in terms of the direction and the selection agenda. Unfortunately, this person was also one who proposed the development of the alternative, UPL-SOFT.

This appears to be a conflict of interest, and again attests to the political play of the department’s self-interest. The fact that senior management did not take into account that the different departments had different requirements from an information system led to more dissatisfaction amongst staff. The implications arising from this highlights lack of management capability in understanding the dynamics of change and staff resistant behaviours originating from miscommunication throughout the project.

**Communication**

The data from the third session reinforces comments made in earlier sessions about staff dissatisfaction with the conduct of management in relation to the TRIM decision making process. As mentioned earlier, this dissatisfaction flowed over to the observation that staff would probably not be so ready to volunteer next time as there was the feeling of time wasted on what was perceived to have been a decision already made prior to the project’s commencement.

The lack of communication was again highlighted during the third interview session, and staff were not sure what was supposed to be accomplished overall. Participants indicated that though training was offered for TRIM, the trainer himself was not a good communicator, and the training sessions were practically useless. There were implications that the training sessions/demonstrations were unstructured and that the trainer was not prepared for SMO’s environment, or that the person liaising with the trainer had not communicated the situation to him. Committee decisions and meeting
minutes were not disseminated throughout the organisation, and due to the lack of communication about the project, the project leader’s identity remained a mystery to some staff throughout the project. Rumours about TRIM’s poor user friendliness were confirmed as a factor causing distrust and resistance amongst staff.

Power and Politics

Power plays, such as withholding information and hidden agendas at the committee meetings were a significant part of the project dynamics at SMO. Data indicates that at least two committee members claimed the role of KG regarding IS knowledge. Analysis of the data reinforces the considerable resistance by staff towards TRIM. The act of preventing access to organisational files on the old system was continually expressed as an important issue. Staff at SMO were particularly protective of their own ‘system space’ and their document storage facility and the uncertainty and distrust of TRIM did not help the situation. Staff felt forced to comply with the order to move their documents or else would lose access to them. The data reveals that staff received three warnings and offers of help to shift the documents into TRIM. After these warnings, IT staff abrogated responsibility for the security of any document left remaining on the old shared drive. The IT staff commented that the reinforcements to staff regarding lack of security for documents left on the old system was a strategy to encourage staff to move their information, rather than the actuality, as the old system was kept running. Unfortunately, staff did not realise that these communications were a strategy, and became resistant to what they perceived as forced compliance. This specific incident highlights the unpredictable impact that one decision might have on predicting opposite outcomes.

It was noted in the interviews that staff perceived that influence was used to secure the implementation of TRIM and certain committee members remained unconvinced as to the appropriateness of the choice of software system, fearing that a system that did not entirely suit their operations would be foisted on them. As mentioned earlier, the fact that UPLab was permitted to develop software that they considered more appropriate for that department shows a certain covert influence being brought into play.

Committee members reported during the interviews that they were uncertain as to whether they had the decision-making authority to do more than recommend the
software. This supports observations from other participants who claimed the software had already been selected and that the committee was ‘just for show’.

Another point raised during the third session was that TRIM was incorrectly implemented the first time, and that a second attempt was made after the staff had been using the software for some time. This observation supports comments that TRIM was implemented in haste with the intention that ‘someone’ could gain credibility with senior management. The implication is that personal influence was used in a political play to gain recognition for skills that were sadly lacking with the consequent negative impact on the dynamics of the committee and a further impact on the organisation as a whole. Highlighting the dissatisfaction with TRIM and its usefulness, as participants in the third interview session indicated many do not now use TRIM.

Resistance as power display was obvious from the start of the project as committee members indicated during the interviews. Signs of resistance included their lack of attendance at all meetings and highlighted the fact that after the first two weeks, there was not a full team at each meeting, with some citing prior commitments to avoid the meetings.

**Third Interview Conclusions**

The data from the third interview session reinforces and confirms the observations and perceptions collected in the first two sessions and acts as a control for the analysis and extraction of meaning. Table 4.10, on page 140 displays a summary of the analysis of the third interview sessions.

**Conclusion**

This chapter highlighted the extent of the resistance and dissatisfaction as underlying factors throughout the change at SMO. It was argued that the TRIM implementation was one change too many in a series of changes. As evidenced by the data, few staff at SMO had any experience in implementing an information system with the complexity of TRIM and this exacerbated the pressure of the changing environment. Participants associated the choice and subsequent implementation of TRIM with the use of social influence and hidden agendas to achieve outcomes that were not necessarily congruent with the goals of the project, as understood by the committee.
The perception of forced compliance was a theme throughout the interviews as many participants reported they felt forced to stop using the old method of storage and to move documents into TRIM, the data reveals that staff received many warnings that the old system would become inaccessible after a certain date. TRIM became a lightening rod, attracting resistant behaviour from staff, particularly those who were on the committee. There is a strong indication of the workthink phenomenon amongst the committee members who cited other priorities, supported by the observation that there was not a full committee after the first few weeks.

Over the period of the interview sessions, staff appeared to rationalise the choice of TRIM, and the data reveals that committee members and other staff agreed with the premise that SMO needed software such as TRIM to support the new organisational direction. This again indicates divergent views amongst staff as to the perceived usefulness of TRIM, as many of the participants do not use TRIM now. This cognitive dissonance appears within the committee as members reported organisationally to other committee members and the data points to instances of ‘follow the leader’ or isolated pools of groupthink within each group from separate departments or divisions.

Communication or the lack thereof, was a major issue as there was no discernable strategy in place to inform staff about the progress of the project and many staff were unable to confidently identify the project leader. Staff were not informed of the rationale behind the TRIM implementation and this led to the use of rumours as informal communications to fill the information gaps. Staff remained resistant to TRIM over the majority of the data collection period and they cited lack of staff training as a major cause of their distrust of TRIM, as they were uncertain of how to operate the functions to correctly store and retrieve their documents.

One major flaw to the TRIM selection and implementation project was the revelation that staff on the committee did not have the experience with evaluating similar systems, and therefore could not readily apply their knowledge to the SMO context.

One significant point that is embedded in the data refers to the ED’s decision to choose the research participants rather than distributing the invitation to participate and asking for volunteers. This in itself implies an exercise of top-down power and perhaps a too late attempt at allowing an open and transparent voice to the
dissatisfaction at SMO. Unfortunately the data do not provide confirmation of this interpretation, nor of any alternative interpretation.

This chapter has provided a detailed analysis and explanation of the issues identified as contributing to resistant behaviour in relation to TRIM. The following chapter analyses these issues in light of the mTAM framework.
### Table 4.10: Summary of analysis from third interviews

<table>
<thead>
<tr>
<th>Issue</th>
<th>Classification</th>
<th>Change</th>
<th>Communication</th>
<th>Group Dynamics</th>
<th>Knowledge Gatekeeper</th>
<th>Power &amp; Politics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communication</strong></td>
<td></td>
<td>• Staff perceived that TRIM failed to function as expected and this caused staff resistance.</td>
<td>• Staff sceptical and cynical as rationale for TRIM not communicated effectively.</td>
<td>• Resistance by staff fuelled by distrust and rumours.</td>
<td></td>
<td>• Perceived attitude towards TRIM.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Distrust of software.</td>
<td>• Unsuccessful communication strategy.</td>
<td>• No cohesiveness amongst committee members.</td>
<td>• Delaying tactics.</td>
<td>• Hiring staff.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Staff sceptical and cynical as rationale for TRIM not communicated effectively.</td>
<td>• No clear agreement amongst participants as to who was project leader.</td>
<td>• Elements of groupthink by staff.</td>
<td>• Development of UPL-SOFT.</td>
<td>• Forced compliance.</td>
</tr>
<tr>
<td><strong>Knowledge Gatekeeper</strong></td>
<td></td>
<td>• Confusion, uncertainty and concern in relation to TRIM.</td>
<td>• Skills gap</td>
<td>• Resistant behaviour.</td>
<td>• Inadequate training</td>
<td>• Overt and covert displays of power.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Change agent.</td>
<td>• Communications gap regarding depth of understanding and knowledge of systems implementation.</td>
<td></td>
<td>• Inadequate categorisation of topics in TRIM.</td>
<td>• Covert conflict between committee members.</td>
</tr>
<tr>
<td><strong>Power and Politics</strong></td>
<td></td>
<td>• Situation or circumstance of power display.</td>
<td>• Inter-group communication did not improve.</td>
<td>• Use of personal influence to ensure that own preference was selected.</td>
<td>• Power exercised as legitimate authority.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Fear of loss of information.</td>
<td></td>
<td>• Implementation staff avoidance of responsibility.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Perceptions of Knowledge Gatekeepers
Chapter 5
‘and it’s all working out fine!’

Introduction

The comment in the title of this chapter ‘and its all working out fine’ was made during an interview with the project leader, and as interpreted from the data in this dissertation was a masterstroke in self-delusion or self-censorship. This statement represents the core idea of this chapter as senior management and project leadership consistently failed to notice the staff dissatisfaction arising from Scientific Measurement Organisation’s (SMO) changing environment.

If there is a change in the senior management structure, new staff can fall into a trap of attempting to effect change without fully understanding if there are problems with the current system or how the current system works, potentially alienating staff and triggering social defence mechanisms within the organisation. It is not uncommon to find that staff form the opinion that senior management have decided to implement a new information system without due investigation or rationalisation as to the exact problem the new system is supposed to solve or without consultation with those affected by this change. This can generate high levels of anxiety for staff as they attempt to rationalise the mismatch between their desired goals (known workplace environment) and the current situation (changing environment) (Wastell, 1999). The development of shadow systems is one way that staff use to overcome dissonance in a changing environment. The use of shadow systems indicates that staff prefer systems that they perceive as facilitating their daily work processes (Chae and Poole, 2005), and thereby reducing their anxiety level. These systems may not be computer-based systems but can be as simple as a known daily workflow and work patterns.

During an organisational change, those implementing the new system often dispose of the various mini systems developed by staff over the years without a second thought, leading to dissatisfaction and resistance from the staff affected. During this time, staff may develop informal systems as an alternative to the official system that may not be delivering promised and expected functionality or ease of use. Informal systems (shadow systems) are often created to correct a perceived lack of functionality in the official system, and sometimes can duplicate existing processes.
with one advantage: staff perceive them as useful and functional (Behrens and Sedera, 2004).

In Chapter 4 it was revealed that there was uncertainty surrounding the implementation of Total Records and Information Management (TRIM). The SMO staff appeared very cynical after the training demonstration of TRIM and remained resistant to it. Staff seemed to rationalise the choice of TRIM, and the data revealed that committee members and other staff agreed with the premise that SMO needed new software to support the new organisational direction, but felt that it was not necessarily useful for their department. The findings in this study support Davenport’s (2000) suggestion that the failure of technology projects may be due to the lack of user acceptance and understanding of the rationale for change. In Chapter 4, I discussed the importance of adding groupthink and cognitive dissonance to the theoretical concepts. The two elements of groupthink and cognitive dissonance partly explain the users’ lack of acceptance of TRIM and indicate behavioural aspects of staff resistance. Also in Chapter 4, I discussed the findings at SMO as derived from the interview data and in Chapter 5 I will develop these findings within the Social Influence and Change Acceptance Model (SICAM) framework, called Modified Technology Acceptance Model (mTAM) previously in this dissertation.

Whilst the mTAM, as derived from TAM, was useful to understand the preliminary findings at SMO, from the analysis presented in Chapter 4 it became apparent that the change environment (as the context of the change) and the communication environment were necessary additions to the model to explain the events at SMO. The following SICAM framework (Figure 5.1), which is an extension of the Technology Acceptance Model (TAM) developed by Davis (1989), and Venkatesh et al. (2003), is adapted to a broader frame that includes the environmental elements groupthink, communication, and organisational change environments. The top level elements of social influence (power), experience (knowledge) and the behavioural element of dissonance assist in relating individual constituents such as age, voluntary usage and user involvement to the environment and context that create the behaviours, without specifically listing all constituents, as previous versions and extensions of TAM have done. Differing organisational situations will call for differing responses to change and a variable mix of individual constituents will
emerge making it unlikely that one particular model with individual constituents will suit all requirements.

The organising principle for this chapter is placing the findings at SMO within the SICAM framework as depicted in Figure 5.1 above.

**Change environment**

The organisational change that SMO underwent caused stress and resistance amongst staff members as they learnt to cope with the new environment. Particularly, staff were under pressure because of the time factor required to complete necessary tasks to change from being a statutory authority to a business unit of a federal government department. Early on in the series of changes at SMO, the executive director (ED) made the decision to change to an electronic records management system as:

"...there was a push towards electronic, computing for government and electronic transactions and I made a decision I guess fairly early on, that we would start to work towards electronic records as the current system was a mixture of paper and electronic records, and a lot of information was not being captured. (ED)"

There were a number of staff development workshops held at SMO where it was decided that project teams would be set up to handle the various changes.
It has been recognised that pressure leads to resistant behaviours which take many forms, and those that arose at SMO appeared as an unwillingness to embrace the new software TRIM. TRIM acted as a lightning rod by attracting resistant behaviour as a flow-on from other major organisational changes happening concurrently with the new system implementation. TRIM possibly attracted so much resistant behaviour as it was the one change event about which staff felt they could express their dissatisfaction, whereas the other events were beyond their control.

One critical change for SMO staff was the loss of organisational self-determination, which occurred when another hierarchical layer was placed within their daily workplace environment. That additional layer, together with the change in senior management executive and the new records management system, created a frustrating atmosphere as staff came to terms with the changing conditions.

Figure 5.2 on page 145, shows the multiple factors that affected staff at SMO and ultimately were involved in the rejection of TRIM by UPLab, who went on to develop software they considered more appropriate for their work tasks.

An aspect of the changing environment, depicted in Figure 5.2 was the forthcoming merger of differing organisational cultures. One participant commented during an interview that ‘there was a basic conflict of where we were going as an organisation, and now we are changing to a government department’, and pointed to the existence of different organisational cultures amongst the three entities who were merging. Staff felt keenly the loss of organisational status after being subsumed into a ‘faceless’ federal government department, and the subsequent merger with two other entities. In relation to organisational culture differences, another participant observed that staff at SMO viewed themselves as a ‘scientific group of people’ whereas one of the units they were amalgamating with viewed themselves as a ‘group of scientists who share information out of mutual interest’.

The third organisation was a business unit from within a larger scientific research organisation, and therefore was used to working as a unit in a larger organisation. As the participant further observed:

…there is a different culture and for the staff here that’s going to be….. like I’ve worked in Government agencies in the past, and I think there is only one other person here that has any idea so we know what’s coming. (CSM)
Figure 5.2: Factors leading to dissatisfaction with TRIM implementation  
(Source: concept developed for this study)
There are differences between these three staff perspectives of corporate cultural differences within the three organisations that implies vastly different perspectives and staff behaviour. There is a gulf between those who consider themselves as a group of scientists, with the implication that they work in isolation for the majority of time (as interpreted from the participant response) and a group of scientists who are already sharing information for mutual benefit.

The following example illustrates SMO’s changing circumstances and loss of self-determination. Before the change of organisational designation SMO was responsible for paying its own staff and accounts, even though some government systems were used to accomplish these tasks. After the merger, these tasks were taken over by the federal department, and SMO had to submit items to the federal department for approval.

During a discussion of the SMO changes, the corporate services manager (CSM) acknowledged that most users of the systems at SMO were aware of the impending changes and had been for some time, but that a:

…crucial step in any change project was to get the users on board by getting them to accept and want the change. It’s the first step in the interaction, but that’s not how it was done (CSM).

During the interviews, staff had indicated their awareness of the changes to SMO and they had been told that there would not be any adverse effects to their working environment. Staff subsequently felt that their scepticism was vindicated when three colleagues were offered and accepted voluntary redundancy. Of the corporate services staff who left, one was the CSM. Only one of the redundancies is directly attributable to TRIM, with the other two attributable to the National Scientific Institute (NSI) losing its status as a statutory authority, and thus losing self-determination.

Some SMO staff changed location and took up residence in offices of a larger organisation though they retained their own identity [NSI], while the others remained at the original location, effectively splitting the staff into three diverse political groups: administrative, laboratory [new location], and laboratory [original location]. The laboratory staff that moved location depended solely on the type of technical testing they performed; the move did not depend on factional affiliation.
During times such as described above, staff may turn to certain colleagues for support and/or interpretation of the new work environment. By doing this, colleagues voluntarily place certain staff members in positions of power and influence, irrespective of whether that power and influence is benign or malign. By default, in this position the gatekeeper can affect the outcome of change initiatives as a change agent, by being the one to promote the change, or as a change facilitator who acts as the conduit for change.

**Knowledge Gatekeepers as Organisational Change Agents**

One aspect of this study is the power relationship between the knowledge gatekeeper (KG) and those within the organisational environment. An element of this aspect is whether the KG is an agent of change or acts as a facilitator of change through an information system change. There is a subsequent use of power if the KG is acting as a conduit of change. To differentiate between these two terms in the context of this study, a change agent may act as a catalyst for change by proposing, directing, and controlling the change process. On the other hand a facilitator of change is more of an enabler of emergent change by acting as a conduit for the change and disseminating information amongst colleagues including the rationale for change.

