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The Impact of Values on Information Systems Development

Angela Lauener

A thesis submitted in partial fulfilment of the requirements of
Sheffield Hallam University
for the degree of Doctor of Philosophy

September 2004

COLLABORATING ORGANIZATION

To preserve confidentiality, the collaborating organization has been given the fictitious name 'Prosper plc' and all names of individuals have been changed.

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I am also grateful to Prosper pic for their collaboration. I am especially thankful to the project team for their willingness to accept me as an observer during the case study.

Most of all, I am grateful to my husband, Peter, and my children for their support throughout.

DECLARATION

As per the regulations of the University, this declaration confirms that none of the research material contained in this thesis has been submitted for examination for the award of any degree at this University or other. Powers of discretion are granted to the University Library to allow reproduction of single copies of the thesis in whole or in part for study purposes only and subject to normal conditions of acknowledgement

ABSTRACT

The continuing occurrence of information systems development (ISD) failure persists as a strong motivator for both industrial and academic research to identify factors and develop methodologies which are more likely to lead to ISD project success.

While good technical design is fundamental to the successful implementation of information systems, it is well understood that social and behavioural factors also have an important impact on the design and development process. It is proposed here that values held by individuals - enduring beliefs about what is worthwhile that influence behaviour - are important in relation to the chances of success for corporate ISD projects. It is further proposed that values implicitly determine the underlying philosophy of corporate approaches to ISD and also inform definitions of success. However, it is also recognised that greater specificity is required to more clearly understand the impact of these factors on ISD projects. Obtaining a clearer understanding of this should lead to greater success in developing methodologies or approaches which recognise and utilise values in the processes involved in the development of information systems.

This research has addressed the need to provide greater specificity of these factors by investigating the process of systems development as undertaken in a large financial institution. The approach employed was exploratory and descriptive, including techniques such as survey, interviews and observation to examine the impact of personal and corporate values in ISD projects. The results of the investigation are based on an interpretive case study of a team of systems developers who were using a traditional structured systems methodology to help analyse and design the merging of a standalone database with a corporate information system. The research has employed a qualitative approach, using the interpretive skills of the researcher to provide the essential detailed descriptions and explanations of how social and behavioural factors affected the project at the micro-level.

The significance of the contribution of this research is the level of detailed explanation it provides about the impact that the social, economic, political and theoretical values of individuals have on an ISD project taking place within a corporate setting. In particular, it demonstrates the significance of the role of the IT project manager in relation to managing the interface between the competing demands of corporate, personal and project team values and highlights the importance of social values in doing this. The thesis proposes that by paying greater regard to social values, for example altruism, which engenders trust and honesty, the project manager will ensure greater congruence between corporate and personal values, thus creating favourable conditions for project success.

LIST OF ABBREVIATIONS

INFP	Introverted, Intuitive, Feeling, Perceiving
IS	Information Systems
ISD	Information Systems Development
IT	Information Technology
NIMSAD	Normative Information Model-based Systems Analysis and Design
Prosper plc	Fictitious name of case study organization
SDM	Fictitious name of systems development method as used at Prosper plc
SSM	Soft Systems Methodology

PART ONE

CONTEXT OF THE RESEARCH

CHAPTER 1

INTRODUCTION

Summary

This chapter describes the background of the research. It includes a rationale for studying the impact of values on systems development and gives an overview of the whole thesis. As appropriate for this topic and the research approach used, personal information about values and motivation is included and it is written in the first person.

1.1 The values of the researcher

Doing a PhD is not something that should be undertaken lightly or recklessly. Like getting married, you do not know precisely what you are letting yourself in for. Like having a child, it does not go away and gets more demanding as time goes on.

The opportunity to begin a PhD came at a time when my career focus at Sheffield Hallam University had changed - from researching and writing case studies and distance learning material on innovative use of information technology (IT) by organizations, to lecturing undergraduates on information systems development (ISD). Although I enjoyed the challenge and creativity of face-to-face interaction with students in my new role, I missed the rapport with professionals in the IT industry and the intellectual challenge of gathering information, analysing, synthesising and making sense of it for case studies. Also, as a lecturer on information systems development who had no first hand experience of working in industry, I felt a need to appreciate what it means to work in IT and to know about the daily work of systems developers.

Even prior to studying psychology as part of my zoology degree, I had always had an interest in 'what makes people tick' - why people behave as they do, what their thought processes are and why individuals behave differently. I enjoy intimate conversations with the opportunity to understand the mind of another and to share my thought processes. My interests in IT had always been 'people-focused' rather than technology-

focused since my MSc in Computer studies in 1991. I was fascinated by the psychological and philosophical elements of Soft Systems Methodology (SSM), first encountered on the course then followed up as I took on a lecturing role in that subject. I was also intrigued and bemused by the knowledge that systems development projects frequently fail and often go over time and budget, usually because of human issues rather than technical issues. Naively, perhaps, I could not understand why SSM, with its people focus, was not more widely used. I was tired of literature repeatedly giving statistics on failure rates of projects and speculation about social and behavioural factors being the cause in general terms but never in any detail.

My ethical and moral beliefs gave me a concern for the victims of failed information systems - despondent developers, disappointed and frustrated customers, powerless shareholders. It seemed immoral and unethical that failure should be allowed to continue to affect so many lives. So, I was satisfied that there was a powerful rationale for doing research in this area. With hindsight, I realise that my personality type also played a part in my determination and ability to contribute to knowledge in this field of information systems (IS). A Myers Briggs Type Indicator defines me as 'INFP' (Introverted, Intuitive, Feeling, and Perceiving). The Myers Briggs literature states:

"People with INFP preferences have an inner core of values that guides their interactions and decisions. They want to be involved in work that contributes to both their own growth and inner development and those of others - to have a purpose beyond their pay cheque. They make a priority of clarifying their values and living in congruence with them."

"INFPs recognise and respect the emotional and psychological needs of others, even when others may not have recognised or expressed their own needs."

"INFPs enjoy reading, discussing and reflecting on possibilities for positive change in the future".

"INFPs are usually fascinated by opportunities to explore the complexities of human personality - their own and others'...They are generally faithful in fulfilling obligations related to people, work or ideas to which they are committed, but they can have

difficulty performing routine work that has little meaning for them” ... “They are adaptable and flexible until something violates their inner values”.

(Myers, 2000:27)

“They take a very personal approach to life, judging everything by their inner ideals and personal values. They stick to their ideals with passionate conviction.”

(Anon, 1991:2)

These skills and characteristics are highly relevant for pursuing research on values. They also support a commitment to do research both for personal development and the benefit of information systems developers and users.

During the course of the research, another motivating force became explicit. My preference is for social values, defined by Spranger (1928) as putting emphasis on warm human relationships, altruistic, sympathetic, unselfish, and loving people. This is linked to my belief in the universality of spiritual needs in all areas of life, including the workplace. This led to the proposal, supported by the research findings, that social values and spirituality in the IT workplace are highly relevant to the social and behavioural factors responsible for project success and failure.

1.2 Evolution of research and researcher

Meloy (2002:1) states that “conducting and writing up a qualitative research project is evolutionary and inductive”. This is a truth borne out by the experience of this research, when insights and ideas continued to develop to the very end.

It is apt that as a zoology undergraduate in the 1970’s, I studied the theory of evolution because it is a theme that has characterised the research described in the thesis.

As a zoologist, I was interested in the idea of organisms as systems adapting to their environment in order to survive. This is also a concept drawn on by SSM, which is based on systems theory as its underlying philosophy. The task of arriving at a research question and suitable methods for investigation was also an evolutionary process leading to a viable approach to the research. It required me to adapt the focus of the project to a relevant and practicable topic and it needed me to understand and be

flexible in my epistemology, using an interpretivist approach in contrast to my positivist background.

1.3 Overview of the thesis

'In writing a problem down or airing it in conversation we let its essential aspects emerge. And by knowing its character, we remove, if not the problem itself then its secondary, aggravating characteristics: confusion, displacement, surprise

(Dunleavy, 2003:1)

Although, as indicated by Potter (2002) the way research really happens is not straightforward, it may be written up in a logical manner. Dunleavy (2003) stresses the importance of good authoring of a PhD thesis, distilling the pertinent points from a wealth of data and presenting them in an ordered fashion. In this thesis, the 3-part structure and organisation of chapters aims to do this.

An overview of the content of each part, below, is followed by a more detailed summary of the content of each chapter.

Part One sets the context for the research. It describes the evolution of the research question in Chapter 2 and research methods in Chapter 3.

Part Two presents the results and analysis of the research conducted at Prosper pic in Chapters 4 to 7.

Part Three then returns to the wider context. Chapter 8 draws some conclusions and implications for practice, based on findings presented in Part Two. Chapter 9 then reflects on the whole process and suggests areas for further research.

The development of the research question is described in *Chapter 2* in the context of relevant literature. I was offered the opportunity by Nimal Jayaratna, proposer of the Normative Information Model-Based Systems Analysis and Design (NIMSAD) framework for understanding and evaluating methodologies (Jayaratna, 1994), to follow up his ideas on the mental construct of methodology users, which is part of the

NIMSAD framework. This topic appealed to me because of the psychological bias. However, this feature alone was not sufficient incentive to make the large commitment needed for a PhD. The venture seemed more worthwhile, in terms of my values, when linked with the broader aim of information systems development (ISD) methodology research to improve success of ISD projects. I saw a link between the concept of the mental construct in methodology research and the notion of social and behavioural factors determining the outcomes of ISD projects in success and failure research. Ultimately, both seek to explain the behaviour of systems developers and the outcomes of ISD projects.

A critique of the mental construct concept shows it to be an unsure foundation on which to base a major piece of research. Alternatively, it is proposed that values, one of Jayaratna's (1994) suggested mental construct elements, are a more reliable and focused theme to follow up. This is supported by a review of the literature on ISD success and failure. While much evidence exists for social and behavioural factors causing failure, the literature lacks detailed explanations. Analysis of this literature leads to the argument that research on values could provide more specific explanations by posing the following research question:

What is the impact of values on ISD projects?

A rationale for an interpretive case study approach to the research is presented at the end of Chapter 2. This is based on the nature of the research question and the existing knowledge. Values are an intangible concept, they rely heavily on people's perceptions and the impact of values needs first to be described and explored using qualitative techniques, not measured and quantified. This is further supported in *Chapter 3* by considering research methods. As a result of my scientific background in education and employment, I had been thoroughly immersed in an implicitly positivist culture. An alternative perspective on research design was needed for this social science type of research question. This meant taking an interpretivist stance and using qualitative methods. The implications of this are discussed in Chapter 3 in the context of philosophical issues related to research design. This is followed by a detailed explanation of the methods applied to answer the research question.

Chapter 3 describes how the interpretive case study took place in three phases of fieldwork in a large financial institution, fictitiously named Prosper pic. Phase 1 consisted of a survey by questionnaire on methodology use and mental construct, issued to over 500 IT staff. Phase 2 consisted of a series of follow-up interviews with IT project managers on how they apply their values in ISD projects. These preliminary studies provided useful pre-understandings, which formed a good background for the interpretive case study carried out in Phase 3. During Phase 3, a period of one year was spent visiting the financial institution regularly to do observation, interviews and document analysis while a team of systems developers worked on the design phase of a major project.

Evaluation of the research approach is presented at the end of Chapter 3. The preliminary survey followed by interviews and observation proved fruitful in generating useful data and it was rewarding to conclude that the overall approach had been successful.

Typical of qualitative research, the fieldwork and analysis evolved during the research. The findings from the preliminary studies are described in *Chapter 4*. This summarises a series of proposals, issues and reflections resulting from pre-survey interviews, the survey, post-survey follow-up interviews in Phase 1 then values interviews in Phase 2. During this activity, the findings supported the need to narrow the research focus from mental construct to values. Issues regarding the validity of the mental construct were developed and expanded during Phase 1. Narrowing the focus to research on values in Phase 2 proved successful and provided support for this alternative approach.

Three main themes emerged during analysis of results:

- Personal values

- Interplay of corporate and personal values and

- Outcomes of the application of values in projects.

Chapter 5 presents the findings on personal values of members of the project team. It shows how all members of the project team apply social and economic values but those with project management responsibilities apply them differently to team members. Project managers apply social values to build the team and develop good relationships internally and externally. They use economic values to meet both long term and short-

term goals of the project. Team members apply social and economic values in short-term, daily tasks to interact with users and analysts and to meet targets. The legitimate power of the project manager role is used altruistically to support the team and the project. Project managers apply theoretical values to aid rational decision-making and to understand the wider context of the project.

Some staff reported that line managers had shaped their values. The chapter concludes by proposing that the values of project managers potentially have greater impact on systems development than other project team members due to their authority, responsibility and status.

The influence of corporate values is considered in *Chapter 6*. Evidence from document analysis shows the prevalence of corporate values, standards and procedures at the financial institution. Analysis of results shows that the organization is effective in communicating its values to IT staff mainly via use of a structured and disciplined systems development methodology that supports the corporate values and is enforced by line management and documentation. IT staff were found to be mainly compliant with the standards and procedures demanded by the methodology and their line managers, leading to a co-operative culture or a 'controlled organization' as defined by applying Mumford's (1981) framework. Differences in the amount of control exercised by heads in different departments support the case for the influence of management on project outcomes. Evidence of value conflict was presented and discussed. It was concluded that value conflict is not a major problem at Prosper pic and that there is a high degree of values congruence.

Following the evidence built up in Chapters 5 and 6 for the important role of the project manager, *Chapter 7* reports findings on the impact of values on project management. It provides a narrative for each of six project team members, including the project manager, describing details of how they apply social, economic, political and theoretical values in their daily work as systems developers. It also describes how they adhere to corporate values. Findings are in general agreement with the results of Chapters 5 and 6 but more explicit, practical detail is given. Data from interviews and observation are mutually reinforcing.

Highly detailed results are presented for the project manager because of his higher profile and key role. They show how he interacts with others in formal and informal settings, how he manages his time to meet targets and how he adheres to corporate values and encourages others to do so, thus reducing risk of project failure.

The particular importance of social values is discussed in the context of the project management literature. It is suggested that the application of social values may help managers carry out essential project tasks more effectively, especially communication. This is supported by practitioner literature giving advice on successful communication and academic literature on interaction analysis.

Discussion of literature on types of power in the context of social values leads to the proposal that the exercise of power by project managers is more acceptable and effective if accompanied by the application of social values.

Trust and honesty are two social and behavioural factors cited in the literature as important in ensuring project success. It is proposed that if project managers apply social values, they are more likely to motivate and empower staff, thus engendering trust and honesty. This is essential if problems are to be reported before they have become large and damaging to the success of projects.

These findings from Chapter 7 are based on the high level of detail recorded in field notes, transcribed and included in this thesis. This demonstrates the importance of actually publishing such detail and is a significant contribution made by this research.

Chapter 8 draws together the findings from the case study and summarises the findings on the wider impact of values on systems development. This takes place at all levels in organizations, from top management to individuals at the lowest levels, and affects the following

- Choice of systems development methodology
- Mode of application of the methodology
- Definitions of success in IT projects
- Project management
- Project tasks

It concludes that the project manager is at a key interface, between corporate values, personal values, needs of team members and his own values. The amount of congruence between these values will determine the outcome of the project.

A discussion of generalization of the findings at Prosper plc concludes that it is legitimate to do so because the basic building blocks of IT projects are broadly similar. This is supported by obtaining similar findings from research in a contrasting setting on a large public sector IT project (Lauener, 2002).

Therefore, some implications for practice are described, drawing on the detailed findings on the project manager at Prosper plc. The implications for practice consist of recommendations for managing potentially conflicting values of organisations, individual project team members and project managers. It was found helpful to structure the recommendations around the NIMSAD framework. This is a rewarding outcome because it returns the focus of the research to the original starting point.

Chapter 9 revisits the literature reviewed at the start of the research and shows how the findings addressed the issues of concern expressed in Chapter 2. It concludes that the mental construct was a useful starting point for the research but focusing on values led to better research outcomes; the Spranger (1928) classification of values was practical and appropriate despite some initial concerns about its limitations; corporate values are linked to personal values in determining project outcomes and methodologies are more likely to be useful in aiding project success if carried out by project managers with social values.

The main strength of this thesis is that it reports on social and behavioural factors in greater detail by analysing a systems development project in terms of values applied by project managers and staff. A major contribution to the literature is that it enriches and elaborates on the NIMSAD framework by adding more detail, especially on the methodology user.

Ideas for future research are to build on the emerging realisation at the end of the research about the overlap between social values and spirituality in the workplace. An interesting area for future work would be to test out the proposal that social values and

spiritual values have a positive impact on project management, to clarify definitions of social and spiritual values and to investigate practical and realistic methods for developing their application in the workplace.

CHAPTER 2

THE VALUE OF RESEARCH ON VALUES IN INFORMATION SYSTEMS DEVELOPMENT

Summary

The aim of this chapter is to explain and critique previous research on information systems development in relation to success and failure. It will be shown that previous research has not provided sufficient detail to result in practical, fine-grained knowledge, which may help provide recommendations for success in information systems development. It is argued, in the context of relevant literature, that it is worthwhile to research the impact of values on information systems development because this has the potential to provide detailed new knowledge on social and behavioural factors. Justification is given for using Spranger's (1928) six classes of values, i.e. social, economic, theoretical and political, aesthetic and religious, in spite of some limitations of this classification. It concludes by arriving at the research question, 'What is the impact of values on information systems development?'

2.1 Introduction

2.1.1 Overview of literature in the context of phases of the research

Chapter 1 explained how the concept of the mental construct was the starting point for the research. This chapter explains how this was a useful stimulus but the concept of the mental construct was too shaky a foundation on which to build the research. On reviewing relevant literature, in conjunction with the first phase of fieldwork, the research question that evolved was: *What is the impact of values in information systems development?* Figure 2.1 shows the phased progression of the research in terms of refinement of the research topic and related literature.



Figure 2.1 Table showing phases of the research and literature accessed

Initially, during Phase 1 (Preliminary Studies) the topic of the research was ‘The mental construct of the problem solver’. This theme originated in the field of Information Systems Development (ISD) methodologies, specifically based on the ideas of Jayaratna (1994) so it was appropriate to review other literature on problem solving and mental construct including literature from fields outside IS. At this stage, a survey by questionnaire was planned for providing data on mental construct and methodology use in Prosper plc, a large financial institution, so literature was also accessed to help with the design of the survey.

As Phase 1 was being conducted, severe doubts emerged about the usefulness and focus of researching the mental construct of the problem solver. During the literature review and survey, it was discovered that literature referencing the term ‘mental construct’ as used by Jayaratna (1994) was sparse and it did not appear to be a widely used or standard term. Psychology professionals would avoid the word ‘mental’ because of its amateurish impreciseness and lack of clarity for describing concepts relevant to the human mind. However, similar concepts by alternative names abound in other fields, especially social science, showing the mental construct to be based upon theories recognising the social construction of reality or nominalist ontology. Also, Jayaratna (1994) proposed elements of the mental construct based on personal experience, unsupported by others’ experiences, with minimal explanation of how and why they were chosen.

The findings in Phase 1 provided justification for narrowing the focus of the research to ‘The impact of values on ISD’ in Phase 2. Reviews of the literature on values in ISD and other fields showed that the term ‘values’ has a precise, consistent and measurable definition. Pilot interviews with systems developers in the financial institution showed that this was a fruitful focus for providing detailed new knowledge on social and behavioural factors in systems development. Literature on qualitative research methods showed the appropriateness of such methods for this research topic and in particular the interpretive case study approach. A series of semi-structured interviews using an interview guide with systems developers, mainly in project management roles, provided useful qualitative data explaining some of the fine detail of how systems developers put their values into action in ISD projects, hence producing specific detail on social and behavioural factors. In order to obtain data on the corporate context and to increase

validity of data, it was felt that these findings needed to be complemented by observation of systems developers in the context of a project together with document analysis and interviews. By the end of Phase Two, it was clear that further fieldwork was necessary, using an interpretive case study approach.

By the start of Phase Three, it had become clear from the earlier phases that literature on project management and corporate values was relevant to this research. Also, in the context of the findings from the case study, it was deemed useful to review literature on the contribution of personal values, corporate values and project management to ISD project outcomes by analysing success and failure literature. Literature on interpretive approaches and researcher reflexivity was also accessed, highlighting the importance of the values and interpretations of the researcher in qualitative research.

2.1.2 Summary of development of the research question

Literature listed in Figure 2.1 formed two strands of an argument, summarised in Figure 2.2, which led to the evolution of the research question, ‘What is the impact of values on ISD?’ This is explained in more detail in the rest of this chapter.

Stimulus for research:-

The need for ISD to be successful. However, a high rate of failure persists despite much research on methodologies and on success and failure, _____ as shown by two routes to the research question. _____

ISD Methodology route

Success and failure route

Methodologies introduced to reduce ISD failure

Lessons learned from cases of failure

Frameworks for understanding and evaluating methodologies. Includes NIMSAD framework and mental construct of methodology user

Recommendations produced to avoid failure

V

Importance of social and behavioural factors recognised but described with limited specificity

Still ISD failures occur. Methodology user needs further investigation

Still ISD failures occur. Social and behavioural factors need further investigation

Research on values of systems developers will add new knowledge

Research on values of systems developers will add new knowledge

Use of the Spranger (1928) classification of values justified and shown to be most appropriate

Discussion of definitions of success shows relevance of both corporate and personal values

F

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Research question: What is the impact of values on ISD?

Figure 2.2 Diagram summarising stimulus for research and development of the research question via two routes

The common starting point for the two strands of the argument is the premise that it is desirable to be successful in information systems development. This is the rationale for both the development of methodologies and research into success and failure.

The first strand of the argument, labelled the ISD methodology route, takes a path through the literature on ISD methodology research, passing the little-researched mental construct concept on the way. ISD methodologies first arose in the 1970s to try to reduce the problems experienced in computer systems development. The burgeoning number of methodologies in the 1980s became known as the ‘methodology jungle’ and it became necessary to devise frameworks to understand and evaluate them, partly in order to decide which methodology was appropriate in any given situation. Jayaratna derived the NIMSAD framework in 1986, in which he claimed that methodology users and context must also be taken into account when evaluating methodologies. The concept of the mental construct of the methodology user is shown to be partially helpful for research on successful information systems development but it is argued that research on values of the methodology user in the corporate context may be more fruitful. This is discussed more fully by addressing the question:

How is the mental construct concept relevant to successful information systems development and how can research on values of the methodology user achieve new knowledge about this?

The answer to this question is discussed in section 2.2.

The second strand of the argument, labelled the success and failure route, takes a path through the literature on information systems success and failure and arrives at the conclusion that research into values may help provide detail on social and behavioural factors associated with ISD success. Research into IS failure has been taking place for over thirty years since the early development of computer systems. Literature on cases of failure, lessons learned and recommendations on how to achieve success all point to the importance of social and behavioural factors. The problem is that these factors are usually described in general terms with insufficient detail. It is argued that research into values of systems developers may provide more detailed explanation. This is discussed more fully by addressing the question:

Why are social and behavioural factors important in avoiding failure in ISD and how can research on values achieve new knowledge about this?

The answer to this question is discussed in section 2.3.

Having arrived at the conclusion that it is worthwhile to research values in ISD, the next stage of the argument brings in literature on values. This includes definitions, measures and classifications and it also has implications for research methods. This is discussed more fully by asking the question:

What is the rationale for using an interpretive case study approach and the Spranger (1928) classification of values for research on success in ISD?

The answer to this question is discussed in section 2.4.

Definitions of success and failure must be explored and clarified because they will shape the research. Relevant literature is examined by asking the question:

How does the literature on success and failure shape the research on values?

This question is discussed in Section 2.5.

Finally, from the discussions in Sections 2.2 to 2.5, the resulting research question emerges:

What is the impact of values on ISD?

2.2 How is the mental construct concept relevant to successful information systems development and how can research on values of the methodology user achieve new knowledge about this?

2.2.1 History of development of the mental construct concept in methodology research

The use of methodologies for information systems development has been taking place since the 1970s. They were devised as a preventive measure to avoid occurrence of a range of problems that caused failure in early computer systems development.

Mumford's research (1981) on values, technology and work led her to realise the need for a humanistic approach to systems development and she incorporated this into a methodology called ETHICS. Although such methodologies solved some problems, ISD failure still occurs and methodologies have not been a panacea. Avison and Fitzgerald (2003) describe the current period as the 'era of methodology reassessment', the fourth era in the evolution and development of ISD methodologies. Figure 2.3 summarises four eras in the evolution and development of ISD methodologies, as described by Avison and Fitzgerald (2003).

ISD Methodology era	Date	Brief Comments
The pre-methodology era	Up to the early 1970s	Traditional systems development life cycle approach used. Many problems
The early methodology era	1970s to early 1980s	Some simple methodologies devised which attempted to address problems but still problems occurred
The methodology era	Mid 1980s to late 1990s	'Methodology jungle' - many methodologies devised. Frameworks developed to make sense of methodologies
The era of methodology reassessment	Mid to late 1990s onwards	Realisation that methodologies are not the complete solution to problems in ISD

Figure 2.3 Four eras in the evolution and development of ISD methodologies

During the methodology era in the 1980s and 1990s, there was such a proliferation of methodologies that it was called the ‘Methodology Jungle’ (Avison and Fitzgerald, 1995:417). This posed problems in selection of methodologies so frameworks were devised to help choose an appropriate methodology for an ISD project e.g. Episkopou and Wood-Harper (1986) and the NIMSAD framework, incorporating the mental construct concept (Jayaratna, 1994).

2.2.2 Jayaratna’s (1994) NIMSAD framework and mental construct concept

The concept of the mental construct originated as part of the NIMSAD framework. Jayaratna initially developed the NIMSAD (Normative Information Model-based Systems Analysis and Design) framework in 1986, a meta-model for assisting methodology users to understand and evaluate methodologies. This framework includes the concept of the ‘mental construct’ of the methodology user in addition to the methodology and methodology context. The NIMSAD framework was refined in Jayaratna’s book published in 1994 entitled ‘Understanding and Evaluating Methodologies. NIMSAD. A Systemic Framework’. (Jayaratna, 1994). He describes this framework as ‘a methodology-independent framework’, a *general* framework that can be used for understanding and evaluating *any* methodology, not simply those relating to information systems’. Please see Figure 2.4.

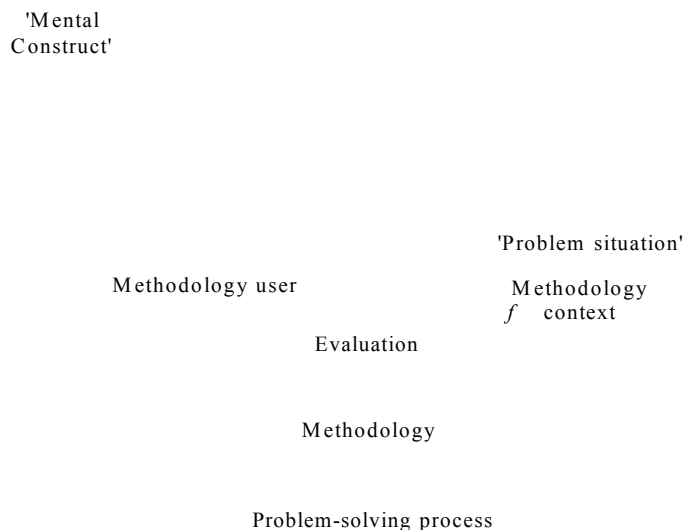


Figure 2.4 The NIMSAD framework (Jayaratna, 1994:53)

In the NIMSAD framework, Jayaratna implies that in any systems development project, the *methodology* is only one of three relevant factors that determine the outcome of the project. The *methodology user* has an important role and so does the '*problem situation*' i.e. the context of the project. From the methodology user's perspective, the context and methodology are 'given' or 'fixed' but the methodology user has some choice about how to work, leading to a variety of possible outcomes. This is due to the unpredictability of social behaviour compared to investigations in natural science, e.g. if copper is added to sulphuric acid, the same chemical reaction will take place and will always produce copper sulphate, hydrogen and water. If a systems development methodology, methodology user and problem context are combined, the outcome is much less predictable.

Jayaratna's (1994) rationale for the elements of the NIMSAD framework is briefly as follows.

The 'problem situation' (the methodology context) - Jayaratna believes that consideration of methodology context is important because:

1. It is important to take into account the needs of the users of the system. This includes usability of systems.
2. It helps the analyst understand how the organization perceives the problem situation, and may help the organization re-examine the situation.
3. Interpersonal relationships need to be formed with organization members.

Here Jayaratna is showing that methodologies operate in a variety of contexts and the methodology user must be aware of the context for the above reasons.

The intended problem solver (the methodology user) - systems analysts who use methodologies have their own 'mental construct', which affects how they view the problem situation and apply the methodology.

Jayaratna (1994) gave this rationale for inclusion of the intended problem solver in the framework:

"However powerful, useful and effective a methodology may be, the success of

effective and efficient information processing systems design and development depends, among other things, on the personal characteristics of the intended problem solver. Intended problem solvers, by being human, tend to select some elements of the situation as being relevant and useful for study and transformation. Some of this selection is implicit and unconscious (i.e. based on gut feelings, hunches, assumptions), but at other times the selection is prompted by explicit concepts, models and methodologies that are employed.”

(Jayaratna, 1994:63-64).

This statement shows that Jayaratna recognises that individual human beings are unique so their perception and action in problem situations will be varied and different. By understanding the contribution of relevant personal characteristics and the methodologies and models that developers may have learnt, this may help understanding of developer behaviour.

The problem-solving process (the methodology) - methodologies are based on a range of different philosophies and correspondingly, the suggested steps in the methodologies put the underlying philosophies into practice. Jayaratna proposes 3 elements that must be addressed in the methodology, or problem solving process:

Phase 1 – Problem formulation

Phase 2 – Solution design

Phase 3 – Design implementation

Here, Jayaratna is abstracting three main functions present in all systems development methodologies

The evaluation of the above three - If using this framework to evaluate the effectiveness of application of a methodology, it is suggested that this is done before, during and after intervention of the problem solver. This enables adjustments to be made during the intervention and lessons to be learnt afterwards.

Jayaratna is aware that evaluation may change as the project progresses.

2.2.3 A discussion of mental construct elements

Jayaratna's rationale for proposing the mental construct concept is explained in the following quotation:

“It is not within the domain of humans to capture any ‘true’ account of the richness of a situation. The learned/acquired bounded knowledge sets, the inherent limitations of information receptor, effector and processor faculties together with prejudices, motives, values, ethics, experiences, models etc. which are themselves forms of closures, condition the way humans perceive and structure their understanding of situations.” (Jayaratna, 1986:75).

Dynamic 'Mental Construct'

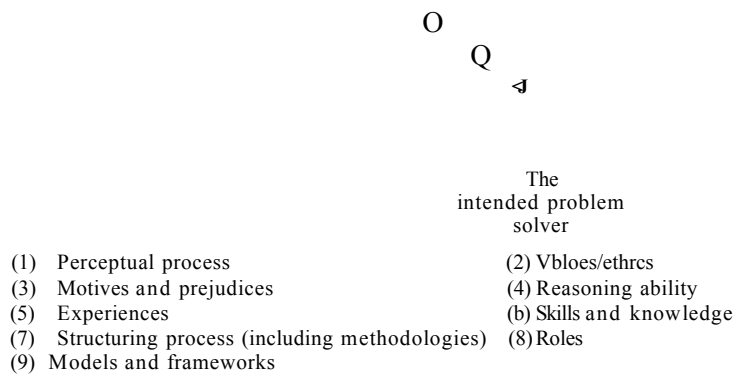


Figure 2.5 The mental construct (Jayaratna, 1994:64)

Jayaratna (1994) proposed the concept of the ‘mental construct’ for the collection of personal characteristics that affect the selection of relevant elements in a problem situation (please see Figure 2.5). These elements are clearly based on Jayaratna’s personal experience, as shown by his explanation: “We have identified, from our industrial work and consultancy practice, several characteristics that help to shape this selection process”. Although he uses the collective ‘we’, it is clear from his

explanations that he has based his ideas on his personal experience as an individual and includes no evidence from other sources. However, he does recognise that other individuals 'mental constructs' may have a different composition.

The elements and their practical relevance to information systems development, as explained by Jayaratna (1994), will now be discussed. It will be seen that most of these elements are generally applicable when people interact in any situation. *Text in italics denotes quotations from Jayaratna (1994:65-70).*

Perceptual process refers to the belief that *"each person perceives 'reality' in different ways* Therefore, the problem solver may perceive situations differently to stakeholders. Elsewhere in the literature, this concept is generally recognised as the social construction of reality or interpretivism (Burrell and Morgan, 1979).

Values *"help us pass judgement on situations" ... "provide a form of guidance system"*, where some values dominate over others, e.g. social values and economic values (Guth and Tagiuri, 1965) may compete. In practice, this means that since values tend to be strongly held, if there is a conflict of values, opinions may be difficult to change, leading to an ill-structured situation so this would require very sensitive interpersonal relationship management skills. Jayaratna gives no justification for selecting Guth and Tagiuri's ideas on values, no indication about other categorisations or types of values that may be relevant and no detailed evidence on how values affect the role of the problem solver in practice. Jayaratna et al (1999) return later to the issue of corporate and personal values in the context of methodology use but their assertions are not supported by empirical research.

Ethics are *"standards which we and others place on a person's expected behaviour"* i.e. they are standards imposed externally as opposed to values, which may be described as internally imposed standards. The practical outcome of this for the problem solver is that it may be unethical to divulge sources of information when analysing systems.

Motives *"are those needs that we try to satisfy in a given situation but keep private to ourselves"* Jayaratna claims that problem solvers need to be aware of their inner needs and this may help them be aware of the inner needs of others in the problem situation.

Prejudices are “*persistent opinions which we form from our values, experiences or out of insecurity, i.e. fear of the unknown*”. In information systems development, Jayaratna proposes that there are pros and cons of having prejudices. A prejudice against a certain form of technology or contributions of other people may form a mental block and preclude a good solution. However, it may be useful if it is based on previous experience and reduces time spent information gathering. Problem solvers need to be aware that they may have prejudices.

Experiences “*help us form implicit models for structuring and understanding situations.*” The pros and cons of this are similar to those of applying prejudices. Experience may help streamline information gathering and give confidence to assume expert status. However, it would be unwise to assume that each problem situation is the same.

Reasoning ability “*is our ability to abstract the essential aspects from any situation and to understand the concepts underlying our thought processes, i.e. examine what makes us reason in a particular way.*” Jayaratna believes that it is helpful if problem solvers can explain their thought processes and this includes being aware of when they are using what he calls ‘intellectual’ thought processes as opposed to ‘political’ thought processes. This definition of reasoning ability, like Jayaratna’s definition of prejudices, motives, experiences and values, is really about self-awareness, critical self-reflection and acknowledging our thought processes.

Knowledge and skills ‘*are acquired from education, training and experience*’.

Jayaratna claims that methodologies should clarify the wider knowledge and skills needed by methodology users for effective methodology use because both technical and interpersonal skills are needed. However, it could reasonably be expected that it is up to the individual methodology user to apply interpersonal skills naturally because guidance from a methodology could only be general.

Structuring processes “*are unique to each individual*”. “*Whether we have access to methodologies or not, we continue to structure our thinking and action. Learning to structure our thinking in many different ways helps us to gain new insights about the same situation.*” Methodologies are explicit structuring processes but we all have our

unique structuring processes. Jayaratna believes that it is important for systems developers to understand how methodologies structure their thinking and actions.