At SMO, the new information system was only one change, albeit one that proposed to encompass all aspects of record keeping within the organisation. It was not the intention of SMO to use the TRIM project as a change agent. It is apparent that SMO had missed an opportunity of using TRIM as a change vehicle, as a means of influencing changes to all business processes in relation to capturing knowledge or expertise held in the organisation’s records. The downside of attempting to capture someone’s knowledge, expertise, or business know-how, and make it public property, is that it produces the perception of loss of status or importance within the organisation and leads to resistance as well as general resentment among staff. By taking away what staff inherently see as their knowledge or expertise and their gatekeeping ability to disseminate information when they perceive it is to their own advantage, management can exacerbate a resistant situation. On the other hand, a conduit is actively involved as a facilitator of disseminating information in the change event.

Management’s decision on how to proceed and organise the project team structure had implications on the collaborative process in the IS implementation. For an
interpretation of where a KG is in a position to enable change as either a change agent or a change facilitator, refer to Figure 2.9, (reproduced on page 149 as Figure 5.3). The flow of change that surrounds the actors undertaking the change tasks, and with the KG as the conduit of change, it is irrespective whether the change flows from the organisation to the information system or in the reverse. As happened at SMO, the information system and the changed business processes were bi-directional.

The external force for change at SMO was the mandated use of an electronic records management system, followed within the year by a change in the organisational designation from a government statutory body that makes its own decisions and rules, to being a business unit within a federal government department, and therefore subject to decisions made without potentially consulting them. As mentioned in an earlier chapter, Figure 5.3 below, the flow of change is not unidirectional, but bi-directional as each change creates further opportunity for change.

Therefore, for SMO the catalyst was the change in organisational status and the subsequent government mandate to implement an electronic records management system, facilitated by the ED through the IT manager. The position of KG as depicted below would be the IT manager, who possesses the knowledge and influence to accomplish the implementation of the TRIM system. This position enables the KG to exercise considerable influence over the choice of software, the method of implementation of that software, and the change impact on the organisation.

Another aspect of being a change agent is whether it is the change agent itself or circumstances arising from the change that actually promotes evolving change. At SMO, some participants reported that, in their perception, TRIM did not dramatically change the work environment, but others reported that the complexity of the system changed the way records were stored and shared amongst staff, and was indeed, ‘a paradigm shift’. The difference in perspective is split between those who used TRIM for records storing and those who don’t (the UPLab). Irrespective of whether staff used TRIM, that system did cause a paradigm shift as it was the catalyst for the development of UPL-SOFT.
The CSM related that another change agent emerged at SMO, and this was the Engineering and Quality Officer (EQO) from the UPLab, who proposed and developed the shadow software. It is interesting to note that UPL-SOFT had more overall change effect on staff at SMO than the official records management software TRIM. UPL-SOFT was developed in an effort to avoid using TRIM. Some staff members in the UPLab did not consider UPL-SOFT to have changed anybody’s role significantly in the laboratory. From the analysis, it is evident that as a reaction to TRIM, UPL-SOFT was a major contributing factor to the change environment. The effect the TRIM/UPL-SOFT implementation at SMO is discussed in more detail in the Groupthink and Cognitive Dissonant Environments sections of this chapter.

It is appropriate at this stage to therefore name the EQO both as an agent and facilitator of change, as UPL-SOFT came into being as a response to both the organisational change and TRIM. In the instance of UPL-SOFT, the EQO was both a change agent (as promoter of UPL-SOFT) and a KG (as developer of UPL-SOFT) and therefore the decision-maker as to the structure and content of that system.

When asked whether TRIM had changed business processes at SMO, one participant from UPLab commented ‘but it’s more like the other way round, the [organisational] change has had the influence on the system’. This observation
supports the findings that the catalyst for change was in fact the SMO change from a self-governing statutory organisation to that of a business unit within a federal government department, thereby enforcing the implementation of TRIM in keeping with government policy, and not the other way around as so often happens. The element of power and its use, inherent in the role of the KG is discussed in the following section.

**Knowledge Gatekeepers as Power Brokers**

A focus of this investigation is on the KG characterised as power broker in the sense of my second definition as discussed in Chapter 3 on page 31, *'a person whose actions and opinions strongly influence the course of events'*. This definition, together with my first definition of a KG as *'somebody who facilitates the dissemination of information to a group or the wider community'* (on page 1) creates a powerbase. Whoever finds himself or herself in a situation similar to that depicted in Figure 2.8, on page 50, where the gatekeeper has a cultural role of interpreting a situation on behalf of colleagues, holds the communicative power.

As stated before, Lukes (1974) claims there are three dimensions of decision-making power: overt, covert, and overt and covert (with latent conflict). These are relevant to understanding the role of power in the KG function. The basic concept of power is that one entity [A] can affect in some way [B], that is, to cause [B] to act against [B’s] perceived best interests. Power, as proposed by Lukes is an appropriate model to use to understand the flow of influences at SMO and the consequences of that influence. The model deals with power over others (Lukes, 2006), the exercise of power, and the resulting resistance to that power as found in the analysis of the data.

According to Lukes (1974), the first dimension of power focuses on the behaviour of those exercising that power. Some staff exercised their power by avoiding using the software, others by leaving the committee when it became apparent that they did not have influence over the decision. A one-dimensional view of power explains how staff at SMO did not have control over the change agenda as the change was imposed upon them by causing a cultural change (Hardy and Redivo, 1994), when the decision was made to amalgamate SMO with two other entities to form a new business unit and the reaction of SMO staff to that change was instead resistance to TRIM.
One aspect of the behaviours demonstrated by the staff was the increasing anxiety they were feeling about the merger. Staff were resistant to this change as there was concern over whether their jobs would be safe and it was revealed that staff were asking ‘What’s going to happen to my duties? Am I getting something else or, is that duty just disappearing’, and this increased the negative feeling of staff to any change within SMO. Another perspective of this resistance was that staff were reluctant to store files in a medium that facilitates the easy sharing of information with other departments, thereby removing a need for staff to be part of the information chain. Staff members were particularly resistant to using TRIM, as they could not see the usefulness of this software for their work, especially when compared with the ease of use of the previous system that they were using.

The IT manager’s control of access to old files is seen as an exercise of the first dimension of power: controlled access to organisational resources. The exercise of power in this manner also falls within Hardy and Redivo’s (1994) dimension of power, which is the control of resources (refer to Figure 5.4 on page 155 for an interpretation of Hardy and Redivo’s relationships of power). In this instance, the resources were the staff members’ files and their access. By informing staff that they would lose access, the IT manager created a negative response which manifested itself as resistance to TRIM, as TRIM was perceived as the cause for change. This resistance was a counter-measure by staff to overt control, and is itself an exercise of power by staff refusing access by others to their records by consistently resisting transfer of their documents.

The two-dimensional view of power focuses on political action undertaken when exercising power, and ignores the fact as to whether the actors have decision-making authority or not. Therefore, within this dimension, it is irrelevant whether a person is in authority or not, as long as they can exercise power in a covert or overt manner. An example of this dimension of power was the (overt) ED’s announcement of the TRIM project without consultation with any senior managers within SMO. Around the same time that this announcement was made, a further announcement was made that the interaction between departmental managers and staff would change, in that the managers were instructed to delegate more responsibility to their staff and act as mentors rather than maintain hands-on control.
Simultaneously, staff who thought it was more political to be seen to volunteer for the committee instead of waiting to be selected exercised covert power. Covert power in this instance was also being exercised by the ED, and it would have been seen as unprofessional and regarded as inappropriate to refuse to serve on the committee. The committee members exercised covert power in the form of resistance by citing their work duties as valid reasons for refusing to attend committee meetings. The power was covert as senior management had no recourse but to accept this reason as staff would be held accountable if their main duties suffered by attending the committee meetings. It was overt power that the ED applied when, after no firm decision had been made in twelve months of meetings, she decided to make the committee’s decision for them and select TRIM as the electronic records management software. Covert power can also be observed in the data through the conflict of perceptions as to who was the force behind the implementation of TRIM and that other staff were seen to lack influence with the ED. Therefore, covert power was granted, (by authority) to certain staff due to their workplace activities, rather than those staff members claiming such power and influence.

In the matter of forcing staff compliance for storing documents in TRIM, senior management can be seen to be exercising overt power over the staff as compliance was secured by threatening them with the loss of access to their documents when the old system was removed from the network. Lukes (1974) calls this coercion rather than power or influence caused by exerting one’s personality to achieve one’s aims. Another aspect of the two-dimensional view is the place that authority holds within the overt perspective of power. Staff from the policy and administration departments acknowledged that senior management had the right to request staff to use TRIM, and in this instance the power exhibited by management was supported by legitimate authority. In some cases, due to the autonomous nature of staff working behaviour at SMO this authority was disregarded, hence the actions of management to force staff use of TRIM.

Lukes (1974) links the two-dimensional aspect of power to both decision-making and non-decision-making. The committee’s lack of a decision after twelve months of meetings appears to be due to the use of covert power designed to thwart the intention of the ED to force change onto SMO through an information system, therefore bringing into the area an aspect of the three-dimensional view of power:
Perceptions of Knowledge Gatekeepers

latent conflict. The apparent unanimity within the committee, due to committee members not voicing their concerns, can be associated with covert power as the committee were exercising their right (as conferred by the ED) to evaluate and select software for SMO.

For Lukes (1974), the second dimension of power is used to suppress conflict or debate. The exercise of the second dimension at SMO is evidenced by the apparent disinclination to follow suggestions from committee members to investigate alternative systems to TRIM. Committee members reported that their views regarding TRIM were not heeded, whilst others claim that the committee process was for ‘form’s sake’ and that, the committee would ‘probably not have the authority to make a decision for an alternative system’. One possible outcome of the exercise of power in this dimension was the development of UPL-SOFT by the UPLab as resistance to TRIM.

Power as exercised at SMO provides an important contribution to the insight on the three dimensions by moving them into the organisational framework of resources, process and meaning. Hardy and Redivo (1994) discuss power in relation to organisational change where the president of an organisation forms a selection committee to gather information and make recommendations. Whilst the SMO project was different to the Hardy and Redivo case, in both instances the outcome was a solution that was not what senior management required. Senior management at neither organisation exercised resource power to control the committee, but they did exercise power to veto the committee workings (process power). Process power is power exercised to control participation in decision-making, whereas resource power relies on one staff member to act as a conduit to resources seen by others as valuable, which can be associated with a gatekeeper. A KG would be exercising resource power when acting as a communications bridge. Hardy and Redivo’s third dimension of power is that of meaning, whereby those exercising the power influence others actions to the extent that they are seen as the change agent. Members of the committee at SMO claimed not to have any degree of influence over the outcome, but it should be noted that UPLab was given approval to develop an alternative to TRIM, indicating a great deal of personal influence.

The third dimension of power as identified by both Lukes (1974) and Hardy and Redivo (1994) is power as exercised to reduce conflict. Hardy and Redivo suggest
that the third dimension of power also has the ability to define an organisational reality with the use of symbols (such as a dedicated car parking space) and meanings that attach to power, and therefore the third dimension has inherent legitimacy. No one person has exclusive control over this dimension of power, as it is exercised as the necessity arises and is dependent on the situation or circumstance.

Participants noted that one reason why the ED attempted to make the software selection process inclusive was that there would have been resistance to any future projects where volunteers were required if the perception was that the TRIM had wasted their time on a project where the outcome was already decided. As a means of gaining buy-in by staff to the new IS, this tactic failed, as staff at SMO considered their time to be a precious resource and, after the first two weeks of meetings, it appeared that there was not a full committee in attendance. Committee members were exercising power to avoid what they considered a waste of their time, by using workthink as a symbol of resistance. Workthink is discussed in more detail in the next section.

The three-dimensional view of power aligns dimensions one and two and adds the complexity of latent conflict as opposed to the overt and covert conflict from dimensions one and two respectively. The potential for conflict was evident in all phases of the TRIM implementation: from the low profile announcement of the project (‘it was announced that we would be getting something better in record keeping’ [Policy Officer]) to realisation that TRIM was impacting all areas of SMO, and not just the way that staff stored electronic files (‘Everything is hectic now, because the future is uncertain and CS the department’s trying to fill in all the processes that are going to take over. We starting to run out of time’ [CSM]). Figure 5.4, below, shows the three dimensions of power and the relationship to the situation or circumstance where that power is exercised.

Differing perceptions of staff expectations in relation to sharing and collaboration can impede the exchange of knowledge. These differing perceptions can lead system users to believe that they are being forced into a collaborative environment against their will. The perception of force can engender an equal amount of resistance to and resentment of knowledge sharing and can be an unconscious or conscious act of defiance to the perceived forced collaboration, the goal of which is to implement a new information system.
Figure 5.4: Relationships of three-dimensional power to the situation or circumstance  
(Developed for this study based on an interpretation Hardy and Redivo, 1994)

In agreement with Robey, Smith, & Vijayasarathy (2003, p8) proposal that:

Conflict resolution and, to a smaller degree, participation are positively associated with project success. This is to be expected because the success of a project is largely dependent on the extent, to which incompatible goals are resolved by consensus among project members...

there was latent conflict between the committee members. It was reported that some members had their own agenda which served their department more than it did the organisation as a whole. The largest contingent of staff members on the committee came from the UPLab [downstairs] and the corporate services [upstairs], and the data reveals that UPLab committee members were attempting to exercise their influence to form the thinking of the committee, in direct opposition to the project leader’s influence who, as a member of corporate services, was favouring another system. This influence aligns with both the groupthink syndrome of mind-guard as each group was convinced that their solution was best, and Lukes’ (1974) observation that power and influence control information flow. Further influence can be seen from the data that reports each group as having individual gatekeepers who tried to
influence the committee towards collecting the necessary user requirements. This again indicates divergent views amongst staff as to the perceived use of TRIM.

Influence was a strong factor in the selection and implementation of TRIM. Participants held contrasting views regarding how much influence the committee had over the selection of TRIM. From the interviews, it was evident that staff felt they did not have much influence over the decisions made by the ED in relation to TRIM. One member explained that the committee had made an informed decision but was uncertain if their voice would have been heard if they had suggested a different solution to that being promoted by the IT manager. This is an interesting observation as data from other interviewees indicates the ED made the decision in favour of TRIM, and indicates a rationalisation of the committee proceedings by at least one committee member. A possible interpretation of this data is that some committee members were attending the meetings and attempting to fulfil the project tasks whereas others were assigning the decision-making capability to senior management. Both views appear to be divorcing themselves from the final decision.

The project leader/IT manager linked the implementation of TRIM with the merger of SMO and two other similar entities around the time of the training sessions, thereby placing the major organisational change of a new ‘bigger and better’ organisation in the area of new software.

Fear of loss of information appears to have been the biggest influence on staff when forming their perceptions of TRIM, and this led to the politics of force or coercion. Staff were very resistant to transferring their documents from their self-determined folder structure on the network into TRIM. Data reveals that staff were given approximately six months to transfer the documents (deadlines at 1st March, 1st May and 1st June) and this timeframe indicates the depth of staff concern about TRIM and their commitment to resisting the new software. It also indicates the flexibility that management brought to the negotiations, and the commitment management had to encouraging staff before forcing compliance.

One interviewee who was involved in enforcing the decision to ‘switch off the old system’ revealed that staff had to accept the decision, as they knew ‘it was coming’. It appears the staff hated the decision and that, for a while, dealings with colleagues were strained as the staff complied with management requirements and transferred their documents. It appears that staff came to rationalise their use of TRIM as by the
time of the third interview session, an interviewee revealed that staff are ‘now game to use TRIM’. This indicates that staff had moved through a period of cognitive dissonance to changing attitude and behaviour, and at the end had assimilated the new system into their experience.

This action brings into view another dimension of power as proposed by Hardy and Leiba-O’Sullivan (1998). Hardy and Leiba-O’Sullivan proposed that there is a fourth dimension to power, which is empowerment, and that it is inherent in the fabric of the system. The system in this instance is representative of the hierarchal structure and influential power embodied in positions held within an organisation. Figure 5.5 above, introduces the fourth dimension of power as another element, which affects the situation or circumstances in which that power arises as it stresses perceptions and behaviour already affected.

The data revealed that staff in charge of the transfer appeared to have deflected their responsibility for SMO’s records by claiming that they were not responsible for the risk of records loss if staff did not transfer them to TRIM within the required timeframe. This seems to be a manifestation of Luke’s (1974) first dimension of
power in that technical staff appears to have transferred responsibility for the use of
the resources (old records) through empowering the general staff (Hardy and Leiba-
O’Sullivan’s (1998) fourth dimension) with that responsibility. Unfortunately, this
apparent empowerment was not communicated to staff and the perception remained
that technical staff held access to the old records as ransom or reward for
compliance. This shared behaviour by the technical staff appears as a syndrome of
groupthink amongst the technical staff, in that they appeared to be ignoring the
ethical consequences of records loss, based on the fact that they gave SMO staff so
many warnings to transfer their documents.

Trust between members of the committee was lacking and disclosures during the
interviews revealed that some committee members had different or hidden agendas
to other committee members. One interviewee indicated that he had left the
committee before any conflict of interests arose and it should be noted that this
interviewee was the manager of UPLab. An interpretation of this action is that the
manager left the committee in a personal attempt to reduce any conflict that he may
have felt towards other committee members. As has been observed, his department at
that time had received permission to develop UPL-SOFT through exercising
personal influence with the ED. UPLab was represented on the TRIM committee by
two staff members, one being the manager of that department and one being the staff
member who proposed the alternative system.

This led to tension between members of the committee as it became apparent that yet
another change was being proposed and the influence of UPLab (or staff members
from that department) was perceived to be contrary to the committee’s supposed
agreement for TRIM.

It is relevant to note that TRIM was going through a third implementation, and UPL-
SOFT is being redeveloped on a more robust platform so that it also can be used in
all laboratories in the new organisation. When the EQO was asked how the other
entities were feeling about UPL-SOFT being installed in those business units and
taking the place of systems that had been developed specifically for them, he replied
‘that UPL-SOFT was better than “old” systems and they would get used to it’. The
person driving the implementation of UPL-SOFT organisation-wide is the same one
who first proposed it as an alternative to TRIM to the former ED of SMO.
During the TRIM implementation, there was evidence of power in the form of personal influence exercised by committee members and by the general staff as a form of resistance. Personal power is exercised when one person influences another to behave in a manner adverse to that which they define as their interests, (Lukes, 1974, p23). Lukes specifically associates power and influence with the control of information, and this association links to the KG acting in the role of a communications bridge. This point is expanded upon in the next section. This also brings communication, and the ability to facilitate it, into view as an aspect of power.

**Social Influence and Organisational Power**

Power is contingent upon the activity or circumstance where it is exercised and the expectations that the organisation and/or users have of the power holder. This was evident at SMO where there appears to have been the use of force of personality as a form of power exercise by the appointed KG when dealing with other staff on the committee. This interpretation is consistent with some comments about staff supposedly voluntarily joining the committee to evaluate TRIM and then leaving, citing the argument of pressure of work. Two committee members from the laboratory stated that they had left the committee early or in the process due to pressure of work, but one of these staff members also mentioned that they had continually put forward suggestions for software only to have them disregarded. The two forms of rationalisation, which seem to be contradictory, actually point to the tension involved in the strategy of workthink. The definition of *workthink* is

...the act of agreeing to a particular action so that the participant can return to a task that he or she perceives to be more important than the reason for meeting as a group... (Wells and Coronado, 2007)

The use of workthink as a political strategy would explain some of the reactions of committee members to meetings, as in the case of SMO, in which not all members attended committee meetings on each occasion. Their workthink strategy may explain the apparent haste to conclude the meetings or the disinterest some members reported they felt during the meetings. Resentment about feeling disempowered does not need to be expressed openly when using the work commitment as a legitimate justification of disengagement.

As the time for the TRIM implementation approached, rumours and resentment about influence exerted by the project leader to further his own ambitions in the
forthcoming new organisation worsened. Interviewees who were also committee members indicated that they thought they were achieving ‘something’ and that having the final decision taken out of their hands was made in haste (see Michelson and Mouly, 2002).

During IS development and specifically the requirements gathering stage, systems analysts routinely discussed user requirements and attempted to ascertain the full range of business processes to be incorporated into a new system. This implied that there was a process of knowledge sharing happening, and if this happens, those who hold the knowledge hold power (positive or negative). At SMO, there were many instances where staff were afforded opportunities to exercise positive power and share their knowledge of SMO processes, as well as exercise negative power in the form of resistance to requests for that knowledge.

Knowledge sharing takes place in many ways, via the written word, the spoken word, visual media, or body language. This is the stage where it may become apparent as to whether the KG is facilitating the transfer of knowledge between one or more groups or preventing it from reaching those who need to know due to an obvious gap once the documentation for the new system is distributed for analysis or auditing. Often the lack of information does not become apparent until the system is deployed and is in daily use, as happened at SMO where the staff became resistant to TRIM as a reaction to a system that they perceived as being not suitable for their business processes.

Knowledge not shared willingly and openly within an organisation may still cause the holder of that knowledge to be recognised as knowledgeable. People who withhold knowledge may cause resentment for continually throwing up barriers that prevent others from realising their full potential as an individual employee, as a group member, and in the wider workplace community.

If knowledge of a certain process is located within a group or a subculture within the organisation then that group may exercise a high degree of influence within office politics. Supporting this position on power, Filion and Rudolph (1999) suggest

… a fundamental principle of power (and domination) is its invisibility. It has to disappear in order to be efficient, to make its will realised. It has to be silent to persist.
If knowledge is shared and is seen to be shared then the holder is likely to be perceived as a KG. Therefore, power transfers silently along with the information or knowledge to the next knowledge holder.

Foucault (1977, cited in Introna 1997) proposes that exercised power, flows from all points in an organisation and is bi-directional irrespective of whether it flows from top down or bottom up. Due to the many levels of hierarchy within an organisation, members or groups within the organisation may have differing perceptions as to the KG’s role and position as power broker. This perception may depend upon whether the person has been appointed to that position by management or whether the person is seen as a natural KG. These differing perceptions may cause different interactions among the groups, and therefore the responses from the other groups may not have the expected outcome. For example, a programmer will have different perceptions of the gatekeeper’s role within a group than an analyst or a systems implementer. The programmer will seek out a connection with the KG’s knowledge of programming, the analyst with analytic skills, and so the flow will be through those connected with the project.

As this example demonstrates, if there are mismatched project members there are many opportunities for misunderstandings to arise, and groups can start defending what they perceive as their territory based on this miscommunication.

Forsyth (1990, p321) states

Territoriality is, in many cases, a group-level process. Instead of an individual claiming an area and defending it against other individuals, a group will lay claim to its turf and prevent other groups from using it.

If staff feel that the new information system is an infringement upon their personal workspace then resistance to the technological change is likely to be high. It is important to understand this territoriality in relation to the nature of the power held by the acquiescent or dissident groups rather than those who have neutral feelings regarding any changes to their workplace environment. In the SMO case, territory equates with any personal work systems the individuals or groups within an organisation may have developed to enable them to carry out the daily business functions. Whilst a group or an individual may not actively prevent others from using the new Information System, they may consciously or subconsciously, supply misleading information to the systems analysts.
Both Lukes’s (1974) and Hardy and Redivo’s (1994) models are examples of vertical power where the power flows from the top down the organisational structure, with employees at various levels obtaining power through legitimate authority. Possessing power to control resources, make managerial decisions and reduce conflict within an organisational hierarchy implies one has the authority to do so, therefore power flows downwards from the top, as models of power tend to. UPLab reversed this tendency and exercised power from the bottom upwards, by campaigning and promoting the alternative to TRIM for their department. That they were successful also indicates some access to horizontal power across differing departments as they were not prevented from doing so by others.

The next section will discuss the influence of the KG on aspects of organisational communication and explain how that influence affects communication channels and the perception of change and resistance to change in the workplace environment.

**Knowledge Gatekeepers and Resistance to Change**

All resistance is not futile, nor should it be considered detrimental to organisational processes if those who observe the resistance understand it as flagging a deeper problem that staff members may not feel able to articulate. If the resistance is a trigger to investigate the issues surrounding overt resistance and the problems causing that resistance, then perhaps credence should be given to those comments that are articulated. The following section uses the model SICAM (Figure 5.1, on page 143) to explain the outcome of one such resistant action at SMO and the impact of that behaviour and demonstrates the organisational value of resistance.

**Communication Environment**

A major change to the environment at SMO was the change to the organisational structure facilitated by the new ED. Along with the new structure, the ED also tackled the perceived lack of communication between staff. One requirement was that instead of single occupancy of offices at SMO, each office was to have two occupants to facilitate communication. As the Policy Officer commented, the ED ‘...wanted people talking together and one way of doing that is putting them in one room I don’t know that it has actually worked, but...’. The data reveals that staff did not talk and did not communicate with each other what they were doing; therefore, the simplistic strategy of enforced co-habitation of offices to engender
communication was self-defeating as staff members continued to behave in the same manner as before.

Each decision made during an IS implementation will be likely to affect each group within an organisation differently considering the different interests of each group or field of activity. If the differing groups do not immediately see the usefulness of the new system, then each will form their own opinion of that usefulness (Lin and Silva, 2005).

The approach that SMO took for this implementation was as an IT project rather than from an organisational change perspective. The data indicates that some employees at SMO felt that if a broader perspective had been taken the outcome might have been different from that achieved. The ED appointed the IT manager as project leader, and this person had a technically oriented perspective rather than one that considered a wider change focus (Oliver & Van Dyke, 2005). This difference in perspectives and opinions as to the required outcome, led to a miscommunication about the rationale for the new system at that particular time of the change, and this in turn led to resistant behaviour amongst staff. A major sticking point was the change to how staff managed their documents. Prior to TRIM, staff determined how they stored their own documents and the folder hierarchy on the server. This procedure had created problems for staff when searching for documents stored by other staff members, but as related by an administration officer, ‘…we could always find the documents, as the folder structures were generally based on the organisational structure’. TRIM structure did not follow the organisational structure and seemed incomprehensible to SMO staff, leading to distrust of the system and resistance to the change.

The lack of effective senior management communication regarding the TRIM implementation appeared to increase staff perceptions of negativity towards the system, and therefore increased already existent staff resistance. The scepticism displayed by SMO staff reinforces the negativity towards the software and organisational change. By the time the software was implemented SMO staff were change weary and the lack of communication, rather than the change itself, exacerbated the situation. Many interviewees replied, ‘I don’t know’ when asked how and when the software was chosen. One replied, ‘I just thought that it was the IT Manager who had chosen it, and that was that’ (Admin Officer 1). Even though
the committee met for a year before the ED made the decision, some staff saw the TRIM decision as being made in haste and considered other issues should have been addressed, not least that there was other software ‘out there’ that perhaps suited SMO’s purpose better than TRIM.

**Gatekeeping as Communication Bridge**

The KG is in a strategic position at the crossroads of various communication channels. These channels can be between the KG and staff in different departments, IS development project team members, senior management, external consultants, and in fact anyone who is a stakeholder in the project and uses the organisational information channels to gather or disseminate data in relation to the new system.

![Figure 5.6: Knowledge gatekeepers acting as communication channel between differing organisational subcultures](source: concept developed for this study)

Figure 5.6 above, shows the position of the KG in relation to other members of a project team or as part of an organisation when acting as a communication channel between the various stakeholders. The KG can facilitate communication on both an organisational and individual level by enabling the transfer of ideas and beliefs that support the acquisition and development of knowledge. Organisational behaviour and structures can create a shared environment where a common meaning of events can translate to knowledge. This does not appear to have been the case at SMO, as the data indicates that the organisational structure and differing meanings of events actually worked against both the committee and their intentions and the implementation of TRIM.
These information channels, and the person or persons who decide on the channel content, can be seen as comparable to the already mentioned 1943 study of Lewin (1951). Lewin’s categorisation of the gatekeeper and the conflict that potentially arises around the subsequent decision-making as to what passes through the channel is the basis for the model used here to explain the communication channels at SMO.

Figure 5.6 above, is used to represent the interpretation of the information channels at SMO. There were two instances of staff at SMO identified as KGs: the IT manager/project leader and the manager of the UPLab. In both instances, these two staff members stood at the nexus of communication channels within their respective departments and in respect of the IT manager, the organisation as a whole. Therefore the IT manager as KG played two roles, albeit similar ones. The first role was as the collector of departmental requirements within his own department, and secondly, as the interpreter of the organisational requirements as communicated to the external consultant. Due to the nature of the simplistic and informal communication strategy at SMO, and the many instances of miscommunication arising from it, especially during the systems requirements gathering stage, both of these staff members appear to have differing agendas regarding what they saw as an effective outcome for the new information system.

The information regarding staff preferences flowed through the person/s standing at the merging of the channels, and misinterpretation of that information or inexperience in interpreting it led to dissatisfaction amongst staff members, as well as the two KGs. The data indicates that there was a perception amongst some staff that the communications process was used as a means of resistance. When asked how he would improve the implementation process, the IT Manager responded, ‘not have volunteers, as the communication would be much easier than having volunteers who maybe wanted to slow the process or make the process harder’.

Staff resistance at SMO to the new information system, as evidenced by the time taken by the committee to reach a resolution regarding TRIM, the lack of use once implemented, and the creation of UPL-SOFT, could have been minimised if senior management had created an effective communication strategy. By applying open and transparent communication to all levels of the organisation (Fisher and Walker-Gibbs, 2007), informal communications such as negative rumours may have been reduced, but such a strategy was not demonstrated by the data from SMO.
There was confusion and concern amongst staff at SMO when it was announced that TRIM was the chosen software and would be implemented before 1 July 2004, the date of the merger of three entities into a new organisation. The concern arose from the fact that staff were aware that no one at SMO had used or understood the software, and therefore there was uncertainty as to who was going to provide support services. Data reveals that the project leader engaged a consultant to assist with the implementation of TRIM and undertake staff training to allay staff concerns. The consultant also met with staff to elicit their requirements for TRIM, and this further confused and concerned staff as they were aware that SMO staff had already performed this function. The implication behind this second session was that the information collected by SMO staff was inadequate for TRIM implementation purposes, and again this highlights the inexperience of SMO staff in relation to TRIM and systems implementation.

A strategic point to consider is the potential perception by users as to the difficulty in using the new system (Robey, Ross and Bourdreau, 2002) as proved to be the case in this investigation. Rumours amongst the various referent subgroups reinforced this perception, further entrenching resistance. Staff at SMO had already faced a number of changes over a relatively short period, and they faced another major change with the merger of the three different entities.

Training or the formal lack thereof, appears to have been a sticking point with the staff, as they were not able to understand either the structure of TRIM or the functions within TRIM that they should be using throughout their day. One interviewee commented that he thought documents had been lost due to that practice as there was no way that staff could compare a set of records before and after transfer. What the staff did not know at that time was that the IT manager had not removed the old records as threatened, only the staff access. Therefore, the records could be relocated if necessary. This implies that whilst staff were under the impression that they would lose access to their documents, the project leader had made provision to safeguard those documents. Unfortunately, there is no evidence from the data that staff were ever told of this benign duplicity or that at the end data was required to be retrieved from the old system. Perhaps if staff had known their documents were safe, their concerns may have been mitigated, and they may have been more trusting of the change.
The transfer of knowledge from the staff to the consultant and back as knowledge of TRIM to the staff appears to be another point of contention. In the incidence of the second series of user requirements collection and translation of these requirements into system specifications, the external consultant was acting as the KG.

Figure 5.7 below, shows a depiction of the knowledge transfer process and the conversion of that knowledge into new knowledge. The relationship between input and outputs is reciprocal as new knowledge generates further insights, which in its turn commences the knowledge transfer processes again. For knowledge to be effectively transferred the process must have context, enabling those processing the information to assimilate it into that which has already been received and understood as knowledge. The filter elements of the context from Figure 5.7 below, that affected staff perception of TRIM are timeliness, reliability, completeness, accessibility, and trust, all of which staff perceived as lacking and ultimately led to resistance.

Staff did not perceive they were ‘getting their money’s worth’ from the training as there was no context to the sessions, and therefore little or no transfer of knowledge between the consultant and staff.

Another aspect to the collection of user requirements from staff is the implication that staff were actually asked to relate their knowledge and understanding of the organisation’s daily business processes. However, as mentioned elsewhere, staff
were protective of their documentation, and it appears they were equally protective of their tacit knowledge of organisational processes. The nominated committee members acted as the communication bridge within their respective departments (refer to Figure 5.6 page 164 for a representation of this role).

Once collection of the requirements was finalised, the committee received the results for collation. In this respect, the committee was acting as a communications bridge between various departments in the role of the KG. Figure 5.8 below, shows the position of the gatekeeper and which makes possible the effectiveness that the KG can bring to that position. As a communications bridge between departments the KG will need to interpret the requirements within the organisational context to ensure a correct translation.

As communication of user requirements is a central theme in developing an appropriate system for an organisation’s requirements, any lack of understanding or miscommunication can be disastrous as this can lead to failed user expectations of the new system. In this case, staff perceptions of an inadequate system led to resistance about using that system.
A communications gap can appear between those gathering user requirements and staff translating those requirements, and if this gap does eventuate, this again is likely to lead to failed expectation of the new system, as happened at SMO (refer to Figure 5.9 below). Communications between two or more people is dependant on whether they have a shared understanding of the goals of that communication. Skill, understanding, knowledge and experience are all elements that can facilitate or impede communication. If those who are trying to communicate have different levels of any of these elements then a misunderstanding can occur. As mentioned previously, senior management had failed to develop an effective communication strategy to inform staff as to the rationale behind implementing TRIM at the time decided, rather than waiting for the merger between the three entities.