Models and frameworks - Jayaratna believes that “*Modelling helps to develop one’s reasoning ability*”. Some models are gained from experience and others are acquired by conscious training.

Roles “*can be defined as the explicit behavioural characteristic sets that can be attributed to someone responsible for performing a set of tasks.*” Jayaratna claims that our role expectations may have to match the expectations that others have of that role, which may be in conflict. Therefore systems developers need to balance natural behaviour and personality with expectations. He believes that methodology creators need to explain role expectations implied by their methodologies. This author’s view is that it is unreasonable to expect a methodology to do this and implies a frustration with Jayaratna’s ability to manage his role and relationships as a systems developer.

Jayaratna’s personal comments on some of the mental construct elements indicate the possibility of problems with interpersonal skills when doing systems development work, which may have arisen from personal experience. In his comments about roles and knowledge and skills, Jayaratna expresses some unreasonable expectations about methodologies, which hint at an inability to decide on appropriate conduct. There are many instances of critical self-reflection which show that he is aware of possible problems with relationships e.g. “if our perceptions are incongruent, then we may have an additional problem of managing our relationships with the stakeholders” (1994:65); regarding motives, he claims that becoming conscious of inner needs “may also help to reduce the tensions that may arise in our interactions with others in the ‘problem situation’”. He is particularly aware of a tension between ‘political’ and ‘intellectual’ thought processes: “the secret manipulation of other human beings is not a sign of our problem solving ability, but visible evidence of our sense of insecurity and our lack of confidence in our own ability to pursue desirable actions. In other words, we sacrifice our intellectual reasoning in the face of pragmatic difficulties.” Jayaratna thinks that political thought processes are aimed at achieving power and control over others, exploiting their weaknesses and making them support our viewpoints. However, he does not allow for the possibility that positions of power may also be used altruistically.

It is clear from the explanation above how Jayaratna believes each individual proposed mental construct element is put into action when systems developers do projects. However, there is some overlap and interconnectedness between some of them. They can be grouped into different types of concepts:

Reasoning ability and *perceptual process* are both internal to the individual - psychological processes that would be undertaken naturally by any human being in a wide range of activities.

Skills, knowledge sets, models and frameworks and structuring processes are external to the individual and need to may be learnt and acquired. They are relevant to the activity of developing systems because they aid understanding of situations and project planning. They are not unique to individuals. They rely on the psychological processes - reasoning ability and perceptual process - to aid interpretation of situations and enable skills, knowledge sets, models, frameworks and structuring processes to be put into practice.

Ethics may be relevant either as an internal moral code unique to an individual, and similar to values, or as an externally imposed, profession-based moral code promoted by the organization in which the project takes place. However, individuals may choose to ignore it unless it agrees with their personal values.

Role acts as a delimiter and definer of what the systems developer is expected to do.

The elements listed above are relevant to the thought processes of systems developers, i.e. they affect how they **think** about the problem and perceive possible actions. The remaining elements - values, motives, experiences and prejudices - may affect what systems developers may actually do, i.e. they have some effect on guiding the actual outcome of the thought processes described above. *Values, experiences, motives and prejudices* are personal characteristics that may all be acquired over time and are likely to be unique to individuals. In this research, it is proposed that these elements are more powerful in guiding the actions and behaviour of systems developers.

The following discussion of the mental construct in the context of problem solving

shows that there are potential problems researching the mental construct concept. However, the discussion prompts helpful issues and insights and reinforces the rationale for limiting the investigation to values of systems developers.

2.2.4 Mental construct discussed in the context of problem solving

The discussion will begin by considering what is positive and helpful about the concept in terms of understanding information systems development. Issues that require further exploration will then be discussed. Conclusions will be drawn on the value of researching values, one element of the mental construct, as a means of contributing new knowledge on social and behavioural factors relevant to successful information systems development.

Jayaratra's explanation of the NIMSAD framework makes clear that there are three important ingredients in any systems development project - methodology user, methodology and organizational context. It therefore follows that success in using any tool or methodology must depend on the methodology user (systems analyst) and the context in which it is being used. It is obvious that where humans are involved, the outcome of combining the ingredients of a project will not be predictable because of human free will and choice, compared with the predictable outcomes of combining natural ingredients as in chemistry experiments or cookery.

The systems analyst's role is to act as a problem solver. The act of doing systems development, with or without the use of a methodology, is seen as a problem solving activity and the mental construct of the systems developer is important in determining exactly how the work will be done.

Bransford and Stein (1993:7) claim, "A problem exists when there is a discrepancy between an initial state and a goal state, and there is no ready made solution for the problem solver". The solution to a problem involves getting from one state to another. Holyoak (1990:1187) is in agreement, stating, "A problem arises when we have a *goal* - a state of affairs that we want to achieve - and it is not immediately apparent how the goal can be attained". By these definitions, it is clear that activities such as "planning a dinner party, tracking deer, diagnosing a disease, winning a game of chess, solving

mathematical equations, managing a business” (Bransford and Stein, 1984:2) and developing an information system may all be defined as problems, although Wilson (1990) and Checkland and Scholes (1990) prefer the term ‘problem situation’ and describe the problem solver’s role as bringing some improvement to the problem situation (Checkland, 1990:205). Wilson (1990:8) claims, “At the ‘soft’ end problems do not occur in a way which enables them to be readily isolated. It is more usual to find sets of problems which are highly interactive and it has been found to be more useful to examine, not a problem, but a problem situation, i.e. a situation in which there are perceived to be problems”. The distinction between ‘hard’ or clearly defined problems and ‘soft’ problems in the information systems literature is mirrored by the distinction between problem solving as search, when “the problem solver has a clear goal, understands the initial state and constraints, and knows exactly what operators might be useful” (Holyoak, 1990:134) and ill-defined problems, where “problems are ill defined in that the representations of one or more of the basic components - the goal, initial state, operators, and constraints - are seriously incomplete” (Holyoak, 1990:134). This is usually the type of problem which systems developers are required to deal with.

In an example of the extreme importance of wise problem solving, Bransford and Stein (1993:1) quote the way the President of the United States and members of the Executive Committee of the National Security Council dealt with the Cuban missile crisis in 1962. They state, “Had these men selected a different course of action for the problem they confronted, the world as we know it may have changed drastically”. The results of information systems development may also have a big impact on the people involved in organizations because systems development inevitably brings about change which affects the “lives, psychological well-being, remuneration, job satisfaction and quality of life of other people” (Jayaratna, 1994:xi).

As human beings, we are able to think, therefore we can solve problems. Holyoak (1990) claims that the ability to solve problems is one of the most important manifestations of human thinking. Bransford and Stein (1984) believe that we create the environment we live in as a result of problem solving. “Houses, laws, furniture, vehicles, schools, scientific theories, and books are just a few examples of things devised by humans. It is noteworthy that each of these creations or inventions was designed to solve various problems” (Bransford and Stein, 1984:2). To this list,

information systems could be added. Another important feature related to the human ability to think and solve problems is free will, and with this, the fact that we take responsibility. Donaldson (1993:8) states “I am not concerned here with the philosophical problem of free will but with the psychological fact of the experience of choice. In so far as we have this experience, we *take* responsibility”. Nissen (1996) recognizes that we do not have unlimited free will but our action is to some extent determined by genes and environment - the influence on human action lies “somewhere between unlimited free will and determinism.” In relation to the development of information systems, he states, “...our environment does not fully determine either the particular applications and their use or information systems development and its methods. Some room remains for human creative action. From **freedom of choice** a corresponding **responsibility** follows”.

The relevance of the concept of the mental construct here is that it influences human action in any problem solving activity. For example, in the practice of law, Costanzo (1995:5) quotes Ackoff as saying, “Problems are abstractions extracted from messes by analysis...” She recognizes that legal practitioners have to extract problems from life and that “Different practitioners might have extracted different problems from the same mess”. This could be true of many other professions, and is true of the work of systems developers as they analyse and design information systems. Costanzo goes on to say, “What we extract from the mess as a problem to be solved depends on how we see our role, what we perceive as relevant facts, how we conceive appropriate solutions and how much we involve the client in the process” (Costanzo, 1995:7). This aligns with Jayaratna’s belief that an individual’s personal characteristics i.e. mental construct, will influence the outcome of the problem solving process.

2.2.5 Problems with the mental construct concept

Several problems exist with the mental construct concept as described above that require further explanation. There are 3 main issues, which will now be dealt with in some detail:

Issue 1: The effect of context on individual behaviour.

Issue 2: The mental construct concept as a manifestation of nominalist ontology.

Issue 3: The breadth of the mental construct concept.

Issue 1: The effect of context on individual behaviour.

The notion of corporate values is prevalent in business literature. Pattison (1997:106) describes organizational members as “swim[ming] in a sea of values”, combining these with their own value preferences, ethical decisions and performances. Current business ethics literature and the press abound with articles on corporate values (e.g. Small (2002), Dearlove and Coomber in Crainer and Dearlove, 2001; Grof (2001); Winkler (2000)). It is a topic on which there is much interest by both academics and practitioners. The international human resources consultancy Blessing White specializes in helping organizations promote corporate values for the benefit of the business. They use findings from Posner and Schmidt (1993) about the interplay of corporate and individual values, which shows that it is beneficial to business if there is congruence between corporate and individual values. Other authors are critical of this approach: Mumford (1981) expressed concern that there might be a problem of fit between organizational and corporate values; stronger criticism comes from Pattison (1997) who is concerned that the promotion of corporate values, through appraisal systems, is a form of social control; Dearlove, (2000) suggests it could be corporate brainwashing. Although these authors have differing views on the outcome of the influence of corporate values, all are agreed that they do have an influence on individual behaviour.

In the field of education, Straughan and Wrigley (1980:8) believe that “values also inform the life of an institution”. Values of individual teachers and the school guide teachers’ education of their pupils, i.e. a combination of corporate values and individual values. The same notion may be applied to systems developers working in an organization with its corporate culture and values. Developers work as individuals alongside other individuals to achieve organizational goals. However, the diagram of the NIMSAD framework as shown in Figure 2.4 implies that a methodology user operates as an individual, interacting with a methodology and a problem situation. It does not show that system developers frequently work in project teams with a management structure and within a corporate culture. There is no indication of the effect of interpersonal relationships and corporate influences yet these would also have an impact on what systems developers do.

Therefore, it is clear that the mental construct concept and NIMSAD framework (Jayaratna, 1994) is inadequate, incomplete and unrealistic because it does not take

account of corporate values or the effects of interpersonal relationships when developers work in project teams.

Issue 2: The mental construct as a manifestation of nominalist ontology

Jayaratna (1994) indicated that the mental construct concept applies to any problem solving activity, of which ISD is one example. The discussion that follows reinforces the point and elaborates on it. It shows that the mental construct concept is a manifestation of nominalist ontology and that there are equivalents in many other fields.

The literature of Peter Checkland had a strong influence on the academic community in information systems and his book 'Systems Thinking, Systems Practice', published in 1981, is frequently cited. Checkland, who comes from a scientific background, realised the inadequacy of systems engineering approaches when designing computer systems (Checkland and Scholes, 1990). In addition to technology, computer systems contain people, each with their unique interpretation of the world, or 'Weltanschauung', so computer systems are infinitely more complex than systems in engineering or natural science. Hence, Checkland devised Soft Systems Methodology, which defines systems in terms of transformation processes and underlying assumptions (Weltanschauung) that make the transformation meaningful. Mumford (1981) strongly advocated that attention be paid to the human element in information systems development in addition to technical concerns, and it was from this concern that the ETHICS methodology (Effective Technical and Human Implementation of Computer Systems) was devised. These people-focused methods appeared as major steps forward in the world of computing because of its origins in systems engineering. However, a consideration of the human element would have been assumed naturally if methodologies for developing computer systems had been devised by people working in social sciences, by definition, a field that naturally pays attention to human behaviour.

The 'mental construct' concept is not unique to the field of information systems. Jayaratna (1994) developed it from the term Weltanschauung, which originates in the field of philosophy. Weltanschauung was described by Checkland (1981) as "...the particular non-absolute world image which we take for granted and through which we construct/attribute meaning to human activity or interpret reality ... There will never be a single (testable) account of a human activity system, only a set of possible accounts all

valid according to a particular Weltanschauung.” Elsewhere, Weltanschauung has been variously defined as “assumptions” or “outlook” (Avison and Fitzgerald, 2003:162), “world view” (Checkland and Scholes, 1999:35), “world-perception” (Hebel, 1999:253), “our cognitive representation of the world, our evaluation of life, and our ideals concerning the conduct of life” (Checkland and Scholes, 1999a:276), “A filter in the head of an observer which has been formed and is continually moulded by experience, personality, politics, society, and the situation” (Wilson, 1990:32). Weltanschauung is based on the belief that humans interpret the world they live in and that since individuals are unique, their interpretations will vary. Reality is therefore socially constructed, i.e. this is nominalist ontology (Hirschheim and Klein, 1989). This has application in many fields, e.g. in law, “How the lawyer sees the problem will depend on the information the lawyer takes in through the senses and what the lawyer already knows or deems important in the mind” (Costanzo, 1995:13). The notion of social construction of reality is recognised in the field of social science by the existence of related concepts, e.g. lebenswelt (Miles and Huberman, 1994); verstehen (Hammersley and Atkinson, 1995); people’s apprehension of the world (Husserl in Bryman, 1988). The term ‘mental construct’ is actually used by Schutz (1954) quoted in Burgess (1984:78) to contrast the observational field of the social sciences – human beings – with that of the natural sciences – atoms, molecules and electrons. The social scientist observes human beings who, “By a series of commonsense constructs [they] have pre-selected and pre-interpreted this world which they experience as the reality of their daily lives.”

Literature in the field of organizational behaviour includes the concept of the mindset “as a concept that captures members’ understanding of the nature of the reality that confronts them.” (Darwin, Johnson and McAuley, 2002:67). An earlier definition of mindset characterises it as “a predisposition to see the world in a particular way that sets boundaries and provides explanations for why things are the way they are ... a filter through which we look at the world” (Rhinesmith, 1992:63 in Darwin, Johnson and McAuley, 2002:68). This accords with Wilson’s (1990) definition of Weltanschauung and Jayaratna’s mental construct concept.

Habermas’ ‘lifeworld’ concept also has similarities to Jayaratna’s mental construct concept and NIMSAD framework. Quoted in Myers and Young (1997:225), he argues,

“modern society can be theoretically defined as an amalgam of “lifeworlds”, “systems” and “steering media”. “Lifeworlds” are the communicatively formed (over time) life experiences and beliefs that guide attitudes, behaviour and action. The three main elements of the lifeworld are culture, society and personality.”

Therefore the concept, which Jayaratna calls ‘mental construct’, has equivalents that were published prior to 1994 in many fields but Jayaratna (1994) does not reference any of them.

As shown by the range of disciplines in which equivalents to mental construct exist, the outworking of nominalist ontology is prevalent in all human activity. In situations where people interact, each has a different perception of the situation because they construct a reality unique to them. If the interaction involves problem solving, e.g. developing an information system, planning an exhibition, organising a school or deciding where the next family holiday should be, the existence of differing perceptions needs to be addressed. Jayaratna and Checkland tried to do this for information systems development by using the mental construct and *Weltanschauung* concepts respectively.

Even disciplines such as engineering and science, when seen from a wider perspective, may be subject to the effects of individuals’ different perceptions of reality when problem solving. When the Challenger space shuttle exploded shortly after launch in 1986 (Go for Launch, 2002) and again when the Columbia space shuttle was burnt up on re-entry in 2003, people whose perceptions about the launch were focused on issues other than safety overrode the technical concerns prior to the launches. Had the decisions been based purely on scientific and engineering fact, both launches would have been cancelled because the shuttles were unsafe.

The existence of choice and control in situations that are perceived differently due to individual worldviews reinforces the importance of values in decision-making. In the Challenger disaster, people in positions of power did not use their power altruistically; rather they used it to serve their own ends. This would be described as giving priority to political values in terms of Spranger’s (1928) six classes of values: social, political, economic, theoretical, aesthetic and religious. Had they given priority to social values, displayed by altruism, selflessness and love for people, their overriding concern would

have been to serve the needs of the crew for safety. Similar choices exist for people in positions of power in systems development projects such as project managers. In exercising their role, they have the choice of how to act. Therefore, within the bounds of organizational procedures, their actions will be guided by their values and ultimately may determine whether the project succeeds or fails.

Issue 3: The complexity of researching the mental construct concept.

In terms of doing further investigation of the mental construct concept in the field of information systems, one of the main problems is related to the mixture of types of elements that comprise the mental construct. Some affect what developers think, others affect what they do; some are unique to the individual, some are externally dictated. Therefore, researching all of the elements would be very complex and resource intensive, yielding an unwieldy amount of data for a PhD research project. Investigation of selected elements would be simpler. Furthermore, it would be more relevant and logical to investigate one of the personal characteristics responsible for directing the unique **actions** of developers, i.e. values, motives, prejudices or experiences.

While it would be worthwhile to investigate the impact of all four elements on information systems development, it is necessary for practical reasons to refine the scope of this research to one element. Since reliable measures and categorisations of values are available in the literature (Rokeach, 1973; Allport, Vernon and Lindzey, 1960; Spranger, 1928), it is believed that research on values would be a good starting point and may also provide some data on motives, experiences and prejudices. Also, motives, prejudices and experiences may change, hence making any findings time and situation specific. One of the key features defining values is that they endure over time e.g. Rokeach (1973) believes “A value is an enduring belief that a specific mode of conduct or end-state of existence ..”. Therefore, findings on values and resulting behaviour from may be expected to be consistent over time.

2.2.6 Conclusion – The value of researching values I

The aim of this section was to discuss the question, ‘How is the mental construct concept relevant to successful information systems development and how can research

on values of the methodology user achieve new knowledge about this?’

The first part of the question, ‘How is the mental construct concept relevant to successful ISD?’ was explained by tracing the origins of the mental construct concept in ISD methodology research and its attempts to address on-going problems in computer systems development. Jayaratna’s (1994) NIMSAD framework was an approach to understanding and evaluating methodologies, in which he claims that the ‘mental construct’ of methodology users is one of three important factors that affect ISD projects and ultimately are crucial to the success or failure of ISD.

The second part of the question, ‘How can research on values of the methodology user achieve new knowledge about this?’ was addressed by analysis of the mental construct elements and discussion of the mental construct concept in the context of problem solving. This provided useful insights for continuing research.

Analysis of the proposed components of the mental construct showed in more detail how each component might affect the interpretations and behaviour of methodology users. However, Jayaratna’s (1994) explanations included many personal interpretations and reflections specific to him as an individual, based on his experiences and resulting from his personality. Further analysis of the mental construct elements showed that there is overlap and interconnectedness between some of them. The most helpful insight from the analysis of mental construct elements was that all of the elements affect thought processes but values are the deciding factor that precipitate a course of action, hence this is the most fruitful area for continuing research.

A critique of the mental construct concept in the context of problem solving led to a further insights for continuing the research.

Firstly, it showed that the mental construct concept includes only internal influences on the behaviour of the methodology user but awareness of two external sources of influence must be included in the research. Systems developers often work in teams and usually have line managers directing their work so the effects of interactions with others must be included in the research. Another external influence is the corporate values of the organization in which the project takes place, which may be manifest in

standards, methodologies and procedures that developers are expected to adhere to.

Secondly, it showed that the mental construct concept is a manifestation within ISD of the more widely applicable notion of the social construction of reality i.e. nominalist ontology. Individuals uniquely perceive the world they inhabit based on their personal frame of reference. However, values may affect how people behave in response to their perceptions. A brief discussion of the Challenger disaster produced a proposal that applications of different types of values by managers of ISD projects might result in differing project outcomes, ultimately determining success or failure.

Thirdly, it was shown that the mental construct concept as a whole would be too complex to research but values would be a more clearly defined and focussed topic for further research.

In summary, this section has shown that in a general sense, the mental construct concept is relevant to successful ISD and it has been a useful stimulus for planning further research. A critique of the mental construct has shown that values would be a more fruitful line of research. The next section shows in more specific terms why research on values may achieve new knowledge on social and behavioural factors important in avoiding failure in ISD.

2.3 Why are social and behavioural factors important in avoiding failure in ISD and how can research on values achieve new knowledge about this?

2.3.1 Relevance of social and behavioural factors to success and failure in ISD

Failed information systems have enormous impacts on individuals and organizations, e.g. the London Ambulance Service and the London Stock Exchange systems failures in 1992 and 1993 (Flowers, 1996) and more recently, the failure of the system to support UK Passport Agency in 1999 (House of Commons, 2000). Therefore it is very important to IS practitioners, companies and the public that information systems are 'successful'.

Despite the existence of literature on failure spanning over 30 years with contributions

from both academics and practitioners, information systems projects continue to fail. Colton (in Sauer, 1993) conducted surveys and interviews in US police departments and reported in 1972 that it was not technical but behavioural and people oriented problems that hindered development. Other literature from the 1970's and 1980's is consistent in showing the importance of social and behavioural factors in a general sense e.g. Lucas, (in Sauer, 1993); Boland and Hirschheim, (1985) and Lyytinen and Hirschheim, (1987).

Literature from the 1990's onwards is more specific. Overall, the literature shows some concern for pragmatic issues such as timescales, scheduling, monitoring, risk awareness, training and support (Flowers, 1996) but the major concerns are about social and behavioural factors (**indicated by bold type**). Oz (1994) in Flowers (1996) claims "In the long run, **honesty** is the best policy." He believes that lack of honesty about system development problems can lead to major failure. Guinan and Coopriider (1998) found that keeping important information a secret from stakeholders has negative consequences. Bashein, Markus and Riley (1994) point out the **communication** and **empowerment** are two essential requirements for success. Coe (1996) believes that effective **communication** with users and senior management of the 'big picture' is essential and suggests using progress reports. Vadapalli and Mone (2000) found that giving teams direction and **empowering** them to find efficient and effective ways to get the job done seem to be important. Poulymenakou and Holmes (1996) stress the importance of recognising **politics** as opposed to approaching information systems development from a technological perspective. **Team skill** is also a relevant factor; Guinan and Coopriider, (1998) believe effective team practices depend more on **managerial involvement** than software development tools and methods.

Several authors highlight the importance of **good management**, especially project management because, as Poulymenakou and Holmes (1996:43) state, "the development and implementation of an IS is surrounded by uncertainty and requires project management practices that tolerate and work around this situation." The OR newsletter (1996) advises that project managers need to take into account human and organizational factors and a Cabinet Office report on successful IT (2000) stresses the need for **good leadership and project management**. This includes change management and the need for a supportive cultural context (Willcocks and Griffiths, 1994). Related to this is literature on *hybrid managers*, which burgeoned in the 1990s.

This highlighted the skills held by those who were successful in managing IT projects, including a set of excellent social skills - **listening, understanding, negotiating, persuading, motivating and team building** (Earl and Skyrme 1992; Skyrme, 1995).

Most of the social and behavioural factors listed in bold type above would require the application of values that serve the needs of others, hence the relevance of social values as defined by Spranger (1928). The need to be aware of politics also shows the relevance of political values (Spranger, 1928). This is worthy of more detailed investigation.

2.3.2 Addressing lack of detail on social and behavioural issues by research on values

Several academics and practitioners have attempted to produce recommendations for achieving success by addressing the issues identified above (Sauer, 1993; Coe, 1996; Flowers, 1996; Jones, 1996; Lyytinen and Hirschheim, 1987; Whitten, 2003; Whyte and Bytheway, 1995; Yeo, 2002; Sauer, 1999).

These authors' recommendations are broadly consistent and include mostly general guidance for addressing a range of social and technical issues in project management but unfortunately give little practical detail on how to put them into operation. One exception is Whitten (2003; 1996), a project management consultant dedicated to human issues in project management, who regularly updates his web site by providing suggestions related to interpersonal behaviour and human values in IT project management, 'soft skills stuff' (Whitten, 2002). He has also published recommendations for 'Communicating in Harmony' (Whitten, 1995), including the 'Golden Rule' - Treat others as you would wish to be treated'. Please see Figure 2.6. This clearly indicates his belief in the importance of human values in systems development. Most of the lessons require good relationships between individuals in projects, a high degree of altruism and trust, and many of them are quite detailed and specific e.g. admit when you are wrong, bestow dignity and value on individuals, say "Thank you", acknowledge others by name, share knowledge and experience and listen to others.

Lessons for Communicating in Harmony (Whitten, 1995)
The dignity and value bestowed upon and felt by each individual is central to the overall success of an enterprise
There is no better advice for working alongside others than to treat others as you would like to be treated yourself
Understanding ways to improve communication is the first step; practicing – practicing – practicing the Golden Rule is the key step
Admitting when you are wrong can change the mood from one of confrontation to one of cooperation
The tolerance that you extend to others also will teach others to be tolerant when it is called for by your actions
Interactive communication is still the best there is
As members of a project willingly share their knowledge and experiences, the collective strength of the project increases
Tapping into the potential of another leaves you both to gain from the experience
Tact is the art of making a point without making an enemy
The message you send may not be heard as loud as the manner with which you send the message
Strive not to surprise others with bad news
Bad news is like garbage; the longer you delay in acting upon that news, the greater the potential for stink
Lingering problems between people or groups have a negative effect on communication
One of the most important sentences that you can speak: “Thank you”
Listening provides great benefit to both parties
Acknowledging others – especially by name – is a powerful way to embrace others and to feel embraced
A compromised solution is often the best overall solution
Don’t allow past habits to impede positive progress
Project members must understand the role of others if an effective team is to emerge
In the final analysis, management has the authority and is accountable for ensuring that the needed communication exists across a project
<i>Coming together is a beginning, Keeping together is progress, Working together is success. -Anonymous</i>

Figure 2.6 Lessons for Communicating in Harmony (Whitten, 1995)

2.3.3 A case study showing how application of social values resulted in turning the London Ambulance Service Computer Aided Despatch (LASCAD) system around

A case study by Russo and Fitzgerald (2001) showed how actions of a new project leader, similar to many prescribed by Whitten (1995) in Figure 2.6, changed the outcome of the LASCAD system from failure to success. The new leader had strong management and change skills, worked closely with trade unions, motivated and respected staff and engaged with the people involved. He took time to listen and attempted to address people's concerns. Therefore, he used his position of responsibility primarily to serve the needs of others and not to seek personal renown, i.e. he used his position of power to apply social values.

The need for detailed reporting of results in ISD research on social and behavioural factors

When the LASCAD paper was presented at the UKAIS conference in 2001, Russo and Fitzgerald gave more specific detail during the ensuing informal discussion on how the new project leader interacted with individuals e.g. they described how on first arriving in the organization, he sat and ate fish and chips with the users of the system and listened to their concerns. Clearly, a high level of detail is observable in case study research but may not be included in published papers. While such detail may be seen as trivial for an academic paper, this author believes that it is precisely the kind of detail that needs to be published to describe adequately social and behavioural factors relevant to successful ISD. This will then address the problems identified with earlier literature, which state that relevant factors are described with limited specificity (Sauer, 1999).

2.3.4 Conclusion: The value of researching values II

Section 2.2 showed that it is worthwhile to research values in ISD because they guide action in problem solving situations and may affect methodology users' perceptions of problem situations.

In discussing the question, 'Why are social and behavioural factors important in avoiding failure in ISD and how can research on values achieve new knowledge about

this?’ a number of further insights have been gained. Certain social and behavioural factors are important for ISD success and it is proposed that most of them require the application of social values as defined by Spranger (1928). Currently, knowledge about them is not sufficiently detailed to enable detailed suggestions to provide practical recommendations to improve ISD project success. It is proposed that research on values of systems developers may provide more detail, especially if a case study method were used, thus enabling detailed observation in context. This would also require findings to be reported and published in detail.

2.4 What is the rationale for using an interpretive case study approach and the Spranger (1928) classification of values for research on success in ISD?

In Sections 2.2 and 2.3, the relevance of studying values of systems developers has been justified via two routes: firstly, as an extension of research on methodology users and their ‘mental construct’, and secondly, as a means of gaining more detail on how social and behavioural factors affect the success or failure of ISD projects.

However, as Banwell (2004:195) states, “the whole subject of values is inherently slippery”. Therefore, this section begins by presenting an overview of definitions of values then discusses some of the main measures and categorisations of values used in the literature. It concludes with a justification for using the Spranger (1928) classification of values for this research on the impact of values on ISD using an interpretive case study. This includes a consideration of perceived limitations of this approach and proposed mechanisms for overcoming the limitations.

2.4.1 Definitions of values

“Values can be defined as desirable qualities and attitudes that, when learned and practiced, develop character, integrity, and purpose. Values are more than just skills to acquire. True values are meant to be internalized, ultimately defining who we become.” (Wright, 2001:6).

The term ‘values’ is used in everyday language and the notion of values pervades all of life. Wright’s quotation shows the importance of values in determining whom we

become, implying that we are known by the manifestation of our values in our behaviour. In the psychology literature on theories of personality, Hilgard and Atkinson (1967) believe that the self may be perceived as the embodiment of values and goals. Allport, in Phares and Chaplin (1997: 458) states “people have a unifying philosophy of life or a system of values that directs and gives meaning to their lives. These basic values act as central dispositions that influence behaviour in a variety of domains.”

Values are defined in many fields of literature. The teaching of values is particularly important in the field of education, where young people are prepared for living in society. Halstead and Taylor (2000:3) define values as “principles and fundamental convictions which act as general guides to behaviour, enduring beliefs about what is worthwhile, ideals for which one strives, standards by which particular beliefs and actions are judged to be good or desirable.” This definition highlights the function of values as leading to good or desirable behaviour. Straughan and Wrigley’s (1980:76) definition describe values as underlying motivation: “Values are those stable, consistent, effort-intensive motivations, etc. which, it becomes clear, as a result of analysis or the pressures of life, underlie his behaviour ... the basic motivational constituents of his intentional behaviour and in view of which it is explained.”

In the field of psychology, values are studied as a means of explaining human behaviour. Rokeach (1973:5) states: “A value is an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence.” The notion of choosing one kind of behaviour over another is implied by Allport’s definition in Reich and Adcock (1976:18): “A value is a belief upon which a man acts by preference” and echoed in Hofstede’s (1994: 263) definition of values as “broad tendencies to prefer certain states of affairs over others”. Jones and Gerard (1967) in Reich and Adcock (1976:17) add to this element of choice the notion that individuals expend energy to act on their values: “Any singular state or object for which the individual strives or approaches, extols, embraces, voluntarily consumes, incurs expense to acquire is a positive value ... values animate the person, they move him around his environment because they define its attractive and repelling sections.”

Guth and Tagiuri’s (1965:124) definition from the business literature adds two new

dimensions concerning values - that they may be implicit or explicit, and that they may be held by individuals or groups: “A value can be viewed as a conception, explicit or implicit, of what an individual or a group regards as desirable, and in terms of what he or they select from among alternative available modes, the means and ends of action.”

In the field of philosophy, Baier and Reseller (1969:35) claim that the terminology used by sociologists to define values is “a bewildering profusion of terms, ranging from what a person wants, desires, needs, enjoys, prefers, through what he thinks desirable, preferable, rewarding, obligatory to what the community enjoins, sanctions, or enforces.” They arrive at a definition of values as “*dispositions to behave* in certain ways which can be ascertained by observation... *tendencies* of people to devote their resources (time, energy, money) to the attainment of certain ends” (Baier and Reseller, 1969:40).

Despite Baier and Reseller’s (1969) claim that definitions of values are bewilderingly profuse, there are several consistent features in the definitions presented above:

- All imply an end state
- The end state is achieved by some action or behaviour
- The end state is desirable - it has been chosen or preferred above alternatives
- Values persist and endure over time.

Therefore, it is legitimate to research values of systems developers because in doing their work, they are trying to reach an end state by their actions. Within the guidelines of any methodology they may be using, they have some choice over their actions. It is proposed that their values influence that choice, and that since their values persist over time, their choices will be consistent.

2.4.2 Measures and categorisations of values

Two measures and categorisations of values have appeared most frequently in the literature of recent decades: the Rokeach Value Survey (1973) and the Spranger classification of values (1928). Both incorporate the generic features listed above and

have a clearly explained theoretical underpinning. Less frequently reported values inventories have appeared more recently, e.g. the Hall-Tonna Values inventory (1994), operated commercially by a company called Values Technology, and the MyPotential values test, available on the internet.

2.4.2.1 Spranger (1928) classification of values

Eduard Spranger was a German philosopher, Professor of Philosophy and Pedagogics at the University of Berlin. In 1928, he published the English translation of his book, 'Types of Men. The Psychology and Ethics of Personality.' His aim in writing this book was to "carry out a new method of differentiating human types, especially types of the soul" (1928:vii). In the early chapters he provides the philosophical basis for six ideally basic types of individuality, based on individuals' dominant mental activity. His general formula states,

"Every field of mental activity, insofar as it becomes the object of actual endeavor, is dominated by a specific attitude of evaluation" (1928:23).

Therefore, he is linking mental activity, evaluation and enactment of attitudes through behaviour. When thoughts (mental activity) are converted to actions, the resulting actions show the dominant attitude of mind. This reinforces the fact that individuals are different both in body and mind and that differences in mind can be observed in the resulting behaviour. It also implies that individuals have a choice of how to behave and that, according to Spranger (1928), there are six different classes of objective values, realized by mental acts. It follows from this that it is possible to derive classes of acts from classes of value.

The six attitudes Spranger (1928) identified were:

The Theoretic Attitude: a person dominated by this attitude focuses mainly on objectivity and truth and loves rational completeness and systematisation. They are motivated by a desire to be consistent.

The Economic Attitude: a person dominated by this attitude focuses mainly on the useful, preservation of life and satisfaction of needs. They are motivated by what is useful.

The Aesthetic Attitude: a person dominated by this attitude focuses mainly on expression of forms. They are motivated by a will to form, “the formed expression of an impression”.

The Social Attitude: a person dominated by this attitude has an impulse to give themselves to another – when “the value of the other soul per se is placed above all other values”. The well being of the other is their highest motive.

The Political Attitude: a person dominated by this attitude wants to imprint his will on others. They are motivated by a desire to be superior to everyone else.

The Religious Attitude: a person dominated by this attitude sees experiences as related to the total value of life; therefore nothing is outside the realm of religion. “The motives of religious men are based on the final value context, which not only determines their whole personal life but also the total meaning of the world”. (Spranger, 1928:236).

So, for example, if a person were dominated by the aesthetic attitude, then they would place highest value on creating forms or expressions. A person dominated by the economic attitude would place highest value on doing something that is useful. Spranger (1928) goes on to say that even though one value direction may dominate, the other mental acts cannot be absent, but they are subordinated to the dominant value direction. He explains, “We may symbolize this in the figure of a gambler’s die, of which in every instance one side with its figures must lie uppermost. The others are not, however, absent but are instead in a definite relation to the figures on top” (Spranger, 1928:104).

Spranger’s six ‘attitudes’ are also called values in more recent literature. A more detailed interpretation of the six classes of values is given in Figure 2.7.

THEORETICAL: This person emphasises the search for truth

- interested in discovery of truth
- looks for identities and differences
- divests itself of judgments regarding the beauty or utility of objects
- seeks only to observe and reason
- interests are empirical, critical and rational
- chief aim in life is to order and systematize his knowledge

ECONOMIC: Whatever is useful is valued. This is a pragmatic person

- characteristically interested in what is useful
- based originally upon satisfaction of bodily needs (self-preservation), interest in utilities developed to embrace the practical affairs of the business world - production, marketing and consumption of goods, the elaboration of credit and the accumulation of tangible wealth
- thoroughly "practical"
- regards unapplied knowledge as waste
- only interested in art if it serves commercial ends
- may confuse luxury with beauty
- more interested in having wealth than dominating or serving people

AESTHETIC: Artistic experiences are sought. The value is on form and harmony

- sees his highest value in form and harmony
- each experience judged from the standpoint of grace, symmetry or fitness
- regards life as a procession of events; each single impression is enjoyed for its own sake
- does not need to be artistic, is aesthetic if he finds his chief interest is in the artistic episodes of life
- concerned with identities of experience
- chooses to consider truth as equivalent to beauty
- "To make a thing charming is a million times more important than to make it true"
- tends towards individualism and self sufficiency

SOCIAL: Love of people characterises this person. Warm human relationships are vital

- highest value is love of people, e.g. altruistic or philanthropic
- prizes other people as ends
- kind, sympathetic and unselfish
- regards love itself as the only suitable form of human relationship
- selfless

POLITICAL: This person is motivated by the search for power and influence

- interested primarily in power
- wishes for personal power, influence and renown

RELIGIOUS: An almost mystical belief in the essential unity in the universe describes this person

- interested in unity
- mystical, seeks to understand the cosmos as a whole
- mental structure permanently directed toward the creation of the highest and absolutely satisfying value experience
- sees something divine in every event

Figure 2.7 Spranger's classification of values adapted from Phares and Chaplin (1997:458) (bold type) and Allport, Vernon and Lindzey (1960) (regular type)

2.4.2.2 The Rokeach Value Survey (1973)

Rokeach (1973) defines two different sets of values: terminal values and instrumental values. *Terminal values* express desirable end states to achieve. These can be further subdivided into self-centred (intra-personal) values e.g. salvation, happiness and society centred values (interpersonal) values e.g. world peace, national security. Please see Figure 2.8.

A comfortable life	A world at peace
An exciting life	A world of beauty
A sense of accomplishment	Equality
Family security	Pleasure
Freedom	Salvation
Happiness	Self-respect
Inner harmony	Social recognition
Mature love	True friendship
National security	Wisdom

Figure 2.8 Terminal Values (Rokeach, 1973)

Instrumental values express means of getting to desired end states or goals. These are subdivided into *moral values* - modes of behaviour e.g. honesty, that arouse pangs of conscience when violated and *competence values* e.g. behaving intelligently which leads to a feeling of behaving competently. Please see Figure 2.9. It is worth noting here that Rokeach's (1973) list of moral values e.g. loving, forgiving, and helpful, is similar in nature to Spranger's (1928) social values described above.

Ambitious	Imaginative
Broadminded	Independent
Capable	Intellectual
Cheerful	Logical
Clean	Loving
Courageous	Obedient
Forgiving	Polite
Helpful	Responsible
Honest	Self-controlled

Figure 2.9 Instrumental values (Rokeach, 1973)

The Rokeach Value Survey (1973) is administered by showing respondents the lists of terminal and instrumental values. They are asked to rank each list in order of importance. Rokeach claims this is preferable to using observation or a phenomenological approach because the survey may more efficiently be applied to large numbers of people and it avoids people being selective in what they tell the researcher.

2.4.2.3 Limitations of the Rokeach Value Survey for this research

Mumford (1981) applied a modified version of the Rokeach Value Survey (1973) to compare values of systems designers and managers. This approach was successful at proving her hypotheses about similarities and differences between managers and systems designers, e.g. that both groups would have primarily ‘cognitive goals’ (getting things done rationally and efficiently), as opposed to ‘cathectic goals’ (relating to what is pleasurable and painful) and moral goals. The research used a deductive approach and a positivist epistemology.

This survey approach did not lead to explanations of how and why certain values were relevant and important. If explanation were required, a phenomenological approach would be needed to complement use of the survey. This would rely more heavily on the interpretations of the researcher but should provide more detailed explanations. However, Rokeach’s lists contain a total of 36 values, which would make a phenomenological approach highly complex. The Spranger classification of values into

six categories appears less complex and the categories more relevant to issues in information systems development. Further elaboration is given in the next section.

2.4.3 Relevance of the Spranger (1928) classification of values to research for gaining data on social and behavioural factors in ISD

The descriptions of Spranger's (1928) classes of values presented in Figure 2.7 contain attitudes and interests that mainly result in observable behaviour in individuals. This has implications for the research methods used and the potential to gain data relevant to social and behavioural factors in information systems development.

Allport, Vernon and Lindzey's Study of Values (1960) is based on a questionnaire that provides scores for each of the Spranger (1928) categories of values, showing its relative importance for an individual. It was used successfully by Guth and Tagiuri (1965) to assess personal values of US executives responsible for corporate strategy. The most recent version of the questionnaire, devised in 1960, is culturally and temporally dependent i.e. the questions were appropriate to 1960's Western culture but are not appropriate in 21st century. However, Huntley and Davis (1983) showed that self-assessment of values was equally reliable ie self-ratings of values were significantly correlated with test scores obtained two decades earlier. Therefore, this suggests that it should be possible to observe behaviour in systems developers and interpret the behaviour in terms of values on which it is based. Also, by showing systems developers the descriptions of values, they should be able to reliably self-assess their value preferences. This has some benefit in current research on information systems developers because self-assessment combined with observation and interviews allows the researcher to get relevant data in context without reliance on the questionnaire.

Examination of the descriptions of values classes in Figure 2.7 shows that many of these may be used to interpret the actions of systems developers in terms of values applied. Also, social, economic and political values are clearly relevant to the social and behavioural factors identified in the previous section as important for successful ISD. A discussion of each of these classes of values will elaborate on this proposal.

Social values: At first sight, this definition may not seem directly relevant to the actions

of systems developers. However, systems development projects involve people working together in a management structure, hence the importance of relationships. Furthermore, psychological theories of motivation applied to the workplace, summarised by Phares and Chaplin (1997) characteristically involve meeting needs of employees, e.g. McLelland's (1985) need-achievement theory proposes that organizations should provide working conditions that will allow them to achieve; Maslow's (1970) needs-hierarchy theory believes that a need for self-actualisation is a motivating force; Alderfer's (1972) existence-relatedness-growth theory recognises employees' needs for support for existence by salary and job security, relatedness by providing a place for workers to interact and needs for growth by providing opportunities for creativity and challenge, thus enhancing self-esteem. These and other theories of motivation require the organization to meet employees' needs in a manner identified by the theory. In practice, this would require managers to appreciate the needs and fulfil them. Therefore, a degree of altruism and selflessness is required of ISD project managers if a systems development team is to remain motivated.

Basic psychology literature on the how children are socialized by internalising values and developing conscience shows the effect of warmth in relationships. Parental affection and warmth have been shown to be more effective than physical punishment in producing desirable behaviour and the kind of conscience that internalises control (Hilgard and Atkinson, 1967). If extended to adults in the workplace, it is clear that warm human relationships within systems development projects may produce developers happier to conform to the requirements of the organization and the project manager than situations without warm relationships e.g. a cold, authoritarian approach to management. Ultimately, this could help address needs for communication, honesty and empowerment identified as factors essential for ISD project success.

Political values: Spranger's (1928) classification describes a person with political values as interested primarily in power, wishing for personal power, influence and renown. The line management structure in systems development projects creates a hierarchy in which managers have legitimate power. Simon (1964) cited in Levine and Rossmore (1995) describes business organizations in general as socio-political conflict systems. The political aspects of IT implementations are addressed by Myers and Young (1997) and Markus (1983). Literature reviewed in Section 2.3 on social and

behavioural factors relevant to ISD success and failure shows the importance of being aware of politics (e.g. Poulymenakou and Holmes, 1996). Although individuals with a desire for personal power may be unwilling to admit to or divulge such information, observation of behaviour may reveal hidden attempts at exercising power, e.g. Myers and Young's (1997) ethnographic study on a health service IT project in New Zealand. The study revealed political agendas surrounding the attempted introduction time-based costing against the wishes of the clinicians who believed that users of the system would perceive this as 'big brother'.

An alternative view on the use of power is that it may be used altruistically. This has been debated by philosophers and theologians. Ions (1988) proposes "we might conclude that there is nothing wrong in power, or even the possession of power, provided it is used for good deeds." As explained by Pattison (1997:103), the original function of politics from Plato onwards was "the art of debating social values and determining the public good". Jenkins (2002:118) believes that people's 'world-views', personal assumptions about values they want to promote, will show in their political behaviour. Hence, a link between social values, politics and the altruistic use of power.

Levine and Rossmore's (1995) case study of a financial services company concluded that power holders must be helped to use their power with justice and against a background of a well-articulated value system. They believe that the norm is for individuals to support their private goals and values while simultaneously, and often unconsciously, undermining the publicly espoused goals and values. This has implications for systems developers because when ISD methodologies are used, it is likely that these methodologies reflect corporate values, e.g. use of the Effective Technical and Human Implementation of Computer-based Systems (ETHICS) methodology would suggest that an organization placed emphasis on both job satisfaction and technical quality whereas use of Structured Systems Analysis and Design Methodology (SSADM) would suggest an organization whose major priority was efficiency and technical design of the information system, meeting timescales and budgets, also echoed by Jayaratna et al (1999). Whatever the corporate values, the implication from Levine and Rossmore's (1995) conclusions is that if these values are to be upheld by systems developers, they must be clearly articulated and project managers must use their position of power to serve corporate values and not to pursue

their private goals and values.

Economic values: The application of economic values is to be expected in systems development. Systems developers have targets to meet so they must be pragmatic and use resources wisely and this includes placing emphasis on doing things that are useful. Successful ISD is defined partly in terms of completing projects on time and within budget. The avoidance of failure in information systems includes paying attention to pragmatic concerns that people with economic values would address.

Theoretical values: The application of theoretical values may be observed in some of the technical skills used in systems development. An emphasis on ordering and systematising knowledge is relevant to the application of modelling techniques in systems analysis. This requires observing and reasoning in a critical and rational manner and seeks to discover a true representation of the system being analysed.

Aesthetic values: These values are relevant to the system design and programming phases of systems development. A well-designed information system which meets users' requirements, thus giving user satisfaction and job satisfaction for the developers could be seen as creating a situation of harmony; programmers may be motivated to produce elegant programs.

Religious values: In the summarised definition based on Spranger (1928), religious values appear irrelevant to systems development. However, further work on a related theme, spiritual values (e.g. Burack, 1999; Korac-Kakabadse et al, 2002; Mitroff and Denton, 1999; Neal, 2001 and Rigoglioso, 1999) suggests a different view and shows the relevance of creating satisfying value experiences to employee job satisfaction and ultimately project success. An interest in unity may be relevant to a successful implementation where all are agreed on the value of a well-designed and useful information system.

2.4.4 Limitations of the Spranger (1928) model

Although a justification has been offered for use of the Spranger (1928) model, it is also necessary to reflect on its limitations and to propose mechanisms for overcoming them. The limitations are of two types.

Firstly, in terms of the proposed research methods - observation and interview, the results rely entirely on the researcher's and the interviewees' interpretations of the descriptions of values categories used by Spranger (1928). Inevitably, these will vary and may be misinterpreted, especially by interviewees who are seeing the descriptions only briefly and for the first time during an interview. To rectify possible problems resulting from this, it will be the responsibility of the researcher, who, having worked with the model, should be more familiar with the concepts and therefore more consistent in her understanding, to correct any misinterpretations by interviewees during the interview or to take them into account during analysis.

The methods also rely on self-awareness by interviewees to be truthful and realistic in recognising the extent to which each category of values applies to their conduct in ISD projects.

Secondly, the terminology and descriptions of religious and political values, which may have been acceptable and relevant in 1928, are incomplete and inappropriate in the 21st century when language and culture have changed and more knowledge has been published in the literature related to these two topics.

Spranger's extensive discussion of political values and the use of power in 'Types of Men' (1928) shows the richness of the concept and addresses some issues revisited by current literature (e.g. Buchanan and Badham, 1999; Clegg, 1989; Clegg, 1997; Darwin, Johnson and McAuley, 2002; Mintzberg, 1993; Morgan, 1998 and Pfeffer, 1992). Unfortunately, the terminology used in the brief description in the model in Figure 2.7 does not reflect adequately the full richness of Spranger's intended views; indeed, it provokes an image that interviewees are unlikely to admit to because it appears socially undesirable.

In order to rectify this apparent flaw in the model, it is necessary to take a broad interpretation of political values, which explicitly includes the wider issues. This is informed by perspectives on politics and definitions of power from the recent literature. It is not within the scope of this thesis to provide a comprehensive discussion of issues relevant to power and politics in the organisational behaviour literature but further information can be found in Buchanan and Badham (1999), Clegg (1989; 1997),

Darwin, Johnson and McAuley (2002) and Morgan (1998). Hardy, in Buchanan and Badham (1999:47-8), provides a good summary of the issues:

“Power has been both the **independent variable**, causing outcomes such as domination, and the **dependent variable**, usually the outcome of dependency or centrality. Power has been viewed as **functional** in the hands of managers who use it in the pursuit of organizational goals, and **dysfunctional** in the hands of those who challenge those goals and seek to promote self-interest. It has been viewed as the means by which **legitimacy** is created and as the incarnation of **illegitimate** action. Power has been equated with **formal** organisational arrangements and as the **informal** actions that influence outcomes. It has been seen as **conditional on conflict** and as a means to **prevent conflict**. It has been defined as a resource that is **consciously** and deliberately mobilized in the pursuit of self-interest, and as a system of relations that knows no interest, but from which some groups **unconsciously** and inadvertently benefit. It has been seen as an **intentional** act to which causality can be clearly attributed and as an **unintentional**, unpredictable game of chance. The study of power has created a **behavioural** focus for some researchers and **attitudinal** and ideological factors for others. Power has been berated for being repressive and lauded for being productive.”

Buchanan and Badham (1999:47-8)

The points covered in this quotation broaden the understanding of issues related to power and politics. In particular, they reiterate some of the negative associations where politics is seen as a pejorative term but they show that for each, there is also an alternative positive meaning. This more informed perspective will be used when collecting and analysing data.

At first sight the description of religious values in the model based on Spranger (1928) in figure 2.7 seems vague and unconnected to the daily work of information systems developers. However, a review of the abundant recent literature on spirituality in the workplace shows the underlying concepts to be highly relevant to organisations and management. Again, it is not within the scope of this thesis to do a comprehensive review of this literature, but relevant issues will be presented briefly.

The term 'religious' now has some negative connotations, especially post-September 11th 2001. Cavanagh (1999) claims that 60% of people in the USA are positive towards spirituality but negative towards organised religion. A clear distinction between religion and spirituality is commonly recognised but Bierly et al (2000) give a balanced view when they state that spirituality and religion are different but related topics.

Definitions of spirituality vary and it is generally agreed that it is inherently difficult to define. Mitroff and Denton (1999) claim that a single word that best captures the meaning of spirituality and the vital role that it plays in people's lives is "interconnectedness".

Examples of definitions of spirituality include "the basic feeling of being connected with one's complete self, others and the entire universe" (Mitroff and Denton, 1999:83); spirituality is about three central themes: Meaning – a need for purpose, Presence - being present and Communion – a need for connectedness (Darwin, 2003); Tischler et al (2002:203) explain spiritual experiences as "feeling connected to the universe, the Transcendent, or God, seeing light, hearing inner or other voices".

The range of literature that addresses spirituality is evidence for the increasing interest in it during the past few years. Tischler et al (2002) provide a useful review of spirituality research in the academic literature. It also appears in literature directed towards industry, including that of a more commercial nature e.g. Thompson (2000).

Spirituality in the workplace and implications for leaders and organisations is discussed by several authors e.g. Burack (1999), Cacioppe (2000), Cavanagh (1999), King and Nicol (1999), Korac-Kakabadse et al (2002), Krishnakumar and Neck (2002), and Tischler (1999). Cacioppe (2000:49) claims, "People are seeking a way to be more of themselves at work and want a way to be authentic in what they do and how they do it. In order for this to occur, organisations must care for the whole employee's physical, emotional and spiritual well being." He also explains that many people have sought to apply their spiritual values into the workplace.

Caccioppe's statements are directly relevant to this research on the impact of values on ISD and use of the Spranger (1928) definition of religious values. They highlight both

the desire by employees to apply spiritual values and the responsibility of organisations to meet spiritual needs of employees.

This discussion shows that Spranger definition of religious values has many similarities to current definitions of spirituality and also that spiritual values are highly relevant in the workplace. However, negative perceptions of the term 'religious', which suggest that interviewees may discount religious values as irrelevant or undesirable to their work as systems developers, seriously jeopardize the chance of collecting potentially useful data. Therefore, this problem will be addressed by careful analysis of the resulting data to include findings that are relevant to the concepts included in religious or spiritual values, even though interviewees may not recognize them.

2.4.5 Conclusion - The value of studying values III

A discussion of Spranger's (1928) six classes of values shows that social, political, economic and theoretical values are relevant to the actions of systems developers and are therefore worthy of further investigation. It also highlights limitations of Spranger's descriptions of political and religious values and recommends alternative interpretations that concur with current literature.

Social values affect relationships in management of ISD projects; political values are relevant because the behaviour of individuals in positions of power affects the activities in the project; economic values have an impact because ISD projects are rich in pragmatic concerns and theoretical values are related to application of certain technical skills. Religious values are relevant when considered in the light of related current literature on spirituality in the workplace.

It has been demonstrated that each of these values leads to observable behaviour, which is important for the proposed research method. It is notable that Baier and Rescher's definition (1969:40) includes the statement that values are 'dispositions to behave in certain ways which can be ascertained by *observation*' (italics added). This is an important feature relevant to the proposed research methods described in Chapter 3.

2.5 How does the literature on success and failure shape the research on values?

Normally, individuals and organizations doing projects of any type do not set out to fail but as shown in section 2.4, the reality is that failure in information systems development projects continues to occur after over thirty years of experience (Sauer, 1999). Successful ISD is important because of the wide impact of failed information systems on organizations, customers, users and developers. This has motivated academics and practitioners in software engineering and information systems to do a vast amount of research resulting in the publication of a huge literature. This includes definitions of success and failure and theories on how best to achieve success and avoid failure (e.g. Capers Jones (1996); Flowers (1996); Sauer (1993); Garrity and Saunders (1998)).

2.5.1 The range of definitions and criteria for success and failure

Definitions reveal what is considered important overall, as do criteria for deciding whether an ISD project is a success or a failure. Garrity and Saunders (1998:135) believe that definitions of success and failure in ISD are really two sides of the same coin - "Success is defined in terms of failure - what is not". Therefore, failure is not achieving the success criteria; success means meeting the criteria and avoiding failure.

Some criteria for ISD success refer to projects that run to completion i.e. the level to which an ISD project meets these criteria can only be determined when development and implementation are completed, e.g.:

Jones' (1996) dominant concerns:

- Delivery schedules and time-to-market considerations for software projects
- Costs and resources needed to build software applications
- Quality and reliability levels of the software when it is delivered
- Ease of learning and ease of use when the software is operational
- Customer support and service levels when problems occur
- Ease of modification and maintenance as the application matures.

Garrity and Saunders' (1998) "dimensions of IS success":

- Task support satisfaction
- Quality of work life satisfaction
- Interface satisfaction
- Decision making satisfaction.

Lyytinen and Hirschheim's (1987) categories of IS failure:

- correspondence failure - failure to meet predefined design objectives
- process failure - failure to produce a system at all, or failure to produce it within reasonable budgetary and timescale constraints
- interaction failure - failure to satisfy users so systems are partially or totally unused and
- expectation failure - inability of an information system to meet a specific stakeholder group's expectations.

Flowers (1996:4) states that 'failure of an information system occurs when the system as a whole does not operate as expected and its overall performance is sub-optimal.' He identifies several degrees of failure: 'flawed but usable'; 'totally unusable'; 'unused' and 'absolute disaster'.

Flowers (1996) believes that failure may occur at several stages, and it may be possible to identify at which stage it occurred - project initiation, systems analysis/design, programming/testing or implementation. This implies that a project may reach completion but failure may have happened during the development stage.

Capers Jones (1996) defines projects that terminate before completion as "absolute failures". However, Boehm (2000:94) claims that the implication that cancelled projects are failures is 'false and hazardous' because there may be good reasons for terminating them. In the case of risky projects, it may be 'natural and even healthy' (Boehm, 2000:96). Sauer's view is equally considerate, that "failures are best considered in terms of the process by which they come about" (1993:19); that an information system is only classed as a failure when development or operation ceases, leaving supporters dissatisfied with the extent to which the system has served their

interests. He claimed that approaches to measuring failure by considering such metrics as cost-benefit, user satisfaction, or schedules “generate useful evaluations but do not constitute the very essence of failure” (Sauer, 1993:18). Sauer’s (1999) review of IS failure research showed that the search for the ‘very essence of failure’ was still on and that neither research on factors - e.g. top management support, inadequate resources and non-user involvement - nor research on process, had yielded prescriptions that could be successfully put into practice.

2.5.2 The relevance of values to definitions and criteria for success and failure

Sauer’s (1993) assertion that many ‘definitions’ of success and failure actually generate evaluations supports the proposal of this research to investigate the impact of values on systems development because criteria for evaluation give an indication of underlying corporate values, especially social and economic values (Spranger, 1928).

Success criteria incorporating underlying social values include outcomes that meet needs for job satisfaction (Garrity and Saunders, 1998). This may include serving the needs of customers, technical staff and users for ease of learning and use of the system, ease of maintenance, good support and service levels (Jones, 1996). Success criteria based on underlying economic values include outcomes related to costs, delivery schedules, quality and reliability.

A combination of social and economic values may underlie other criteria, e.g. quality and reliability levels of software. This is relevant to the needs of the organization for practical and useful information systems but also improves the job satisfaction of technical staff, users and customers. Generally, meeting expectations has both economic and social values underlying.

Sauer (1993:28) states “Where there is a large measure of agreement between project organization and supporters that a system has been a good investment but that it no longer serves as a basis for their relationship then there is no need to talk in terms of failure.” This could be extended to partially completed systems development projects that are abandoned but are not necessarily classed as failures if some benefit has been received e.g. if some lessons had been learned from initial progress but the organization

realised it would be most pragmatic to abandon the project, then what some may describe as a 'failed' project may have some positive outcomes. This would be more likely in a learning organization (Senge, 1990) as opposed to a blaming culture and would rely on openness and honesty within the organization to recognise problems early. This is echoed by Boehm (2000), who urges companies to reassure project managers that their career is not in jeopardy if infeasible projects are terminated early. This is more likely to happen where social and economic values are both present.

Political values as defined by Spranger (1928) are relevant to criteria for success and failure in that individuals in positions of power are responsible for decision-making and may use their power either to apply economic and social values to serve the needs of the organization or to seek personal renown.

2.5.3 The interplay of corporate and personal values in ISD success

Success may be defined at a number of levels e.g. organizational, function and individual (Garrity and Saunders, 1998). This implies that corporate values are relevant because they determine success criteria and hence the major concerns of the development for the organization. Individual employees are expected to operate within the requirements of corporate values. However, they also have personal values and are responsible for their own actions in the minute detail and activities of the project. These activities are the building blocks that combine to form the systems development project tasks leading to the completed project. Hence, congruence between personal and corporate values is important for project success. Therefore, it is necessary to investigate personal values, corporate values and the interplay of the two in this research.

2.5.4 Conclusion - The value of studying values IV

This discussion of the literature on success and failure has led to more support for researching values in ISD and has confirmed the need to research both corporate and individual values.

1. It confirms the relevance of the Spranger (1928) classification of values and

- suggests some areas where they might apply. It also draws attention to possible limitations and suggested mechanisms for dealing with them.
2. It confirms the relevance of some of the social and behavioural factors to failure and success.
 3. It shows the relevance of context when defining success. Expectations may be linked to the values of stakeholders; therefore it is essential to research corporate as well as personal values. Also, corporate values are relevant to how 'failed' ISD projects are viewed. In a learning organization (Senge, 1990), the organization would learn from the failure. This would need application of social values to create an open and honest atmosphere.
 4. It shows that the interplay of corporate and individual values should also be researched because individuals work within an environment in which application of their personal values takes place within the procedures and guidelines determined by corporate values.

In terms of research methods, the results of the discussion of success and failure literature in the context of values reinforce the need to use an interpretive case study approach. Interpretation is needed to produce data on application of values by observing developers at work, using the Spranger (1928) definitions of values. The observation must take place in the context of the organization so that data on corporate values and interplay of personal and corporate values can be gathered. This contrasts with the scientific approaches of earlier ISD researchers which involved hypothesis testing.

2.6 Finale - The value of studying values

This chapter has justified the proposal that research on values could lead to useful new knowledge on successful information systems development and it has built up evidence for the use of an interpretive case study method.

Two approaches justifying research on values were taken - the methodology approach which aims to prevent ISD failure by devising steps in methodologies that address all potential problems, and the learning approach, which aims to address those issues which failure cases have shown to be important, i.e. social and behavioural issues.

Firstly, literature on ISD methodologies was discussed. This included a critique of the mental construct concept, which incorporates values amongst other elements, and it was concluded that research specifically on values would lead to more relevant and focussed findings than research on the mental construct as a whole. Systems developers use an element of their 'mental construct', their values, to guide their actions. These actions are like building blocks which, when combined, make up a project so it is helpful to understand how values guide their actions and determine the outcome of the project. Corporate values are also relevant because individual systems developers work in a corporate culture under the influence of corporate values. If a methodology is used, the type of methodology selected by the company is likely to reflect corporate values.

Secondly, literature on ISD success and failure was discussed. The literature claims that social and behavioural factors are responsible for project success and failure but there is a lack of detailed description. A case was made for investigation of personal values of systems developers to provide a structure for examining social and behavioural factors. The rationale was that it would involve observation of systems developers working together on projects.

The Spranger (1928) categorisation of values was chosen as the most appropriate for this research and illustrated by discussing the relevance of Spranger's classes of values to ISD research. Strengths and limitations were discussed.

Finally, support for the research question was gained by analysing some definitions of success and failure in the context of values. It reinforced the need to research corporate values, personal values and the interplay of the two.

These findings provided overwhelming evidence in support for the final research question, 'What is the impact of values on systems development' and a strong case in favour of a specific research method, i.e. an interpretive case study.

CHAPTER 3

RESEARCH METHODS

Summary

Chapter 2 has already indicated a preferred research method, i.e. an interpretive case study. Chapter 3 now further justifies the research approach by considering the philosophical underpinnings of the interpretive case study method, explaining why it is appropriate from an epistemological and ontological perspective. It also describes how the research methods were carried out in practice, incorporating comment on methodological issues.

3.1 Introduction

Chapter 2 arrived at the research question, ‘what is the impact of values on ISD?’ as the most appropriate means of gaining new knowledge on social and behavioural factors in ISD. It also recommended the use of an interpretive case study method as the best research approach because:

- This would be the best method for obtaining *detailed description*, essential for addressing a perceived gap in the literature, hence gaining new knowledge.
- The research needs to include data on corporate values, personal values and the interplay between the two. This could be done most effectively by studying a project in the context of an organization, i.e. in its natural setting.
- The research seeks to obtain data on the impact of values in ISD, which results in observable behaviour of systems developers. Therefore, this requires observation to produce descriptions of behaviour from an external viewpoint and interviews with developers to gain data on their internally held values. As shown in Chapter 2, measures and statistics are inadequate means of producing detailed description.
- It is clear from the preceding points that the research relies heavily on interpretation by the researcher of Spranger’s (1928) definitions of values

and their application by systems developers. Therefore, the researcher becomes an important tool in the research and the need for an interpretive approach must be acknowledged.

The overall aim of this chapter is to demonstrate an awareness of philosophical and methodological issues, to describe how the research was done in practice and to evaluate the research approach.

3.2 Philosophical issues underlying the rationale for using an interpretive case study approach to research the impact of values on information systems development

3.2.1 Justification for the interpretive case study approach

This research is being carried out in a period during which qualitative methods in IS research are more acceptable to the IS community than they were in the 1970s and early 1980s, supported by authors such as Walsham (1993, 1995), Klein and Myers (1999), Lee, Liebenau and DeGross (1997) and Mumford (in Trauth, 2001) whose ethical stance and people-focussed research interests survived the strong influences of positivist culture in IS research in the 1980s. A review of issues and trends in qualitative research in IS states that many current IS researchers learned research methodology at a time when quantitative analysis was deemed the only legitimate scientific approach (Trauth, 2001). Research on values in IS in the 1980's by Mumford (1981) and Kumar and Welke (1984) used a positivist approach and produced statistics to prove and disprove hypotheses. As explained earlier, this does not lead to detailed explanations of how values impact systems development. The use of qualitative methods for this research aims to address that gap in the literature.

The following points summarise the philosophical basis for the research design for studying of the impact of values on systems development.

- *It is inductive*

Gill and Johnson (2002) propose parallels between inductive and deductive reasoning and Kolb's experiential learning cycle, illustrated in Figure 3.1.

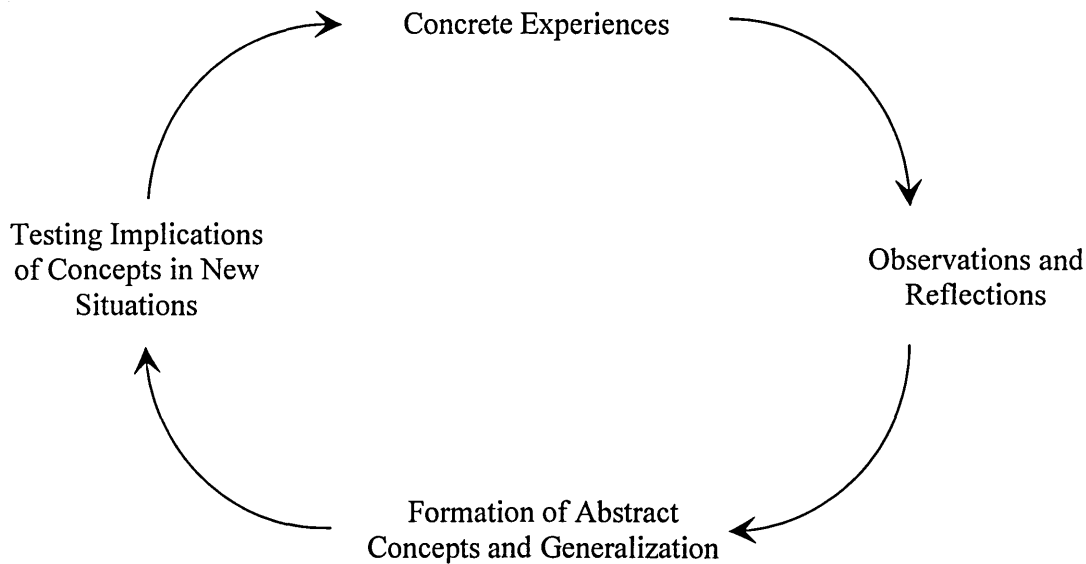


Figure 3.1 Kolb Learning Cycle
Source: Gill and Johnson (2002:30)

Observations and reflections lead to formation of abstract concepts and generalisations, or theories. This is an inductive process and is represented by the right hand side of the cycle. These theories may then be tested in new situations, represented by the left hand side of the cycle. This is a deductive process. Acquisition of new knowledge may take place by either induction or deduction or a cyclical process involving both. In describing the discovery of DNA by Crick and Watson, Watson describes how, during the research, Crick would oscillate furiously between proposing new theories then doing experiments to test them, frequently spurred on by boredom of the phase he was currently in! (Watson, 1968).

The research reported in this thesis moves around the cycle, starting at the bottom. The mental construct is an abstract concept proposed by Jayaratna (1994) and described in Chapter 2. The case study research tested it out in a specific situation. This led to concrete experiences that were observed and reflected upon, presented in Chapters 4 to 7, leading to some generalisation, presented in Chapter 8. Further research would take us round the cycle again, using the conclusions from this research to create new research proposals to be tested.

The Kolb learning cycle is a simplistic model that demonstrates the cycle of induction

and deduction that occurs in research. A more sophisticated model showing the inductive-deductive cycle of the research process is the research wheel, proposed by Rudestam and Newton (1992:5). Please see Figure 3.2. This suggests that research is a recursive cycle of steps that are repeated over time.

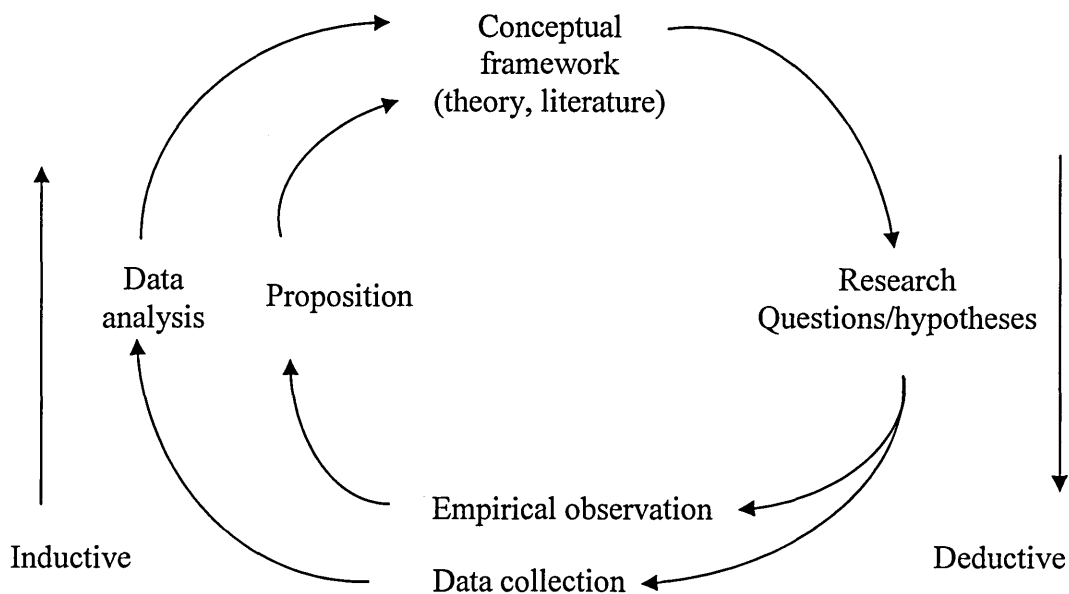


Figure 3.2 Rudestam and Newton's Research Wheel
(adapted from Rudestam and Newton (1992:5))

The research in this thesis can also be explained in terms of Rudestam and Newton's research wheel. It started with a research question, based on theory and literature about the mental construct. Empirical observation, described in preliminary studies in Chapter 4, moved the research on to the inductive part of the cycle and formation of a proposition concerning the supreme importance of values over other mental construct elements, thus narrowing the research focus. As explained by Rudestam and Newton (1992:5) "The inductive process serves to relate the specific topic to a broader context and begins with some hunches of the form, 'I wonder if ...'" In this research, the first hunch about the importance of values led to the research question, "What is the impact of values on information systems development?" This moved the research into a deductive phase, with the hypothesis that values are important in ISD. Data collection and analysis took place (results presented in Chapters 5 to 7). This is related back to the literature and a proposal for how values impact ISD is described in Chapter 8.

- *It has a non-positivist epistemology*

Much debate has taken place in the literature about positivist and non-positivist epistemologies and the science and social divide ((Hughes, 1990; May and Williams, 1998; Williams and May, 1996). Originally, a positivist epistemology dominated, stating that what is knowable is an unequivocal reality (Ashworth, 1997), an objective truth (Cassell and Symon, 1994). Social science research and its findings were seen as anecdotal (Maykut and Morehouse, 1994), 'Will o' the wisp counterpart to solid fact' (Atkinson, 1990). In the past few decades recognition has been given to an alternative epistemology, interpretivism, which counts the interpretations and description given by humans to human situations as knowledge.