![Figure 5.9: Knowledge gatekeeper and communications gap](Source: conceptualised for this study from the data)

Figure 5.9, represents the cyclical nature of information exchange when collecting and translating user requirements into systems specifications. As seen in this diagram there is considerable scope where communications can fail, either through misunderstanding or through misleading or incomplete information being given. As
related during one interview, certain groups within SMO were using delaying tactics, such as being slow to respond to requests for information.

An aspect of the role that the KG plays within an organisation concerns dissemination of information, and in situations such as depicted in Figure 5.9, the lack of communication can cause the KG to be an unwitting accomplice to resistance if they inadvertently disseminate incomplete information for use by others in determining systems specifications. Another aspect of the KG is that of a facilitator who can direct the flow of information for some, and translate its meaning for others. The project leader undertook this role by being the one to liaise with the external consultant for the implementation and training of TRIM. This role again places the KG in a powerful position, as perception of that role is one of educating others.

In examining the KG as change agent, the KG acts by facilitating the exchange of ideas and incorporating those ideas into current practice as innovation for the organisation. Then the role becomes even more powerful by being associated with the innovative change. The innovation may be new to the organisation as TRIM was to SMO. Interviewees revealed that they linked the role of KG to that of innovation, and one particularly named the project leader as an innovator.

It was revealed during the interviews that ‘some people’ ‘were shooting themselves in the foot’ by withholding information from those who were trying to collect the user requirements. This communication gap points to staff not being fully aware of the relevance of their input for TRIM and further points to a defensive behaviour by staff as they try to retain a working environment with which they are familiar. As observed by one interviewee, people did not have a problem sharing their knowledge of daily processes; it was more of a case of not knowing what was required of them and what type of knowledge was needed. As confusion was evidenced at this level, this further points to lack of experience by those who were leading the project and lack of understanding of system processes overall. Data reveals that one interviewee was reluctant to share his knowledge of system processes because he was sceptical about seeing any benefit of sharing his knowledge, and therefore he preferred to retain ownership of his knowledge.

Those committee members who were interviewed for this study acknowledged that their understanding of IS increased because of their participation in the project. This
implies that they were open to new ideas and that knowledge was shared at the committee level. What is not clear from the data is whether their increased understanding benefited their departments and the organisation as a whole. The data indicates that the committee did request user requirements from staff in their individual departments, but it does not reveal what happened to that data. Staff observations as disclosed during the interviews show that there was an assumption that the committee collated the information into one document, but again the data does not confirm this, probably because this document was not publicly released.

There are conflicting views of the usefulness of TRIM between the staff (who use the system daily) and senior management. Senior management saw TRIM’s usefulness as being a storage system for organisational documents enabling access to those documents after general office hours. Staff saw TRIM as an imposition, as there was a working system in place that could act as a general electronic storage area. Both administrative staff and committee member interviewees acknowledged that SMO needed electronic records management software, but of the participants interviewed, only three continue to use the software at the time of the third interview sessions. Two of them reported becoming more familiar with the software approximately 30 months after the first implementation, and the other comments that it was making him less efficient overall due to the time consuming processes needed to file electronic documents.

During this period TRIM had been implemented (or reconfigured) three times: firstly, the event discussed in the first interviews, secondly shortly after the new records manager commenced at SMO, and lastly after the merger of the three separate entities a new organisation. At each iteration of the implementation process, there were different project leaders and there is no confirmation within the data that lessons learned at each iteration were transferred to the new project group. The second implementation was more of a reconfiguration and tidy up, which is an expectation with such a complex system. The fact that there were so many ‘goes at it’ did not enhance staff perception of a reliable system.

The data from SMO indicate detrimental effects of irregular and unclear communication regarding the rationale for change and the staff perception of the politics and rumours associated with the TRIM implementation. Staff resistance to the implementation of TRIM, as demonstrated by the existence of rumours regarding
the usefulness of TRIM (‘but then when everyone was shown Trim the people I spoke to said immediately this did not look very easy to use’ [Admin Officer]), personality conflicts between committee members (Manager UPLM and IT Manager), and the implementation of an entirely new system (UPL-SOFT) negatively affected the implementation and adoption of TRIM. This is another example of power being exercised upwards and vertically as the informal communication channels within SMO were used to spread dread rumours and reinforce resistance to TRIM.

Staff perceptions regarding SMO and other changes are discussed in the next section and linked to attitudinal environments where the committee members were affected by the organisational communications as resistance.

**GROUPTHINK AND COGNITIVE DISSONANT ENVIRONMENTS**

The purpose of the selection committee was to evaluate and recommend appropriate software to senior management, and one problem that appeared early in the process was the apparent lack of authority to enact what they considered was the best decision. Data indicates that some committee members felt their recommendations were not seriously considered and this led to a lack of commitment to the selection process. Some committee members were demotivated by the feeling that they were on the committee to ‘make weight’, and that their contribution was a waste of time. This feeling gained credence due to the imminent merger of SMO and two other entities, and the perception of one committee member that the management decision regarding the software had been made at the start of the project.

There is no direct evidence that the software was decided before the start of the project. In fact, the ED revealed during an interview that the decision was made after the committee had met for one year without reaching any conclusion. The committee’s feeling regarding the prior decision about the software can be viewed as an attempt at rationalisation of the situation. Such rationalisation can be considered an aspect of cognitive dissonance, which, as posited by O’Keefe (2002, p78) can adversely affect motivation and those experiencing it will attempt to reduce that dissonance by any means. The view of pre-selected software appears to be a cognitive rationalisation to overcome any resistance felt towards TRIM. It was reported that some committee members’ opinions were not heeded during the meetings, and even though committee members mentioned other systems, they were not considered viable candidates for SMO. The reason for rejecting the alternative
systems was not mentioned during the interview sessions. In this context, cognitive dissonance emerges as part of a resistance strategy (Jermias, 2001), as staff did not consider the rewards offered by SMO attractive enough to overcome their resistance (*‘we’re all agreed this is a fair way of adding things so it’s gonna cause some pain in the meantime changes to the way we work (carrot and stick)’* [CSM]).

By the time the decision was made to implement TRIM, the committee members were feeling disenfranchised as they had each (individually) put in a considerable effort to make a suitable recommendation without actually being heard:

...Why didn’t these people just make a decision? Why didn’t they just make it themselves in the first place? (Admin Officer)

...not a good use of a resource and the main resource was time (Policy Officer).

It is possible to interpret these perceptions in the context of the KG acting as a mindguard by filtering out adverse information and using the committee to advance his own influence and standing within the organisation for future benefit after the merger. In this environment of unease, it is easy to understand the appearance of workthink as a strategy for not participating in decision-making and avoiding what some committee members perceived as a waste of time. There is ambiguity in the use of workthink in this instance, as it appears that the committee members were using the strategy to send a message of dissatisfaction to senior management, while appearing committed to SMO and the project at hand. Further emergence of the workthink strategy is explored in more detail later in this chapter.

**Insider/Outsider Perceptions of the Committee and TRIM Implementation**

Group dynamics play a large part in systems development and implementation, more so if the group forms specifically for it. In other words, if this process does not occur, then there would be no reason for the group to exist as a group. The KG’s role within a team as a team member is to assess the necessity for and monitor the flow of information to other members of the team. The KG acts as a conduit of information/knowledge as the flow is bi-directional.

Structured conflict, when introduced into a group who are displaying elements of groupthink, can potentially assist in assuring that decisions are reached after full discussion, as pressure to conform can lead to poor choice, as demonstrated at SMO (Priem, Harrison and Muir, 1995). When selecting members to form a committee there is benefit in selecting at least one devil’s advocate who can argue against the
committee’s decisions. By introducing this element of social interaction into the group, trust and cohesion increases and resistance lessens (Napier and Gershenfeld, 2004). Unfortunately, the role of devil’s advocate appears to have been taken jointly by the two staff members from UPL-Lab, and therefore perhaps seen as anti-TRIM rather than a reasoned approach.

There is also the possibility that a person playing such a dissenting role could prevent emerging groupthink, by speaking out and questioning when other committee members are lapsing into groupthink behaviour.

By having a devil’s advocate on a committee, or at least taking part in the evaluation phase, issues that potentially would only arise after the decision has been made, and possibly only at the first sight of the new software or organisational change, could surface and be dealt with before they escalate at a later date (Janis, 1972).

The interviewees hold disparate views of how the committee was recruited by the ED with some interviewees saying that it was ‘fairly voluntary’ with others saying that, they felt obliged to volunteer before being volunteered.

The committee formed by the ED to evaluate and recommend appropriate software contained staff from various departments. The data indicates that membership of the committee changed whilst it was in force, as staff returned to their main work focus. On occasion, there were committee members where there was a direct reporting relationship between each member. For example, at one time the committee consisted of five staff members from the Laboratory Services division, (the Manager-Lab Service, UPLM, the EQO (reports to UPLM) and Lab staff 2 and 4). The IT Manager was the project leader (from corporate services), without any committee members reporting to him, though there were other staff from the department where he was located, (Archivist, Librarian, CS1), (refer diagram Figure 5.10). The Policy Officer was the only representative of the Policy Department.

As can be seen in the diagram below, there was opportunity for in-group influence from one department. One interviewee commented that, as the IT Manager was not anybody’s manager there was no conflict of interest, and therefore had no undue influence over colleagues’ opinions. This may have been the publicly held view, but the data challenges this view.
In conjunction with establishing the selection committee to foster teamwork, the ED also expected the departmental managers to change their role from being hands-on managers involving active participation in day-to-day tasks, to taking more of an administrative role in the department. As the CSM observed:

…going out, and making it happen, instead of doing it, setting the timeline, really getting people committed and involved. We had a long time of working the other way, and it’s debatable as to whether it has worked.

Therefore, not only were some staff required to evaluate software without expert support (as mentioned elsewhere in this chapter) they were also required to change their way of interacting with staff and attempt to solve problems at arm’s length.

![Organisational reporting relationships within TRIM committee](source: developed for this study)

Early in the project, some committee members proposed that SMO reorganise the paper-based records and bring everything up to date before transferring the documents to TRIM. Other committee members considered this approach to be too time consuming and outside of their purpose of selecting and evaluating, electronic records management software. The committee began to lose motivation when the UPLM member suggested, ‘a deep analysis of the organisation’s information needs to be undertaken’. This proposal was seen by others as a delaying action. The committee lost more momentum when they realised they were expected now to be
involved in collecting the user/system requirements now that the change of systems had become a reality as the committee members thought that their task had been completed with the choice of TRIM.

Some committee members considered that they had achieved something by developing a list of requirements, which is opposite to the view held by other committee members regarding pre-selected software:

I think the committee actually, basically drafted out the wish list of what we'd like for an ideal system and then measured up other systems against the ideal wish list. And the one with the greatest ticks won (Policy Officer).

This simplified method of determining system requirements points to the committee’s collective inexperience in this area. The major achievement for some after twelve months was only the most basic of comparisons for requirements against similar records management software. All interviewees related that the external consultant also performed this activity sometime after their initial input via the department’s committee member. This indicates that the initial requirements gathering activity was inadequate and highlights the committee’s inexperience in such functions.

Differing perspectives within the committee caused members to share the illusion that there was unanimity in decisions and did not recognise the existence of groupthink and cognitive dissonance behind the overt consensus.

A comment made by an interviewee is interpreted as a sign of some dissent within the committee relatively early in the project, and identifies the existence of what is considered as mindguard roles (Janis, 1972). Some committee members played these roles, ‘there were people in the committee who were using their influence to form the thinking of the group as a whole’. The interviewee indicated existence of conflict between two committee members who both claimed to understand computer systems. One was a committee member who felt that other similar systems were in the marketplace that could do the job better than TRIM, and the other was the champion for TRIM. The interviewee who mentioned the conflict indicated that he had also put forward software he considered more appropriate than TRIM, but that no action was taken to seriously follow-up this suggestion. This lack of action supports some perceptions that TRIM was selected prior to the start of the project and that the formation of the committee was ‘merely lip service to convention of
inclusiveness’. The implications of this conflict indicates that at an early stage in the project committee members were considering their own agendas rather than considering the project to benefit SMO.

The conflict between the committee members did not promote any notions of teamwork. One committee member with his own agenda was from the laboratory department located downstairs and the other was from the corporate services department upstairs. As managers of different departments, both committee members were located at different power positions in the organisation, and also represented the separate physical structure of the organisation as upstairs/downstairs. This link also recognises the means of communicating the power structure of organisations.

Participants from differing departments bring the possibility that certain committee members had hidden agendas in relation to committee membership. Lack of cohesiveness as a committee was demonstrated by some members who attend the committee meetings, but dissociated themselves for the majority of the discussions. There were two outcomes from this dissociation: silent resistance and the portrayal of apparent consensus as in groupthink.

As indicated earlier in this dissertation, staff felt obliged to volunteer as committee members. This is interpreted as forced compliance with requirements, and therefore rationalisation between two opposing concepts: the need to be seen to comply with the ED, and resistance to change. This dissonant behaviour may have been exacerbated by staff feeling obliged to volunteer for and participate in committee meetings, and taking them away from what they perceived as their ‘rightful’ tasks, thereby avoiding disapproval from the ED (Kelman, 1970). It could also create the feeling that, at the end of the day, the big decisions, the recommendation of the committee, and the final decision were more or less out of the committee’s hands. Some people felt it was an imposition on their time as the committee work was not their core business. This interpretation is reinforced by comments from some committee members who indicated that some resented being away from ‘their towering in-tray of specialty work to do something such as attend committee meetings’. Whilst it was recognised as being for the general good, they felt resentment at the arbitrary use of their time. This view can also explain the use of workthink as a way of avoidance from the participation in the committee in order to focus on what they regarded as meaningful work.
From the perspective of the project leader, it is obvious that the aim of the committee was to fulfil other non-communicated aims. One of the benefits the project leader emphasised to staff was the ideal of a paperless office. Many people do not understand that implementing a new system will not necessarily change the way an organisation’s business processes flow (Volkow, 2002, p271). The project leader appears to hold that view. During the interview he mentioned that his role was as leader and advisor in persuading the staff to change their information storage habits and his belief that SMO could be paperless within 10 years. Staff interviewed for this project refute the ideal ‘paper-less’ outcome and viewed TRIM as ‘just another change that we have to go through’ (Admin Officer).

Butler and Fitzgerald (2001) suggest in their study that if system users and developers are aware of each others contribution to the system implementation and are well-disposed to that contribution then both groups will respond favourably to each other (see also Boland, 1978). Whilst the SMO interviewees acknowledge that there was interaction between the committee and their respective departments regarding the type of information that needed capturing in the new system, there does not appear to have been any inclusive approach to gathering this information as proposed by Butler and Fitzgerald. Nor was there any particular format suggested by the committee or the subsequent external consultant hired to facilitate the implementation.

All interviewees revealed that there was a period of requirements gathering, but were uncertain as to who specifically performed this function and the timeframe of the activity. For example the Admin Officer commented ‘then someone from Trim came out and sat with us and said ah okay, tell me what your needs or your requirements are on this computer for Trim’. Though the methods employed by SMO to collect the relevant information did involve the eventual users of TRIM, it appears to be in direct opposition to that suggested above by Butler and Fitzgerald (2001). SMO appears to have attempted inclusiveness by requesting staff to submit, via nominated members of each department, their requirements for the new system, but ignored the idea of any relationship between staff, the information collected, and its eventual use.

At SMO, staff appear to have received the information about a new system with cynicism. Participants related during interviews that other staff could not understand
why this particular system was chosen as no one at SMO understood it, nor had experience of it. For some, TRIM failed to live up to staff expectations and some staff, notably those in the UPLab stopped using it after a short time.

The data conveys that those who collected the data and collated the user requirements did not possess the skills to translate those requirements into a context map of the new system’s functions. Staff reported there was no consistent process to identify standard categories for saving, nor keywords to search for those documents. This led to staff perception that once their documents had been allocated a category and saved into TRIM, there was potential for them to be ‘lost in the system’, as the TRIM process required staff to consistently attach the same category or keyword to documents to enable retrieval by any person who needed to see that document. SMO staff were not confident that their training and understanding of TRIM would naturally allow that consistency.

This led to an observation by one interviewee that TRIM was making him less efficient as TRIM requires users to file documents electronically under pre-ordained categories and attach a keyword to those documents, and if he wasn’t aware of the category or the keyword, he then had to search for those either by asking someone else or referring to a manual. This comment regarding a manual for TRIM was the only reference from any of the participants to its existence, implying that the manual was inadequate and staff refused to use it or that staff did not know it existed. As discussed earlier in this chapter, SMO staff used to be able to create their own categories and file structure as in the old system, in which if anyone else needed to find a document, then it was relatively easy by searching the file server. Within TRIM, the categories and file structure were predetermined by a consultant and did not correlate with the old system therefore, SMO staff were trying to ‘second guess’ each other as to the category and keywords to attach to each document.

Resistance to TRIM was such that staff decided very early on in the transition from the old flexible system to the new ‘hard to use’ system that they were ‘not going to like it at all’. One of the most common remarks mentioned during the first round of interviews was that TRIM was not intuitive and that it was difficult to use. Another remark was that staff were never sure if their documents were actually stored where they were supposed to be. Figure 5.11 below, represents a synthesis of the main factors that formed the staff resistance to TRIM, factors that will be discussed next.
Staff at SMO did not trust that TRIM had the functionality to enable them to retrieve their documents when required, nor did they trust that TRIM had stored the document in the correct folder. The implication behind this collective feeling is that staff have lost documents within TRIM, and they remained uncertain as to how TRIM functioned. According to the data, staff did not understand what they perceived as the complexity of the internal structure of TRIM.