There are no 'determinate characteristics' or 'unequivocal reality' (Ashworth, 1997) concerning knowledge of values and how they affect actions. Values are intangible, they are part of a person's characteristics and they can only be observed or reported by individuals and are therefore open to interpretation. The creation of definitions of values and the application of these definitions is also open to interpretation by different individuals; therefore a non-positivist epistemology is appropriate.

- *It has a nominalist ontology*

The scientific approach limits what is knowable. It takes an ontological perspective that reality is hard, measurable fact – a realist ontology. A nominalist ontology states that reality is the product of individual consciousness (Burrell and Morgan, 1979) and would include social constructs such as attitudes, beliefs, views, understandings, motivations, cultural or social constructions, experiences, rules, morality, belief systems (Mason, 1996).

The researcher's ontological perspective is that personal values and resulting action, as described by the subject and observed by the researcher, count as knowledge.

- *Results are needed from research in natural settings*

It is desirable to produce knowledge of subjects in natural settings for this research topic because awareness of the organisational context is integral to the research question.

- *Qualitative data is required so qualitative methods are necessary*

Findings of a qualitative nature are valid where detailed description is required, thus requiring qualitative methods in this research. Many authors distinguish between qualitative and quantitative research approaches in the literature e.g. Halfpenny (1979) in Silverman (2000:2) contrasts the features of the two approaches as follows:

qualitative methods – soft, flexible, subjective, political, speculative, grounded;
quantitative methods – hard, fixed, objective, value-free, hypothesis testing.

Description and explanation are required for this research, rather than statistical data.

- *An interpretive approach is needed*

The fact that the experimental approach avoids potential ‘problems’ of researcher bias is seen as desirable in the realm of science. In contrast, the social scientist would see the presence of a reflexive researcher with their interpretative skills and human insights as a potential bonus that may lead to a rich source of data. The latter is true of this research.

Therefore, this research requires a non-positivist epistemology; a nominalist ontology; it should begin with an inductive approach but be open to the possibility of moving around an inductive-deductive learning cycle; it would expect to produce findings that are qualitative including description and explanation; these findings should be described from the natural setting and the researcher should expect her interpretations to make an important contribution to the findings. An interpretive case study approach meets all of these requirements.

A range of suitable methods exists to operationalise this research design and these are discussed in section 3.3. Gill and Johnson (2002) classify five research methods on a nomothetic-ideographic continuum from laboratory experiments at one extreme to ethnography at the other. Please see Figure 3.3. They claim that “nomothetic methodologies have an emphasis in the importance of basing research upon systematic protocol and technique” and “ideographic methodologies, on the other hand, emphasise the analysis of subjective accounts that one generates by ‘getting inside’ situations and involving oneself in the everyday flow of life” (Gill and Johnson, 2002:44).

Nomothetic methods emphasize		Ideographic methods emphasize
1. Deduction	vs	Induction
2. Explanation via analysis of causal relationships and explanation by covering-laws (etic)	vs	Explanation of subjective meaning systems and explanation by understanding (emic)
3. Generation and use of quantitative data	vs	Generation and use of qualitative data
4. Use of various controls, physical or statistical, so as to allow the testing of hypotheses	vs	Commitment to research in everyday settings, to allow access to, and minimize reactivity among the subjects of research
5. Highly structures research methodology to ensure replicability of 1, 2, 3 and 4	vs	Minimum structure to ensure 2, 3 and 4 (and as a result of 1)

Laboratory experiments  ethnography

Figure 3.3 Research methods: nomothetic-ideographic continuum
(Gill and Johnson, 2002:44)

It is clear from comments above that ideographic research methods are required in this research and that an ethnographic approach would be suitable, which “allows the field worker to use the socially acquired and shared knowledge available to the participants to account for the observed patterns of human activity” (Gill and Johnson, 2002:123). Since the research will be conducted in a natural setting and there is a defined unit of study within the organization, this can also be called a case study. This aligns with the ethnographic approach because, as stated by Yin (1994), “In brief, the case study allows an investigation to retain the holistic and meaningful characteristics of real life events’. Further support for viewing this research as a case study comes from Yin’s (1994) claim that a case study is advantageous when a how or why question is being asked and the investigator is exploring a situation, in context, over which he has little or no control. Typical techniques for doing this include interviewing, observation and document analysis.

3.2.2 On interpretation and the role of the researcher as interpreter

It is helpful to compare and contrast the role of interpreting as practiced by a foreign language interpreter and the researcher seeking to produce findings on the impact of values on ISD. The language interpreter listens, translates and presents the translation to her audience. The IS researcher observes and interviews, translates findings into relevant data and presents findings to the community of interested parties.

Riessman (1993) proposes five levels of representation of primary experience which may be applied to the foreign language interpreter and IS researcher taking an interpretive approach:

1. attending
2. telling
3. transcribing
4. analysing
5. reading.

The linguist only needs to do the first two and her task is relatively simple. She attends to all that the speaker says then she interprets the meaning, translates it and tells the result to her audience. The results are likely to be the same or very similar regardless who is doing the interpreting.

The IS researcher's task is more complex, using all five levels. At each of levels 1-4, the results are dependant on the researcher's characteristics, especially level 1, attending. In contrast to foreign language interpretation and translation, the findings are heavily dependent on the characteristics and skills of the person doing the research, as shown below, based on Lauener, (2002) and presented in Appendix 1.

1. Attending

The observation and interviews, which take place in the case study organization, involve researcher-subject interaction (Stake, 1995). As stated by Burrell and Morgan (1979:28) she "seeks explanation within the realm of individual consciousness and subjectivity, within the frame of reference of the participant as opposed to the observer of action", i.e. she needs to try to get into the frame of mind of the systems developers she is observing to try to understand the values they are applying in the project. Yin (1994) warns that it is important to avoid bias, or 'going native' (Bryman, 2001). This requires the researcher to balance neutrality as an observer with empathy for the views of the subjects.

When doing observation or listening to the subject speak in a semi-structured interview the researcher has to make choices about what she selects to pay attention to and the line

of questioning that she chooses to follow. Certain things become meaningful and others are ignored. The researcher here is looking through a values-focussed lens (Walsham, 2001), selecting observations and seeking comments which she interprets as examples of values in action, based on her interpretation of Spranger's categorisation of values.

According to the literature, several interpersonal skills are necessary for effective 'attending'.

- Yin (1994) believes that the researcher will need skills in question asking, listening, adaptiveness and flexibility, grasping the issues being studied.
- She will need to be sensitive to the context (Mason, 1996). This was made easier in the research described in this thesis because preliminary studies were carried out in the case study organization, which provided useful experience of the environment and culture.
- While in the field, Stake (1995) believes that researchers need to rely on intuition and to keep attention free to recognise problem-relevant events, i.e. the researcher must avoid distraction. This is implied by Ashworth (1997) who states that interpretive (hermeneutic) research highlights matters of relevance to the interests of the research, i.e. the researcher must choose to record relevant data and ignore irrelevant data.
- Cresswell (1998) believes that the researcher's role is as an active learner. This was possible in the research described here because of the extended period of contact with the organization, during which the researcher could reflect on early experience and learn from it.
- Mason (1996) states that the research should involve reflexivity by the researcher, who should be capable of self-scrutiny.

Based on self-reflection, peer feedback and results of personality and psychometric tests, the researcher is quite confident that she possesses most of the requirements indicated above. She was classed as Introverted, Intuitive, Feeling, Perceiving (INFP) by a Myers Briggs Type Indicator carried out in September 2003. INFPs are described as openminded, understanding, flexible and adaptable. They place much emphasis on values, which is highly relevant for this research project because the researcher is more

likely to be aware of others' values if she places importance on her own values. In a values questionnaire compiled by the careers consultancy MyPotential and completed in November 2003, the researcher had high scores for intimacy, altruism, social values and trust. These are helpful to this research because they indicate the ability to relate closely and openly to people, necessary for a good rapport with subjects in the research. A learning styles questionnaire completed in November 2003 shows that the researcher prefers reflective, intuitive, visual and global as opposed to active, sensing, verbal and sequential styles of learning. This means that she should be open-minded and flexible when doing fieldwork, quick to grasp situations and able to reflect quietly on findings when out of the field.

2. *Telling*

When writing observation or interview field notes, the researcher interprets the original words and actions and re-presents the information in written form, ordered to some degree. For practical reasons, she must be skilful in selecting relevant data because it is not possible to record everything. However skilful she is, she is limited by the fact that she does not have direct access to the systems developers' experience. She is dealing with ambiguous interpretations of it (Riessman, 1993).

3. *Transcribing*

Hand written observation notes may be transcribed as a document, with the potential for further ordering and selection of material. Again, this requires skill in selecting relevant data and presenting it faithfully. When interviews are transcribed and analysed using a computer analysis package such as *NVivo*, the selection of categories and allocation of data to them is at the researcher's discretion.

4. *Analysing*

The researcher extracts data from the text, which she interprets as relevant to the research question and analyses it to produce findings. Mason (1996) describes this as building explanations that will involve understanding complexity, detail and context. All of this depends on the researcher's skills in selection, analysis and sense-making.

5. *Reading*

By the time the findings reach the reader, the original data has been interpreted several

times by the researcher. This explains Stake's (1995) claim that ultimately, the interpretations of the researcher are likely to be emphasised more than the interpretations of those people studied. Then, people who read the researcher's findings bring their own interpretations and meanings to bear.

This discussion of the role of the researcher in interpretive research demonstrates its highly subjective nature. As stated by Burrell and Morgan (1979:28), "The interpretive paradigm is informed by a concern to understand the world as it is, to understand the fundamental nature of the social world at the level of subjective experience". Walsham (2001:7) also shows the key role of the researcher when he describes interpretive research as telling a truth "through the lens of his or her subjectivity," giving the researcher's own ideas concerning the phenomenon at issue.

3.2.3 Reflections based on Trauth's 5 factors influencing the choice of qualitative methods in IS research

The discussion of philosophical issues will be concluded by reflecting on the research approach in the context of an appropriate and helpful set of five factors influencing choice of qualitative methods in IS research described by Trauth (2001):-

1. The research problem
2. The researcher's theoretical lens
3. The degree of uncertainty surrounding the phenomenon
4. The researcher's skills
5. Academic politics

The research problem: It has been shown that the nature of the research problem demands exploration and description, resulting in qualitative rather than quantitative data.

The researcher's theoretical lens and the researcher's skill: These are highly relevant factors in determining the choice of qualitative methods and an interpretive approach in this research. The research question on the impact of values and interpretive case study method allow the researcher to use her natural skills and abilities and personal characteristics to best effect in this research. She is highly sympathetic to the

interpretive approach, convinced of the appropriateness of it for this research and enthusiastic about the topic. Therefore, a firm belief in the value of a non-positivist epistemology for this research forms the researcher's theoretical lens.

The degree of uncertainty surrounding the problem: The impact of values on ISD involves some uncertainty because it is not easily measurable. Instead, it relies heavily on interpretation by the researcher to record and analyse systems developers' behaviour in terms of values, an intangible concept.

Academic politics: The trend towards greater use of qualitative methods in IS research reassures the researcher that her approach will be counted as legitimate and acceptable.

3.3 Putting the research methods into practice in 3 phases of research activity - survey, interviews and interpretive case study

Kvale (1996) defines methods as a route to a goal. Section 3.2 clarifies the research goal and the type of data sought. The goal is to answer the question, 'What is the impact of values on ISD?' and the type of data sought is qualitative data. This section describes how the methods were put into practice during 3 phases of research activity to gather the required data. It also includes some discussion of methodological issues.

Please see Figure 3.4.

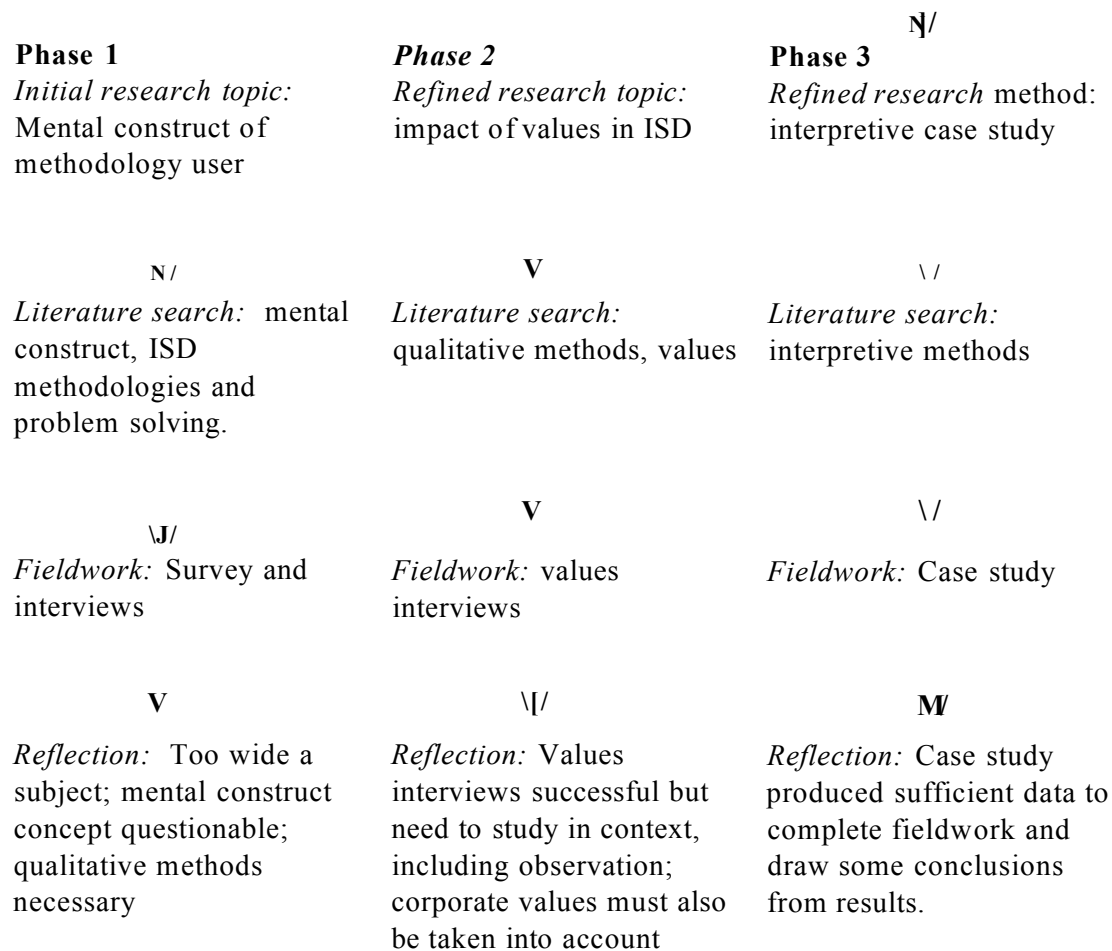


Figure 3.4 Diagram showing three cycles of action learning leading to final research question and application of interpretive case study method

As shown by Figure 3.4, the research took place in three phases as the approach progressed.

During Phase 1 the survey on methodology use and the mental construct in a large financial organization was conducted. This started a cyclical learning process during which the research approach developed by a combination of experiential learning, reflection on research findings and increased experience in use of qualitative research methods.

During Phase 2 an interview guide on values and information systems development was created and piloted and further interviews were conducted.

At the start of Phase 3, the useful knowledge and experience gained from the preliminary studies were excellent preparation for the final stages of the interpretive case study. Observation, document analysis and further interviews completed the research.

3.3.1 Phase 1. Preliminary studies Part 1: An investigation of the role of the mental construct in systems development using questionnaire survey and interviews at Prosper plc

The 'mental construct' of ISD methodology users was a concept suggested by Jayaratna (1994) as part of the NIMSAD framework. As described in Chapter 2, it was felt worthy of investigation because of its potential contribution to knowledge on information systems failure. This was shown both from reviewing literature on ISD methodologies and information systems success and failure. It was also supported by reasoning that in any problem-solving situation involving people, personal characteristics are bound to have an impact. The mental construct is a suggested model of personal characteristics relevant to ISD. Therefore an investigation of ISD using the mental construct model could be helpful in explaining behaviour when systems are developed, whether successfully or unsuccessfully.

Gaining access to the research organization – Prosper plc

For this research question, an understanding of the context is vital because the NIMSAD framework shows mental construct of the methodology user operating within the context of an organization. Thus it was decided that access should be sought to an organization where it was possible to build up a good relationship over a period of time sufficient for in-depth research.

It was decided that a survey would be an appropriate research method to begin the case study because it would lead to a useful product for the organization, in addition to helping with the research. Observation following the survey would be useful to complement the survey findings and enable data to be gathered on topics not amenable

to survey questions.

The process of negotiating access began by writing to a senior manager. A meeting was set up to discuss the proposed research. The research topic was described to the senior manager as an investigation of the use of systems development methodologies by doing a survey and work shadowing. The intention would be to use the research to cover issues of interest to both the organization and the research. This was agreed subject to signing a confidentiality agreement. A contact was given who acted as a liaison for the research during the project, provided useful background information on the organization and acted as gatekeeper and sponsor (Bryman, 2001: 295). He arranged contacts in the IT department, reviewed the final draft of the survey and advised on production of the report. The gatekeeper also gave permission for the survey and for pre- and post-survey interviews .

Fieldwork and methods

Phase 1 took place in three stages from May 1999 to October 1999. The three stages comprised pre-survey interviews, the survey by questionnaire and some follow-up interviews.

Stage 1: Semi-structured interviews prior to survey

Methodological issues

Advice on the practice, benefits and limitations of the interview approach were found in Kvale (1996), Mason (1996), Silverman (1993) and Douglas (1985).

The exact method of conducting a qualitative research interview ranges from unstructured to highly structured. A semi-structured interview approach is preferable for this research because it allows interaction with the interviewee in a flexible fashion but with some underlying structure and consistency in questions. This flexibility will allow the interviewer to tailor the questions and follow leads intuitively.

In comparison to using the postally administered questionnaire, the semi-structured interview approach was beneficial to this research because:

1. In addition to the words spoken, the interviewer could also note tone of

voice and body language to enrich the communication.

2. It was possible to follow up leads that look promising and to ask ad hoc questions.
3. It was possible to clarify questions and answers if necessary.
4. The information provided was first hand, up to date and explained in context.

Awareness of limitations of the qualitative interview approach at the beginning of the research helped refine later approaches to the research and included the following:

1. Partial understanding of the organizational context.
2. The interviewees may not have given full and true answers or may not have been self-aware. Therefore it was essential to build up a good rapport, assure them of confidentiality and create an open and relaxed atmosphere where the interviewee could talk and act as naturally as possible.
3. Time was limited and the interviewer must respect the needs of a busy professional. Careful timing was also needed with very talkative interviewees.
4. Words are a limited form of expressing a person's inner world. The interviewer therefore relied on her skill in interpreting the responses including non-verbal communication. This included trying to identify any relevant data of which the interviewee was not consciously aware. It entailed developing and verifying 'hunches' (proposals).
5. Descriptions of actions in the workplace were only a verbal account of the interviewee's perceptions as interpreted by the researcher - the observed reality may be different. This shows that observation would be a useful complement to the interview approach.

Conducting fieldwork

Please see Figure 3.5 for a summary of the aims, data gathered and outcomes of the pre-survey interviews.

The purpose of the pre-survey interviews was to find out from contacts at several levels in each of the seven departments of the IT headquarters what they saw as the main

issues concerning use of their in-house systems development methodology (SDM). These would then be incorporated in the survey questions, together with the researcher's questions on mental construct elements. The follow up interviews would complement the questionnaire by giving opportunity to ask questions which would reveal information on mental construct elements unsuitable for the questionnaire method, e.g. reasoning ability, perceptual process.

Semi-structured interviews prior to survey

Aims

1. To find out what users of the organization's information systems development methodology thought were the main issues concerning its use.
2. To build up relationships with the organization.

Data gathered

Hand-written notes from 15 interviews conducted during May and June 1999

Outcomes

Recurring themes resulting from analysis of field notes provided suggestions for questions for the survey which were of interest to the organization

The researcher gained an awareness of the overall culture within the organization and differences between departments.

Figure 3.5 Summary of aims and outcomes of semi-structured interviews prior to survey

Sessions of 1 hour were arranged at the organization with each of the contacts. The interviews were semi structured in that the researcher had a list of topics to cover but was flexible in conduct of the session, allowing interviewees to bring in their own issues. Hand written notes were made as it was felt unnecessary to tape the interviews at this stage in the research because only general details on issues of interest were sought. Also, it was believed that the respondents may feel more open and at ease if the interview were not taped. Respondents were assured that a confidentiality agreement had been signed with the organization and also that personal views expressed by individuals would be treated in confidence in keeping with ethical guidelines for the Social Research Association (Bryman, 2001:476) as described on their website.

Reflections

The **outcomes** are listed in Figure 3.5. The semi-structured interviews prior to the survey served a useful purpose in familiarising the researcher with the culture of the organization, which was helpful in informing overall presentation and administration of the survey. It also meant that the report on results would be useful to the organization as it covered issues that they were interested in.

Stage 2: Survey by questionnaire

Please see Figure 3.6 for a summary of the aims, data gathered and outcomes of the survey by questionnaire.

Survey by questionnaire

Aims

1. To provide the organization with information on staff attitudes to issues pertinent to use of their methodology.
2. To provide the researcher with quantitative data on questions relevant to some of the mental construct elements.
3. To provide qualitative data from open-ended questions.

Data gathered

Questionnaire responses from 544 individuals (42% response rate) during July and August 1999

Outcomes

Analysis of questionnaires using SNAP software provided quantitative data relating to some mental construct elements

A report was produced for the organization

The researcher acquired details of individuals at all levels willing to do follow-up interviews.

Figure 3.6 Summary of aims and outcomes of survey by questionnaire

Methodological issues

A summary of planning the survey, based on Gill and Johnson's (2002), is given in Figure 3.7.

Conceptualisation and structure of the research problem was done in Chapter 2.

The survey conducted in this research was *descriptive* as opposed to analytic because it is “concerned primarily with addressing the particular characteristics of a specific population of subjects” (Gill and Johnson, 2002:98). The research problem was investigation of attitudes to use of the SDM methodology. This included looking for evidence of the operation of mental construct elements in applying the methodology.

Identification of phenomena involved combining issues identified in pre-survey interviews with the researcher’s interests.

A *sampling strategy* was not necessary because the questionnaire was issued to the whole IT department.

Data were collected through one approach using a *postally administered, respondent-completed questionnaire*. Department administrative staff issued verbal reminders.

In broader philosophical terms, this method takes an inductive approach rather than deductive because it is being used to explore an area, similar to ethnographic approaches. Theory may be developed inductively, to be tested later.

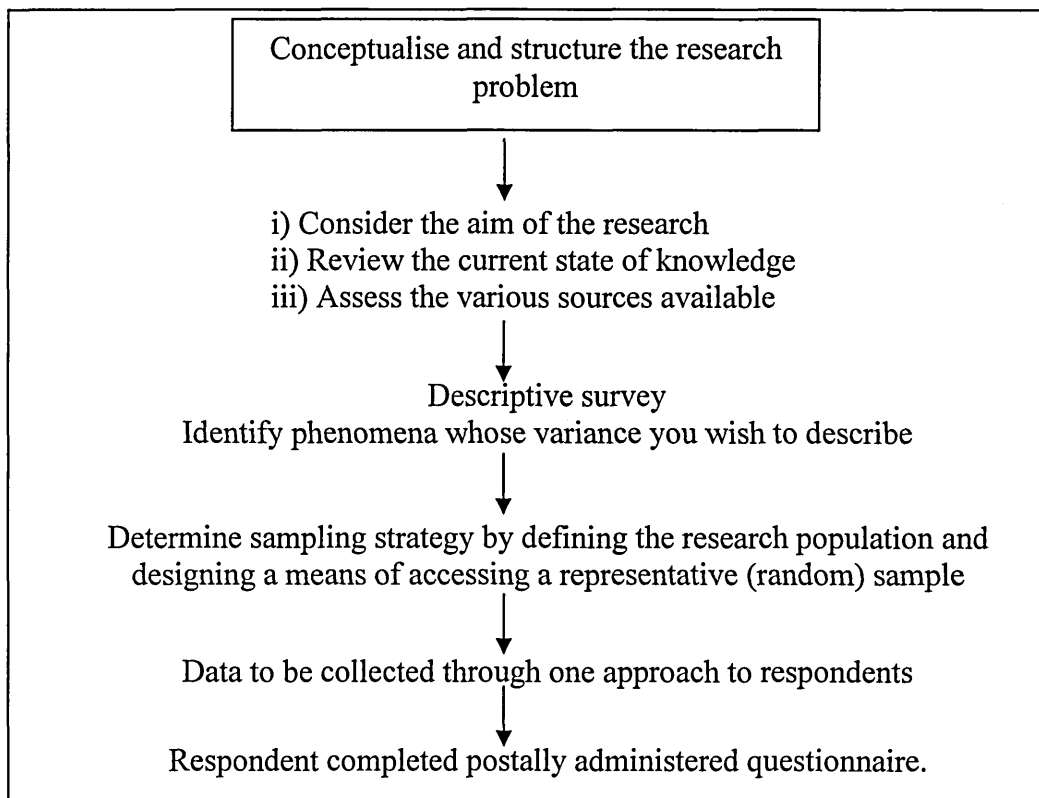


Figure 3.7 A summary of planning the survey, adapted from Gill and Johnson (2002)

An overview of the method used to design the survey research is presented by applying the stages shown in Figure 3.8, based on Gill and Johnson (2002:99).

Determine questionnaire format

i

- i) Focus
- ii) Phraseology
- iii) Necessary form of response
- iv) Sequencing and general presentation

Fieldwork

- i) Piloting study to correct errors and biases in questionnaire proforma
- ii) Contact main sample
- iii) Monitor progress

j

Retrieval and analysis of data

Write up the findings and the rationale behind the research design

Figure 3.8 The questionnaire format - adapted from Gill and Johnson (2002:115)

Questionnaire format

Focus

There were two foci for the questions devised - issues of interest to the organization, and issues relevant to the research question i.e. the mental construct of systems developers. The organization's issues were comprehensively and concisely covered by the questions asked. Of the mental construct elements, experience, structuring processes, models and frameworks, skills, knowledge and role could be partially investigated. The difficulty of asking survey questions on perceptual process, reasoning

ability, motives, prejudices, values and ethics would be addressed by follow-up interviews. This would also give opportunity for further questions on the other elements to complement survey findings.

Phraseology

A covering letter described the purpose of the questionnaire. An assurance of confidentiality was given and respondents were urged to give their true feelings. Clear instructions were given for return of the questionnaire. Wording of the questions was aided by the contact made with the organization during the pre-survey interviews. This gave the researcher an awareness of appropriate terminology.

Form of response

The required responses were elicited by a range of question types: multiple choice questions, yes/no questions, ranking items in lists, open-ended free-format questions, Likert scale questions on attitude and factual questions requiring numerical answers.

Sequencing and overall presentation

The questionnaire was neatly presented and fitted on to 4 double-sided A4 sheets. There were 20 questions in total and some of these were multi-part. The questions were divided into sections with brief descriptions introducing the theme of the questions. Questions on personal details were placed as advised by de Vaus (1993) and Bell (1993), who recommend that respondents are more likely to answer personal questions if put at the end of the questionnaire, when they will feel more committed to completing it.

A copy of the covering letter and questionnaire is provided in Appendix 2.

Fieldwork

Pilot

A pilot questionnaire was tested on a small group of staff at different levels and from different departments. Resulting comments were incorporated into the final design.

Administration

Distribution took place via departmental secretaries at the organization and questionnaires were returned to the researcher by pre-paid envelope. A return deadline date three weeks from date of issue was given. Departmental heads were helpful in encouraging return of the questionnaires.

Analysis

It was intended that the statistical computer package SNAP would be used for data analysis to produce results for the organization. Comments from open-ended questions were transcribed separately.

Results

Results from all questions were compiled into a report for the organization in a suitable format, which included an executive summary followed by more detailed results in the form of pie charts and bar charts. At the request of the organization, there was also a breakdown of results by department and some comments on differences between departments.

Outcomes

Of the questions that had been designed specifically on mental construct elements, the findings were mostly in the form of quantitative data. No detailed qualitative data was produced which would explain how mental construct elements operate. However, fifty people volunteered to do follow-up interviews to enable gathering of qualitative data to complement the quantitative data from the survey.

Stage 3: Semi-structured follow-up interviews

Please see Figure 3.9 for a summary of aims and outcomes of the semi-structured follow-up interviews:

Follow-up interviews – semi-structured

Aims

To gather qualitative data by:

1. Asking questions on mental construct elements, which the questionnaire could not cover.
2. Clarifying answers to some questions in the questionnaire.
3. Finding out other possible factors that influence the behaviour of systems developers, which are not covered by the proposed 'mental construct' elements.
4. Getting some examples of 'mental construct' elements in action - i.e. to find out which tasks are affected by the system developer's 'mental construct' or personal characteristics.

Data gathered

Hand-written notes from 10 interviews conducted during August and September 1999.

Outcomes

Analysis of data showed some recurring themes, a large range and variety of personal characteristics of individuals and some examples of the way that project tasks are affected by individuals' characteristics. It highlighted the importance of personal values.

The importance of corporate values was shown.

In discussing some responses, it was clear that some questions could be interpreted in several different ways, hence showing some limitations of the questionnaire approach. Useful experience was gained which helped in design and conduct of semi-structured interviews on values.

Some insights were gained into the advantages and disadvantages of doing hand-written notes.

Figure 3.9 Summary of aims and outcomes of semi-structured follow-up interviews

Some of the respondents who had volunteered in the survey to do follow up interviews were contacted. The choice was purposive, partly determined by availability, and included people from a range of levels and departments. Sessions of one hour were arranged at venues away from the organization, often over lunch in a neutral setting. The aim was to create a relaxed and informal atmosphere to encourage open and frank conversation. Before the interview the responses on the interviewee's questionnaire were read to gain some ideas about their attitudes and to form some proposals. At the start of the meeting, the researcher assured the interviewee that what they said would be treated in confidence and that no one else would see the notes made. As a starting point for the discussion, some of the answers given on the questionnaire were introduced to

check hunches about the interviewee's attitudes. Interviewees were allowed to steer the conversation and talk about what energised them and what they felt strongly about and the researcher only intervened as necessary to keep the conversation on topics that could reveal information relevant to mental construct elements. This was achieved by questions that inquired into what motivated the individual in their behaviour and attitudes at work. Hand written notes were made as use of a tape recorder would have been impractical in the setting and may have created a less open atmosphere.

Outcomes

While the outcomes of the research completed so far had proved the relevance of all of the proposed mental construct elements in ISD, it was decided at this stage that narrowing the focus to values would be the most appropriate way to continue because of the high relevance of both corporate and personal values shown in the research findings to date. Values guide action and it is the combined *actions* of systems developers that produce the project outcome, as explained in Chapter 2.

3.3.2 Phase 2. Preliminary Studies Part 2: An investigation of the impact of values on systems development using semi-structured interviews

The decision to narrow the focus of the research from investigation of the mental construct to investigation of values was arrived at as a result of the first phase of the research, as explained at the end of the previous section.

Time spent in the organization, together with some questionnaire and interview responses, created awareness of the strong influence of corporate values, standards and culture in the organization. Therefore, when investigating values of systems developers, it was necessary to take into account the corporate values within which they operate. Also, the attitudes of developers to corporate values are important. Prosper plc had many rules, standards and procedures that were essential to provide a secure and reliable service to customers. Most of the employees at the organization appeared fairly compliant with the rules. The highly structured methodology for systems development was a manifestation of the strong culture of control of projects, aiming to reduce risk of failure to a minimum.

It had become clear that the nature of the research question was one that required qualitative methods and that interviews had been very successful. While the questionnaire produced some useful quantitative data on certain mental construct elements, the pre- and post-survey interviews were more fruitful in producing relevant qualitative data on values. Interviewing is a research method that allows exploration of an individual's values by asking them to describe what they think their values are and how they put them into operation at work. Some of the follow-up interviews on mental construct elements had already shown that developers have values, motives and underlying beliefs that determine how they do some of their work on projects. Figure 3.10 summarises the fieldwork and outcomes.

Fieldwork and Methods

Semi-structured interviews on values

Aims

To obtain qualitative data on information systems developers' values and how they affect their work.

Data gathered

11 tape-recorded interview transcripts covering five set themes relating to values, carried out during November 1999 - July 2000

Outcomes

Answers to planned questions plus other information volunteered by the interviewee, often covering other 'mental construct' elements.

Built up more contacts.

More practice at conducting interviews.

Researcher becoming aware of the interpretive nature of this investigation.

Figure 3.10 Summary of aims and outcomes of semi-structured interviews on values

Development of an interview guide

An interview guide was used to aid consistency in approach and it also helped the interviewer cover all relevant topics. Five themes were chosen and within each theme, a number of questions were listed. Please see Figure 3.11.

INTERVIEW GUIDE

THEME 1 - Factual, Related to Work

What is your job title and grade?
What phases of the systems development life cycle do you work in?
How exactly are you involved?
What does your daily work involve?

_____ ***THEME 2 - Self-assessment of Values*** _____

Looking at the six types of values identified by Spranger, which of these sounds most like you?
Which of these are definitely not you?

THEME 3 - Values into Action at Work

What areas of your work do you feel your values can influence?
What do you value about work?
What are your main priorities (e.g. successful projects?)
What gives you satisfaction at work?

_____ ***THEME 4 - SDM, Prosperpic and Values***

Are you aware of any conflicts between:
SDM and your own values?
Prosperpic and your own values?
Other people's values and your own values?
Is SDM as a unifier of values?
Are you aware of any gender differences?

_____ ***THEME 5 - Shaping of Values; Change in Values*** _____

Have any significant life events changed your values? E.g. having a family, doing further study?
What do you think shaped your values?

Figure 3.11 Interview guide for values interviews

The themes and questions were intended to reveal, directly or indirectly, relevant issues on values. It was expected that observations and interpretations by the researcher would complement the verbal answers given by the interviewee. The Spranger (1928) definition and categorisation of values was used because its applicability had been

justified and proved effective in case study research in a government e-learning system development described in Lauener (2002). Please see Appendix 3 for fuller details. Chapter 2 explained possible limitations of the Spranger (1928) categorisation of values, but mechanisms were explained for addressing these limitations and applied in the data collection and analysis.

Theme 1 provided necessary background on daily work. It served to put the interviewee at ease because they were talking about something factual and familiar. It also provided an opportunity for them to express opinions and attitudes, which would then reveal some of their values in general.

Theme 2 introduced the theme of values more specifically and provided a starting point for interviewees to assess their own values by giving the Spranger categories and descriptions. It also clarified the definition of values. Asking interviewees to give a self-assessment of their values was believed to be a valid approach because of Huntley and Davis' (1983) findings on the reliability of self-ratings. The Spranger descriptions are sufficiently structured but open-ended enough to enable the interviewee to interpret the descriptions flexibly and select which they identify with. Although terminology used in definitions of political and religious values was narrow and unhelpful in aiding interviewees to relate findings to their workplace, this was compensated for by flexible interpretation when analysing the data.

Theme 3 included a range of questions designed to reveal how values may operate at work. It also produced findings that could later be interpreted as spiritual values, a theme which emerged later because of its relevance to social and religious values.

Theme 4 aimed to reveal attitudes to corporate values including the standard methodology for systems development projects. It also produced some information on corporate values. In asking the interviewee to compare their own values with others, this was another way of helping them be aware of their values. It also reveals value conflict and mechanisms for dealing with conflict.