Apparently, TRIM was bewildering to some staff, especially those who needed to access it on a daily basis, as there was no discernable, to SMO staff, logic behind the structure within TRIM. This led staff to believe that TRIM was an inappropriate choice for that organisation and that their resistance was the right behaviour for the circumstance.

Committee members identified one particular member as the project leader, who saw himself as the conduit of information and influence. This person pressured the committee members to select TRIM. His agenda was perceived as firstly, to get the other members to agree to TRIM, (already in use at a related organisation), and secondly, as a way of empowering him for the future in the new organisation. This perception of the project leader’s motives may or may not have been correct, but the
project leader himself informed the researcher during his interview, that he had a fall back position if ‘this [TRIM and the merger] did not work out’. The alternative plan was a small business franchise in a very popular shopping centre. This contingency plan indicates uncertainty of actions and points to the insightfulness of others perceptions.

The participants’ perception was that the project leader appears to have used his influence with the ED to force the selection of TRIM (‘that turned out that way is that the project manager basically got what he wanted, which was to buy something quick and implement it quickly’ [Manager UPLM]). The committee members interviewed for this study commented that they thought that TRIM had been agreed before the committee was formed and they were there just to formalise the selection to give the appearance of transparency. Another view commented was that the project ‘was rushed through to make the project leader look good’. If this were the case, this behaviour would not inspire confidence in the outcome.

The committee were not collaborating as one cohesive group, but appeared to have separated into smaller departmental groups. The lack of cohesiveness as a single group led committee members to promote solutions that benefited their own departments more than SMO as a whole. Therefore, some of the problems purported to promote groupthink, such as shared illusion of unanimity and pressure to conform to general opinion, should not have arisen. This reaction by some committee members points to the emergence of workthink as an explanation of behaviour.

The data implies that groupthink characteristics such as self-censorship, illusion of unanimity, direct pressure, rationalisation and mindguards were present within the committee’s actions and behaviour. The illusion of unanimity was displayed through the apparent agreement in committee meetings with the selection of TRIM and the private reservations disclosed in the interviews. By appearing to agree with the TRIM decision, there appears to have been a sense of assumed consensus (Morgan, 1997), and this seems to have inhibited dissenting views being expressed during the meetings. This behaviour of withholding dissenting views demonstrates self-censorship and further contributes to resistant behaviour, such as one department’s development of UPL-SOFT as their alternative to TRIM.
Staff appeared to rationalise the choice of TRIM, and the data reveals that committee members and other staff agreed with the premise that SMO needed software such as TRIM to support the new organisational direction.

The pressure to conform to the decision for TRIM appears to have been more of a decision taken out of the committee’s hands, where they were expected to accept it without overmuch comment, and then formulate a strategy to implement the software. As mentioned before, the decision to implement TRIM was made approximately 12 months after the committee was formed. When the ED decided the process was taking too long the decision was taken out of the committee’s hands.

Resistance can be seen in the overly long process to evaluate the software, and the poor attendance at committee meetings. The project leader mentioned during his interview, that he ‘did not have full attendance at the meetings after the first two weeks’. He also commented that committee members were offering excuses, such as prior commitments, as a reason for non-attendance. Therefore, the meeting time was changed from Friday 3pm, to Thursday [no time stated], and thence to Wednesday [no time stated] with equal lack of attendance.

This lack of attendance at meetings can be seen as resistant behaviour on the part of the committee members, and is indicative of workthink. Workthink describes individual or collective resistant behaviour whereby the proponent or proponents cite valid work related reasons to avoid undertaking tasks with which they do not want to be involved. By citing a valid reason management has little or no recourse but to accept the behaviour and try and determine means to either work with the behaviour, such as changing meeting times and dates, or making a decision that may not be acceptable to those who avoided the task in the first place. This appears to have been the case at SMO. Workthink appears to have caused considerable delay in reaching a consensus on the software, with most interviewees having different perceptions as to the overall timeframe. Two interviewees mentioned they took the opportunity of not attending meetings often, and after receiving permission to develop UPL-SOFT, left the committee altogether. The Policy Officer observed that two committee members left ‘as soon as they got their way [regarding UPL-SOFT]’. This points to a hidden agenda (anti-TRIM) for department UPLab and the emergence of workthink as evidenced by the lack of meeting attendance both before and after the UPL-SOFT decision.
The perceived resistance of the committee would have had an impact on the behaviour of the general staff, even if only through a display of attitude against TRIM. As the committee were also responsible for collecting their department’s user requirements and collating them with other department’s requirements, this had the potential to be another resistance scenario. It also links with the comments made earlier in the chapter in relation to slow communication between various groups within SMO. Staff would have felt justified in continuing their resistance to software if they perceived that it was not useful to them and that their departmental management supported their perception.

The overall impact of individual behaviour on the TRIM implementation process was to cause delay in the evaluation, selection and user requirements phases to such an extent that executive management removed the decision-making processes from the committee and supported the project leader’s choice of software. Some staff, including committee members, doubt that TRIM is the answer, as ‘it just doesn’t fit’ even though according to the interpretation of another committee member:

I think it was an informed decision but whether we had the power to push it if we felt it was not really the only correct option I have my doubts (Policy Officer).

This observation from a committee member points to a perceived lack of influence held by the committee.

**Perceived Usefulness of Change**

At the time of the initial interviews for this research project (2004), very few of those interviewed were using TRIM. All interviewees reported that there was still confusion six months after the implementation as to where a particular document was to be stored. This confusion was in some cases self assumed as can be seen, for example, in the case of one interviewee, a project scientist with more than 15 years experience at SMO. She blamed herself for not knowing the system by saying that she ‘did not have an organized mind’. Others blamed the lack of training or the communication during the training session.

The training sessions appear to have been unsuccessful, as one staff member reported that the sessions were little more than a brief run through of the functions within TRIM, and far from comprehensive enough given the complexity of TRIM. Interviewees indicated that the training sessions at SMO were conducted more as demonstrations of the capability of TRIM and staff disclosed that the consultant who
led the demonstration/training sessions ‘whizzed’ through the session, saying ‘push this button, place the document in this folder’ and never really related the tasks to SMO business processes. Staff left the training sessions more resistant to TRIM than they were before the sessions, as no explanation was offered regarding the context of when to perform the actions that staff would need to take to ensure correct filing and retrieval of their documents. When staff complained about their inadequacy, a few one-on-one hands-on sessions were arranged for staff.

Staff commented to each other after these training sessions ‘this doesn’t look easy’ and ‘I am not looking forward to this’. The project leader commented during an interview that he considered the demonstration sessions to be sufficient and this indicates that there was an assumption about staff level of computer awareness and their willingness to learn a new application. Sadly, this was not the case, and it was reported during the third interview sessions, which took place approximately 30 months after the initial implementation, that some staff were ‘just getting comfortable with TRIM’.

Figure 5.12: Factors leading to distrust of TRIM
(Source: concept developed for this study)

Figure 5.12, above, tracks the factors that caused SMO staff to distrust TRIM. In their exploration of the meaning of trust, McKnight and Chervany (1996) suggest that trust is the extent to which one person is willing to depend on another in any situation. If this trust is lacking from a person’s cognitive belief about another in any
situation, in this case the training sessions, then there will be a rise in cognitive dissonance until the person rationalizes the situation to their belief.

Organisational communication channels in this instance were used to spread staff dissatisfaction with TRIM. From the analysis depicted in Figure 5.12, it is possible to see that the interviewees have an illusion of unanimity in the rejection of the system for one reason or another. It was reported that every staff member who held adverse views of the system had the perception that ‘no-one wants to use it, because it’s too difficult to remember where to store the document’ and the often stated comment ‘they should make the system easier, you know what I mean?’ Data indicates that there were informal discussions amongst staff about TRIM, which reinforced their belief that the software was ‘not for them’. This reinforcement of privately held beliefs subsequently gave substance to the rumours that TRIM was difficult to use and did not really suit the organisation.

Prior to the arrival of the new ED at SMO, staff were used to working in isolation from colleagues and there was a definite appearance of upstairs/downstairs behaviour at SMO. The administrative staff were located upstairs and the laboratory staff downstairs, each with their own lunchroom facilitates. This arrangement was not perceived to be conducive to informal communication amongst differing departments, and shortly after the arrival of the ED, and sometime before the change to an electronic records management system was proposed, this arrangement was changed and communal lunchroom facilities were created in order to encourage cross-group communication opportunities.

This new arrangement was to encourage staff to discuss issues that were of interest to them as a whole, rather than just within a department or location. The training sessions were also used as a method to encourage interdepartmental communication, and data reveals that staff leaving those sessions immediately exchanged views regarding the training and their perception of TRIM. However, the data revealed that the strategy of encouraging staff to communicate through shared facilities was not successful. One indicator of this non-communication was the lack of a shared perception amongst staff in regard to who the project leader was for TRIM. This could indicate that staff did not consider the project leader’s identity the issue as opposed to the change wrought by TRIM, but the interview comments reveal that TRIM itself was a topic of discussion for some time.
During the interviews resistance (as resistance itself) was never openly discussed, though the number of complaints about the TRIM implementation, the lack of use in some cases and the development of UPL-SOFT as an alternative to TRIM, suggested that resistance and dissatisfaction existed.

Even though the official project leader continually cited the proposed benefits of the new system and the expected increased productivity for the organisation, participants interpreted the cost savings as potential job losses. Subsequently staff were proven correct as voluntary redundancies were offered to particular staff, including some participants of this study.

In the case of SMO, the vacillation of the staff that claimed to think the new system is ‘OK’ but subsequently did not use the system, claiming that it is not appropriate for their work practices, clearly confirms staff avoidance of situations likely to increase dissonance. As Festinger (1957, p3) posits “when cognitive dissonance is present, in addition to trying to reduce it, the person will actively avoid situations and information which would likely increase the dissonance”. The perceived inadequacy of the training sessions validated staff perceptions that TRIM was not suitable for SMO and informal communications (rumours) supported this perception.

This behaviour points to resistance against what UPLab perceived as a badly managed IS project (TRIM) rather than resistance to SMO itself, and if they did not protest, would see UPLab using software that they perceived as not suitable for their purposes. Activities indicative of resistance to new systems in organisations include frequent complaints about the new system, poor cooperation when dealing with problems regarding the system, avoidance of the system and subversive parallel operation of both new and old system as reported by Markus (1983). Staff from different departments at SMO displayed the behaviours as described by Markus, and the circulation of rumours amongst the staff which exacerbated these actions. Consequently, these rumours about TRIM’s lack of usefulness further strengthened staff perceptions about the system. DiFonza and Bordia (2002), discussing the level of rumour activity in an organisation, stated that the higher the belief in the rumour, the higher the activity would be, and this proved the case at SMO.

Staff perceptions regarding TRIM’s ease of use and overall usefulness led some staff to avoid the system, and this is discussed in the following section.
Behavioural Intention to Accept Change

This dissertation has identified recurring resistance by staff to TRIM and the strategy to develop UPL-SOFT as an alternative, thereby enabling UPLab to avoid using TRIM. Staff perceived this situation as having detrimentally affected views of the new system resulting in further resistance and its avoidance. This subsequently encouraged more resistance rumours, as staff sought to lessen the ambiguity of what they perceived as their future situation (see Bordia and Rosnow, 1998). The interpretation of the informal communications, in the form of rumours, in this instance leads to the conclusion that staff at SMO were seeking social support from their peers (Festinger, 1957) regarding their opinions of TRIM and seeking to reinforce their belief against the software.

Even though the project leader continually cited the proposed benefits of the new system and the expected increased productivity for the organisation, participants interpreted the cost savings as potential job losses rather than due to the implementation of TRIM. This miscommunication increased the level of anxiety amongst staff resulting from the organisational change, which led to the escalation of rumours concerning which jobs would go (see Burke and Wise, 2003).

Staff from SMO employed strategies to resist using the new records management system from the start, with committee members citing work commitments as a reason for not attending the committee meetings (workthink) and the UPLab developing a quasi shadow system in Microsoft Access for the laboratory. Edmondson (1999) suggests that a work team or group’s psychological safety might affect the degree to which the members are willing to span team/task boundaries. This was certainly in evidence at SMO with committee members appearing reluctant to make a decision regarding the software and this is interpreted in this dissertation as resistance, especially as the committee met for one year prior to having the decision taken out of the committee’s hands by the ED acceding to the project leader’s request for TRIM.

Intervention outside the committee processes by the ED making the decision to implement TRIM demonstrated the presence of cognitive dissonance. Some interviewees indicated that this was because the committee had taken so long to reach a decision [at least one year]. This rationalisation removed any mental and
emotional discomfort that they may have had by the decision being removed from the committee.

UPLab staff’s resistance to change by rejecting TRIM indicates the importance of attitude to the proposed software. As the attitude to the new system was personally important to various members of UPLab, they were more resistant to change, and therefore more resistant to the attitudinal change associated with the motivation to restore consonance (Devine et al. 1999). UPLab staff attitude towards a new system eventually did move to a consonant behaviour but it was indicated by the permission to develop UPL-SOFT, which UPLab staff now use instead of TRIM. This circumvention of TRIM adds one more layer of complexity to the daily tasks, defeated a purpose for the project, which was to ‘be able to electronically store documents and track documents and give access to appropriate staff members when required’. UPLab appears to have defined their territorial boundaries by using their own information system. This process can be interpreted as power used politically to resist the change.

As mentioned previously in this chapter, SMO staff did not trust TRIM to store their documents or allow them to retrieve those documents easily. Staff felt disempowered due to this lack of trust towards the software because it was a situation they were unable to resolve.

As reported by the CSM, SMO had offered an incentive to staff to encourage use of TRIM in the form of salary, ‘...there was a dollar component built into the workplace agreement, sort of a carrot and stick’. Mednick et al. (1975), suggest attempts at offering inducement to change a person’s behaviour, where the behaviour conflicts with a known attitude must be just enough to encourage the behavioural change. If more inducement is offered than the person considers necessary, the likely outcome is to reinforce the resistant behaviour. This suggestion appears to have been the outcome at SMO, as at the time of the initial interviews very few staff were reported as using TRIM, and at the time of the final interview sessions, only some interviewees were consistently using it. Therefore, the strategy of offering incentives to encourage staff to use TRIM clearly failed as evidence from the data indicates that staff continued to resist using TRIM throughout the two years of contact for this research.
The majority of interviewees at SMO clearly indicated that the implementation of TRIM was not to their liking and that there was something missing from the final product. People tend to behave in such ways that are rewarded, and by offering inducement SMO management clearly intended to elicit behaviour favourable to TRIM, (Spreitzer et al. 1999). This attitudinal change incentive possibly caused resentment amongst those that did not use the new software and for operational reasons possibly never would. As posited by Devine et al. (1999), when people choose to adopt a resistant attitude to change, this causes attitudinal conflict to the event resisted. This was clearly the case at SMO.

The loss of the accounting information system (AIS) as part of the agreement to move to ‘something simpler’ created covert animosity towards TRIM amongst corporate services staff, as the corporate services unit was quite happy with the AIS as it contained approximately seven years of data that they could search and retrieve if the need arose. The new accounting system did not provide them with this functionality. UPLab staff interviewed for this dissertation revealed that UPLab had never been satisfied with the functionality of the AIS, as the staff had always found that it was ‘clumsy and cumbersome to use, its use was not suited to our purpose’. Therefore, at SMO there was conflict of interest amongst staff serving on the committee, from the start of the project.

One staff member from UPLab who was reported as having a hidden agenda regarding TRIM developed the laboratory system (UPL-SOFT). This action can be interpreted as securing the interests of UPLab by ensuring that the department has future use of appropriate software. From the corporate services department it was observed that UPL-SOFT had a remarkable similarity of function to certain modules of the AIS that UPLab successfully campaigned to remove.

Experience of having used or been associated with other systems implementation can actually work against the user when reviewing a new system. If a user is closely associated with the old system they can be blinded to the new system’s capabilities and, no matter how strongly an influential actor promotes the benefits of the new system, those benefits will be hidden from the general user. The promoter might potentially be viewed as having an agenda that is different from that articulated. Perhaps when comparing the AIS and its methods of storage and retrieval with TRIM, UPLab staff realised that they had made an error of judgement when
requesting the removal of the AIS from the department and subsequently from SMO. Familiarity with the AIS as a user would explain why the developer of UPL-SOFT ultimately reproduced a system so similar to the AIS.

UPLab effectively prevented the government-driven goal of having an electronic records management storage system at SMO for all organisational records, as documents stored and tracked in UPL-SOFT system are not also stored in TRIM. UPLab interviewees indicated that staff in other departments who needed to access UPL-SOFT could do so with permission from appropriate UPLab management. This then confers a position of power on UPLab staff generated by resistance (to TRIM), thereby confirming to UPLab staff that the resistant actions were valid as they no longer need to use TRIM.

In an attempt to gauge reaction to the outcome of the TRIM project (general resistance and the development of UPL-SOFT), the IT manager rated the implementation as successful, and it appears that this perception was based on a technological view. When asked how he rated the success of the project, whether from an organisational or staff satisfaction perspective, he seemed surprised that there were multiple ways of rating the success of a complex change project. He eventually replied that the system was up and running within the timeframe stipulated (on time and on budget) and ‘everyone’ was now using the software. The data reveals that this was clearly not the case. This again highlights the inexperience of certain staff at SMO whose involvement in the TRIM project led to such dissatisfaction amongst other staff.

SMO staff with experience in systems implementation were not given the opportunity to voice their opinions or offer perspectives based on their experience, as the executive viewed TRIM as relatively simple IT project, and the IT manager was considered to be the expert in that instance. The organisational change at SMO was in fact one that involved a major change similar to what was discussed by Bingi, Sharma and Godla (1999) in their report about the critical issues that arise during the implementation of off-the-shelf software. They claim that implementing an enterprise wide system is not so much about the technology but an organisational paradigm shift and therefore the most experienced staff should be allocated to the team. Evidence suggests that senior management at SMO did not view the TRIM project as a major organisational change, but as a relatively simple IT project.
replacing one system with another. Evidence further suggests that as the laboratory staff were given permission to develop UPL-SOFT, from the perception of executive, this effectively silenced them on any dissenting views on TRIM. The complexities of the implementation and the change in daily processes seem to have escaped the notice of senior management, further pointing to the overall inexperience of staff at SMO involved in the project.

Data indicates that TRIM was just a one change too many for SMO, and the project leader commented during a meeting that another staff member had said, ‘...why involve us, just get on with it’, further indicating the change weariness of SMO staff that led to resistant behaviour. As one interviewee commented ‘... [TRIM] it’s okay, but now I don’t really use it’. This kind of reaction clearly highlights the existence of change weariness and when allied with the need to rationalise a changing environment, points to a need for effective management of communication channels during change, together with the skills to understand and lead the change.

**Conclusion**

This chapter explored the reaction of SMO staff to the implementation of new software that affected their daily business processes and influenced the workplace environment. This change within SMO was part of a wider organisational change where SMO amalgamated with two other entities to form a new NSI. This merger complicated the issue of implementing TRIM, in that an older version of TRIM was being used at one of the other entities. Though it is beyond the scope of this dissertation to discuss the issues that relate to the merger itself, the data explored in this chapter has shown clearly that organisational change involving complex major change to a workplace environment can result in resistant behaviour from the staff, and management need to ensure effective project management by experienced staff.

The culture at SMO was not conducive to acceptance of another change as was indicated by one participant (CSM) who was highly amused at the thought of yet another change at SMO and had taken steps to ensure his future outside SMO ‘if anything happened’. This participant subsequently accepted a voluntary redundancy package. It should be noted that this participant is not the same one as previously mentioned as having a fallback position, and it is interesting that two staff members
deeply involved in such a complex change had contingency plans in place should it be necessary to leave the organisation.

Influence, power, and politics, as exercised by staff on the committee, played a large part in determining the negative perceptions staff had for TRIM, even though over time these perceptions became more favourable of the software. The chapter has also highlighted how the influence of pressure from power positions in the organisation to ‘volunteer’ can transform a desirable form of decision making into a dysfunctional one. It is hard to know if a real voluntary participation would produce a different outcome especially considering the effect of external pressures, which in the mind of the participants represent threats and/or opportunities. The data revealed that there were numerous incidences of different departmental groups achieving their own aims, which did not necessarily coincide with the stated aims and goals of the project, by using personal influence and power.

Exploration of the data disclosed throughout the interviews indicates that there is a fifth dimension to power relationships and this is the situation or circumstance where that power or influence is exercised, and is contingent on the activity being undertaken. This perception of power is a contribution of this study as the situation or circumstance where power is exercised is not readily recognised as a conveyer of power. Rather is it usually the person who is exercising the power who is recognised as the power force.

There was real unanimity expressed consistently throughout the interviews as the recognition of the need of a good system and the acknowledgement that the ‘old method of storing documents’ was no longer appropriate. All staff members acknowledged that SMO needed a better records management system. What is in question is whether the decision taken was the best solution for SMO, especially as the data indicates the decision to proceed with implementing TRIM was made some time before it was necessary, and in the light of the impending merger, possibly a decision taken hastily. It was possibly a mistake to form a committee with the view of generating collaboration and team work amongst the SMO staff, as the data revealed that no one who was interviewed appeared to think that implementing software already in use at another entity would have been unreasonable. Therefore resistant behaviour in the form of competing commitments (workthink as resistant strategy) may have been averted if staff had been advised of this fact. Workthink
proved to have significant impact on the success of the TRIM implementation as committee members did not give the agenda topics due consideration once it transpired that influence was being used to push forward other personal agendas.

It should be noted here that SMO did eventually hire a new records manager with TRIM experience and the skills to implement the software. Unfortunately, that person commenced with SMO after the initial implementation. By this time inexperience had created the damage, and as demonstrated by the first implementation, the resistant behaviour was firmly entrenched.

The discussions in this chapter analysing the process of change are the basis for the SICAM framework (refer to Figure 5.1, on page 143) that can be used in a wider context of organisational change. Managers of change commonly ignore the social influences that emerge from referent group thinking that affect the behavioural and attitudinal change that is required for effective and relatively concern free change projects.

The next chapter concludes the research and provides consideration of the implications for practice of the issues identified and explored, and states how this investigation relates to the context of organisational change and specifically the power relations of the stakeholders in a changing environment.
Chapter 6
Journey’s End

Introduction

The previous chapter presented the components of a model of organisational change, the Social Influence and Change Acceptance Model (SICAM), incorporating issues pertaining to change at all levels of the organisation. This model was derived from the data analysed in Chapter 4 and the subsequent discussions of the issues in Chapter 5.

This chapter includes a summary of the findings, models and conclusions presented in the previous chapters as the basis for discussing the conclusions, and implications developed from the investigation into information exchange during organisational change, specifically during the implementation of a new information system.

The roots of this study are grounded in personal observations gained whilst implementing information systems (IS) in various organisations where I observed the reactions to the new systems. Also, it became particularly obvious that certain people were acting as a channel or conduit for information and influencing attitudes to the new system. If that key person’s attitude was positive towards the new system, then usually others who were affected by the new system also had positive attitudes. On the other hand, if that person’s attitude was negative, then the implementation and overall acceptance of the system become much more problematic, due to having to overcome that negativity and the potential failure of system acceptance. From that experience, I took the challenge of understanding how attitudes from key players, who I consider knowledge gatekeepers (KGs), affect the outcome of a project implementing IS and its consequent organisational change.

As an important social issue surrounding the introduction of the new system, it was equally important to understand why an adverse reaction to a new system could be caused by any attendant changes to the general working environment. In addition to this, it was necessary to understand how social factors such as influence and power affected the staff’s perceptions of the events surrounding the change caused by the new system, as this understanding will enable insight into similar situations. This led to the development of the following question introduced in Chapter 1:
“How does a knowledge gatekeeper’s role within an organisation affect the social aspects of an organisation during information systems change?”

To explore this question I first had to choose participants affected by the Total Records and Information Management (TRIM) implementation, and to ascertain their understanding in that context. By understanding the depth of knowledge held by the participants in relation to the use of IS, the participants’ observations could be given context.

The uncertainty surrounding the TRIM implementation and staff’s cynicism displayed after the training demonstration of TRIM, point to Scientific Measurement Organisation (SMO) staff ongoing resistance to TRIM. Staff seemed to rationalise the choice of TRIM, and the committee members and other staff agreed with the premise that SMO needed software such as TRIM to support the new organisational direction, but felt that it was not necessarily useful for their department. Limited appreciation by management of tacit knowledge within the organisation led to resistance to the new processes being imposed on staff without consultation at SMO.

The committee was established by management as a means of including staff in the selection process for a new records management system, and also to foster communication between departments at SMO. No consideration appears to have been given to the lack of experience of committee members for this task, as prior to the TRIM implementation few staff at SMO had experience with implementing an information system and almost no idea of the complexity that implementing TRIM entailed. Staff appeared very cynical after a demonstration of the functions within TRIM. They were unable to perceive any organisational benefits and were convinced that using TRIM would be difficult. The lack of effective senior management communication as to why TRIM was implemented at that particular time appeared to increase staff negativity towards the system, and therefore increased staff resistance. Informal discussion and rumours reinforced this view, and the data indicates failed expectation of staff, both users and those who were involved in evaluating the software. The issue of power and politics became evident when staff developed excuses that prevented them using the system, and subsequently senior management employed two strategies to encourage TRIM usage: reward via employment agreement, and, after a certain date, preventing access to any records remaining on the old system. Neither strategy appeared to be successful.
As a means of introducing change to SMO’s record keeping practices TRIM failed dismally, as by the time of the third and last interview session, the majority of participants were no longer using the system. The participants reported that in their perceptions, TRIM did not dramatically change the work environment, though there is some conflicting evidence that for some, the complexity of TRIM did change the way records were stored and shared amongst staff. Interestingly, UPL-SOFT seems to have had more impact on staff at SMO than the official records management software TRIM, perhaps because UPlab staff felt committed to and had ownership of that system from the start.

**Contributions and Implications for Theory and Practice**

This dissertation sought to reach an understanding of the nature of phenomena shared by research participants at SMO through exploring the experiences those participants encountered during an organisational change caused by the implementation of a new information system. This study searched for answers to the questions that arose from the issues surrounding this implementation, and the nature of this research enabled the interconnectedness of those issues to be explored resulting in the four contributions discussed in this section.

The majority of literature concerning change refers to top-down change whereas this dissertation is proposing that organisational change through whatever means, such as a new information system, would be more readily accepted by staff if the change was to flow upwards. The decision for change should remain at senior management level, but, by empowering change from the bottom upwards, as each level assimilates the change that level gains ownership of the change and supports the change diffusion. An information system is a good example of how such a flow could effect change, with the information system itself becoming the means of effecting change. It is recommended that volunteers be promoted as advocates of the change, trained thoroughly in the use of the system, and then have these advocates act as mentors to other staff. By this means, the change can be effected incrementally from the ground floor upwards, rather than by imposing change on staff, as happened at SMO.

This dissertation has looked at the problem of organisational change through IS from the perspective of those affected by change and offers insight into the implications that change initiatives have on those most affected by change, the staff.
**CONTRIBUTION 1: SOCIAL INFLUENCE & CHANGE ACCEPTANCE MODEL (SICAM)**

The Technology Acceptance Model (TAM), and the extended versions discussed previously in this dissertation, were developed explicitly to predict users’ acceptance of new technology, posits that the users’ acceptance of this technology is essentially a predictor of acceptance or rejection of change.

The Technology Acceptance Model (TAM) as developed by Davis, Bagozzi and Warshaw (1989) has behavioural elements relating the perceptions and behavioural intentions of users to accept new technology; and these elements were central to this study. TAM, as extended by Venkatesh and Davis (2000) included social influence and cognitive processes, thereby making this extension even more applicable to the study of the perceptions of staff during organisational change.

To make the underlying concept of TAM even more applicable for use when trying to understand organisational change issues, the elements of groupthink and cognitive dissonance have been added as they emerged from the data. These two elements emphasise the relationship that both groupthink and cognitive dissonance has on staff social interactions in a changing workplace environment. Groupthink becomes an issue when staff reinforce their attitudes and behaviour by becoming an in-group or series of in-groups where the members reflect each others thinking on a matter. Cognitive dissonance is relevant for inclusion in SICAM as it describes the changing behavioural attitude of staff members as they rationalise their beliefs about the changing environment and reach the decision to either accept or reject the change.

The model, SICAM, (Figure 5.1 reproduced here on page 198 as Figure 6.1), was proposed as a model to explain social and behavioural aspects of change. SICAM retains the central section of the TAM model, namely, perception, intention and actual acceptance of change. SICAM provides a model of general organisational change, and it looks at the change issues from the individual level and builds upwards. SICAM comprises elements that explain behavioural intention to accept change and relates that to the actual change behaviour.

Change models usually depict flows from the top downwards, and they usually mention at some point that the organisation’s core values (culture) need changing, rather than the perceptions of the individuals within the organisation. If the
perceptions of individuals can change and hence their attitude and behaviour, change has the potential to flow upwards and horizontally rather than vertically.

Figure 6.1: Social Influence and Change Acceptance Model
(Source: concept developed for this study)

The main elements added to the SICAM model are the environmental variable of dissonance and the KG. Whilst some other versions of TAM contained experience, communication, and subjective norm (groupthink environment and social influence as power), none of the earlier versions had all the elements contained in SICAM. Nor did any of versions of TAM portray the relationship of the elements to a changing environment.

SICAM presents a reliable model for use to promote the acceptance of both technology and organisational change in the wider arena. It can also be used to estimate and monitor stakeholder perceptions throughout the various stages of change. SICAM enables the change manager to identify behavioural elements that emerge when stakeholders face change to their workplace. By incorporating the communication environment, change managers can formulate a communications strategy that consists of open and transparent bi-directional pathways thereby removing any specific gatekeeper that may censor those communications. Early communication of the rationale for change, together with senior management leadership, may reduce the failed expectations of stakeholders for change initiatives. SICAM incorporates elements of organisational behaviour theories and therefore its
applicability is wider than either Technology Acceptance Model (TAM), or any other acceptance model, for explaining stakeholder perceptions of change and their ultimate acceptance of that change.

Change itself creates uncertainty, and in changing environments, understanding who can cope with that uncertainty is important, as by understanding this, change initiative leaders will be able to enlist the assistance of those persons to ensure a smoother transition from one state to another. These KGs may also act as change agents by displaying a high level of understanding and coping skills that can be applied to the uncertain environment. A clear strategy for communication that fosters trust amongst the employees will reduce the uncertainty of the situation. In the communication environment, the gatekeepers can assist with accurate IS requirements elicitation, without which the change initiative may fail.

CONTRIBUTION 2: THE KNOWLEDGE GATEKEEPER AND SOCIAL INFLUENCE: A DIMENSION OF POWER

Social influence was a major factor of the findings at SMO and the data has revealed that the situation or circumstance, such as resistance to change, helps promote that influence. The findings analysed in Chapter 4 showed that the power relations amongst the staff on the committee flowed on established communication channels and that the KG had influence over those channels. The discussion in Chapter 5 focused on power and social influence as it related to the groupthink syndrome of the mindguard by exercising informational control over organisational processes. Through an exploration of Luke’s (1974) three dimensions of power and Hardy and Redivo’s (1994) interpretation of those dimensions within an organisational context, it has emerged that the situation or circumstance whereby the behaviour that enables the exercise of power is of equal importance to the dimension of power itself. The addition of Hardy and Leiba-O’Sullivan’s (1998) 4th dimension of power (fabric of the system) further enhances the proposition that the situation or circumstance that contains the symbolic means to exercise that power changes over time, thus linking back to Hardy and Redivo’s interpretation of the third dimension of power. Clegg’s (1975) exposition of the concept of uncertainty of power leads to the interpretation of uncertainty here offered: if power emerges from uncertainty within differing groups then the gatekeeper holds the informational power to resolve that uncertainty. It is unreasonable to assume that all uncertainty is equal and that each separate group
is equal in their uncertainty, therefore the situation or circumstance from which uncertainty emerges is the governing force or dimension of power.

With each changing situation or circumstance, each gatekeeper takes precedence depending on the information resource required, alleviating the uncertainty, and allowing different dimensions emerge as dominant. Figure 6.2, above, shows the relationship of the dimensions of power and the uncertain nature of power within the situation or circumstance, as interpreted from the data explored in Chapter 5. The proposition of contribution two is that power attaches to the situation or circumstance from whence uncertainty arises.

The exploration by Hickson et al. (1971) of solution holders and the uncertainty of power points to the revolving nature of power, by the reduction of uncertainty that has arisen due to various situations or circumstances.

The dependencies created by the gatekeeper demonstrate the power in the situation or circumstance when solving a problem in an uncertain environment and future reliance on the gatekeeper for similar solutions. If the uncertainty of the situation creates opportunities for those with a high level of coping skills, and if those persons are gatekeepers, then the gatekeeper's power will increase and the resulting power
base will be located in the situation or circumstance itself. This theory supports the discussion in Chapter 5 regarding the gatekeeper in a communications environment (refer Figure 5.6, on page 164).

The proposition of another dimension of power suggests that the solution should be based on a situation or given circumstance and is further linked to the concept of coping with uncertainty and the power that emerges through that solution for that particular situation. Further indications are that if another person assumes the gatekeeper function then the power in the uncertain situation will attach to that gatekeeper, due to relevancy and timeliness of the solution.

By recognising that the change situation or circumstance is another dimension of power rather than the event that is fostering influence or resistance, management can develop strategies for overcoming adverse reaction to the changing environment.