Theme 5 asked the interviewee to reflect on how they may have acquired or changed their values. It was not expected that all interviewees would find this easy to answer but

it was seen as another approach to revealing values. It also revealed information on what was centrally important to their lives, another feature related to spiritual values.

Selection of interviewees

A sample of people who had volunteered to do follow up interviews in the questionnaire was used. Individuals were selected on the basis of their position and role. It was realised that values of people at the level of project manager and above have more influence on how the project is done because of their position of responsibility, than programmers and testers who operate under the project manager's guidance. Therefore no programmers and testers were selected for interview.

Conduct of the interview

Sessions lasting one hour were arranged in a meeting room on the organization's premises. It was explained beforehand that it would be preferable to tape-record the interview to get an accurate recording of answers in a convenient manner. At the start of the interview, confidentiality was assured. It was explained that no one else would hear the tape or see the transcript. An overview of the research aims was given, followed by a brief explanation of how the interview would be conducted. Initially, questions were asked in the order on the interview guide but if the conversation strayed onto other themes, this was allowed to happen to keep the flow natural. The agreed time slot of one hour was honoured and the interview was concluded.

Use of tape recorder

This freed the researcher to maintain eye contact with the interviewee and modify the order of questions on interview guide as appropriate. Also, it gave a richer, more accurate and complete set of data than hand written notes which inevitably are selective.

Transcription of interviews into electronic format

This was necessary to allow analysis to take place either manually or using computer based analysis tools.

Outcomes

Data was gathered on each of the five themes in the interview guide. The interview guide worked well and the use of Spranger's descriptions of values (1928) worked well

in that interviewees had no difficulty deciding which values they thought they applied in practice. Interviewees were able to describe what they thought their values were and how they put them into operation at work and they were usually aware of the influence of corporate values. The focus of the research, therefore, seemed appropriate and hunches about corporate values had proved correct. The main shortcomings were that in using interviews it would be impossible to know whether or not the interviewee were truly representing their practice in a project situation and much was left to the interpretation of the researcher. This highlighted the value of the interpretive case study approach including observation of a work situation in the context of a project combined with interviews and document analysis.

3.3.3 Phase 3. An investigation of the impact of values on systems development using an interpretive case study

The outcomes of phase 2 recognised that interpretation by the researcher was an integral part of the research. A combination of observation, interviews and document analysis would give the fullest possible picture of the impact of values on systems development, where values include personal values and corporate values, hence the value of an interpretive case study approach. Before describing how this was put into practice using observation, some important methodological issues need to be addressed on observation because it plays a significant part in the case study and the interpretations of the researcher are central. Interviews have already been discussed in the context of this research; document analysis will be discussed briefly.

3.3.3.1 Observation - methodological issues

Observation complements the interview approach because interviewees may not be conscious of some of their behaviour or may not wish to reveal certain information. An observer may develop hunches about behaviour and underlying values, which can be checked in an interview. The personal characteristics of the observer need to be taken into account because they will affect the collection and interpretation of data.

Issues concerning observation in this research are considered under three headings, based on Mason (1996):

- a Researcher effect and researcher bias

- b Ethical issues
- c Method

a Researcher effect and researcher bias

- i The aim of observation is to observe the subject in their natural setting. The presence of the researcher may cause them to play to the camera (Fielding in Gilbert (1993) or the social role and characteristics of the researcher, e.g. age, sex, ethnicity and experience, may influence the research (Burgess, 1984). However, Punch (in Hammersley, 1993) believes that although individuals may modify their behaviour in the presence of the observer, over a long period they will not maintain the pretence. The intended period of contact with Prosper plc was more than one year, so it was believed that subjects would behave naturally once they were familiar with the presence of the researcher. The intention was to be non-intrusive.
- ii Asking questions could channel responses and it may be more productive to keep quiet. Whyte (1981) reported that as he sat and listened he learned the answers to questions that he would not even have had the sense to ask if he had been getting information solely on an interviewing basis. The intention in observing systems developers at Prosper plc was to be mostly silent during observation, so eventually, the subjects would not notice the presence of the researcher.
- iii Hammersley and Atkinson (1995:f16) point out that “the orientations of researchers will be shaped by their socio-historical locations” and this reflexivity is a major issue. This problem can be counteracted using interviewing, which allows the researcher to check out hunches and interpretations. Due to the extended period of contact with Prosper plc, it was expected that there would be opportunity for informal interviews to check hunches.
- iv ‘Going native’ is another potential problem discussed in the field of social science (Burgess, 1984; Whyte, 1981; Holdaway, 1983; Fielding in Gilbert, 1993; Hobbs, 1988) i.e. when observers “lose their sense of being a researcher

and become wrapped up in the worldview of the people they are studying” (Bryman, 2001:300). The researcher needs to be aware of striking a balance between getting close enough to get non-superficial data but not so close that they begin to identify with the feelings of the subjects. This is an issue that the researcher needed to be careful about during contact with Prosper plc, especially due to her personality type which leads her to sympathise closely with others.

b Ethical issues

- i Ethically, it is preferable to be open about the research intentions, i.e. using an overt approach instead of a covert approach (Punch, 1986) although there may be circumstances when covert research is necessary (Holdaway, 1983). In the case study at Prosper plc, there was no option of covert research because of the formal processes that had to be adhered to for gaining access.
- ii Confidentiality of findings is essential because breach of confidence may lead to undesirable consequences for the subjects observed. This applied at two levels in the case study. Firstly, a formal confidentiality agreement was produced by the organization and signed by the researcher. Secondly, the researcher had a moral obligation to her subjects who openly disclosed sensitive opinions to her about colleagues and the organization, to whom she assured confidentiality.

c Method

The observation that took place at Prosper plc was informed initially by a general awareness of issues in the literature, but as shown by the brief summary of issues below, observation relies heavily on the adaptability and intuition of the observer while in the field.

- i There are no rigid guidelines for doing observation but useful advice can be found in Jorgensen (1989). Jorgensen describes participant observation as artful; Whyte (1981) explains how he trained on the job and learned by experience. The experience of this research at Prosper supports these assertions.

- ii The most practical method for recording observation data is in the form of handwritten field notes. Therefore, analysis and coding needs to take place manually prior to presentation of findings. A sample page of manually coded field notes from the research at Prosper plc is provided in Appendix 4, showing how the handwritten notes were analysed.
- iii Tools for representing observations are limited to talk and text. Miles and Huberman (1994) state that what may be generated as data is affected by what the ethnographer can treat as writable and readable. Riessman (1993:15) comments on the inadequacy of these media, "All we have is talk and texts that represent reality partially, selectively and imperfectly." The data collected at Prosper plc relied on prudent collection and interpretation.
- iv It is a potential strength of this methodology that analysis can be developed and refined while in the field. There are no prescribed methods of coding data but some researchers have suggested systematic approaches (Miles and Huberman, 1994). Silverman (1993) describes how he developed a coding system for his study of outpatient clinics but this happened following observation of more than ten sessions. Taraborelli (in Gilbert, 1993) describes how she found it advantageous to redefine her existing research questions and explore new lines of enquiry in the course of data collection. Schaffir et al (1980) described how the focus of their research evolved during participant observation. This was found to be true with the research at Prosper plc.
- v An important feature of doing observation is a self-awareness by the researcher of her effect on the setting, her bias and interpretations. Therefore, it is appropriate to make field notes on 'researcher reflexivity'. This proved to be helpful in the research at Prosper plc. Typical comments are provided in Appendix 5.
- vi Validation is difficult in observation due to the unique and individual nature of interpretation by the researcher. Fielding (in Gilbert, 1993) believes that objective observation is hopeless to achieve. However, some validation was built into the method in the research at Prosper plc by combining observation with

interview and also by verifying observations on the project manager by interviewing colleagues.

vii Whyte (1981) wrestled with the problem of producing generalizable results from doing in depth studies of individuals rather than communities in general.

However, an in-depth study of one organisation was preferable for this research topic. Issues of generalizability are considered in Chapter 8.

viii Choosing a definite end point for a study can be difficult - Punch (in

Hammersley, 1993) feels six months is an acceptable minimum period for study;

Whyte (1981) felt that even four years was not adequate for his social research in Cornerville. At Prosper pic, there was a natural end to the observation when the business liaison meetings ceased at the end of the requirements definition phase of the project.

3.3.3.2 *Document analysis - methodological issues*

In the wider context, document analysis describes a research method which uses documents as a source of data. In areas such as philosophy, social theory, law and history, research may rely heavily, if not exclusively, on documents as their key sources (Denscombe, 1998). A variety of documents may be accessed, including books and journals, web site pages and the Internet, newspapers and magazines, records, letters and memos, diaries, official documents deriving from the government or private sources, films and visual sources (Bryman, 2001; Denscombe, 1998).

Bryman (2001) claims that document analysis may be viewed as an unobtrusive method of data collection which is unaffected by the presence of the researcher, in contrast to obtrusive methods such as interviewing and participant observation. It also enables triangulation of findings with those of other methods.

In this research, document analysis was used to complement the other research methods used in the case study, observation and interviewing, e.g. a document listing the line manager's objectives for Peter, the project manager, showed the importance placed on his role to encourage staff to adhere to the SDM methodology ; emails from Nicole, the Head of Department, demonstrated the seriousness with which the company takes

project monitoring; guidelines for interviewing new IT staff elaborated on the information described in an interview with the project manager.

A range of document types was accessed, including official project documents, handbooks, memos, newsletters, circulars and the staff intranet. It was felt that this was a representative cross-section of the documents available. Analysis of the documents was done by scanning the content to gain an overall impression of the culture of Prosper plc and in particular, to collect evidence of corporate values. Inevitably, this required some selectivity and interpretation on the part of the researcher.

Evaluation of the reliability of the documents was irrelevant in this context because the nature of company bias for certain influences and values is precisely the type of data that was being sought.

3.3.3.3 Field work in the interpretive case study

Suitability of Prosper plc as the Case Study Organization

Initially, Prosper plc was selected because access was granted, it was conveniently near, it had a large IT department, it used a systems development methodology and there was potential to spend at least one year doing research there. As the research progressed, the strong emphasis on corporate values had become apparent and this contributed to the research. During the first two phases of research activity, a good relationship had been built up, the researcher felt trusted and welcome, and there were several on-going long term IT projects at various stages, several of which would be suitable for the case study approach as long as access was granted by the project team.

The Project

Although the gatekeeper had given permission, several project teams were reluctant to invite a researcher to observe them. Eventually, access to a suitable project was agreed.

Figure 3.12 shows the timescale of the IT project. The case study began in September 2000 for one year.

Phase and timing	Description	Deliverables
DEFINITION Pre-June 2000	Initial request stage Feasibility study	Terms of reference Feasibility report Business case
EXTERNAL DESIGN Part 1 June 2000 – July 2000	Project re-scoped before external design complete because it was predicted to be over time and budget	New business case
EXTERNAL DESIGN Part 2 September 2000 – September 2001 (period of researcher involvement)	External design	User requirements statement Functional specification External Design Management Report
INSTALLATION Post September 2001	Internal design Programming System testing Acceptance testing Implementation	Relevant documentation
SUPPORT Post September 2001	Post implementation review (PIR) Production system support	PIR report Relevant documentation

Figure 3.12 Summary of project in case study in chronological order

Comments on the suitability of the project

1. This was a large project subdivided into 9 sub-projects spanning more than 3 years. Therefore it was expensive and involved a lot of staff both in the IT department and the business. It involved migration of customer data from a standalone mortgage service centre database to the corporate database to fulfil the company strategy to remain competitive in the financial services industry.
2. Observation took place over a period of one year, during the Design stage, from September 2000 to September 2001. 1 of the 9 sub-projects was observed.
3. In terms of project success, the design stage is relevant for three reasons:
 - a) Contact with users. This is an important phase in terms of setting the scene concerning relationships with users – it may impact on future

training and implementation; it is important in terms of getting requirements correctly understood and agreed.

- b) It puts into practice the proposed project and requires practical work, detailed plans and actions to put into operation the business needs. A good interface between IT and the business users is essential.
- c) It provides the work for the next phase (installation).

In contrast, the definition phase is primarily focussed on the business; the installation phase is more heavily biased towards IT activity initially, then moves on to the Business/IT interface again, where the scene has already been set (see a) above).

- 4. In terms of the research question, the design stage is relevant because there are many detailed decisions to be made and many interactions between project team members and users. Therefore, there is plenty of scope for observation of personal values being put into action within the corporate context.

Conducting the case study

This section describes how the interpretive case study was carried out. It also describes briefly how the method evolved during the research. Ideas for analysis also evolved and guided the data collection.

Initially contact was made with Peter Smith, the Project Manager, and a plan was devised to enable the researcher to do observation, interviews and document analysis relevant to the project. The observation was concluded at a natural break in the project when the business liaison meetings ceased after one year because the external design phase was completed.

Observation took place over one year at the regular business liaison meetings of the IT team with business representatives and workstation developers. A few months into the project, the researcher felt comfortable enough to ask the project manager if it would be possible to arrange some whole days of observation outside meetings. This was agreed.

During observation, field notes were made by hand so recording had to be selective.

The main aim was to record evidence of values in action. Little factual detail was recorded about the project, although occasionally factual detail was helpful as a reminder of the context in which the actions observed took place. Observation data was collected on body language, atmosphere, evidence of feelings and values, dress, environment and researcher self-awareness and hunches.

Two sets of interviews were arranged with all individuals who regularly attend the business liaison meetings. The first set was conducted a few months into the project when the individuals had got to know the researcher and felt comfortable. The interviewees were invited to meet for lunch with the researcher so the interviews were informal and field notes were hand written and fairly brief. They were intended to generate data about their impression of management of the project. The second set of interviews was semi-structured values interviews held in meeting rooms, taped and transcribed. This was intended to generate data about the values of the interviewees and how they put them into practice in the project. It also served as an opportunity to check hunches formed during observation.

Some document analysis took place at the institution during observation days. Other documents, which the researcher was allowed to take away, were analysed elsewhere.

Evolution of method and analysis

As the fieldwork progressed, the researcher became more experienced and selective in recording relevant data.

When recording field notes, evidence of personal characteristics was recorded, to be analysed later according to the Spranger (1928) values definitions. There was also the potential to record any evidence of mental construct elements.

Organization of field notes

Field notes and interview tapes were dated and filed to make them easily accessible for analysis. The approach to analysis is explained in detail in Chapter 5.

Reflections

Taking the three phases of research activity as a whole, it felt that the resulting research

focus and method were appropriate and fruitful. The case study research was successful in producing a rich set of data on personal and corporate values and how they impact on systems development projects.

3.4 Evaluation of the research methods

This section discusses and evaluates the research process that took place during fieldwork and analysis during each phase of the research. This is followed by consideration of reliability, validity and generalizability of the research.

3.4.1 Evaluation of three phases of research

As described throughout this chapter, the research method and focus evolved as the research progressed.

Phase 1 - Evaluation of the role of the mental construct using survey by questionnaire and follow-up interviews

The survey was useful because the survey questions arose from issues of concern to project managers and, as the conclusions have shown, values of project managers are of central importance to the outcomes of systems development projects.

Design of the survey was aided by recommendations from the literature and advice from an experienced survey user. The survey was easy to administer by post and the response rate was very good. Analysis using SNAP software was straightforward as it is an easy package to use and it proved to be a suitable package for the needs of this research. If more sophisticated statistics had been required, a package such as SPSS would have been better.

Much contact was made with Prosper pic during the intense 5-month period of activity from May to October 1999, which included:

1. Initial meetings with a senior manager to set up the survey
2. Pre-survey interviews with managers in all departments

3. Pilot testing the survey and receiving feedback from people at all levels
4. Issuing the questionnaire
5. Consulting with a senior manager on presentation of the report
6. Doing initial follow-up interviews.

This process was excellent preparation for doing the case study because it allowed the researcher to imbibe the culture as an ethnographer and gain useful knowledge of the organization.

The production of the survey report was designed to meet the organization's needs primarily but it was also an excellent way to build up a rapport to enable later research on values and ISD at Prosper plc.

Although the mental construct concept was abandoned after the preliminary studies, it was a useful stimulus for the research. The use of Spranger's (1928) categorisation of values was appropriate for this research but it relied heavily on interpretation by the researcher. It would have been helpful if modified definitions of the six types of values had been used in interviews. Nevertheless, the interviewees all coped well with the original definitions.

Phase 2 – Semi-structured interviews on the impact of values on systems development

The use of values definitions created a helpful structure for recording detailed data on social and behavioural factors relevant to IT project success and failure. This has added to the existing knowledge and provided a base from which further research may be done.

It became clear after several interviews that the interview guide was successful and some useful data was being gathered. However, there were the usual drawbacks of using interviews i.e. the researcher has to rely on the account provided by the interviewee and there is no way of verifying the truth of what they are saying. Also, from the nature of the research question, it was clear that the data from the interviews

needed to be complemented by observation in the context of a project. A purely ethnographic approach was considered but rejected as being inappropriate because of the time and commitment needed from the organization. An interpretive case study was seen as a good compromise. An ethnographic study would form a good complement to the current research, if carried out in an organization that was willing to meet the demands it would make on them.

Reflections on handwriting interview notes versus taping and transcribing

Disadvantages of handwriting are that it is sometimes hard to read; one cannot be sure that “quotes” were verbatim because the researcher may have written them down incorrectly; some detail was not noted because it seemed irrelevant – this may later have turned out to be relevant; some detail has to be missed due to the limitations of handwriting. These disadvantages are overcome by taping and transcribing interviews, with the additional advantage that they can be used in software packages for qualitative analysis such as NVivo. However, on the occasions when it was not possible to use a tape recorder for interviews, this did not appear to make significant difference to the end result of data analysis and sufficient relevant detail was recorded by hand.

Phase 3 – The impact of values on systems development using an interpretive case study approach

The decision to study only one organization in depth led to generation of sufficient data from which some contribution to knowledge could be made. Some of the potential benefits of having a second organization for comparison were achieved anyway because a smaller scale case study had been done on values in a contrasting organization to pilot use of the Spranger (1928) values categories (Lauener, 2002). Also, personal experience as a member of staff at an academic institution as a unit leader, a role that involves some project management, provided further comparison. These comparisons were useful because they showed contrasts in behaviour between three professional organizations with different cultures and values. For example, the disciplined attitude to meetings at Prosper plc contrasted strongly with the lax attitude at the academic institution. The creative, open and friendly culture at the public sector organization contrasted with the more rigid, security conscious and formal culture at Prosper plc.

This prompted a rich set of field data from observations at Prosper pic as differences were noted.

It was felt that sufficient time had been spent doing observation and interviews at Prosper pic because towards the end of the fieldwork, little new data was emerging. For the interviews, there was also good agreement between the findings from the preliminary studies and the case study.

One year was spent tracking the progress of the requirements definition phase of a systems development project. This was a good phase to be involved with because in addition to the main IT team, workstation developers from the IT department and business users were also involved. This enabled data to be gathered on views of three different groups, each with their own interest in the project. This counteracted the influence of spending most time with the main IT team, focussing on the project manager, and prevented the researcher 'going native'.

3.4.2 Reliability, validity and generalizability

The issues of reliability, validity and generalizability in case studies and qualitative research produce on-going debate on theoretical and practical aspects (Lee and Baskerville 2003; Mason 1996; Silverman 2000).

Mason (1996) has some clear practical advice on how to be convincing in analysis and interpretation of qualitative data. It is applied here under the headings reliability, validity and generalizability.

Reliability

Mason (1996) advises that to convince an audience of reliability, the researcher needs to include something in the analysis to show that 'data generation and analysis have been not only appropriate to the research methods but also thorough, careful, honest and accurate, i.e. data has not been invented or misrepresented and the researcher has not been careless and slipshod in recording and analysis of data'. As descriptions of the methods in this chapter have shown, care and thoroughness was taken to use a strategy for recording and keeping all field notes. Values interviews were tape-recorded and

transcribed in their entirety and all data considered during analysis. For practical purposes, it has been necessary to present a representative subset in this thesis. The rationale for the approach at each stage of analysis has been explained and the choice of case study organization justified.

Following a pilot study on a small group, the survey by questionnaire was issued to all IT staff, i.e. over 1000, and all of the 544 responses were analysed. Free form comments were reproduced in full.

A consistent approach was adopted for values interviews, using an interview guide, recording the interview in a private room and assuring the interviewee of confidentiality, which enabled them to speak openly and truthfully.

Reflection on experience during the research activity led to some change and improvement and this is documented earlier in this chapter.

Validity

Validity is defined as measuring or explaining what you claim to be measuring or explaining (Mason, 1996). In the case of this research, as the results in Chapters 4 to 7 will show, data on the impact of values on systems development has been generated. More precisely, it is possible to explain how data generation methods and interpretation were valid.

Validity of data generation methods

Data on values is generated better by interviews and observation than by questionnaires because it is important to find out what subjects both think and do and seek explanation on how the two are linked. This relies on honesty in the interview but observation may verify interview findings. The researcher built up a good rapport with the subjects in the case study and was involved with the group for a year so it is unlikely that they were behaving differently due to the presence of the researcher as it would be difficult to sustain over a long period.

Validity of interpretation

Here, the validity of data analysis and interpretation on which it is based is questioned.

Evidence needs to be given that the interpretation presented in this research is acceptable and that the data has not been misinterpreted. This requires justification of steps through which the interpretations have been made.

The main evidence in this research for validity of interpretation is the detailed presentation of analysis and findings, including extracts of interview transcripts that demonstrate the basis for the findings.

Mason (1996:150) advises ‘Try to read the data from alternative interpretative perspectives’ and states ‘The validity of your interpretation will be strengthened both if you can give some sense of how your standpoint or analytical lens feeds into your interpretation, and also if you can show why other interpretive perspectives are less compelling than your own.’ In this research, several measures and classifications of values were considered. Justification for use of the Spranger (1928) classification of values and rejection of others was given in Chapter 2. The same principles apply regarding interpretation, i.e. the Spranger (1928) classification is simpler and less prescriptive than the Rokeach (1973) definitions. While using the Spranger (1928) classification of values, the researcher was aware of her value preferences because she answered the values interview questions and asked a friend to validate her responses.

Generalizability

Lee and Baskerville (2003) include a review of recent literature on qualitative research and case studies in their critical examination of the nature of generalizability of findings to a wider context. They challenge the criticism that findings from these methods are not generalizable. They believe that it is possible to generalize from description to theory in two ways: “The generalizability of measurements, observations, or other descriptions to theory, and the generalizability of the resulting theory beyond the sample or domain that the researcher observes” (Lee and Baskerville 2003:236). Findings presented in the following chapters support the view that the latter type of generalizability is possible in this research, and possibly the former. More detailed evidence for this is presented in Chapter 9.

3.5 Conclusions

This chapter started with a discussion of philosophical issues of research design and then methodological issues. It described the research methods used for the three phases of the research as the approach evolved, leading to a justification for the interpretive case study approach. Preliminary studies (Phase 1) comprised pre-survey interviews, a questionnaire survey and follow up interviews on mental construct elements. This was followed by Phase 2, interviews on values. For each, brief aims and outcomes were listed to show how the evolution of method took place. Finally, the techniques used in Phase 3, the interpretive case study, were described. Discussion of methods of analysis will be presented with the findings in Chapters 4 to 7.

Finally, the research approach was critiqued. Evidence was produced to show that the research approach was successful in answering the research question and that the findings are reliable, valid and generalizable.

PART TWO

RESULTS AND ANALYSIS

Introduction

A full description of how the analysis and findings evolved is given in chapters 4 to 7. They present, in chronological order, how the analysis and findings progressed through the 3 phases shown in the model in Chapter 3.

The findings are presented in the form of tables and explanatory text. In cases where it would be cumbersome to print full results, extracts have been presented in the chapters and fuller tables in the appendices.

An overview and summary of the data produced is presented below.

Time period	Research Activity	Data produced
PRELIMINARY STUDIES - Phase 1		
May 1999 - July 1999	15 Pre-survey interviews	Field notes
July 1999 - October 1999	Survey issued and analysed	Survey report
August 1999 - April 2000	10 Mental construct interviews	Field notes
PRELIMINARY STUDIES - Phase 2		
November 1999 - April 2002	11 Values interviews (tape recorded)	Interview transcripts
INTERPRETIVE CASE STUDY - Phase 3		
September 2000 - September 2001	Observation of Business Liaison meetings	Field notes
September 2000 - April 2002	Project observation, values interviews and document analysis	Interview transcripts

Summary of fieldwork at Prosper pic showing data produced

Phases 1 and 2 - Preliminary Studies

Phase 1, an investigation of the role of the mental construct in information systems development, consisted of doing a survey by questionnaire. Pre-survey interviews were seen simply as preparation for the survey. Field notes were recorded and they were used only to help form questions relevant to the organization and the research. Follow-up interviews after the survey were intended to complement the findings from the survey. Field notes were recorded but when it became obvious that the research topic was too wide, no further analysis was done at that stage. Some useful findings were produced that confirmed some proposals about the mental construct concept and produced further proposals but there was no detailed explanation of the role of the mental construct in ISD. Values were shown to be a potentially useful mental construct element to follow up in further research.

This led on to **Phase 2**, an investigation of the impact of values on systems development using interviews, an improved method and focus for the research. Interviews were recorded and transcribed. Before any analysis was done, it became obvious that while interviews were helpful in providing some useful explanation of how values impact on systems development, richer explanations could be gained by observing systems developers in context and doing an interpretive case study. Therefore, no analysis of the values interviews was done at this stage. However, the interview guide developed for Phase 2 using the Spranger (1928) categorisation of values proved successful at producing detail on how values impact on systems development. Some proposals from Phase 1 were verified and further proposals were developed.

Findings from Phases 1 and 2 are described in Chapter 4.

Phase 3 - Interpretive Case Study

Finally, Phase 3 took place using an interpretive case study to investigate the impact of values on systems development. This provided a rich source of data from interviews, observation and document analysis. Proposals that had been developing throughout the research activity, and initial reflections on the data, resulted in a framework for presenting findings on three themes and related questions, forming Chapters 5 to 7.

Theme 1 - Personal values - Questions addressed by Chapter 5:

What personal values do project team members have?

Is there a difference between values of the project managers and team members?

How do project managers and team members put their values into action?

Theme 2 - Interplay of personal values and corporate values - Questions addressed by Chapter 6:

What are the corporate values at Prosper plc?

How are these values put into practice, e.g. in terms of procedures and standards?

How are the values, standards and procedures communicated to staff?

How are the standards and procedures monitored?

What is the attitude to corporate values?

What are the outcomes of the interplay of corporate and personal values in terms of attitudes to, and use of, the methodology?

Is there a difference between project managers and team members in terms of attitude to corporate values?

Is there evidence of value conflict?

Theme 3 - Overall outcomes in terms of the project – Question addressed by Chapter 7:

What is the impact of personal values, corporate values and the interplay of corporate and personal values on the project?

What is the project manager's role in this?

CHAPTER 4

RESULTS FROM PRELIMINARY STUDIES

Summary

This chapter begins by presenting four reflections in Section 4.1 on the mental construct concept based on knowledge from the literature. The reflections contain proposals and questions that create topics for analysis of findings from the three pieces of field work in Phase 1 - pre-survey interviews, survey and post-survey interviews. Findings are reported by addressing the four reflections.

Section 4.2 shows how findings from Phase 1 led to new proposals that were investigated in Phase 2. The findings are then presented showing some detail of how social, political, economic and theoretical values are put into action at Prosper pic. The conclusions show that the findings supported most of the original proposals, and led to recommendations for more research in Phase 3 using an interpretive case study.

4.1 Phase 1: An investigation of the role of the mental construct in information systems development

Reflections and proposals on the mental construct concept prior to fieldwork

This research began with a desire to explore the role of the mental construct concept in the NIMSAD framework as proposed by Jayaratna (1994). As stated in Chapter 2, no further discussion could be found in the literature on this concept but it prompted reflections based on personal experience and knowledge.

The NIMSAD framework is a model of an individual methodology user working in a problem situation in an organization, applying a methodology, to do systems development. Jayaratna (1994) proposed that the mental construct of methodology users affects how they view the problem situation and how they act to solve problems.

“The identified elements interact in a dynamic way to form the ‘mental construct’, to help us make sense of the situations, to manage our relationships with others, to take action and to identify and solve problems.”

(Jayaratna, 1994:70)

A number of reflections, questions and proposals arose from this and it was intended that the investigation would address these concerns.

REFLECTION 1: EFFECT OF CORPORATE INFLUENCES

Firstly, if the methodology user is working in an organizational context, he will be subject to influences from it. This may be in the form of culture, values or standards held by the organization. Therefore, views and actions of the methodology user are affected by both his mental construct and external influences from the organization. Individuals may vary in the extent to which they will comply with organizational constraints and influences; organizations may vary the extent to which they seek to influence staff.

REFLECTION 2: EFFECT OF OTHER PEOPLE AND TEAM ROLE

Secondly, it is common for methodology users to work in teams. The views and actions of the methodology user may also be affected by interaction with others in the team. They may also be affected by their role and position in the team e.g. the project manager has a different role to a team member. Related to this is the proposal that people in a position of power, e.g. project manager, may use their power altruistically to serve the needs of others, or egotistically, for their own personal gain.

REFLECTION 3: DETAIL NEEDED ON EFFECT OF MENTAL CONSTRUCT ELEMENTS

Thirdly, the mental construct concept implies that the outcome of projects may vary because different individuals with their unique mental constructs will view and act on problems in different ways. Detail is needed to explain how and why the elements of the mental construct affect outcomes.

REFLECTION 4: IS THE PROPOSED SET OF MENTAL CONSTRUCT ELEMENTS CORRECT? HOW DO THEY INTERACT?

Fourthly, the suggested elements comprising the mental construct need to be questioned. Jayaratna (1994) explains how all of the elements listed are relevant to the methodology user. However, some of the elements may be more important than others and there may be other elements he had not thought of. Some of the elements may combine or interact with each other. No detail is given in Jayaratna's work (1994) on precisely how these elements may affect outcomes.

These four reflections provided a background against which the initial investigation of the role of the mental construct was carried out. The pre-survey interviews, survey and follow up interviews provided some findings that addressed the reflections and they are presented below.

4.1.1 Findings from pre-survey interviews

These findings are based on field notes made during pre-survey interviews. A table of results is included in Appendix 6.

REFLECTION 1: EFFECT OF CORPORATE INFLUENCES

The findings showed that at Prosper plc there are strong influences on staff to do projects in a standard manner following a highly structured and prescriptive methodology within a highly structured framework for IT projects, the Annual Technology Plan. Manuals give guidelines on how to do projects and there is strong emphasis on documentation, which is to be done following guidelines. There is also a strong emphasis on security and risk aversion.

Most staff seem compliant with the culture e.g. a dress code is observed and men wear white shirts and suits. Generally, there is a professional, disciplined and conscientious attitude to work. There is a strong sense of hierarchy.

REFLECTION 2: EFFECT OF OTHER PEOPLE AND TEAM ROLE

There was evidence that some people especially like their particular role because it suits their personality; also, that having a role legitimises what they do, especially systems

testers. Individuals were being interviewed outside their normal project and teamwork context so it was not possible to fully address reflection 2.

REFLECTION 3: DETAIL NEEDED ON EFFECT OF MENTAL CONSTRUCT ELEMENTS

There was evidence of variation in the way the methodology was used by different departments. While visiting departments to do interviews, there was a different feel and atmosphere, e.g. some seemed more lively and energetic, with more conversation, while others were relatively quiet. There were also differences in attitude and personality between department heads when interviewed. This shows that despite the strongly prescriptive culture and methodology, there are differences between departments and hence different outcomes for projects may occur. This must be due to differences in people because the methodology tries to make all procedures standard.

REFLECTION 4: IS THE PROPOSED SET OF MENTAL CONSTRUCT ELEMENTS CORRECT? HOW DO THEY INTERACT?

There were no findings relevant to reflection four because the interview questions were not attempting to address details of mental construct elements at this stage.

Outcomes relevant to survey design

The experience and findings from the pre-survey interviews informed the design of the survey. It produced some new and more detailed proposals relevant to the initial four reflections listed above and most of these were used to formulate survey questions. Experience gained by spending time in the organization enabled the design of questions on some mental construct elements in a manner that was relevant and appropriate to the organization i.e. to translate the mental construct concepts into meaningful questions e.g. 'Knowledge and skills' translated into questions about which training courses people had attended from a list offered by the organization. Please see Appendix 2 for a copy of the survey.

4.1.2 Findings from Survey

Detailed results of the survey were presented in a report. Please see Appendix 7. These findings are now considered in relation to the four reflections presented above.

REFLECTION 1 - EFFECT OF CORPORATE INFLUENCES

Findings from questions 1-3 showed that one way the organization tries to influence the designers is to supply enough manuals and guidelines for documentation that they are within easy reach of most of the IT staff. However, most of them choose to use the manuals infrequently, i.e. less than once a month. Many staff had done training on use of the methodology. Also, most managers encourage use of methodology. On the whole, staff were found to be compliant with the SDM methodology but felt able to deviate from it if necessary. This further verified the strong influence of culture, and the fact that people are aware they are expected to adhere to guidelines.

REFLECTION 2 - EFFECT OF OTHER PEOPLE AND TEAM ROLE.

Evidence from job titles showed that people work in project teams and not as individuals. The free-form answers given to question 5 showed the importance of good interactions between individuals in terms of management, teamwork, communication and project planning for successful projects. This confirms the need to take into account interactions with others when considering the operation of the mental construct. It also showed the importance of good teamwork, communication and management.

75% of respondents agreed with the statement in question 8 section B, 'My line manager encourages use of SDM', showing that managers do try to have an influence on use of the methodology.

REFLECTION 3 – DETAIL NEEDED ON EFFECT OF MENTAL CONSTRUCT ELEMENTS

Findings relevant to mental construct in general

In analysing results by department, there was evidence of differences in attitude to use of the methodology between individuals and departments. This shows that methodology and corporate influence do not totally control outcomes and produce uniform outputs, which supports the proposal that individuals with unique mental constructs do systems development tasks differently.

Findings relevant to mental construct elements

*(NB in the following section, **bold type** signifies mental construct elements)*

Question 5, an open-ended question on factors leading to success, produced some qualitative data related to **values and motives** but detail was very brief and general. The most commonly quoted factors were clear statement of requirements, good teamwork, good communication, good project management, realistic timescales, user involvement, planning, testing and reviews. While the selection of these factors may be based on underlying **values and motives** and are in keeping with findings in the literature on successful projects, they do not add anything to it and they do not explain what values underlie the behaviour.

Question 6, which involved ranking a list of priorities in order of importance from the developer's point of view, showed that meeting business requirements and meeting end user needs were most important to systems developers personally. Completion of project within budget, completion of project within timescale and error free product were all of lower importance and adhering to group standards was lowest. From this, it is deduced that the highest priorities were people-focussed and serving the needs of the business rather than being driven by economic and technical considerations, but again this is nothing new. It demonstrates behaviour that may be underpinned by **values** but there is no further explanation.

Question 7 involved ranking a similar list of priorities in order of importance based on what they thought the company standard methodology required. It was not surprising that overall, adhering to group standards was ranked as second most important factor, below meeting business requirements. This suggests some conflict between personal values and corporate **values**.

75% of respondents agreed with the statement in Question 8, part A, i.e. 'SDM helps clarify expected roles of project team members'. This provided data relevant to **role**, and highlighted the contribution made by the methodology.