This dissertation does not purport to provide a simple solution to the issues of social influence and power during organisational change. This would be contradictory with the whole spirit of this research. The aim of this discussion is to bring to the attention of change managers the importance of understanding how the use of power as social influence can potentially affect the outcome of a change project. This research looks at the KG relationship to social influence when determining which information system the organisation should implement and the potential flow-on of staff resistance if their workplace needs are not considered.

Change managers would benefit from looking at the context of the change and identifying those staff members who can contribute most to the opportunities that change affords and seek out those who have a high level of coping skills during uncertain times, attempting to get their assistance in the change program. Management should also be aware that by placing certain staff members in this situation there is potential for that staff member’s individual influence to increase amongst colleagues as they communicate with the various groups and individuals within the organisation, with positive or negative outcomes, depending on the privately held views of the gatekeeper.

CONTRIBUTION 3: WORKTHINK

There was considerable covert resistance at SMO to the new information system, TRIM. The strategy some committee members employed successfully when
avoiding committee meetings was the excuse that other work took priority over the
committee meetings. In this dissertation, workthink is construed as a form of
deliberate covert resistance as decisions can be delayed if there are not enough
attendees at a meeting to enable a decision to be reached. By exercising power in this
context, resistance emerging as workthink becomes resistance through the second
dimension of power: power of processes.

Naturally, not all claims of prior commitments can be attributed to workthink, but at
SMO the project leader changed the scheduled meeting day and time twice in an
attempt to accommodate colleagues’ work schedules and find a suitable time for all
committee members. This accommodation did not alleviate the situation, and the
committee still did not have full attendance of members after the first few weeks.
The conclusion is that some committee members used non-attendance as a deliberate
strategy of resistant behaviour towards the new system or the process of
implementation.

Workthink relates to dissonance as revealed by the participants’ rationalisation of the
importance of their work and the need to respond to the level of importance that they
themselves had set. This suggestion supports the proposition put forward in this
dissertation that dissonance has considerable influence on workthink behaviour
amongst staff members and the emergence of resistant behaviour until that
dissonance is rationalised.

Tension was caused in some committee members by the continuing need to make a
decision between invoking workthink and staying on the committee. As the
committee member rationalised the workthink decision, the more the committee
member became committed to the cause from which workthink emerged, and the
justification took on more importance. In the case of workthink, temptation to avoid
situations where the staff member is in an awkward or untenable position was
common to some committee members. The decision to spend time on tasks other
than those that have been assigned tend to reduce dissonance as the rationalisation
takes precedence. Another aspect of workthink relates to groupthink. Dissenting
members within a group may opt to cite the importance of other work rather than be
viewed by colleagues as unconstructive or resistant to the group’s goals.

By identifying behaviours that potentially lead to workthink, and the subsequent
resistance, change managers can develop strategies to overcome disengagement or
passivity that can adversely affect the change project. Workthink has the potential to impact on the success of organisational change if participants are not giving the change agenda attention due to distraction caused by work events that they may consider more important.

Not all incidences of workthink emerge from dissonance or groupthink. Whether or not the use of workthink is a resistant strategy would depend on whether the majority of the group members also placed high importance on the task or tasks that remove a particular group member from organisational obligations. There is also the possibility of workthink being an agent for good if the committee member uses workthink to remove themselves from groupthink situations, thereby preventing the illusion of unanimous agreement of a decision.

**CONTRIBUTION 4: COMMUNICATION DURING SYSTEMS REQUIREMENTS ELICITATION (SRE)**

This case has made prominent the fact that an IS implementation affects an organisation as wide reaching change. It is not a mechanistic approach of simply changing the technology and expecting staff to follow. Communication, coupled with experience in understanding of staff needs during a time of change will potentially lessen the change impact. Lack of experience with organisational change initiatives, as found by this investigation, has highlighted the need for persons that participate in change initiatives to be able to identify staff members who hold knowledge regarding the organisational processes and procedures. Interaction between organisational subcultures needs to be encouraged and the KGs that were identified by these groups enlisted to promote the change initiative. By enlisting the KGs to lessen the knowledge gap that can occur between the users and those performing the SRE, potential miscommunication and misunderstanding can be averted. Those undertaking the SRE, irrespective of whether they are staff or external consultants hired for that specific purpose, must be able to communicate effectively across the different levels within an organisation. The quality of the communications will affect the quality of the user requirements, and determine whether those requirements reflect the users’ needs and expectations. A communications gap can occur if the critical knowledge regarding organisational processes is unacknowledged thus preventing the necessary information transfer, leading to failed expectations of the users.
As highlighted at the start of this section, there was a knowledge gap in the experience of the project leader, and therefore he was unable to communicate effectively to those who carried out the elicitation. By not being able to state explicitly what type of information was needed, the communication gap widened when the committee members attempted to fulfil their tasks. This was evident by the participants’ lack of understanding of what was required during the elicitation process thereby leading to resistance of the process.

Clearly, this study has highlighted the importance of getting the right mix of experience, skill and understanding of the issues that surround change. This can potentially reduce resistance when gathering the system requirements for a new information system. As was evident from the data, poor requirements elicitation that do not reflect the needs of the users will lead to failed expectation of the new system, resulting in resistant behaviour amongst the users. The complex process of communicating correctly the needs of those who are attempting to implement the new system to user requirements can become obstructive if not performed with due consideration of stakeholders’ needs. Organisational culture will influence how the SRE process is performed and may worsen the situation if there is no clear rationale for the need for change. This rationale for change needs to be communicated and supported by influential persons within the organisation.

Organisational change practitioners need to consider implications such as whether all members of a committee should have an equal stake in the outcome. From the finding of this study it is recommended that a committee should consist of at least one devil’s advocate who can argue against the decision. By having a devil’s advocate on the committee, or at least taking part in the evaluation phase, issues that potentially would only arise after the decision has been made, and possibly only at the first sight of the new software or organisational change, could surface and be dealt with before they escalate at a later date.

Consistent with the findings of this study, recent research on the communication gap issue has found that the interaction of differing human elements, such as experience in organisational and technical background, can actively hinder knowledge transfer. By including KGs in the interaction, some measure can be taken towards reducing uncertainty caused by the change and knowledge transfer between groups potentially increasing the user acceptance of the change. This acceptance of change relates back
to SICAM (refer to Figure 6.1, page 198) for the relationship of the communicative environment in the wider change environment.

**Assessment of the Research**

The creation of SICAM as derived from the data indicates the interrelationship of the issues and the need to take into account all environments and behaviours when planning organisational change. A limitation of this study is that it was undertaken at a single organisation and investigating the reaction to one change amongst many. This approach however provided the opportunity to explore in-depth the multiple issues involved in change acceptance.

There is little or no research linking the coping skills of a KG and uncertainty of the change environment, and thence to the inherent power within a situation reflecting power onto the gatekeeper role. As the change environment is the cause of the emerging uncertainty and offering the opportunity to the KG to display those coping skills, the change events are imbued with power and the person who resolves the uncertainty is perceived to hold the power. The study did not set out to specifically investigate and test for another dimension of power; therefore, more studies are required to determine if such a dimension as proposed is relevant for the understanding of other cases.

The emergence of workthink as an exercise of power over processes (second dimension) and as a strategy for resistance added to the depth of this study regarding power, as this dissertation was not specifically designed to test for workthink resistant behaviour. Understanding of workthink in various situations needs to be researched more extensively, as there is a clear linkage with uncertain situations, power, personal influence, resistance and thence workthink behaviour.

The research approach for this study has provided a rich understanding of the issues surrounding change through the implementation of a new information system. This understanding can contribute to an understanding of changed environments such as how academics perceive changing assessment practices in universities, or change engendered by a new managing director within an organisation.

All issues as discussed above are pertinent when looked at in the communicative environment as depicted by SICAM. The lack of communications strategy has been well researched, during both organisational change and when considering
requirements elicitation for IS. A study into gathering the staff requirements for change from the bottom-up and those requirements flowing upwards to management for approval rather than the opposite direction was beyond the scope of this study. This would need a wider range of research than has been afforded by this investigation.

**Directions for Future Research**

Future research should seek the perceptions of staff in many levels of the organisation, not just those from the most affected areas. As was shown in this study, the senior management of the organisation had a different perception of events than those amongst the general staff. General staff are those most affected by any impact on daily workplace changes, as the changes generally flow from the top of the hierarchal chain, and in some instances, changes are mandated without top level having in-depth knowledge of the issues at lower levels. Research into change that flows from the bottom up should be undertaken as by focusing the change effort by those who are actually affected may create buy-in from those staff members and lessen any resistance to change. Any chance to lessen resistance would increase the potential for a smoother change effort to be accomplished and therefore increase the viability of that change.

The issue of workthink would have most impact as resistant behaviour when used as a strategy by those in middle to upper middle levels, as those levels can act as the conduit of information flowing from above to the lower levels in the organisation.

Whilst there is considerable existing research on the communications gap and requirements elicitation, the finding in this investigation supports continuing study in this area. A communications gap can exist between any level within an organisation and between those levels to any other particular group, either internal or external to the organisation. This is particularly obvious when the rationale for change is not communicated effectively to all those affected by the change. There is also the issue of terminology (jargon) used by some when determining user requirements for a new system. This study shows that this act of using *in-language* is counterproductive when attempting to reach equitable understanding of each user’s requirements and translating those requirements into a system suitable for all levels of the organisation without too much angst on the part of those affected.
The KG is acting as a communication channel between two or more diverse groups. It would be beneficial in the context of organisational change to investigate further this focus of perception, within the framework of SICAM, to ascertain whether there is any difference in results. Another point raised by this study is the misunderstanding of what constitutes staff training and how training tailored to the needs of the staff member and the context of learning should be considered. It is recommended that change leaders should consider enacting change initiatives through organisational learning in the broader organisational view and in a more focused view, adequate individual staff training to increase staff ability to cope in uncertain situations and therefore decrease the potential negative effects that may arise through the use/abuse of power that emerged in this case, in some situations or circumstances.

A limitation for SICAM to date is that it has not been tested for generalisation, and as such needs to be tested in the wider community. If this proves successful then the generalisability of SICAM, when applied to change situations, should enable change managers to identify those KGs who can assist the change effort. Based on the foregoing discussions it is recommended that future research focus on investigating staff perceptions and analyse those perceptions in the framework of SICAM to ascertain the applicability and validity of this research to other environments.

**Conclusion**

This dissertation has explored the meanings behind various actions and behaviours of a group of employees undergoing organisational change forced upon them by the implementation of a new information system. The actions and reactions of this group have shown that change through any agency is a complex and wide ranging force. This study has also shown that resistance to change is not necessarily counterproductive, especially if those who are resisting are doing so for valid organisational reasons, and have viable alternatives to offer to the change agent.

The documentation of workthink as a resistant strategy and rumours applied to uncertain situations, and the subsequent validation of that resistant strategy as evidenced by the development of UPL-SOFT, does not detract from the findings of this research in relation to emergent power arising from those uncertain situations. Nor does it detract from the opportunities that those uncertain situations might offer.
This research aimed at identifying the issues that influence user’s perception of whether a new information system is a success or failure. The differing perceptions of those involved in the systems implementation discussed in this study have been documented, analysed and interpreted in the preceding chapters.

The importance of the relationships between members of the groups involved in the implementation focused on the research question as discussed at the beginning of this chapter (also in Chapter 1, on page 7). One core objective of this research was to understand the power relationships that develop in the organisational environment, to propose an appropriate theory to explain the issues surrounding the implementation of IS and organisational change and how communication affects these elements. The discovery of the relationship between KGs and social influence, and the relationship between KGs and acceptance of change clearly indicates these objectives have been reached.

When I began this journey, I was convinced that I was exploring phenomena obvious to anyone who has been involved in IS implementation and thus organisational change. Based on that assumption I felt that this dissertation would prove a relatively easy trip. The discovery of issues that surround a systems implementation and the attendant stresses of organisational change, has led to an exploration not only of the matters explored in this dissertation, but of self. I discovered in myself a commitment to contributing by giving organisations the capacity to see the human side of technology and emphasising the cost to staff and the organisation, of poorly thought out change strategy.

This has some times been a fraught journey, but always with the ultimate goal of learning, why, in some situations that to me seemed to be an improvement to a working environment using new technology to enhance existing capacities there were adverse reactions. I believe that this dissertation is someway towards finding that explanation.
References


Appendices

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Appendix 1 - Research Project Information sheet

Dear Potential Participant,

This is an invitation to participate in the Research Project “Perceptions of knowledge gatekeepers” This project aims to investigate and understand the social interaction between group members during a systems implementation. I am conducting this research as a student at UWS, and I am undertaking a Masters Honours course.

The implementation of a new or enhanced information system is a collaborative process between staff, management and in many cases, external consultants. During the migration from one system to another, there will be people from these three broad categories who others may perceive as having a better understanding or knowledge of the current system’s process and procedures and the organisation’s goals in migrating to a new system. For the purposes of this study, I will call these people “Knowledge Gatekeepers” (KG).

This phase of the project is the research investigations within an organisation to gain an understanding of the differing perceptions of the KG function during information systems implementation.

In the interests of developing an understanding and knowledge of how members of various groups respond to knowledge gatekeepers during information systems implementation, I am asking you to consent to participate in a survey and face-to-face interview.

I hope to receive your consent to the use the data collected from the interview and any subsequent conversations for the purpose of writing up the research and publishing the research developed. This research will contribute to the increased understanding of knowledge transfer and discovery within a collaborative group during a systems implementation.

I assure you that if you so choose, your name will be protected by a pseudonym in the writing up of the research materials.

I can offer you a copy of the research findings, but I can offer you no financial compensation for your involvement in the study. Nor will I offer any inducements to participate. If you chose to withdraw from this project for any reason, I assure you that there will be no disadvantage, penalty or any adverse consequence incurred by you in any way. You are free to participate, or not, to the level at which you feel comfortable. If you would like to discuss any aspect of this project with me, my contact details are as follows:

Marilyn Wells
Lecturer in Business Systems
Nirimba Campus, Building U2, Room 1.36
School of Management
College of Law & Business
University Western Sydney
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PENRITH SOUTH DC NSW 1797
AUSTRALIA
Phone: 02 9852 4168
Mobile: 0418 600 546
Email: m.wells@uws.edu.au

NOTE: This study has been approved by the University of Western Sydney Human Research Ethics Committee. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Research Ethics Officers (tel: 02 4570 1136). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.
Appendix 2 – Research Project “Perceptions of knowledge gatekeepers”

Consent form

I, ________________________________ (please print your name) have read the information sheet regarding the research project “Perceptions of knowledge gatekeepers” and consent to participate.

I understand that this is a research project conducted by the researcher Marilyn Wells (#02 / 9852 4168/0418 600 546) from the University of Western Sydney, and that this is an inquiry into how the knowledge gatekeeper’s role in systems implementation is perceived by other stakeholders of the system. I am aware that this research will contribute to the understanding of the processes of creation and transfer of knowledge during information systems implementation and that this research can be applied to future information systems implementations.

I agree to participate in the initial interview and subsequent conversations. I agree to the use of my response to the survey conducted during the initial interview and any subsequent conversations in the context of this research project.

I am aware that the researcher, Marilyn Wells may use recording equipment during the interview. I consent to the use of the data gathered from the survey and the interview and any subsequent conversation for the purpose of writing up the research and making the research developed available to others.

I understand that if, at any stage, I wish my words to be confidential or not attributable to me, that my name will be protected by a pseudonym in the writing up of the research materials.

If I choose to withdraw from this project for any reason I am assured that there will be no disadvantage, penalty or any adverse consequence incurred by me in any way. I am free to participate, or not, to any level I feel comfortable. I am also aware that I will receive no financial compensation for my involvement in the study, nor will I be offered any inducements to participate.

I enter freely into this project and will participate only to the level I feel comfortable.

☐ I do wish to have my name changed in research materials to protect my anonymity.

☐ I do not wish to have my name changed in research materials to protect my anonymity.

☐ I would like a copy of the research findings. I would like this forwarded to my email address which is: ________________________________________________________________

Signed________________________________  __________________  Date____________________

NOTE: This study has been approved by the University of Western Sydney Human Research Ethics Committee. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Research Ethics Officers (tel: 02 4570 1136). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.
Appendix 3 – Participant background

Research Project - Perceptions of Knowledge Gatekeepers
Code: [researcher use only]
Name: ...........................................................................................................................
Department: ..................................................................................................................
Age: [optional] ........................................... Gender:  M / F
Highest educational level attained: ..............................................................................
What is your current position at NSC? ........................................................................
How long have you held this position? ........................................................................
Have you held any other positions at NSC and how long did you hold each one?
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
Have you been involved with any systems implementation other than at NSC?  Y / N
Who was this for, and what type of system did you implement?
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
What was your involvement in this implementation?
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........................................................................................................................................
If you would like to discuss any aspect of this project with me, my contact details are
as follows:

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**Appendix 4 – Interview round 1 question guidelines and prompts**

<table>
<thead>
<tr>
<th>RQ</th>
<th>Issues</th>
<th>Sub Issues</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Information Systems</td>
<td>What is the participant’s understanding of an information system?</td>
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<tr>
<td></td>
<td></td>
<td>What was the participant’s involvement with the IS at SMO?</td>
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<tr>
<td></td>
<td></td>
<td>Has the system achieved what the organisation and the group set out to achieve?</td>
</tr>
<tr>
<td>2</td>
<td>IS Implementation</td>
<td>Did all of the members within your group have equal knowledge of how to implement an information system?</td>
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<tr>
<td></td>
<td></td>
<td>Were they part of a group or where you acting alone for the implementation?</td>
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<td></td>
<td></td>
<td>As a member of the ISI group, was the participant’s knowledge of information systems and that the processes involved with implementation increased?</td>
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<td></td>
<td></td>
<td>Now that the new system is in place and its been used for awhile, has the KG’s problem solving skills were transferred to the new system?</td>
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<td>3</td>
<td>Collaboration</td>
<td>Often during information systems implementation, you are required to collaborate with others to achieve your goal. Did you find this happening?</td>
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<td></td>
<td></td>
<td>Was the collaboration forced or voluntary?</td>
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<td></td>
<td></td>
<td>What is the participant’s understanding of forced collaboration?</td>
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<td></td>
<td></td>
<td>Did the participant increase there ISI knowledge due to the collaborative work within the group?</td>
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<tr>
<td>4</td>
<td>Leadership</td>
<td>Did you find that there was a leader within your group?</td>
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<tr>
<td></td>
<td></td>
<td>Was group leader formally appointed by management?</td>
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<td></td>
<td></td>
<td>Were they informally at the appointed by the group?</td>
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<td></td>
<td></td>
<td>Who was the leader within the participant’s group?</td>
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<td></td>
<td></td>
<td>Would you term this person to be a knowledge gatekeeper?</td>
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<td></td>
<td></td>
<td>Can you tell me what made them stand out as a leader?</td>
</tr>
<tr>
<td>5</td>
<td>Knowledge Gatekeepers</td>
<td>What is the understanding of the participant of what a KG is?</td>
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<td></td>
<td></td>
<td>What roles did the knowledge gatekeeper play within your group?</td>
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<td></td>
<td></td>
<td>Within your group who was the KG?</td>
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<td></td>
<td></td>
<td>Were they KG by A or by K and Ex</td>
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<td></td>
<td></td>
<td>In the participant’s view, did the KG use their knowledge to solve day-to-day problems relating to systems issues?</td>
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<td></td>
<td></td>
<td>Has the knowledge gatekeeper maintained that position now that the new systems are fully functional?</td>
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<td></td>
<td></td>
<td>Did the KG role change during the ISI, did the person acting as the knowledge gatekeeper change?</td>
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<td></td>
<td></td>
<td>What was the new role?</td>
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<tr>
<td>6</td>
<td>Trust</td>
<td>What degree of trust was there between the different members of the team?</td>
</tr>
<tr>
<td>7</td>
<td>Teamwork</td>
<td>Did the participant have any understanding of group behaviour and the dynamics within a group in situation [information systems implementation] before they became part of this group?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>How would you rate that understanding of what you know now of how a group interrelates?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Are you happy with your part in implementing this new system?</td>
</tr>
<tr>
<td>8</td>
<td>Perception</td>
<td>Did the participant’s perception of the KGs role change during the different phases of systems implementation?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the participant’s perception changed, at what stage did they do so?</td>
</tr>
<tr>
<td>RQ.</td>
<td>Issues</td>
<td>Sub Issues</td>
</tr>
<tr>
<td>-----</td>
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<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>9</td>
<td>Organisational</td>
<td>How does the participant feel about OC?</td>
</tr>
<tr>
<td></td>
<td>Change</td>
<td>What effect does a new IS have on OC?</td>
</tr>
<tr>
<td>10</td>
<td>Other Issues</td>
<td>Is there anything else that you would have liked to see happen during this</td>
</tr>
</tbody>
</table>
Appendix 5 - Interview round 2 question guidelines and prompts

Participant: ........................................................................................................

Who were the Team members: ...........................................................................

<table>
<thead>
<tr>
<th>RQs</th>
<th>Guideline Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>3, 4, 6, 7, 9</td>
<td><strong>Team structure and member selection</strong></td>
</tr>
<tr>
<td></td>
<td>Did team consider using an approach that maintained a small full-time core team,</td>
</tr>
<tr>
<td></td>
<td>supplemented by a broader base of part-time participation?</td>
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<tr>
<td></td>
<td>Are there any specific changes in team composition that you would recommend, given the opportunity?</td>
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<tr>
<td></td>
<td>How do you think the team measured up in terms of authority, influence, and project knowledge?</td>
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<tr>
<td></td>
<td>Were there any team problems that might be explained by the fact that team members lacked authority to commit their respective departments?</td>
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<td></td>
<td>Whether any team problems that might be explained by the fact that members did not possess project related skills and knowledge?</td>
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<tr>
<td></td>
<td>Were there any team problems that might be explained by the fact that team members lacked influence within the total organisation?</td>
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<tr>
<td></td>
<td>If you had to replace a team member, would you choose to replace and why</td>
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<tr>
<td></td>
<td>What characteristics would you most like to see in the replacement. And why</td>
</tr>
<tr>
<td></td>
<td>How do you think the team measured up in terms of interpersonal skills, sharing team objectives, feelings about goal importance</td>
</tr>
<tr>
<td></td>
<td>Were there any problems within the team that might be explained by the fact that team members did not share common objectives</td>
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<td></td>
<td>Were there any team problems that might have been explained by the fact that the team members had other goals that they believed were more important than the team goals</td>
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<td></td>
<td>If you had to replace an existing team member who would you choose to replace and why</td>
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<td></td>
<td>What characteristics would you give the greatest weight in selecting a replacement and why</td>
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<td></td>
<td>Whether any team problems that might have come from the fact that team members were reliable and dependable</td>
</tr>
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<td></td>
<td>Whether any team members that might have been explained by the fact that the team that member or members were not socially sensitive towards other team members and external groups</td>
</tr>
<tr>
<td>2, 3, 4, 6, 7</td>
<td><strong>Team constituency</strong></td>
</tr>
<tr>
<td>RQs</td>
<td>Guideline Questions</td>
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<tr>
<td></td>
<td>Of the areas affected by TRIM which areas did or did not have a representative as part of the committee</td>
</tr>
<tr>
<td></td>
<td>If there are imbalances regarding representation, how important did you judge them to be</td>
</tr>
<tr>
<td></td>
<td>Were there other formal or informal links to groups not represented or those underrepresented</td>
</tr>
<tr>
<td></td>
<td>Were people with the necessary information and decision making authority on the team</td>
</tr>
<tr>
<td></td>
<td>If you were to start over again, would you recommend the same team</td>
</tr>
<tr>
<td></td>
<td>What changes to the team makeup would you recommend</td>
</tr>
<tr>
<td>1, 2, 3, 4, 5, 6, 7, 8</td>
<td>Team Decisions/Actions</td>
</tr>
<tr>
<td></td>
<td>What was the extent of personal dissatisfaction amongst team members regarding the team’s decisions and actions?</td>
</tr>
<tr>
<td></td>
<td>When you compare personal feelings to perceptions about how others feel regarding the decisions, are there discrepancies?</td>
</tr>
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<td></td>
<td>When you compare personal and team feelings to those views perceived as held by management and other users are there discrepancies?</td>
</tr>
<tr>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9</td>
<td>Team interaction</td>
</tr>
<tr>
<td></td>
<td>Did any direct supervisory relationships exist between team members?</td>
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<tr>
<td></td>
<td>If so, in your opinion, did those relationships affect member participation?</td>
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<td></td>
<td>If so, were subgroups [cliques] formed?</td>
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<tr>
<td></td>
<td>Did team members represent different levels within the organisation hierarchy?</td>
</tr>
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<td></td>
<td>If so, did this affect member participation?</td>
</tr>
<tr>
<td></td>
<td>And did this affect the degree of influence on the individual members?</td>
</tr>
<tr>
<td></td>
<td>Are there pre-existing authority structures that predisposed the team toward a central authority structure?</td>
</tr>
<tr>
<td></td>
<td>If you were to start over again, would you recommend the same team?</td>
</tr>
<tr>
<td></td>
<td>What changes to the team makeup would you recommend?</td>
</tr>
<tr>
<td>3, 4, 5, 6,</td>
<td>Status</td>
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<tr>
<td>RQs</td>
<td>Guideline Questions</td>
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<tr>
<td>7, 8, 9</td>
<td>In the selection committee itself were there roles assigned to various members?</td>
</tr>
<tr>
<td></td>
<td>What are the various team positions, and as per your perceptions, what were their relative importance in terms of prestige within the team?</td>
</tr>
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<td></td>
<td>Were there any formal or informal rules for expectations that the team members had of one another.</td>
</tr>
<tr>
<td>1, 3, 5, 6, 7, 8</td>
<td><strong>Team Social structure and interaction.</strong></td>
</tr>
<tr>
<td></td>
<td>Describe your role as a member of the selection committee. Did your role have a formal title?</td>
</tr>
<tr>
<td></td>
<td>Describe the other participant’s roles as you perceived them.</td>
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<td></td>
<td>Whilst being a part of the selection committee, you had 2 roles within the organisation - one as a committee member, and one as the job you were hired for. Can you recall instances of conflicts between your team role and the other roles? And if so how did you solve the problem?</td>
</tr>
<tr>
<td>3, 5, 6, 7, 8</td>
<td><strong>Influence on the team</strong></td>
</tr>
<tr>
<td></td>
<td>What was the effectiveness of the leadership within the group?</td>
</tr>
<tr>
<td></td>
<td>Who was the appointed leader of the team man who was the true leader of the team.</td>
</tr>
<tr>
<td></td>
<td>Who do you work with most frequently, and who do you most like or dislike working with?</td>
</tr>
<tr>
<td>3, 4, 6, 7, 8</td>
<td><strong>Autonomous workgroups.</strong></td>
</tr>
<tr>
<td></td>
<td>How autonomous was the team in regard to performing its task?</td>
</tr>
<tr>
<td></td>
<td>How autonomous was the team with regard to its collective skills and abilities?</td>
</tr>
<tr>
<td></td>
<td>How autonomous was the team with regard to decision-making?</td>
</tr>
<tr>
<td>3, 4, 6, 7, 9</td>
<td><strong>Project goals.</strong></td>
</tr>
<tr>
<td></td>
<td>Were the goals clearly stated and in some detail and shared with all the team members?</td>
</tr>
<tr>
<td></td>
<td>What steps were taken to prepare the organisation as a whole for the eventual change</td>
</tr>
<tr>
<td></td>
<td>What steps were taken to prepare the team members for their task in its role in the software selection</td>
</tr>
<tr>
<td></td>
<td>Did the team members play a role in developing the project goals</td>
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<td>RQs</td>
<td>Guideline Questions</td>
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<td>Did they share in the belief that the goals were important</td>
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<td>Were there any steps taken to reduce the degree of uncertainty associated with the</td>
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<td></td>
<td>new system, proposed the team and the total organisation</td>
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<td></td>
<td>What steps were taken to reduce the degree of uncertainty that is often associated</td>
</tr>
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<td></td>
<td>with new software and techniques and processes</td>
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<tr>
<td>2, 3, 6, 7, 8, 9</td>
<td><strong>Procedural uncertainty.</strong></td>
</tr>
<tr>
<td></td>
<td>Did the other people within the organisation have a clear understanding of how the</td>
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<td></td>
<td>new system will affect those who were required to operate after its implementation</td>
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<tr>
<td></td>
<td>Did the people external to the team felt comfortable with proposed changes in</td>
</tr>
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<td></td>
<td>staffing and reporting structures</td>
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<td></td>
<td>What steps were taken planned or should I say, to ensure that the transition to the</td>
</tr>
<tr>
<td></td>
<td>new system was smooth and positive experience</td>
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<td></td>
<td>How effective was the team in recognising the uncertainty associated with the team's</td>
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<td></td>
<td>work and in constructing a plan to reducing uncertainty as the implementation of the</td>
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<td></td>
<td>new system progress to</td>
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<tr>
<td>3, 4, 6, 7, 9</td>
<td><strong>Project management skills.</strong></td>
</tr>
<tr>
<td></td>
<td>What aspects of task or project management and the greater definition</td>
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<td>To what extent were task assignments and time resource estimate is made with</td>
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<td>input from the team members</td>
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<td></td>
<td>To what extent, the detected the leader whole individual members accountable to</td>
</tr>
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<td>the team</td>
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<td></td>
<td>To what extent did the leader support an approach to decision-making are</td>
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<td>recognised the need to darter collection and aggregation prior to the act of</td>
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<td>deciding on the system</td>
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<td></td>
<td>What suggestions would you make to the team leader that will assist in managing</td>
</tr>
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<td></td>
<td>other people's work</td>
</tr>
<tr>
<td>3, 5, 6, 7, 8</td>
<td><strong>Physical environment</strong></td>
</tr>
<tr>
<td></td>
<td>Were there any office layout changes during this change period</td>
</tr>
<tr>
<td></td>
<td>Did you have any say in selecting the physical environment in which you work</td>
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<td></td>
<td>Do you feel that the physical environment is conducive to lead the team's work</td>
</tr>
<tr>
<td></td>
<td>Do you feel that the physical environment is conducive to your work,</td>
</tr>
</tbody>
</table>
Appendix 6 – First Interview NVivo Tree Nodes – Final Phase Coding

1 - Interaction & Collaboration

Did participants understanding increase?
Forced collaboration
Team - Do you now know how a group
Team formation
Team interaction
Team member
Teamwork
Trust - Barriers
Trust - Did this enable transfer of information?
Trust - Was there trust between the members
Trust - Was there trust within the group
Voluntary collaboration

1 - Knowledge Gatekeepers

Innovation
KG
KG influence
KG roles at SMO
Participants understanding of a KG
Who was the KG?
Why was the KG perceived as being the KG?

1 - Leadership

Leadership qualities
Who was the leader?

1 - Organisational Change

Change Implementation
Change Issues
Change Weary
IS a facilitator of OC
IS an agent of OC
IS and OC
Org Culture
Other entities
Participant’s feelings about OC
Physical environment
Rewards incentive - compliance

1 - Perception

Perception of Change
Perception of Consultation
Perception of Forced Compliance
Perception of Innovation
Perception of KGs
Perception of New Process Uncertainty
Perception of Potential conflict
Perception of Powerlessness
Perception of Prior experience
Perception of Staff interaction
Perception of Successful project
Perception of UPLab software
Perceptions of Prior systems
SMO Technology issues
TRIM Benefits
TRIM Lack of intuitive processes
TRIM Ownership of system
TRIM Perception

1 - SMO Information Systems

IS at NSI - new entity
Previous system experience
SMO Candidate systems
SMO Rationale for new system
SMO Requirements Gathering
SMO System evaluation
SMO Systems security
TRIM
TRIM achieved its goals
TRIM Conceptual Structure
TRIM Development
TRIM Forced compliance to use
TRIM Impact on other systems
TRIM Implementation
Perceptions of Knowledge Gatekeepers

TRIM Opposition
TRIM System benefits
TRIM Uncertainty
TRIM Usage TRIM User Friendly
TRIM User Support
TRIMS Staff Acceptance
Understanding of IS
UPLab software

1 - Staff & Consultation Issues

External consultant understanding
External consultation
Internal consultation
New staff
Other issues
Staff Redundancy
Staff Training & Support
Appendix 7 – Second Interview NVivo Tree Nodes – Final Phase Coding

2 - Committee structure and interaction

- Autonomous workgroup
- Committee member roles
- Team Decisions & actions
- Team Member selection
- Team profile

2 - Influence

- External influence
- Influence within the team

2 - Project Management

- Consultation
- Different agendas
- Planning
- Project documentation
- Project goals
- Project Issues
- Project Mgmt Skills
- Project performance
- Project Team
- Project Timelines
- TRIM Project initiation
- Staff Support
- Team formation

2 – SMO

2 - SMO Structure

2 - TRIM & UPLab Soft
Appendix 8 – Third Interview NVivo Tree Nodes – Final Phase Coding

3 - Behaviour

Bureaucracy
Comfort zone
Communication & Resistance
Potential culture conflict
Resistance

Group Behaviour

Change issues
Collaboration
Gender issues
Group leadership
Staff interaction
Trust issues

Groupthink

Collective Rationalisation
Disassociation
Excessive Stereotyping
Illusion of Invulnerability
Illusion of Morality
Illusion of Unanimity 7
Mindguards 8
Pressure for Conformity
Self-Censorship
Workthink

Individual Behaviour

Body language
Divorcing responsibility
Inclusive phrases
Interview Cooperation
Modesty
Uncertainty
Usage of personal pronoun
3 - Cognition
  Consonance
  Dissonance
  User Knowledge
  User Satisfaction
  User Support

3 - Knowledge
  Ownership
  Reluctant to Share
  Shared Values
  Sharing
  Transfer
  Understanding

3 - Power & Politics
  Dimension 1 - overt
  Dimension 2 - covert
  Dimension 3 - overt or covert with latent tendencies
  Dimension 4 - empowerment
  Dimension 5 - situational
  Personal agenda