Questions 14, 18 and 19, which covered experience and training are relevant to the following mental construct elements: **skills and knowledge sets, experiences, structuring process (including methodologies) and models and frameworks**.

Quantitative data on experience and percentages of people who have attended courses are of no value in explaining how this impacts on their work. More sophisticated

analysis of the data using cross tabulation would be possible e.g. comparing ranking of project priorities (question 6) for the people who have had more than 5 years experience as an analyst and those who have had less. This would require a hypothesis to be proposed and tested. However, whatever the outcome, it would give little information on the detail of how the mental construct elements operate in practice.

REFLECTION 4 - IS THE PROPOSED SET OF MENTAL CONSTRUCT ELEMENTS CORRECT? HOW DO THEY INTERACT?

There was no further evidence relevant to reflection 4 because it was not possible to get such detail in a postally administered survey. This justifies the use of interviews and observation to complement the survey findings.

Further reflections

Question 20, an open-ended question asking for further comments, provided an opportunity for revealing some qualitative data but only 12% of respondents added further comments, and these were mainly concerned with attitudes to the methodology, its use and the need for training.

Conclusion

The survey findings supported some of the initial proposals. They further verified the existence of strong corporate culture and values, which influence the work of systems developers. They also reinforced the notion that systems developers work in teams and good teamwork is important especially in relation to successful projects. Finally they showed that differences exist between individuals and departments despite the use of the highly structured ISD methodology.

The topics covered by the survey showed the type of activities that take place when using the methodology for ISD projects in which there is scope for individual differences to have an effect, i.e. use of manuals and production of documentation. Q5 also showed that good management, teamwork and communication are seen as important criteria for project success. These are activities that the methodology does not prescribe; therefore there is much scope for personal variation.

4.1.3 Findings from post-survey interviews

Findings from post-survey interviews were tabulated. Please see Appendix 8.

REFLECTION 1 – EFFECT OF CORPORATE INFLUENCES

Interview findings produced evidence that confirmed the wide influence of corporate values, standards and procedures. This included examples of the activities that take place. Please see Figure 4.1.

Interviewee 1 - In a competitive market, you can't afford to stand still.

If the project goes more than 10% over budget, we need to submit a new business case.

There is an annual technology plan for which all proposed work needs to be submitted by a deadline.

Interviewee 3 - There is an audit department, which audits IT, projects.

Training is held in use of systems development methodology.

Success in information systems implementation is very important therefore a structured methodology is used.

Systems are highly integrated so the impacts (of new systems) are immense because of knock-on effects.

Risk and security are very important.

Interviewee 4 - The organization is interested in the methodology being widely used. A course teaches about use of the methodology.

Interviewee 5 -The project management workshop gets business and IT people together.

Implementation workshops show people how their bit fits in.

There is a Group Manual for IT.

Interviewee 6 - There is a clear desk policy. Manuals are locked in cupboards when people are not at their desks.

Interviewee 7 - IT Audit is a separate function. They can comment on documents but not sign them off. They give advice and guidance on IT security matters. Project managers are supposed to send copies of documents to IT Audit - most don't.

Quality Assurance checks are part of the SDM methodology.

Use of the methodology provides the key documentation for the system.

Documentation is very important in this organization.

A project steering committee exists i.e. there are structures in place to keep an eye on projects.

IT Audit decides where to do audits.

Interviewee 8 - SDM gives a structure that people can buy into and understand.

Interviewee 9 - Rational Unified Process (RUP) is being investigated, as it may be more suitable for some projects.

Interviewee 10 - SDM replaced a more highly structured and detailed methodology that had been used previously

Interviewee 12 - IT Audit can come at any time. The documents must be there.

Interviewee 13 - There is no course for system testing. Testers need to know the existing functionality of the system. They need to know what the business wants.

**Figure 4.1 Paraphrased extracts from pre-survey semi-structured interviews
on corporate values, standards and procedures**

REFLECTION 2 - EFFECT OF OTHER PEOPLE AND TEAM ROLE

Comments from some respondents showed that they like managing teams as shown by the following extract from a project manager:

Interviewee 3 - “Believes in sending her programmers on courses to see where their part fits into the wider picture;

Values programmers who have moved into IT from business because they understand the business and question things, then useful changes result.

Generally, believes in people knowing and understanding the wider picture and the standards and rules and procedures e.g. when using the methodology, believes in all understanding their role. Values input from all levels;

Sends people on training to aid their understanding.”

This supports the proposal that some managers choose to use their position of power altruistically and gain job satisfaction from empowering others.

REFLECTION 3 - DETAIL NEEDED ON EFFECT OF MENTAL CONSTRUCT ELEMENTS

There was a lot of data related to certain mental construct elements, especially values. A selection of data is presented in Figure 4.2. It gives some detail on how values are relevant to systems development and shows the importance of interpersonal skills and good project team management. This is consistent with the findings from survey question 5. It also shows how experiences in the past can shape current values and ultimately behaviour. There is a smaller, less meaningful amount of data on other mental construct elements.

REFLECTION 4 - IS THE PROPOSED SET OF MENTAL CONSTRUCT ELEMENTS CORRECT? HOW DO THEY INTERACT?

Values was the most fruitful mental construct elements in terms of producing meaningful data that explains behaviour of systems developers. The data shows that values underpin some of the other elements, e.g. project managers who hold values that motivate them to manage the team and the project to give job satisfaction will plan and be thorough. They may use perceptual processes to perceive a situation, skills, experience, knowledge, models and frameworks to get a better understanding, reasoning

ability to help select a number of possible ways forward, and values to guide and motivate them to choose a particular action. Values act like a steering wheel and the other mental construct elements are like parts of the vehicle.

Outcomes

These findings prompted a narrowing of focus from all mental construct elements to values only for the next phase of the research.

Values

Beliefs and personal characteristics:

He appreciates people's need for satisfaction. (4)

Believes in valuing and empowering staff and delegating work to them. (4,5)

Thinks that trust is important in teams. (8)

Believes in the importance of the manager in motivating. (8)

Likes managing. Gets job satisfaction from creating teams that work well. Liked helping a member of staff returning to work on recovering from an illness. (9)

Social interaction and interpersonal skills:

Likes social interaction and is people-focussed (1).

Likes the analyst role because he likes social interaction, using interpersonal skills and talking to people at different levels. (6)

Describes himself as a people person. (8)

Feels it is important that people are happy, then they will perform better.

Likes playing team sports and motivating people. (8)

Likes teamwork, working with people. (9)

Shaping of values:

Was brought up as a Marxist and taught not to be exploited. Therefore he is reluctant to work more hours than necessary. (3)

Has Christian beliefs, which give him a strong conscience. Believes in doing good documentation because it will have to be used by other people. (4)

Worked as a primary school teacher. This taught her to value and trust people; not to undermine; to create an open atmosphere for sharing of problems; to give people confidence in their own ability. (5)

Knowledge and skills; models and frameworks

Doing an MBA helped him understand the wider picture. Believes that case studies help him to understand projects through managers' eyes. (7)

Experience

He feels he gains from his manager's experience. (7)

Experience is useful if not following the methodology. (8)

Motivation

He is motivated by challenge;

Also motivated by good quality work. (6)

Roles

The role of intermediary between users and IT people in systems development projects does not work (1)

Checks need to be done by someone who understands what the system is about (5)

The analyst/programmer role is better than separate analysts and programmers. (6)

Having analyst/programmers involved in testing is beneficial because they understand the system. (6)

Reasoning ability

It is better to sell ideas by knowledge and reasoning rather than force. (6)

NB These are mainly interpretations by the researcher; some of the text is quoted verbatim from what the interviewee said, as recorded in the original raw data.

Numbers in brackets are interviewee ID numbers.

Figure 4.2 Extracts from the data from post-survey follow-up interviews showing comments related to mental construct elements

4.2 Phase 2: An investigation of the impact of values on systems development using semi-structured interviews

The research in Phase 1 showed that a focus on values using semi-structured interviews with an interview guide should produce meaningful data that explains the actions of systems developers in some detail. It also suggested that altruistic values lead to good project management. The decision to narrow the focus in Phase 2 of the research to investigation of the impact of values on systems development allowed for the possible influence of both personal and corporate values.

As Chapter 3 explained, Spranger's (1928) categorisation of values was used in the values interview guide. The six categories of values are Social, Political, Economic, Theoretical, Aesthetic and Religious.

4.2.1 Development of new proposals

Reflection on findings from Phase 1 led to the following new proposals:

Proposal 1: People-focussed or altruistic values are relevant to good project management and this is important in successful information systems development. Altruistic values fall into Spranger's social values categorisation.

Proposal 2: It was also recognised that power may be used altruistically or egotistically, the latter being equivalent to Spranger's political values.

Proposal 3: Investigation of the relative importance, possible linkages and overlap of each of the six categories of values in the work of systems developers could be useful in explaining behaviour.

Proposal 4: It was deemed useful to follow up details of the outcome of operation of personal and corporate values in the work of systems developers and to prompt comment on the attitude of the individual to corporate values. This follows up earlier speculation.

Proposal 5: Questions about shaping of values may also help explain values in action at work.

4.2.2 Findings relevant to proposals

Interviews on values were transcribed and results presented in a table. Please see Appendix 9. Further analysis of the table produced the findings below.

Proposal 1 - findings on social values and project management

The findings fully supported Proposal 1 and provided some detailed explanation. Social values in management were shown to be important from the results of values self-assessment during the interviews. Please see Figure 4.3. Nine out of eleven interviewees thought they held social values and all of these had management responsibilities. Of the two who did not think they had social values, one was a technical specialist who was not a manager and the other was a manager but said he would prefer to do more technical work in isolation.

Interviewee number	Economic	Social	Theoretical	Political	Religious	Aesthetic
1	v	v				
2	v	v				v
3	v	v		v		v
4	v	v	v			
5		v	v			
6	v		v			
7	v	v				v
8			v		v	v
9	v	v			v	
10		v	v			
11	v	v	v			
Total	8	9	6	1	2	4

Figure 4.3 Self-assessment of values by 11 interviewees during values interviews using Spranger (1928) categorisation

A lot of detail was produced on how systems developers thought they put values into action at work and many of the actions related to project management and management of people (see Figures 4.4 and 4.5).

Values into action at work: Personal characteristics

Relevant extracts from field notes. Individuals identified beliefs in:

- getting organised;
- a need to really understand customers and their needs, being genuinely supportive and working with them;
- not being afraid of confrontation;
- not being pushed around;
- honesty, e.g. being accurate and factual, not hiding things;
- integrity;
- fairness;
- openness;
- diplomacy;
- need to see the wider picture;
- explaining why things are necessary;
- putting the effort in;
- truth and facts.

Figure 4.4 Personal characteristics showing values related to project management

Spranger's (1928) definition social values is summarised as follows:

“SOCIAL: Love of people characterises this person. Warm human relationships are vital. Highest value is love of people, e.g. altruistic or philanthropic; prizes other people as ends; kind, sympathetic and unselfish; regards love itself as the only suitable form of human relationship; selfless. ”

Several of the characteristics in Figure 4.4 may be categorised as social values e.g. being supportive of customers, openness, fairness, integrity, diplomacy, truth and facts. All of these suggest an altruistic and selfless manner for relating to people.

Values into action: Outcomes in management of people

Relevant extracts from field notes.

“coaching people, listening, empowering people, “mucking in” and getting involved ... working together as a team, getting people to open up.

Looking after people in the team, especially when under pressure.

Feels she is a good judge of character;

situations can be turned around by your way of working;

If the project supervisor or co-ordinator does not seem interested, then it causes staff to feel less motivated.

Need to explain why things are necessary.

It is important to contact people and involve people in projects at an early stage.

Networks of people are very important

One person admitted “There is a slight element of calculation.... Make an effort to remember people’s names and what football team they support ... it makes it more likely they will do what you want.”.

It is useful to write notes following discussions so you remember what you have agreed.

“In terms of being equal, I always think of the poor user at the end of the day.”

Realises the need to build trust and to see the other person’s side of the problem.

Tries to be level headed, fair and non-threatening.

Selfless, practical and inclusive in decision making in the team.

Thinks that if people come to work and enjoy it, you will get the best out of them.

Managers who rant and rave and bully don’t win in the end.”

Figure 4.5 Examples of values into action at work related to management of people

All of the extracts in Figure 4.5 describe ways of relating to people in a project team. Most of them could be categorised as putting social values into action because they show altruism and selflessness, realising the needs of the people they are managing.

Findings on requirements for job satisfaction are relevant to values and management because they often define what makes an individual feel valued. Extracts of responses to the interview question about job satisfaction are presented below in Figure 4.6. Some of these requirements may be facilitated by a manager e.g. delivering projects and

completing a piece of work; some of the needs are related to the personality of the individual e.g. applying new technology, being thorough in writing documents and some of the needs are met by managing others e.g. advising people, managing and planning projects. Therefore, if social values are held, the managed and the manager may work in a symbiotic, or mutually beneficial relationship where each serves the needs of the other.

Activities that people like or from which they gain job satisfaction included:

- Delivering projects;
- Completing a piece of work;
- Learning;
- Applying new technology;
- Advising people;
- Interaction with users;
- Being thorough and writing documents to the best of her ability;
- Social interaction;
- Pay and pension;
- Seeing her ideas put into practice;
- Doing jobs thoroughly;
- Problem solving and the intellectual challenge of how systems work;
- Managing and planning projects;
- Working with new technology;
- Working outside her comfort zone;
- Nice team environment.

Figure 4.6 Evidence of needs of project staff

Findings relevant to Proposal 2 - political values

Only one person claimed to have political values. This is not surprising bearing in mind Spranger's (1928) definition of a person who holds political values:

"POLITICAL: This person is motivated by the search for power and influence; interested primarily in power; wishes for personal power, influence and renown. "

By this definition, political values are contradictory to social values. Some of the interview responses demonstrated negative perceptions of politics, i.e. they showed a lack of desire for power for its own sake, and some hinted at conflict, e.g.:

“If I’m political, I think it is a necessary evil”;

“Politics is one of the biggest pains in an institution – it can prevent you doing your job. You become a victim. The manager thinks of himself, not the people who are being affected by what he decides. Politics can lead to inertia”;

“I am certainly not interested in things like power struggles – far too many people in this building are”.

“I get particularly annoyed with the ‘Political Man’ - I feel it is not helping to get you where you need to be. It is all about covering your own back (said with disdain) and not doing what is best for the organisation.”

“I think a lot of what goes on here is purely due to politics, and I am not prepared to play a political game.”

“Political, not. Not at all. I positively look at all the high-ups and think ‘I don’t want to be there, it is horrid.’”

“I am not political. I have no interest in power..... politics. I am not competitive, so that rules that one out.”

“Political - I am definitely not a person that is motivated in the search for power.”

However, individuals in management roles inevitably have power. Other interviewees, while not specifically describing their behaviour as using power, showed that they choose to use their position of power to enact social values rather than to seek power for personal renown.

These findings reflect many of the issues raised by Morgan (1998:147) who uses the metaphor of a political system to describe organisations, i.e. that “viewed through the lens of politics, patterns of competing interests, conflicts and power plays dominate the scene. We view organization and management as a political process; we can identify different styles of government; we see how an organization becomes politicised because of divergent interests of individuals and groups; we appreciate the fact that conflict is a natural property of every organization; we observe many different sources of power and learn how they can be used to our advantage.”

Therefore, the role of managers is important in balancing conflicting interests and, used skilfully, conflict may be a positive force. This is a relevant issue to follow up later when observing a project manager and project team as Prosper plc in Phase 3 of the research.

Findings on Proposal 3 – other values; linkages and overlaps

Economic values were found to be widely held by most of the systems developers interviewed because of the pragmatic aspect of their work. Spranger's (1928) definition summarises people who hold economic values as follows:

ECONOMIC: Whatever is useful is valued. *This is a pragmatic person.*

Characteristically interested in what is useful; based originally upon satisfaction of bodily needs (self-preservation), interest in utilities developed to embrace the practical affairs of the business world - production, marketing and consumption of goods, the elaboration of credit and the accumulation of tangible wealth; thoroughly "practical"; regards unapplied knowledge as waste; only interested in art if it serves commercial ends; may confuse luxury with beauty; more interested in having wealth than dominating or serving people."

There is some overlap between economic and social values definitions in terms of project management activities. The project manager has a practical task to do, in planning projects and managing people, so needs to be pragmatic and apply economic values. In doing these tasks well, he also serves the needs of his team and his organization for project success. A developer who plans projects well could be described as both pragmatic and altruistic.

Theoretical values were held by some developers. Spranger's (1928) definition summarises them as follows:

THEORETICAL: This person emphasises the search for truth. Interested in discovery of truth; looks for identities and differences; divests itself of judgments regarding the beauty or utility of objects; seeks only to observe and reason; *interests are empirical, critical and rational; chief aim in life is to order and systematize his knowledge.*

The italicised aspects of this definition are relevant to systems modelling, which seeks to understand and represent systems.

AESTHETIC VALUES: Although four people claimed to apply some aesthetic values, further analysis of their comments showed that three of them had misinterpreted the definition of aesthetic values and in fact their explanations were more representative of economic values, e.g. doing a good job, seeking perfection in the system and wanting it to work. The fourth placed value on in symmetry in system design, which does show aesthetic values in operation. If the selection of interviewees had included programmers, it is more likely that some of these would have held aesthetic values, as programming involves creating form and structure.

RELIGIOUS VALUES: Interview responses showed that the terminology used in the definition of religious values was off-putting or confusing, e.g. “I don’t understand the religious one but it doesn’t sound like me”; “Not sure about the religious, that is a confusing one”; “Definitely not religious”.

Those who specifically identified with religious values took a wider interpretation, e.g. “Honesty ... I suppose that might be a part of the religious ... satisfying values.” “Religious, in the sense that people are the same, really”.

However, the findings showed strong evidence for the operation of spirituality in the workplace, as shown by the personal characteristics in Figures 4.4 to 4.6. As these characteristics guide the actions of the developers, they may also be defined as spiritual *values*. The findings show spiritual needs e.g. “need to see the wider picture”; “need to really understand customers and their needs, being genuinely supportive and working with them”; “In terms of being equal, I always think of the poor user at the end of the day”. They also imply that systems development project managers exercise many of the characteristics that Korac-Kakabadse et al (2002) describe as spiritual leadership: building shared values; vision setting; sharing meaning; enabling; influence and power used to help employees accomplish work on their own; intuition; service; transformation.

Therefore, there is considerable overlap between findings interpreted as social values and findings that demonstrate spiritual values. This insight needs to be followed up and applied in Phase 3 during the interpretive case study.

Findings on Proposal 4 - Corporate values and standards

Overall, individuals had little conflict with corporate values because they realised why they existed.

Findings on Proposal 5 - Shaping of values

Most interviewees recognised where some of their values had come from and how they had changed over time. Things that had shaped values included line manager, parents, the responsibility of reaching a high grade in the organization, the responsibility of having a house and family, a serious illness. It was interesting to note that several systems developers thought some of their values had been influenced by line managers. Please see Figure 4.7.

Learnt from a line manager: -

- "Use common sense, say what you think. Don't mind looking stupid."
- "Have fun at work; work hard."
- "Treat others as they wish to be treated."

"Be thorough and do things well."

"Find out things."

The importance of not bodging things.

"Get on well with people."

Changed from being keen on getting promotion to valuing an interesting job more highly than career progression.

Recovering from cancer made her more determined to get back to work and her career.

She is calmer about problems now.

On having more responsibility, he felt his values move towards those of the organization.)

Upbringing as a Marxist affected his attitude to doing over-time and to promotion – he was aware of the possibility of being exploited.

Christian faith gave a strong sense of responsibility that he was serving others with his work, so he made an effort to do documentation well because it was for the benefit of others.

Figure 4.7 Comments showing how values are shaped

4.3 Conclusions

The findings from the values interviews supported the proposal that social values are important in project management. They also showed the relevance of economic and theoretical values. Detail was produced on how values are put into action in systems development projects. More of the findings related to management of projects and less to the technical activities of modelling and systems design. Most systems developers did not believe they held political values, as defined by Spranger (1928), but there was evidence that the position of power held by project managers is very important in allowing them to exercise social values for the benefit of the project, team and organization. Corporate values and standards are adhered to with little reluctance because developers realise their purpose. Some managers have found that by working alongside line managers, they have noticed certain values that they agree with and this has shaped their values.

The values interviews were helpful in producing some detail on the impact of values on systems development. The findings were based on interviews with individuals from a range of levels and departments within the organization.

One limitation of the interview method was that individuals were self-reporting about past experiences. A richer set of findings should be gained by observing a systems development project over a period of time. Another limitation of the data collection during interviews was that the Spranger (1928) definitions of religious and political values did not fully represent current thinking in the literature. Fortunately, interpreting the results with more comprehensive definitions rectified this. This clearly justifies the need for the interpretive case study approach in Phase 3 to complement the findings from Phases 1 and 2.

Overall, the following conclusions are drawn from the preliminary studies at Prosper plc about values and information systems development projects:

1. There is a corporate influence on what systems developers do, in addition to their personal values. Prosper plc is very security conscious and risk-aware. This is shown in practice by the existence of a highly structured methodology, procedures

manuals, guidelines for documentation, IT audits and training in use of the methodology. Managers vary in the degree to which they encourage staff to use the methodology and go for training.

2. Staff, generally, are compliant with the corporate influences. They may deviate from the methodology if they have good reason. They are aware that the organization expects them to adhere to the methodology.
3. Developers usually work in project teams, not as individuals.
4. Developers think that success in projects is due to factors such as good management, teamwork, communication, planning i.e. project management and people issues rather than technical issues.
5. Developers have some scope for individual variation and do behave differently from each other despite the existence of the highly prescriptive methodology and strong corporate culture, e.g. they decide how much effort to put into referring to manuals and producing documentation. They also have control over activities not prescribed by the methodology e.g. team building and communication.
6. Developers put high priority on meeting business and end user needs, i.e. people-focussed priorities as opposed to product-focussed priorities.
7. Most project managers appear to use their position of power altruistically rather than egotistically, i.e. to serve the needs of the team and organization rather than for personal gain.
8. Values are the most fruitful of the mental construct elements to investigate in the research because they are more focussed than the mental construct concept as a whole and they guide behaviour.
9. Social values as defined by Spranger (1928) are important in systems development and are relevant to good project management. Altruistic values lead to project management activities that serve the needs of others e.g. good communication, good

documentation, team building, empowering, trusting and valuing staff. However, many of these values may also be classified as spiritual values.

10. Political values, as defined by Spranger (1928), are unlikely to lead to good project management but if the project manager uses the position of power altruistically and has social values, this has a good influence on the project. There was some intimation of conflict of values and this needs pursuing further in the case study.
11. Economic values are also relevant because of the pragmatic nature of systems development.
12. Aesthetic and theoretical values are relevant to the technical aspects of systems development.
13. Religious values are related to spiritual values and it has been shown that the application of social values and spiritual values result in similar actions. This warrants further investigation.
14. Some examples have been found in this research of social and economic values in action in systems development. These are shown by interpersonal skills; personal standards for behaviour with others which show altruism and respect, 'treating others as you would wish to be treated yourself'; leadership and management activities – empowering, coaching, listening, working as a team. These activities meet the criteria for job satisfaction expressed in interviews.
15. Values can be shaped by line managers.

CHAPTER 5

PERSONAL VALUES IN INFORMATION SYSTEMS DEVELOPMENT

Summary

This chapter presents findings that show how personal values are relevant to tasks involved in developing information systems. It includes results of self-assessment of values by individuals in values interviews conducted during the case study and it compares results for project managers and other members of the project team. Reflections are made on categorisation and measures of values and related to the earlier literature. Findings are supported by re-visiting results from the preliminary studies and conclusions drawn about the importance of social and economic values in IT project management.

5.1 Introduction

Values interviews with project team members in the case study were transcribed, analysed and results presented in a table. Please see Appendix 10.

The project team comprised six people from three different areas of work. Peter was the project manager from the IT department and had overall responsibility for the project. He chaired business liaison meetings. He was line manager to James. Tracy was a project manager representing the business users and had project management responsibilities in her business area. She was line manager to Colin. Ray was a project manager in the workstation development team and line manager to Anne. Figure 5.1 shows the line management structure for the project, including senior managers.

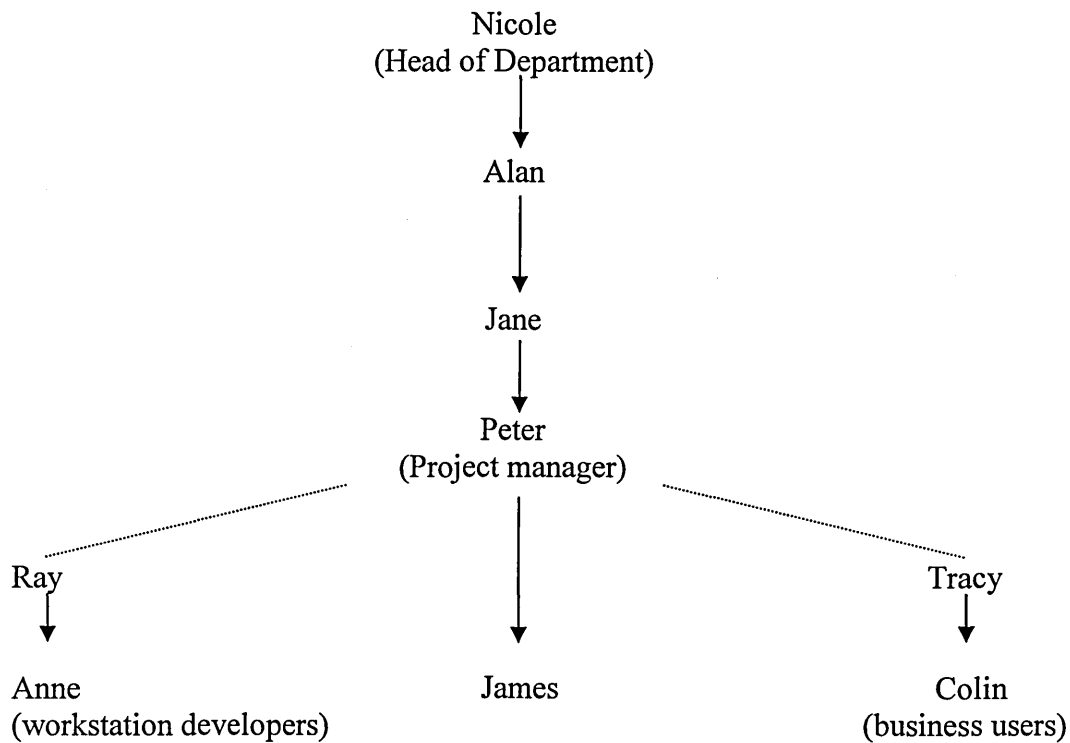


Figure 5.1 Project line management structure

5.2 Values self assessment by project manager and other project team members

In the values interviews conducted during the case study, the six members of the project team were asked which of the Spranger (1928) categories of values they thought they had, and why. Further analysis of the table of results in Appendix 10 produced Figures 5.2 to 5.11.

Figures 5.2 and 5.3 show the overall results of self-assessment of values. Results for those with project management responsibilities are consistent in that they all believe they have some social, economic and theoretical values. Results for those without project management responsibilities are similar in that all think they have social values, but only one thought they had some theoretical values.

	Social	Economic	Theoretical	Political	Aesthetic	Religious
Peter	V	V	V			
Ray	V	V	V			
Tracy	V	V	V	V		

Figure 5.2 Self Assessment of values by members of project group who have project management responsibilities

	Social	Economic	Theoretical	Political	Aesthetic	Religious
James	v					
Anne	v	v	v			
Colin	v	v				

Figure 5.3 Self-Assessment of values by members of project group who do not have project management responsibilities

Social values

Figure 5.4 shows that typically, project managers are aware of working in a team. They place importance on relationships and the need for sensitivity to others' needs. They like supporting people and giving them confidence in their ability and they like to help get the best out of people. They believe in the value of social events.

	Social values: Justification for self-assessment
Peter	<p>“So much of what we do is a team thing. It is important to act together.”</p> <p>“...try to make sure we have good relationships with all the people, not just the local team but the people in this department and other departments, the business areas.”</p>
Ray	<p>“Nobody can do projects on their own.” It is a team effort.</p> <p>Puts effort in to get the best out of people.</p> <p>Likes training graduates and puts time into it.</p> <p>Get the level of work right for people; build in some space occasionally.</p> <p>Notices and supports people with difficulties.</p>
Tracy	<p>“I need to feel that my guys are supported.”</p> <p>Likes people to have confidence in their own ability.</p> <p>Believes in the value of nights out to gel the team together.</p>

Figure 5.4 Extracts from data explaining self-assessment of social values in project team members who have project management responsibilities

Figure 5.5 shows that project team members who have no project management responsibilities typically like talking to people; relationships are important to them; they want to do the best for the users of the computer system and they like working in a team.

The main difference between the social values of the project managers and other team members is that in addition to placing importance on relationships, the project managers have a desire to support the staff in the team.

Social values: Justification for self-assessment

James	Likes talking to people and meeting people. Likes working in a team. Relationships are important to him - he likes to get on with the people he works with.
Anne	Bears in mind the users' needs - trying to do the best for the users. Gets on well with team and spends time discussing projects and sharing feedback.
Colin	Likes to help, support and affirm people. Team player. Cares about people and how they feel.

Figure 5.5 Extracts from data explaining self-assessment of social values in project team members who do not have project management responsibilities

Economic values

The findings presented in Figure 5.6 and 5.7 show that typically, project managers want to provide value for money and omit things in the project that do not add value. They are thinking of the long-term benefits. They believe that if people are happy they will give of their best.

The other team members typically take a pragmatic approach, keep things as simple as possible and do what is useful. They are driven by business goals and they are practical.

The main difference between the two groups here is that the project managers are focussed on the practicality of longer-term goals as well as immediate needs, whereas team members are mainly concerned with doing shorter term tasks pragmatically. Also, the project managers have more power to decide to omit some things if they will not bring long-term benefit.

Economic values: Justification for self-assessment

Peter	“I want to provide something that is value for money.” “getting the best value for the amount of effort”. “We always try and break the ice and get on well with people socially because you can get more out of them when you want them to do something for you.”
Ray	Not applicable.
Tracy	“If people are happy they will give a lot more.”

Figure 5.6 Extracts from data explaining self-assessment of economic values in project team members who have project management responsibilities

Economic values: Justification for self-assessment

James	Not applicable.
Anne	Doing what is useful. Keeping things as simple as possible, with no distractions.
Colin	Takes a pragmatic approach. Driven by business goals.

Figure 5.7 Extracts from data explaining self-assessment of economic values in project team members who do not have project management responsibilities

Theoretical values

Figures 5.8 and 5.9 show that project managers take a rational approach - they have a reason for doing something rather than a gut feel. Also, they see how things fit together.

Two out of three of the project team members did not think they had theoretical values and the one person who did gave no further explanation in the interview.

It is proposed that the role of project manager needs some theoretical values because it helps them see the bigger picture, which aids them in project management. The project team members have less need of this.

Theoretical values: Justification for self-assessment

Peter	“Observing and reasoning are things I do. Also, taking a rational approach to things.” “I always try and think things through,, have a reason for doing a particular way rather than just a gut feeling, a good sound basis.” “I suppose it is a rational thing to split the two things of what you want to do and ... how you want to do it.”
Ray	Uses theory and reasoning.
Tracy	Needs to understand detail and know how everything fits together.

Figure 5.8 Extracts from data explaining self-assessment of theoretical values in project team members who have project management responsibilities

Theoretical values: Justification for self-assessment

James	Not applicable.
Anne	Thought she had some theoretical values but gave no further justification.
Colin	Not applicable.

Figure 5.9 Extracts from data explaining self-assessment of theoretical values in project team members who do not have project management responsibilities

Political values

Consistent with findings presented in Chapter 4, members of both groups emphatically stated that they did not have political values, as shown by comments such as:

“...point scoring goes on ... I just want to design the screens and get the system out and leave the others to fight it out.”

“I am not interested in the politics. I don't want to impress anyone, I just want to do the job and think I have done it as well as I can.”

“ ... definitely not political, that is for sure.”

Question: Just as a matter of interest - most people say that actually, what is it about that that is not you?"

"The search for power, I suppose."

"I don't need to be that person seen to be doing something ... so that will get me there ... or because I am in this position and use it ... it almost seems manipulative"

"Certainly never been political".

"Well, mañana, tomorrow. Whereas I don't think a political animal would be like that, they would be out there trying to make something happen ... some of the team leaders certainly put their mark on the floor ... Some of them act like little dictators".

However, Figures 5.10 and 5.11 show that project managers admitted using power to get things done and not purely for personal renown.

Political values: Justification for self-assessment

Peter	“I wouldn’t say I was political.”
Ray	“I don’t believe I am oriented towards power.” Sometimes uses his position to get things done and to enable people to have a good working life. Also depends on having confidence.
Tracy	“I am definitely not without ego” - wants to do well and have it reflect well on her.

Figure 5.10 Extracts from data explaining self-assessment of political values in project team members who have project management responsibilities

Political values: Justification for self-assessment

James	Likes to be happy in what he is doing, not driven to succeed.
Anne	Definitely not. I would never do anything just to score points or put me in a better position.
Colin	Certainly never been political. “I have never wanted to be that person leading .. taking the responsibility.” Uses positions of responsibility to get things done, not to gain anything from it.

Figure 5.11 Extracts from data explaining self-assessment of political values in project team members who do not have project management responsibilities

The main differences between the project managers and the other team members is that the team members do not want to have power but the project managers use power if it serves the needs of the team and the project, i.e. altruistic use of power.

Religions values

Neither project managers nor other team members claimed to have any religious values. However, there was much evidence of spirituality and spiritual values.

Some aspects of spiritual leadership, as defined by Korac-Kakabadse et al (2002), were found amongst managers, as shown by the following extracts from interview data.

“I think you have to listen to people. At the end though I am accountable for this team, so I have to make sure that they do their job well, but I believe they do their job well by showing that you trust them. “

Gains satisfaction from “knowing that people are happy in what they are doing.”

“What you don’t want to do is overload somebody with work. You want people to enjoy work and if there is too much stress or pressure because of the volume of work then obviously that is not going to achieve that... I don’t think it is a bad thing as a project manager to make sure that some time they have a bit of breathing space.”

“But I like an environment where everyone has got confidence in their own ability, and I work better if I don’t have to monitor people day in day out, so I want them to know their trade and be comfortable in that.”

Some complementary statements relevant to spiritual needs were found in project team members. This includes comments showing that work is only one aspect of their lives and that they have a wider perspective on life goals e.g.:

“I had something of a frustrating previous 5 or 6 years in my previous department, not in that the work wasn’t interesting ... because I was working on the system that was being demised ... it certainly did not do me any harm, but it is nice to actually create something instead of destroy something, or take something out. “

“I have been working for nearly 29 years now, it is a long time and to me, you have got to have some fun because that keeps your enthusiasm.”

“I think it is important that you feel that your knowledge, your ability is respected ... perhaps there have been times where people have said it but you have not really felt it. It is the sincerity part of it I think ... I think honesty is far more important.”

“I don't want to impress anyone, I just want to do the job and think I have done it as well as I can. So as soon as I get out of here I pick the little one up from the nursery. I just want to be able to give him my attention and not think about work.”

“I like to be happy in what I am doing ... I like to have a life outside work”.

Aesthetic values

Spranger's (1928) definition of aesthetic values emphasises form and harmony, the desire to create and to form. Prosper plc has corporate standards aimed at achieving consistency in system design e.g. of workstation screen layout. Hence, there is relatively little scope for personal creativity. Therefore, aesthetic values as described by Spranger (1928), are not relevant in this context. Only one person claimed to have aesthetic values – a project manager who said that he likes symmetry in system design.

5.3 Reflections on preliminary studies and case study

5.3.1 Categorisations of personal values

Initially, when collecting and analysing data, a broad definition of the concept of values was used. The definition included any personal characteristic that was believed to have the potential to affect and control the individual's way of working and behaving, including beliefs, views and attitudes.

Two main types of data emerged:

1. Data relating to satisfying the individual's *personal satisfaction* and needs, leading to personal benefit e.g. answers to questions in the survey and interviews on job satisfaction revealed some data on values in terms of what energises and motivates them. Inevitably, this was directed towards personal satisfaction.
2. Data on interactions with other people leading to *benefits for others*. This came from a wide variety of sources. During interviews some project managers revealed their attitudes towards managing staff; the researcher

also noticed this during observation. The survey gave some broad indications of values directed towards benefits for business users.

This grouping is similar to Rokeach's (1973) subdivisions of terminal values into self-centred (intra-personal values) and society centred (interpersonal values) described in Chapter 2. This subdivision is relevant to the research question because the research is focussed mainly on individual values and resulting behaviour in the context of systems development. Therefore, it concerns behaviour which is largely under the control of individuals and about which they have some choice. Hence they have the ability to choose the extent to which they try to meet their own needs and the extent to which they try to meet the needs of others. Some key findings will now be discussed in the context of the two types of data identified above.

In the survey, question 5 asked respondents to list the top three factors that led to projects that they personally have found to be the most successful in their experience. This was also backed up by answers in the post-survey follow-up interviews. The most frequently reported factors included clear statement of requirements, good teamwork, communication, good project management, realistic timescales, user involvement, planning, testing, and reviews. Most of these require good co-operation between individuals i.e. ultimately, they must not be thinking solely of their own satisfaction but aiming to work together with others, doing things which lead to smooth running of the project for everyone's benefit.

Question 6 of the survey asked respondents to rank a list of priorities in order of importance from their own point of view. The top two priorities were meeting business requirements and meeting end-user needs; 'meeting my needs' was ranked sixth out of 7 priorities. This shows that responsibility to others – the company and end users – is ranked much higher than personal satisfaction. In interviews some explained that they get satisfaction from meeting business and end user needs.

The questions in 8 Part C all relate to personal needs in systems development work. Most of these needs could be met by interaction with a project manager who had some concern for the interests of their staff, e.g. a project manager who empowered staff would give them some freedom to operate using their own initiative; a project manager

who took time to explain the wider context of the project could help the team understand why their tasks were important. Sending staff on methodology training courses could also do this. The post-survey follow-up interviews showed that some project managers aim to empower, motivate and trust staff, that they value social interaction and interpersonal relationships and believe in the importance of teamwork. Therefore they have some personal values that aim to benefit others.

In the post-survey follow-up interviews, a former primary school teacher explained that she was trained by her profession to value and trust people and not to undermine, to create an open atmosphere for sharing of problems and to give people confidence in their own ability i.e. to be outward looking and responsible for others. She carried this into her work as a project manager and treats her team in the same way.

The Spranger (1928) categorisation of values may be analysed in terms of values that lead to personal satisfaction and values that are directed outwards for the benefit of others.

Social values are mostly directed towards benefits for others e.g. altruism, philanthropy, kind, sympathetic, unselfish, selfless. It could be argued that there is an element of personal satisfaction in seeking warm human relationships because this has mutual benefit.

Economic values include some elements that could lead to both personal benefit and benefit to others e.g. 'characteristically interested in what is useful'. In an organization this could benefit individuals and the people they worked with. A pragmatic attitude is needed in projects to get the job done e.g. by planning.

Theoretical values serve the needs of the individual initially by helping them to discover truth in the world about them, but this understanding could then be used to serve the needs of others, e.g. models and frameworks for understanding and explaining how organizations work.

Religious values include an interest in unity in the universe. As with theoretical values, this could initially serve the needs of individuals as it helps them understand their place

in the world. If applied to other individuals, it could lead to a realisation of connectedness with others and therefore an awareness of the impact individuals have on each other when working together in organizations.

Aesthetic values are related to this. Appreciation of form and harmony could be an individual, self-satisfying experience. If applied to people, it could include harmonious groups working in organizations to achieve a satisfying and useful end product.

Political values, as defined by Spranger (1928), are the least oriented towards providing benefit for others. A person with political values is described as 'interested primarily in power', 'motivated by the search for power and influence.' This could result in meeting personal needs at the expense of others' needs. If the definition were expanded to include an interest in power to bring benefit to others, then it can be seen that a position of power could also be used in an organization to serve requirements external to the individual e.g. a project manager has the power to empower others and to enable them to receive training for their own benefit and that of the project.

The Spranger (1928) categorisation of values was used in values interviews following the survey and the case study and in the results reported in Chapters 4 and 5. In the two sets of values interviews carried out during the preliminary studies and the case study, self-assessment of values showed that most individuals thought they held some social and economic values and just over half thought they had some theoretical values. Only a few individuals thought they had political, religious or aesthetic values. Most individuals were quite emphatic that they did not have political values and showed negative attitudes towards the use of political behaviour.

The personal characteristics that emerged from further questions in the values interviews supported the self-assessment results.

There were many examples of social values that serve others. They include a belief in empowering staff, the need for trust in teams, the role of the manager in motivating staff, creating teams that work well, helping people to return to work after an illness, social interaction, the need for people to be happy at work. These values would help people work effectively together in a project team.

Examples of economic values that serve the needs of the project and provide some job satisfaction included belief in careful planning and checking, thoroughness, anticipation of problems before they arise and an appreciation of the need to be flexible. This should contribute in a practical way to project success.

The project manager in the case study exhibited these economic and social values; he also explained how he uses elements of theoretical values - observing and reasoning and taking a rational approach.

Overall the findings on individual values presented here show the important impact of the project manager's values and resulting behaviour during projects.

5.3.2 Measures of values

In Chapter 2, a number of methods of measuring values was described. They included the Allport, Vernon and Lindzey Study of Values Questionnaire (1960) and the Rokeach Value Survey (1973). A justification was given for using neither of these for the research described in this thesis. Instead, a self-assessment technique embedded in an interview guide was used as part of a case study approach, which also included observation and document analysis. This method proved to be successful because it led to detailed, descriptive, contextual data, which would not have been achieved using a questionnaire method.

The use of the Spranger (1928) categorisation of values was highly relevant to the research question because it specifically recognises social values, implied by the literature review to be important in explaining success and failure of information systems development projects.

The findings may now be considered in terms of some other categorisations of values. There was much data that could have been classified as moral values or social values according to OrmeH's classification cited in Straugham and Wrigley (1980). Please see Figure 5.12.

Moral values – to which we appeal in judging the worth of actions and products that affect the life-energy and welfare of others and oneself.

Aesthetic values – to which we appeal in judging the worth of actions and products that affect the total impact of a situation on the senses.

Social values – to which we appeal in judging the worth of actions and products affecting the manner of life in groups and communities.

Spiritual values – to which we appeal in judging the worth of actions and products that do, or claim to, help people to see a purpose or ‘meaning’ in life as a whole.

Intellectual values – to which we appeal in judging the worth of actions and products which do, or claim to, help people to achieve a coherent mental picture of parts of the natural, man-made, and human worlds.

Figure 5.12 Ormell’s classification of values (Straughan and Wrigley 1980:78-9)

In the reflections above, findings on individual values were categorised into two main types – those leading to personal satisfaction and those leading to benefits for others. This matches closely with Ormell’s definition of moral values. The findings also showed the importance of building well functioning teams, leading to job satisfaction and success in projects, which matches Ormell’s definition of social values, i.e. they affect the welfare of others.

Richards’ (in Almond and Wilson, 1988) definitions of basic and secondary or functional values are also relevant to the research findings. There were many examples of pragmatic actions and modes of behaviour (secondary values) that led to meeting basic human needs for job satisfaction by successful operation of projects (basic values), such as efficient and methodical production of minutes; clarification in communication; use of checklists and files for organising work.

5.3.3 Comparison with previous research on personal values

In comparison with earlier research on values, the findings from this research show the advantages of using a case study method as opposed to questionnaires. They also build on the findings of earlier research by Mumford (1981) and Kumar and Welke (1984). The importance of social and economic values shown by this research in a detailed manner agrees with Mumford’s findings in 1981. She found that cognitive goals e.g. stimulating and successful life in work, sense of accomplishment and good

relationships, are more desirable than cathectic goals e.g. psychological health, happiness, friendship, and an attractive environment. This matches the findings on economic values in this research which showed that people gained satisfaction from completing tasks, being associated with successful projects and forming good relationships. She also showed that cognitive means for achieving goals e.g. capable, responsible, independent and logical are more preferable than cathectic means e.g. polite, cheerful and clean (tidy). The need for being responsible agrees with the findings of this research on social values, which showed the importance of responsible attitudes in building a team and meeting needs for job satisfaction. In terms of moral goals, Mumford found equality of opportunity to be important for systems designers. In terms of moral means for achieving goals, honesty was important but not as important as cognitive means. Moral goals and means of achieving these goals are similar in nature to some of the social values as defined by Spranger.

The findings in this research disagree with Kumar and Welke's findings in 1984, that technical and economic values clearly dominate in systems designers. However, the role of systems developers and the context they now work in has altered greatly since their research was published. Kumar and Welke proposed methods of modifying systems developers' value structures in order to give attention to human and job satisfaction issues. They suggested socio-technical methodologies and systems analyst training. The research findings reported in this thesis show that project managers may use their role to address human and job satisfaction issues to complement Prosper plc's structured methodology, SDM, which could not be classed as socio-technical.

5.4 Revisiting results from preliminary studies in the light of case study findings

The case study showed the relevance of social, economic, theoretical and political values to tasks that take place in project teams doing systems development projects. It also showed that there is a difference in application of these values between project managers and project team members who have no management responsibilities. Social values are applied by project managers to create good relationships within the team, to serve the needs of the team members, to enable and empower them and to build up an atmosphere of open-ness and trust. This results in confidence in the leadership of

the project manager and compliance with the demands of the systems development methodology, which ultimately serves company values. The application of social values by the team members results in good relationships with each other and the project manager and a desire to serve the needs of the business users for which the computer system is being designed.

Economic values are universally applicable because of the pragmatic nature of designing computer systems in an environment with limited resources. Therefore, the systems development work must be done efficiently and only tasks that are useful should be done. For the project manager, this means scheduling work wisely, choosing only to build in requirements that are necessary and communicating well with staff and business users to clarify objectives. This also requires the project manager to have an eye on the wider context within which the project is being done. For the team members, their focus does not need to be as wide as the project manager but it is important that they are efficient in carrying out the fine detail of the project by doing daily tasks.

Theoretical values are more applicable to project managers than team members because the project managers need to be rational in decision making and need models and frameworks to help them understand the wider context of the project.

Political values, as defined by Spranger (1928), were unanimously frowned upon by all members of the case study project group. Project managers did not want power for its own sake; team members did not want the responsibility that being a leader brings. However, it was realised that power may be used to serve the needs of others and the project managers in the case study all used the power provided by their position to serve the needs of their team.

The research activity in the survey and interviews in Phase 1 was done without an awareness of the Spranger (1928) categorisation of values. However, results showed that individuals within the IT department have a range of preferences for the nature of the work that they do. On the whole, people do jobs that meet their needs for job satisfaction. Different people have different needs and some of those in management positions showed a natural interest in serving the needs of staff. There was strong agreement with the following statements of needs:

I need to feel I have done a job thoroughly
I need to understand why I am doing a task
I prefer problems with clear-cut solutions
It is important to me to have some freedom to operate using my own initiative
I find security in following guidelines
I enjoy the challenge of open-ended problems
Complex problems are more enjoyable
I need to see how my job fits into the bigger picture
I am a careful person who takes calculated risks.

A project manager who empowers and trusts staff and communicates clearly about the project and use of the methodology could meet these needs by application of social and economic values.

Priorities in projects were focussed on meeting business and user requirements and not on adhering to standards. Findings on project success showed that success depends a lot on people issues as opposed to technical issues. These could be addressed by application of social and economic values. Frequently occurring priorities included:

- Clear statement of requirements
- Good teamwork
- Communication
- Good project management
- Realistic timescales
- User involvement
- Planning
- Testing
- Reviews.

As shown in Chapter 4, Figures 4.4 to 4.7, the values interviews conducted after the survey produced findings that agree with the case study values interviews in Phase 3 of the research. This provides further evidence to reinforce the relevance of social, economic, theoretical and political values as shown by personal characteristics and beliefs and job satisfaction criteria. They also provide more examples of how values

may be shaped by upbringing, previous experience and line managers. Fuller results are given in Appendix 9.

5.5 Conclusions

The findings have shown that at Prosper plc, social and economic values are important to both project managers and project team members but they apply them slightly differently.

Project managers apply social values to support staff in the team and help develop good relationships internally and externally. Team members who also like good relationships benefit from this.

Project managers use economic values to meet both long term goals of the project and short term goals in organising staff to do daily tasks.

Project managers use their position of power to take decisions relevant to scheduling and monitoring the project, manage their staff and interface with others outside the project. In the project studied at Prosper plc, this was done with the needs of the staff and the project in mind, thus the project manager was applying political values altruistically.

Overall, the project manager and team members worked symbiotically, in a mutually beneficial way. The needs expressed by team members included good team relationships, meeting targets and not having the stress of positions of responsibility. The project manager role was exercised by applying social values - encouraging good team relationships and generating team spirit, empowering staff and building mutual respect, communicating effectively and creating an open atmosphere; applying economic values by good planning and monitoring activities enabling the team to meet targets and applying political values altruistically by taking responsibility for providing a secure and supportive environment for the project team.

CHAPTER 6

THE INTERPLAY OF CORPORATE VALUES AND PERSONAL VALUES

Summary

This chapter examines the degree to which corporate values and personal values are in alignment. It begins by describing the corporate values at Prosper plc, as shown by its standards and procedures at a number of levels and its systems development methodology SDM. It then presents findings on value congruence, showing how individuals incorporate the company values in their work as systems developers, and it reviews their attitudes to corporate values. It also addresses value conflict.

6.1 Introduction

Chapter 5 presented evidence of how personal values were applied in an ISD project at Prosper plc. It showed that there are similarities in values between people in the same position in the management hierarchy, i.e. project managers have similar values and apply them in similar ways; those they manage have a slightly different set of values and apply them differently to project managers but apply them in similar ways to each other. In discussing these results, the emphasis was on how the values and resulting actions of project managers and project team members are mutually beneficial.

This chapter extends the consideration of values to include findings on corporate values and the interplay between corporate and personal values. It responds to the fact that “conflict is a natural property of every organisation” (Morgan, 1998:147) and provides evidence of the level of conflict at Prosper plc between values of individuals, groups and the organisation.

6.2 Corporate values at Prosper plc

Two of the defining features of personal values are that they guide action and they

endure. These features are also present in corporate values. Dearlove and Crainer (2001) provide this definition of corporate values: “The organization’s essential and enduring tenets – a small set of guiding principles; not to be confused with specific cultural or operating practices; not to be compromised for financial gain or short term expediency”. These are not the same as organizational goals, mission, purpose or vision but values are the precursor or the foundation on which these others are built.

6.2.1 Findings on corporate values from document analysis

Evidence of corporate values at Prosper plc was found in company documents. An extract from a staff handbook summarising policies and practices regarding employment contains a code of business ethics and responsible behaviour which includes the following:

“Banking is a business founded on mutual trust and public confidence. These attributes have to be earned and sustained over a long period by the successive generations of people who work in the business and can be lost overnight by irresponsible or unethical behaviour.”

Prosper plc lists three enduring principles, which have traditionally been observed – **integrity, fidelity and self-respect**. They also have corporate values in relation to personal conduct, which must govern their business ethics. They are based in **fairness, honesty and respect for regulations** and include:

“Not knowingly allowing the bank to place itself in a position where its duty to one customer or client conflicts with its duty to another.

Ensuring that the provision of banking services to suppliers or potential suppliers of goods and services to the bank, is considered on a wholly objective basis and not tied in to any form of reciprocal agreement.

Observing the spirit and letter of regulatory requirements from the Financial Services Authority.

Maintaining bank records and systems so that all transactions are recorded in an accurate and prompt fashion and not falsifying records or obscuring,

omitting or misrepresenting facts in records or communications.

Reporting to the appropriate internal level of authority any behaviour which contravenes the law, regulatory requirements, or the spirit of this code.”

How corporate values are put into practice at multiple levels at Prosper plc through objectives, procedures and standards

Documentation provided the main source of evidence for Prosper plc putting corporate values into practice by means of corporate objectives, standards and procedures.

Analysis shows that some of the corporate objectives are typical for any business i.e. they want to make a profit by promoting appropriate products and they need to be aware of competitors. Specifically, as a financial institution, they need to be cautious and responsible because they are looking after customers' finances.

At Prosper plc, many company procedures and standards exist that aim to put into practice the company values, some at company level and some at IT department level. Within the IT department, the section in which the case study was done has its own local guidelines, which give further detail on procedures.

In terms of IT systems, which support operation of the service internally and externally, it is vital that systems are reliable and secure. Due to the nature of the business as a financial institution, the IT systems perform a major role in supporting the services offered by the organization and there are many interrelated and complex systems. Consequently, the development of new systems must be done with extreme care, taking into account the many impacts on related systems. The organization has responded to this need by creating standards and procedures to minimize risk, maximise security and ensure that IT projects are closely monitored, therefore reducing the risk of failed projects. This is shown in the wealth of guidelines and procedures documented in manuals, procedures for auditing and maintaining quality and the structured systems development methodology. Departments respond to this strongly enforced, highly cautious culture by having their own departmental standards to monitor and control adherence.

Overall, this shows that the company tries to be highly detailed and prescriptive about how the values are put into practice, leaving less scope for personal interpretation than if there were fewer standards and procedures describing expected behaviour. Findings are summarised below. Titles of source documents are underlined.

Corporate standards and procedures

A section in the Staff Handbook includes ‘Core standards of behaviour’, which states that the overall aim is to be a successful and respected organization by providing high quality service to customers and colleagues. Core standards include detailed recommendations on communicating with customers and colleagues, being open, reliable, doing the job well, punctuality, dress, leading by example and contributing to team morale.

The company Intranet gives detail of company policies. This includes a beginner’s guide, which explains why the policies exist. Employees are asked not to pass on the web address as a security measure. Also, values workshops were advertised on the intranet.

Annual Performance Plan and Performance Review explains how it is felt important that all executives understand how their individual contribution leads to achievement of business success; also that there will be regular reviews of objectives throughout the year.

Corporate magazine – (glossy, in colour) - reports on key messages on company strategy from some senior managers and a message from the Chief Executive supporting these key messages. It also includes a range of company news including achievements, social and fundraising news and a staff gazette.

Trainee Recruitment Interviewers Briefing Information document gives guidelines and checklists for interviewing.

Security Pass Authorisation form – visitors need to renew temporary passes regularly and they require a signature from a staff member authorising the application. Visitors

using the car park also have to be signed in.

IT Department standards and procedures

The evidence presented here is specific to the IT department of the company.

A two volume IT handbook includes details of SDM, the systems development and project management methodology. This is used to ensure consistency of approach, terminology and communications. Required documents include:

External Design Management Report (EDMR) The function of this document is to identify risks, confirm scope, costs and timescales of project, describe proposed implementation approach and approach to security.

Progress Report document

Quality checklists

Project Terms of Reference

Functional overview

Functional specification

Project Management Methodology Phase Checklists

Methodology literature from IT training

Important project documents require sign off by a manager.

Many of the reports are required in a standard format, e.g. a Business Requirements document is presented in standard format and includes business objectives, scope, current problems, impacted functions, business requirements, areas impacted, constraints and opportunities.

The Intranet gives IT objectives and philosophy, which is to give the organization competitive advantage by supporting the group strategy. Overall, the philosophy is to:

- Avoid technical diversity and complexity
- Be technically self reliant for core systems
- Implement standard Prosper plc technology and systems

- Manage for value
- Build systems for long term use
- Deliver high quality, simple products that customers want and are willing to pay for
- Support business requirements
- Maintain high standards of integrity and professionalism
- Employ and develop graduates for IT careers

The Project Management handbook defines key attributes of successful projects and lists them as:

- Thorough Definition stage
- Feasibility report including cost/benefit analysis and business case
- Business sponsorship and ownership from senior users giving them effective control over major decisions
- An organization structure with clearly defined roles for key people.
- A joint-venture team (business and IT)
- Continued attention to risk management, business case validity and operational impact
- Sound estimating, scheduling and control techniques
- A phased and controlled approach, geared to the methodology framework
- Regular checkpoint reviews to ensure that the business case remains valid and that there are adequate plans for the next phase of the work.
- Effective progress reporting
- Delivery timescales less than twelve months.

Annual Performance Plan and Performance Review for IT Project Manager keeps track of his objectives, how performance will be measured and when each objective is to be met.

Local Department Standards and Procedures

Documentary evidence includes internal records and memos local to the department within the IT headquarters in which the case study was carried out.

Internal memos from the Head of Department at the beginning of the project clarify expectations of staff, list responsibilities and urge staff to preserve the department's design principles and standards on document production. They inform staff that two people have been given responsibility for supervising these procedures.

Department Newsletter gives information on staff members – promotions, project team achievements, jokes, sporting and other social activities and comments from senior managers.

A project manager uses a spreadsheet on which she records details of conversations or queries about the project she is dealing with.

Timesheet details amount of time spent daily on different types of work by each project team member. Weekly totals add up to 35 hours.

Memo from manager reminds a project manager of the protocol for dating project progress reports – he was in error by one day.

Memo from project manager reminds a colleague of the agreed procedure for producing a certain document and comments that this procedure has not been followed.

Local standards exist for drawing data models.

Standards exist for interface design.

6.2.2 Evidence of top-down communication and monitoring of values, standards and procedures

The company is rigorous, thorough and structured in the way it communicates its principles and objectives by making available the documents listed above to all staff and by managers promoting the standards.

Evidence for the effectiveness of this communication was gained from observation and interviews and shows that staff are aware of the conduct expected of them, including adherence to standards, e.g. staff were observed taking pre-meeting preparation

seriously, reading and annotating documents for discussion at the meeting. Meetings start punctually and people arrive on time, e.g. an 11am meeting of 12 people started promptly at 11am exactly, with all present and ready to start. During the meeting there was respect for the chair and people behaved professionally. Routine quality procedures, checks and validation were observed to be taking place.

Comments made in interviews conducted with managers at a range of levels of seniority showed how values are communicated top down. Only the head of the department, Nicole, was not available for interview. A diagram showing the line management structure was presented in Chapter 5, Figure 5.1.

Alan commented that his department has a reputation for disciplined use of the SDM methodology. Of Nicole, he said, “that is certainly an attitude that Nicole instils in her department and always has done and I guess in that respect she and I share similar values. And people within this department know that that is the way they are expected to operate..... Nicole’s influence is tremendous [said with obvious respect]. She lets people get on with what they have got to get on with but she makes sure that the values are right”.

Evidence for monitoring of projects at all levels in the department is shown by the following comment by Alan: “I am responsible for 3 of the projects, as you know, and on a day-to-day basis, Jane looks after that for me and Peter reports to Jane, as you know.....And it is my job to steer the IT aspects of that in the right direction.” The interview stopped promptly after the agreed 30 minutes as Alan dashed off to a weekly management meeting.

James expressed his respect for Peter and also his acceptance of Peter’s leadership as project manager by this comment, “But I think it is important that in your job, if you get on well together I think you work better as a team I’ve got a lot of respect for Peter and his knowledge and his ability, and we have a laugh and a joke. But there is also respect there as well.”

Monitoring of adherence to standards and procedures takes place by reporting structures in line management. Progress reports, time sheets and personal objectives are all

documented and reviewed in a disciplined manner by managers. Memos are sent if guidelines are not adhered to. An extract from the cover page of a performance plan listing the objectives of the project manager, Peter, is presented below.

“In order for Prosper plc to achieve its business aspirations, all executives must fully understand how their individual contribution leads to the achievement of business success. Executive Performance Management (EPM) is Prosper plc’s approach to ensuring that this contribution and subsequent performance is managed effectively. It will enable Prosper plc to create a value-driven organization.

The performance plan and performance review phase of EPM ensures that all executives in Prosper plc have clear goals and performance measures and that there is a clear link between their performance plan and their efforts in the workplace”.

Specific objectives were then listed in five areas:

- IT Team - Service availability

- IT Team - Project delivery

- Operating Plan - Project development

- Teamwork and Leadership

- Strategies, Policies and Standards.

For each objective, a method of measuring performance was identified. The operating plan performance measures included the following criteria:

“SDM rigorously applied, especially regarding timeliness of key milestone documents and deliverables.

Cost within normal tolerance”.

These extracts show that corporate values are formalised by setting objectives for staff, which are monitored and reviewed. The specific objectives for Peter include rigorous adherence to the systems development methodology.

In addition to formal monitoring, the office is open plan so informal monitoring can take place, as the managers are located close to the project team so can keep in touch

with progress.

6.3 Attitudes of IT department staff to corporate values and the SDM methodology

The extent to which corporate values and the resulting standards and procedures influence individuals' behaviour will depend on their perception of the ideas promoted. It is therefore relevant to review data on how the espoused values are perceived and adhered to by the IT staff.

Observation and interviews provided evidence of how the organization's aims, values, standards and procedures are perceived. The results below, in Figures 6.1 to 6.4, show that staff are aware of the importance placed by the organization on standards and procedures and they adhere to them. Full results are presented in Appendix 10.

Figures 6.1 and 6.2 show attitudes to corporate values of project managers, senior managers and project team members. Staff at all levels are in general agreement with corporate values but some individuals have concerns about specific issues that affect their job. Ray, an interface designer, disagrees with company policy on interface design. Tracy disagrees with attitudes to female part-time working. On the whole, managers are compliant with corporate values and use of the SDM methodology but are slightly more outspoken about features they disagree with.

	Attitude to corporate values
Peter	Agrees with use of local standards for documents. Agrees with quality standards. Agrees with managing for value.
Ray	Organisation's move towards a different technical infrastructure conflicts with his aim of making interfaces simple for the user.
Tracy	Happy and pleased to be working for Prosper plc – feels it is better than competitors. Believes in the general values it purports to follow. But, aware of some gender issues about female part-time working and promotion.
Alan	Believes in necessity of discipline to get a good product. Respects values of his manager.
Tom	Policies and standards are helpful but ultimately you need to be true to yourself and be open about mistakes.

Figure 6.1 Extracts from data showing attitudes of project managers (Peter, Ray and Tracy) and two senior managers (Alan and Tom) to corporate values

	Attitude to corporate values
James	Agrees with the company's 'clear water' policy. No conflicts with organization's overall aim ('to be the best').
Anne	She agrees with the bank's general values. Workstation development team is separate from 'host' team, which does design and programming. Strong influence from head of 'host' department. Some conflicts with host team on design.
Colin	Likes the informal dress code adopted in his department Sees posters espousing corporate values as motivators Generally has no disagreement with corporate policies except for policy on performance related pay. (generally, avoids conflict with colleagues to make life easier).

Figure 6.2 Extracts from data showing attitudes to corporate values of project team members who do not have project management responsibilities

Figures 6.3 and 6.4 show attitudes to the SDM methodology of project managers and also include comments from two senior managers. Alan is an IT senior manager and Tom is a senior manager from the business users for whom the new computer system was being designed. Overall, the findings in both tables show that staff at all levels think that the methodology is useful for structuring projects and contains sufficient flexibility. However, there can be some problems on smaller practical issues, the most important being that expressed by Tracy, a project manager representing the business users. She is concerned that the methodology forces early specification of requirements, which may change later.

	Attitude to SDM methodology
Peter	Agrees it is useful in structuring projects but also enables some flexibility
Ray	“SDM has served us well”. Believes it can be used iteratively
Tracy	Believes in SDM. Use of SDM can cause some problems in requirements definition - methodology forces you to define requirements too far in advance – things change
Alan	Useful for large projects. A dinosaur for small projects – RUP is better. His department has a reputation for disciplined use of the methodology. Does not like frivolous changes. Final aim is to support business
Tom	Procedures are needed – SDM provides them Realises the value of documentation, which SDM demands

Figure 6.3 Extracts from data showing attitudes to SDM methodology of project managers (Peter, Ray and Tracy) and two senior managers (Alan and Tom)

	Attitude to SDM methodology
James	Does not see it as a constraint but checkpoints are a problem. You tailor the methodology to suit your needs
Anne	Relatively unaware of using methodology. SDM is the way things should be done. It is methodical and cautious Does all of the necessary documents
Colin	Accepts it as a way of working, a structure

Figure 6.4 Extracts from data showing attitudes to SDM methodology of project team members who do not have project management responsibilities

6.4 Revisiting results from preliminary studies

Analysis of data from the preliminary studies supported the findings from the case study and provided more detail on some of the policies, procedures and standards used, especially in the IT department. It showed that the IT department puts into operation procedures that result from the company values. Much of the activity is aimed at risk aversion and security, which fits in with Prosper pic's aim to be responsible and to maintain public confidence e.g. through the use of an annual technology plan to ensure wise use of resources, constant monitoring of projects by thorough documentation and auditing to avoid situations that could lead to projects going vastly over time or budget. Also, there is a constant awareness by Prosper pic that they are in a competitive environment and need to focus on customer needs. For the IT department, this requires them to serve the needs of the business users when developing computer systems.

The survey showed that Prosper pic strongly encourages staff to adhere to company guidelines and that staff are aware of this.

The preliminary studies showed that although most people are happy with SDM, the systems development methodology, there are also some who feel that it is too prescriptive and inflexible. Also, there is variation in attitude between departments and managers and this has an influence on their staff in terms of how much encouragement is given to use the methodology and receive training. This contrasts with the case study findings where there was a more general agreement about the benefits of the methodology within the project group due to the strong pro-methodology influence of the senior manager of the department.

These differences in results highlight one of the outcomes of use of different research methods, i.e. survey results present statistics based on averages whereas the case study presents qualitative descriptions, thus enabling more extreme views to be shown.

It must also be noted that in the survey, only 12% added further comments on the methodology and a high proportion of these were more negative about the SDM methodology than the survey statistics indicated. Therefore it is not possible to claim that the comments are representative of the population as a whole because those with

negative comments may have been more likely to comment than those who were happy or had no comment.

Findings from interviews in the preliminary studies showed a range of opinions on IT audit. Most thought that there was a strong expectation that staff would adhere to company policies but some felt that company policies and principles should be communicated better.

Overall, the methodology was thought to be necessary and useful but a greater range of views about the SDM methodology was expressed in interviews conducted with the wider range of IT staff in the preliminary studies compared with the single group in the case study. Findings are presented in Figure 6.5.

It can be a protection.
 It is not a straitjacket.
 People are rewarded if boxes are ticked.
 Document templates help but may channel thinking;
 some sections of the methodology seem irrelevant but you feel you have to put something there;
 there does not seem any point in issues logs;
 some people will write documents to show off;
 if the functional specification is written in jargon, testers do not understand it; not enough training is given in the methodology.
 Believes that SDM should be used practically not rigidly.
 Believes in the importance of post implementation reviews, as there are always things to learn.
 Feels there is no need for the full methodology in some cases.
 Feels that there is freedom and flexibility in methodology.
 Thinks that things are less clear-cut in the methodology used following the merger.
 It does not help you build the team.
 It does not build in checking.
 It does not recognise that development is a skill. You need to work alongside skilled people to develop it.
 There is a need for thoroughness in documentation.
 Good document templates get re-used.
 Some documents are too technical – users do not understand what they are signing off.
 Post implementation reviews can be a witch-hunt.
 There is little time to do Post Implementation Reviews.
 Training is needed in how to use it.
 Documentation drives the methodology.
 You need to know WHY you have to do something – management should SELL the methodology.
 Feels there is some emotional attachment during the feasibility study – people don't want it to be wrong.
 Many pay lip service to the methodology but do not do it well. A quality assurance checklist helps give more detail.
 Thinks that documents should be written in bullet point form. Believes that programmers like a minimum amount of words.
 Post implementation reviews are taken quite seriously in his department.
 Always looks in the manual to see what should be in documentation.
 Technical areas on which it has little or no guidance include hardware and communications, network traffic, host connectivity, setting up paths, layout and length of documents, definition of good user requirements, outsourcing and risk.

Figure 6.5 Attitudes to the methodology

These comments suggest that the methodology needs to be complemented by the skill of a project manager to use it wisely, encourage use of it, add in team-building and communication and also bring in specialist technical expertise to supplement areas where the methodology is not precise.

Overall, the preliminary studies reinforce the findings from the case study that show staff attitudes are generally in favour of corporate values and standards and even though some individuals may experience minor frustrations, they are compliant and loyal to the company. The fact that there are some differences in opinion on the SDM methodology between departments and groups shows that support for the methodology may be due to local influence e.g. by the department head or line manager. In the case study, there was a positive attitude and this became part of the culture.

6.5 A summary of Prosper plc’s values using Mumford’s (1981) organizational values continuum

Mumford’s (1981) organizational values continuum was used to summarise the findings at Prosper plc, showing that Prosper plc is a controlled organization on each dimension. Please see in Figure 6.6.

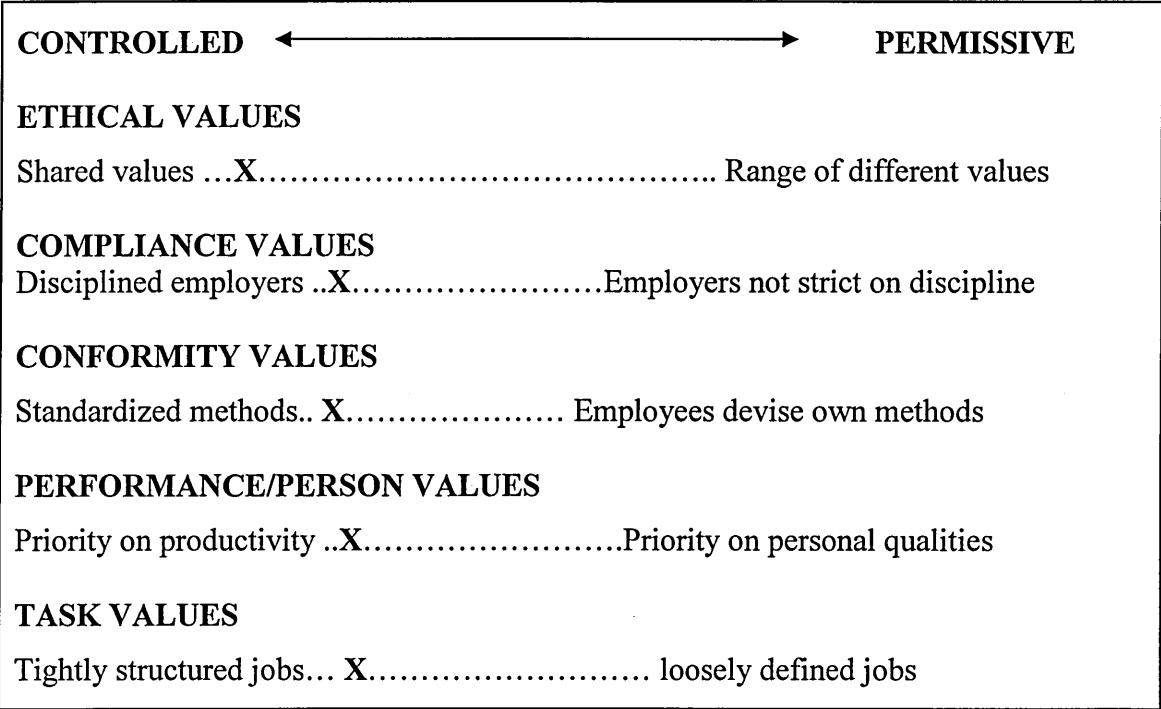


Figure 6.6 Organizational values continuum showing results for Prosper plc (Adapted from Mumford, 1981:37)

Ethical values. Corporate values are shared by individuals e.g. most staff agree that the systems development methodology is useful for structuring IT projects.

Compliance values. Management at Prosper plc is strict on procedures for ensuring that

important methodology tasks are completed. An IT audit department exists to check that procedures have been followed.

Conformity values. The method for systems development projects at Prosper pic is highly standardized. There is some scope for flexibility if justified.

Performance/Person values. The main priority is production of good quality IT systems that meet business needs, are on time and within budget.

Task values. Job descriptions are precise and roles are tightly structured.

6.6 Value conflict

Although findings on attitudes to corporate values and the SDM methodology show a high degree of congruence of values, there is some indication of conflict. As Prosper pic is a controlled organisation, according to Mumford's organizational values continuum (1981), it is possible that the apparent values congruence actually results from 'cultural doping' (Darwin, Johnson and McAuley, 2002) i.e. conflict is avoided because the organisation shapes preferences of employees. An alternative explanation is that it applies one of Pfeffer's (1981) strategies for controlling politics, quoted in Buchanan and Badham (1999), which recommends establishment of a strong culture, with shared beliefs, values and goals, to reduce conflict and disagreement.

Therefore, it is necessary to analyse the data from interviews and observation to collect evidence of value conflict at Prosper pic. It must be noted that evidence of conflict was not abundant. Many of the comments below were made by isolated individuals.

Four categories of findings emerged:

1. Conflict between individuals and the organisation in general.
2. Conflict between one individual and another in general.
3. Conflict specifically within the project team in the case study.
4. Dealing with conflict.

6.6.1 Conflict between individuals and the organisation in general

Much of the data in this category focussed on criticisms of the use of the SDM methodology, including:

Lack of time to use it correctly, resulting in 'paying lip-service' to use of SDM;

Disagreement about the correct level of detail to be used in documents;

Use of project checkpoints is unrealistic and

Project implementation review (PIR) is produced too long afterwards to be of any use.

Most of the wider issues on which there was some conflict between individuals and corporate values were typical of organisations in general and included:

New corporate IT environment;

Use of intermediaries between business and IT – this is unhelpful and produces

'Chinese whispers';

System testing procedure unrealistic;

Dissatisfaction with communication of principles and policies;

Dissatisfaction with capping of resources on partially completed projects;

Criterion-based interview procedures;

Group business decisions;

Personal performance factor approach to appraisal and pay is unfair;

Dress code;

Poorly written leaflet encouraging good writing.

Some of the comments reflected personal opinions and attitudes, e.g.

The organisation is slow to adopt new technology;

Career structure for technical staff means they have to move into management roles if they want promotion.

Personal preference for writing documents in detail, but time constraints and attitudes to necessary level of detail do not allow it.

Negative comments about the culture included:

Awareness of a blame culture in one department;

Post Implementation Reviews can be a 'witch hunt';

Policies on gender equality are not adhered to in practice, including negative attitudes by some managers to (mainly female) part-time working; lower expectation of promotion for females.

Disagreement based on morals included an awareness of 'double-speak', i.e. the organisation claimed that it was beneficial to outsource some work to Third World countries because it was the kind of work that British employees did not like, when actually it means that the organisation pays less. Another comment criticised the organisation's new IT environment, which led to greater efficiency and economy for the organisation but was less helpful for users.

Some expressed the conflict between work and family life.

6.6.2 Conflict between one individual and another in general

Comments that showed conflicts between individual attitudes were typical of human interaction in groups working together. They concerned differences in opinion about managing plans, expressions of power, perceptions of project progress, attitudes to rules, ambition, dealing with business users and bowing to supposedly greater experience when actually this was not the case.

6.6.3 Conflict specifically within the project team in the case study

Findings on application of individual values within the project team were discussed in Chapter 5. Findings on value conflict within the team will now be addressed. They give some insights into the practicalities of user participation in systems design. The need for user participation in systems development projects, as a means of clarifying user requirements is well established (Avison and Fitzgerald, 2003). The project observed at Prosper plc provided an opportunity to study in detail how this works in practice from the perspective of values and value conflict.

Comments from the IT team, the business team and the workstation developers showed that there was an 'us and them' attitude between the IT team and the business and between the IT team and the workstation developers, and that the IT team were seen as

dominant. This contrasted with earlier stages of the project, when a different IT team supported the business in a more subservient role.

The attitude of the current IT team was that they were in control and they would be able to produce a system flexible enough to cater for all possible business requirements for the mortgage service centre. The mortgage service centre's standalone database was to be merged with the Proper plc's corporate database, increasing its size by only 5%, hence, the proprietorial view of the IT department. The IT team worked within a department that rigorously adhered to corporate standards for use of the SDM methodology and they were disciplined about time management.

Some contact between the IT team and the business users was essential to clarify details, within the period of consultation specified by the IT team, after which requirements definition would be completed ready for the next phase of the IT development. The business users found this difficult because they wanted to redesign their business processes before specifying requirements so that they could best meet the needs of their business users. In order to meet the deadlines set by the IT department, they were forced to agree requirements before being completely clear about what was needed. Also, they found the concept of specifying requirements, without the option of changing later, difficult and unrealistic in a constantly changing business context. Consequently, there was some conflict about the project schedule and early specification of requirements. When changes were requested beyond the requirements definition phase, the IT team was unwilling to accommodate their requests. The business project manager, acting as an intermediary in this situation, found this rather wearing. Figure 6.7 presents an extract from an interview transcript, which shows how strongly the business project manager felt about the situation. It also demonstrates the dominance of the IT department's approach in this project. From the business users' point of view, strict adherence to procedures and standards by the IT department had now become counter-productive.

(Extracts from an interview conducted on 30/04/02, 8 months after business liaison meetings had stopped)

“Peter very much likes to have his requirements defined up front, that is it done, book closed, sorted, go away. That has caused issues to the point of having to start sending memos of a fairly personal nature to say ‘Look, this ain’t on, you don’t do it like this, not happy, you are pissing off the team.’ My personal opinion is, I find James to be the most helpful person on the face of the Earth. If you give him a new requirement, his response is always the same, ‘Oh, God, I am going to have to tell Peter about it.’”

“Peter can be very inflexible and fairly aggressive.

“A note came back from Peter, ‘I am not prepared to meet, it is nothing to do with me, I don’t want to play, I’m not coming to the meeting. ‘OK, so how do you suggest I solve the problem?’ ‘I don’t care, it is nothing to do with me.’ Finally agreed, and paraphrased that ‘it was to have one hour of my time, I am not bringing a pen, I am not bringing paper because I am not taking any action and at the end of that hour, I am walking out.’ That, Peter is probably an extreme example. We have not had anything else to that extent from other people, and it has been very frustrating, and the end result is that for a period of time, I had a team that would do anything they could do to avoid talking to him. So requirements would come up, errors would come up, and they would almost say ‘Oh it doesn’t matter, we will work around it in the process’. That shouldn’t be the case, people are afraid to raise it. Hence, the email that went out to Peter saying ‘Cut it out’. He came back saying ‘I don’t agree with you, but from about six months following that, he was very different to the rest of my team. Which suited me. If he was pissed off at me, but treated them better, I considered that to be a success.’”

Question - “Is that a personal thing with him do you think, or is he doing the IT department thing?”

“My comfort is I know it is not just me. Feedback I have had from other IT areas is, that is his general way of working.”

“While those (business liaison) meetings were taking place we were in the process of defining the requirements, so in terms of coming up with a new requirement, Peter was fine, ever so helpful, ever so co-operative. And we got on really well. We get on all right now, but there is tension there. Because deadline point had not been reached, the book was still open to changes, which was exactly his job, and we were still providing them on a regular basis. It was when those meetings stopped, and therefore they were going away and we were still coming back with things, and in some instances, going back on things we had said previously, no argument.”

Figure 6.7 Extracts from an interview with Tracy showing her opinions of Peter after completion of the requirements definition phase

The workstation developers were frustrated that they were not involved in early consultations with the business users, and that their involvement was managed by the IT project manager. They would have preferred to be involved directly with the business team at an earlier stage so they could gain a better understanding of how best to design the workstation interface.

Much of the work involved co-operation and interdependence, so differences in

priorities led to problems. Therefore, some personal conflicts ensued, e.g. the business project manager was frustrated at the intransigence of the IT project manager who refused to cooperate when she wanted to change requirements later. The IT project manager was extremely angry when one of the business team failed to attend a meeting because he was attending another meeting.

It seems ironic that conflict arose between the three groups – the IT team, the workstation developers and the business team - because they were each trying to do the best for the project and each aware of corporate values. Achieving a successful outcome, ultimately for the organisation, motivated all of them. Conflict arose because they each had different interpretations of what was needed and what was the best way to achieve it.

In spite of these conflicts, the work was completed and the system was delivered.

6.6.4 Dealing with conflict

Mechanisms for dealing with conflict were varied, and appropriate to the source of conflict. For example, many explained that although the methodology is highly prescriptive, it could be used flexibly if there is good justification. To compensate for the lack of timely Post Implementation Reviews, local tips were recorded.

On a personal level, differences of opinion were handled by being open and honest; being willing to see others' perspectives and talking things through to come to a mutual agreement; placing higher emphasis on maintaining good relationships by self-awareness and a 'give and take' attitude; having realistic expectations about the fact that people will have different attitudes to practicalities, e.g. complying with standard approaches to document production.

A minority of less positive responses to conflict involved 'pragmatic acquiescence' (Darwin, Johnson and McAuley, 2002) to make life easy; leaving the team because of a poor relationship, and threatening to leave the company because of severe disagreement with the culture.

6.6.5 Values conflict and values congruence

At the start of this section, the source of the apparently high level of values congruence at Prosper plc was questioned. Evidence from the research has shown that, although employees expressed some conflict with Prosper plc's attitudes and practice locally and globally, this was not an overwhelming problem for them and they developed mechanisms for responding to it. Within the project team, where there was clear evidence of conflict between the IT team and business team. Nevertheless, the systems development work continued to completion. It is proposed that this was due to the power held by the IT department, demonstrating Darwin, Johnson and McAuley's (2002:2) assertion that "Power is the medium through which conflicts of interest are resolved as different groups and individuals secure and mobilise different power resources in their pursuit of sectional interests". Therefore, it is questionable whether the apparent values congruence also provides job satisfaction in employees.

Evidence from values interviews on shaping of values shows that while some employees think that the practical application of their values is shaped by line managers, they only choose to be influenced by them if they admire and respect those values. Therefore, this argues against the claim that employees at Prosper plc are 'culturally doped'. However, results from the survey and document analysis support the existence of a strong culture with shared beliefs, values and goals, therefore resulting in the control of politics, as proposed by Pfeffer (1981) in Buchanan and Badham (1999).

Therefore, the effect of values conflict is not a major problem at Prosper plc. This is supported by the low turnover of staff – the survey conducted in 1999 found that the average period of employment at Prosper plc for staff in the IT headquarters was 12 years.

6.7 Discussion

These findings from Prosper plc will now be discussed within the wider context of literature on values congruence, interplay of corporate and personal values, systems development methodologies and corporate values outside the world of information technology.

6.7.1 On the importance of shared values

The importance of shared values was stated by Mumford in 1981 who concluded that values of top management are an important influence. Quoting Fox (1974) she states “in the future we must expect top management to show a keener alertness to the needs and aspirations of those upon whose identification, commitment and loyalty, they are heavily dependent.” She was aware of the importance of job satisfaction and the power of the employees and she urged a humanistic attitude by management. Current literature takes a business perspective and arrives at the conclusion that shared corporate values are helpful in achieving business success (Small, 2002; Dearlove and Coomber, 1999). Coomber and Dearlove (2001) claim that companies that go to great lengths to preserve their values and put them above profit maximization outperform companies that put profits first. They believe that shared values foster a new psychological contract which enables bridges to be built between employer and employee. They cite Posner and Schmidt’s assertion that shared values:

- “Foster strong feelings of personal effectiveness
- Promote high levels of company loyalty
- Facilitate consensus about key organizational goals
- Encourage ethical behaviour
- Promote strong norms about working hard and caring
- Reduce levels of job stress and tension
- Foster pride in the company
- Facilitate understanding about job expectations
- Foster teamwork and *esprit de corps*.”

(Dearlove and Coomber, 2001:203)

The findings at Prosper plc have shown how the organization places great importance on shared values by using many media to promote corporate values, including the intranet, company circulars and standard checklists. The ISD methodology is a method for formalising company values into a disciplined structure. It also verifies Mumford’s (1981) findings on the importance of top management in influencing values because there was evidence that individuals perceived a change in culture, methods and standards following a company takeover. No evidence was found of formal channels for the organization to find out the values of staff, i.e. a bottom-up approach.

6.7.2 Interplay of corporate and personal values

On the whole, the values of individuals at Prosper plc did not conflict with corporate values. This is not surprising, because people are unlikely to choose to work at a place where their values conflict wildly with those of the organization. Also, when selecting recruits to the organization, the application and interview process may detect individuals with values that would not fit in with the company's values. Hence, the company culture is maintained. Pattison's (1997:106) statement that organizational members "swim in a sea of values, combining these with their own value preferences, ethical decisions and performances" has been shown to be true at Prosper plc. The systems developers float in a pool of standards and procedures, which support their activities and give them some buoyancy. The direction in which they swim is partly within their control but they are within a bounded pool, which provides limits.

Liedtka's (1989) research on the interplay of personal and organizational value systems, which leads to a values congruence model, found that decisions are often made by assessing the fit between a proposed course of action (or organizational values) and the individual's self-image (or personal values). At Prosper plc, project managers are continually making decisions when planning and executing systems development. The organizational values guide them in what to do because of the existence of the systems development methodology. In practice, this entails managing the required tasks for each stage of the systems development life cycle, adhering to standards and producing the required documentation. The research findings in this thesis show that project managers are generally compliant with the requirements. They have some differences of opinion about the amount of detail and style of language used in documents based on their own values.

Posner and Schmidt's (1993) research on differences between the interplay of personal and organizational value systems found strong support for Liedtka's (1989) values congruence model. Additionally, their findings suggested that managers who felt clear about their personal values and organizational values reported positive attitudes about their work and the ethical practices of their colleagues and the firm's. They also found that having clarity about personal values may be more important, in relation to attitudes about work and ethical practices, than being clear about organizational values. They

believe that this is because “Ultimately, it is people and not organizations who bear the responsibility for decisions” (Posner and Schmidt, 1993:346). Also, they believe that both understanding and being comfortable with one’s own personal values seems to mitigate against the potentially negative consequences of conflicts between personal and organizational values. This is relevant to project managers at Prosper plc who expressed negative attitudes about aspects of the methodology. The confident and sincere manner in which they expressed their views showed that they were comfortable with these values and this did not have an adverse effect on their attitude to their work or the organization. The fact that they continue to work there, some in senior positions, supports this.

The Blessing White consultancy believes that alignment between organizational values and personal values is the key driver of corporate success (Dearlove and Coomber, 1999). Success is not explicitly defined in their paper but it implies that they are primarily concerned with business success. At Prosper plc, it is essential to remain successful as a business and corporate values reflect this. The economic values demonstrated by staff by adherence to the systems development methodology help ensure the desired success. However, this does not mean that there is a conflict with individuals’ social values. Rather, the two are complementary. Job satisfaction is achieved for many at Prosper plc through being involved with successful projects. Application of economic values contributes to this.

These findings provide some counter-argument to critics who describe the drive to instil corporate values into individuals as corporate brainwashing (Dearlove, 1999). It may depend on motivation. Dearlove and Coomber (2001) report that companies such as Merrill Lynch, Johnson and Johnson, Cadbury Schweppes and Hewlett-Packard put other values above profit maximisation and outperform other companies that put profits first. This suggests that if profit is the ulterior motive for promoting shared corporate values, this may not achieve the best results.

6.7.3 On methodologies

The findings at Prosper plc address and support some recent issues in the literature on methodologies.

Values embedded in methodologies

Jayaratra et al (1999:32) propose that values are embedded in methodologies, that the “models, techniques, methods, language, steps and structures of methodologies implicitly or explicitly demonstrate the value sets of their creators”. Detailed evidence has been provided in this chapter on Prosper plc’s in-house methodology SDM which strongly supports this assertion.

Methodology as ‘corporate DNA’

Flynn and Hussain (2002) stated that the process of constructing IS requirements is shaped by stakeholder beliefs, values and motives. In terms of Morgan’s ‘organizations as brains’ metaphor (1998), in which values are built into all parts of the organization like corporate DNA, Prosper plc is a good example of such an organization. Through the use of its methodology, it ensures that all individuals involved in systems development projects carry out its values.

Adding ‘people-focus’ to a non-people-focussed methodology

The reflections above indicate that the methodology used at Prosper plc clearly fits into the non-people focussed category of methodologies as described in Chapter 2. As stated in Chapter 2, this means that it is up to the systems developers and project managers to choose to address human issues both in development and implementation. The existence of the workstation development team, which is associated with the host team in IT projects, means that consideration is given to design of a user-friendly interface. So, although not built in to the methodology, human computer interaction issues are addressed by the standard procedures for doing projects.

How Prosper plc addresses potential problems with use of methodologies

At Prosper plc, potential problems of methodology use are addressed by rigorous monitoring procedures put into place by the organization. It is accepted that the methodology may be used flexibly as appropriate, and some guidance is given on this in training. Also, project managers learn by experience how to use the methodology flexibly. The problem of users creating wish lists does not arise at Prosper plc because use of the methodology and design of the system is led by the IT department, which offers the users a number of available options.

6.7.4 On the variety of corporate values in the wider context and their relation to social and economic values

This discussion of shared values, the interplay of corporate and personal values, and methodologies as a means of operationalising values is based on the assumption that values are held by individuals and organizations. In fact, the extent to which organizations and individuals have clarified their values may vary, the choice of corporate values may vary and the extent to which the espoused values are acted upon may also vary.

For organizations that have decided upon some values, regardless of what the values are, this provides evidence that the organization has put some effort into thinking about what it wants to achieve and how it wants to achieve it. A mission statement may describe a desired goal and corporate values may suggest behaviour aimed at achieving it.

The centrality and relevance of values may vary between different types of organization. Figure 6.8 shows some examples of corporate values, illustrating similarities and differences between values of different organizations.

Disney	No cynicism; creativity, dreams and imagination fanatical attention to detail, and the promulgation of wholesome American values
Cadbury Schweppes	Competitive ability; quality; clear objectives; simplicity; openness; responsibility to stakeholders
Merrill Lynch	Client focus; respect for the individual; teamwork; responsible citizenship; integrity
Silicon Graphics	Integrity; fairness and respect; innovation; passion and breakthrough results
Merck	Corporate social responsibility; unequivocal excellence in all aspects of the company; science-based innovation; honesty and integrity; profit, but profit from work that benefits humanity
Sony	Elevation of the Japanese national culture and status; being a pioneer – not following others, but doing the impossible; respect and encouragement of individual ability and creativity
IKEA	Innovation; humbleness; simplicity; looking after the interest of the majority; will power
Reuters	Accuracy; independence; accountability and openness; speed; innovation; customer focus
US Army	Loyalty; duty; respect; selfless-service; honour; integrity; personal courage

Figure 6.8 Examples of corporate values (Source: Dearlove and Coomber, 1999:25)

Inevitably, in any profit-making organization, one of the fundamental goals is to stay in profit so some values must be directed towards this, e.g. Cadbury Schweppes lists competitive ability as one of its corporate values.

As people need to work with each other in most organizations, some values may address the need for good relationships, e.g. Merrill Lynch includes respect for the individual and teamwork.

In addition to internal relationships, external relationships with customers, suppliers or

the general public may also be supported by appropriate values, or values that inspire public confidence e.g. Merck includes corporate social responsibility as one of its corporate values and Reuters includes customer focus.

Some organizations may have values that are characteristic of the nature of the work it does, e.g. Disney includes creativity, dreams, imagination; the US army includes loyalty, duty, selfless service and courage.

For some non-profit-making organizations, their core values are their *raison d'être*, e.g. organizations which base their activity on expressing religious philosophy. A UK day centre includes such values in its mission statement :

“We commit ourselves to creating a caring community, based on Christian values, where marginalised and disadvantaged people can find understanding, practical assistance, a sense of belonging and the support to regain their self-esteem and overcome barriers of social exclusion. “

St. Wilfrid's Day Centre (2004)

In the context of the above points, Prosper plc's values, presented in Section 6.1, include several of the types identified, i.e. values that are appropriate for a profit-making organization that is concerned with gaining public confidence, fair treatment of customers, good relationships between employees and compliance with external legislation.

Webley's (1999) review of sources of corporate values questions the extent to which they translate into practical ethics and pervade all levels of a business in all parts of the world. He proposes that for values to be truly effective, they must be integrated into corporate activity. Similarly, Bilefsky (1999) discusses the need for acting upon values rather than paying lip service and reports that companies have a variety of ways of gaining commitment to values, e.g. Levi-Strauss offers bonuses for employees adhering to corporate values. Bilefsky (1999) argues that companies cannot force their values on employees but suggests that top management should be involved and committed to gain the trust and support of staff. Page (1999) is in agreement, stating that creating a corporate culture based on values cannot be imposed by authoritarian orders from

above, rather it needs gentle nurturing. Maitland (1999) has an alternative perspective, that employees will self-select so that if the corporate values seem foreign to them, they will not feel comfortable in the organization. Survey, observation and interview findings at Prosper plc support this last point.

Returning to Spranger's classification of values, it is proposed that the 'values' discussed above are manifestations of Spranger's (1928) social and economic values. Trust, fairness and respect are expressions of social values because they require altruism and selflessness. 'Values' such as client-focus and quality are beneficial to customers but also pragmatic means of achieving a successful business and ultimately ensuring profit. Hence, they are founded on economic values.

At Prosper plc, employees are mainly compliant with corporate values and these values pervade all levels of the organization. Chapter 5 showed the importance of the social values of the project manager in creating good team relationships and in shaping values of the team. The discussion of findings in this chapter leads to the suggestion that the project manager also has an important role in communicating and promoting corporate values.

6.8 Conclusions

Investigations of values congruence and values conflict at Prosper plc showed that while there is some evidence of conflict of values, this does not cause major problems for the organisation, individuals and projects. On the whole, there is a high degree of values congruence and relative lack of conflict due to the strong culture, leading to shared beliefs and values.

The case study showed that Prosper plc's corporate values include the use of responsible and ethical behaviour, integrity, fidelity, self-respect, fairness and honesty. These values are cascaded down from the senior management and put into practice through the use of policies, standards and procedures. This is communicated to staff via documentation and management and monitored by audit procedures and line managers.

The interplay of corporate and individual values was considered an important theme for

the research described in this thesis because individuals, with their personal values, operate in a corporate environment. Therefore, it is useful to gauge the extent to which the individual is influenced by the corporate environment. One way of doing this is to analyse individuals' attitudes to the corporate influences.

The results on attitudes to the corporate environment include attitudes to the methodology, which is one important facet of the corporate environment. The majority of comments refer to the methodology and a few refer to wider corporate influences.

Issues about which attitudes were expressed included amount of detail given in methodology manuals, the value of IT audit, documentation, the structured nature of the methodology, the importance of training, methodology checkpoints, inconsistency of use of the methodology and reward for 'ticking boxes' when methodology steps are completed. Opinions varied on some of the issues e.g. some expressed positive comments about the structured nature of the methodology and others found it too rigid.

For most individuals, there was no conflict with the wider corporate influences, which have less direct impact on their daily work.

Individuals on lower grades were generally compliant with the requirements of the methodology and had less strong views than more senior staff, including project managers. It is the project manager who is responsible for putting the methodology into practice, deciding how to interpret the requirements and allocating required tasks to project team members. Therefore, the project manager's attitude is important in determining exactly which tasks are done. The team members simply carry out the tasks under the project manager's guidance.

It is relevant to pursue methodologies as a theme because the methodology is one practical outworking of the corporate aims and values. Also, project managers with their individual values are required to use it, so the application of the methodology becomes an interface between the individuals' values and corporate aims and values.

Findings showed that the methodology, as documented in a manual, gives structures and checklists for tasks that have to be done to complete a project. This includes documents

that have to be produced and some outline of content. On the whole, production of documents is taken seriously and some feel that this drives the methodology. However, there is no guidance on wording documents in a jargon-free manner and making them suitable for business users to understand.

There are parts of the methodology on which people feel there is not sufficient technical guidance and detail given. In terms of processes, there is no guidance on checking or handling risk.

Overall, the methodology is structured and detailed, giving clear guidelines in a highly task-focussed manner. It gives no guidance on people issues such as team building and communication. Therefore, if these issues are to be addressed, they become the responsibility of the project manager and/or the training department. Training explains the value of using the methodology, gives some practical advice and explains the value of some documents. However, not all staff attend training either because their managers do not send them or there are limited places. Project managers can compensate for this if they have received training and share their experience and understanding with staff.

Most of the case study findings on interplay between corporate values and personal values were actually attitudes to use of the SDM methodology and other standard procedures. In the project group studied, attitudes were favourable. They accepted the methodology because they accepted the rationale for it. Managers were confident about adhering to standards with some flexibility and because these views were communicated positively, the project team members happily complied. Individuals expressed some frustrations about certain aspects of the company standards where it was believed that business users or specific groups would be disadvantaged.

THE IMPACT OF VALUES ON ISD PROJECT MANAGEMENT

Summary

Detailed findings are presented on the application of social, economic, political and theoretical values by individuals in the systems development project studied at Prosper pic. In particular, detailed explanation is given of the actions of the project manager in terms of application of values. The importance of using social values in interactions with the project team is highlighted.

7.1 Introduction

Chapter 5 described the personal values that systems developers bring to the project studied at Prosper pic. Social and economic values are shown to be important for project managers and team members although they use them differently. Project managers apply social values to manage altruistically; team members apply social values to form good relationships with other team members and business users. Economic values are applied by project managers to schedule work and use resources efficiently, while being aware of the wider environment in which the project is taking place and the long-term aims. Team members use economic values to meet targets and get their tasks complete, usually with a narrower focus and shorter-term goals. Project managers use theoretical values to aid understanding of the project by using models and frameworks and to make rational decisions as opposed to gut reactions. Theoretical values do not appear to be relevant to team members. Although distaste was expressed by all interviewees at the notion of having political values i.e. power for its own sake, there was much evidence that project managers use their position of power altruistically, to apply social values when managing people, and pragmatically, to apply economic values when managing the project.

Chapter 6 gave details of how individuals operate within a context of corporate values by explaining the interplay between personal and corporate values. At Prosper pic,

corporate values are concerned with business ethics and responsibility to the customer. Prosper plc claims to have three enduring principles – integrity, fidelity and self respect. Corporate values in relation to conduct are based on fairness, honesty and respect for regulations. A highly structured and disciplined set of procedures is used to operationalise these values at all levels and they are communicated effectively through many channels and monitored by reporting structures in line management.

The attitude, at all levels, to corporate values and use of the SDM methodology is generally positive and compliant. Senior managers actively encourage their staff to adhere to the guidelines. Project team members are not fully aware of using the methodology because they work under the direction of the project manager.

This chapter will now give a detailed explanation how corporate and personal values were applied in the systems development project at Prosper plc.

7.2 The application of project team members' personal values in the project

Description of how the six members of the project group operate while at work is presented. Highly detailed descriptions are given. The detail is appropriate because it provides a rich description of values in action in systems development, which is the heart of the thesis. It includes how they operate within the constraints of corporate values; how they put social, economic, theoretical and political values into action and some comment on how their values are influenced.

Findings were derived mainly from values interviews using an interview guide, presented in Appendix 10, plus a small amount from informal interviews. Following this, extracts of findings from hand-written observation field-notes were added. On the whole, it was found that observation data supported interview findings and showed values in operation in a specific project. In some cases, the observation data supplemented the data from interviews because the researcher noticed some additional behaviour that the individuals were not aware of or did not classify as putting values into action.

More observation data was recorded for Peter than the others because the researcher focussed more attention on him as the IT project manager, a role which gave him greater power to influence the course of the project. Also, his actions were more prominent because he chaired business liaison meetings and was a more active participant than the others. Tracy, the business project manager, also made a big contribution to the meetings and consequently more data was generated on her than the remaining project group members.

Findings are presented first for the project group members who had no management responsibilities in section 7.2.1, followed by the others who did have management responsibilities in section 7.2.2. Finally, findings for Peter, the overall project manager, are presented in section 7.2.3, the largest section. The present tense is used throughout and results represent data recorded during 2000-2001. The data is précised from the original field notes, frequently using phrases and terminology from the original data and occasionally, verbatim quotes to illustrate points.

7.2.1 Findings on personal values of systems developers who had no management responsibilities

James

Interview findings

James is a direct report to Peter in the IT team. He is in his late 40s, older than Peter and a lower grade in the salary scale. He has worked for Prosper plc for over 20 years. In the values self-assessment, he identified himself as having social values, placing importance on relationships with people. He likes to be happy at work and needs to have some fun. He gets job satisfaction by being in at the beginning of projects, doing something creative and being involved in successful projects. He is not driven to succeed for personal gain in career terms but he does like to be associated with successful projects.

Corporate values. James is in agreement with corporate values and is happy with the SDM methodology. He understands that his organization is trying to make itself more customer-driven. He has no conflicts with the approach of the organization.

Social values. He enjoys meeting people. This is an important element of systems analysis work and in the current project he needs to meet business users and workstation interface designers. Relationships are important to him. He believes that if you get to know a person and issues arise, there is a clearer appreciation of the issues and you know the best way of handling them. In the project observed, James was aware that one of the project group representing the business tended to over-dramatise problems and another could act hastily then change his mind later.

He also enjoys working as a team and likes to get on well with people in the team. This includes having respect for Peter, the project manager, and supporting him. He also respects the wider team of which his small team is a part.

He has no ambitions to be in a position of power and likes to be happy in what he is doing.

Shaping of values. People he has worked with have influenced his values.

Observation findings

These supported the above findings. During business liaison meetings, James is supportive, co-operative and practical in looking after small details. He respects Peter and is compliant with his requests. If his understanding needs to be corrected, he is good-humoured about it. He is not afraid to ask questions to check his understanding. Although he clearly enjoys the social side of work, this does not stop him getting his tasks done. It was not surprising to find that he was one of the organisers of the office Christmas party. Also, his indifferent attitude to promotion was reinforced when he made a comment about a new initiative in his department that would keep him in a job until he retired. His top priority is his family and he has family photo on his desk. He also has a joke postcard with a statement about work: "Hard work never killed anyone, but I figure why take the chance?"

Interview findings

Anne is a direct report to Ray in the workstation development section of the project team. She is in her 30s and has worked for Prosper plc since leaving school after A-levels. She gains job satisfaction when users find her systems easy to use. She believes that “ultimately, you are there to deliver what the business wants.” She is not highly ambitious.

Corporate values. Anne is compliant with Prosper plc’s interface design standards because she understands their value and purpose. She is not fully aware of using SDM, she simply does what is required of her by her manager. However, she realises that SDM is useful. She has an appreciation of the needs of users because she had worked in a branch before working in the IT department. Consequently, she wants to be helpful and do the best she can on their behalf because she can put herself in their position. She therefore realises the need for interfaces to be simple and straightforward because most users are not highly technical. She feels that the workstation development team are more sympathetic to the needs of the users than the IT team who are more focussed on the technical aspects of the system such as data storage. This sometimes causes conflicts and Anne finds it frustrating that the IT team is the lead team and had first contact with the business users. “Sometimes, it is almost as though whoever can get to the business first can persuade them they are right”. She felt able to express her concerns informally to Peter that it felt that the workstation development team had “come in cold” half way through the project. She explained that if there is a stalemate over an issue, ultimately they let the business users decide.

Social values. Anne gets on well in her team and she feels this is important. She discusses issues with workstation development team members. She is glad when conflicts are resolved and likes to have the opportunity to explain the full story, but may not take the initiative herself in doing this. She believes in doing the best for the users, i.e. being altruistic.

Economic values. She only builds things into the interface design that are really needed, rather than putting in all things that are possible technically – “keeping things simple”.

Political values. She is aware of politics but sees it as behaving childishly sometimes.

Shaping of values. She explained that her role as a mother of 3 young children affected her current career ambitions - she simply wants to do her job and go home at the end of the day to her family and not to work long hours.

Observation findings

Anne is quiet for most of the time at business liaison meetings. She makes no attempt to dominate or influence and often appears quite phlegmatic, but pays attention. If her line manager is present at the meeting, she leaves all contributions to him unless specifically invited to contribute. In his absence, she showed that she was knowledgeable about the issues. She was more talkative and took more initiative in a one-to-one situation where she demonstrated her workstation designs to the researcher.

Colin

Interview findings

Colin is in his 40s and a direct report to Tracy. He has also had some team leadership responsibilities in the past. He derives job satisfaction from getting to the end of the day and having no outstanding queries - keeping on top of the work. His priorities are delivering things on time of the required quality. He believes relationships are important for helping approachability. He likes to create a happy working environment. ... "have a bit of a laugh and a giggle" and tries not to be "too straight laced, too strict". He avoids conflicts – he will put his view but not argue. "Easiest way, just do it the way they like."

Corporate values. He values standards because they are helpful for people and appreciates the work of the IT team in establishing the computer information system requirements because they ask questions about things that he has not thought of. He prefers the more relaxed dress code and culture in his business environment compared to the more formal dress and atmosphere of the IT department. He accepts the company's business aims and objectives. He sees SDM as a structure to work within.

Social values. Colin realises that good relationships are important if he wants to discuss things where there is a difference of opinion. He describes himself as a team player, team oriented. He likes to help and support people and realises that some people need affirmation. He cares about people and how they feel. He tries to create a happy working environment by “being upbeat” and using humour. He values social interaction and feels that going out for lunch or a drink with work colleagues is a good thing.

Economic values. He describes himself as pragmatic. He does not believe in doing things if they are not needed but if something is useful, then it should be done. At the start of projects, he believes that all should be able to make a contribution. “There is no such thing as a stupid comment”....”everything should be valued to start off with”. He is target driven and aims to deliver things on time. He likes to be on top of things and not have a lot of work left at the end of the day.

Political values. Colin does not claim to have political values. He just wants to do the job with the minimum of conflict. He is not concerned about personal renown or ambitious to get promoted.

Shaping of values. He believes that his values were shaped by his Catholic upbringing. He would feel guilty if he felt he had hurt someone so would try not to upset people. He can see the positive things in other people’s values but is not sure that he could take them on. He is comfortable with himself as he is.

Observation findings

During business liaison meetings, Colin is energetic and talkative, not afraid to ask questions if he does not understand. He clearly wants to get things right on behalf of the business users he represents. He is alert and talkative, demonstrative in his body language. He has a positive, ‘can-do’ attitude. He responds readily, quickly, sometimes hastily, to issues and questions.

He appears honest and straightforward; he was hospitable at the start of meetings in his department, offering to get coffee from the machine, and generous with his time at the informal lunchtime interview, clearly enjoying the opportunity to talk about the project.

7.2.2 Findings on personal values of systems developers with project management responsibilities

Ray

Interview findings

Ray is the line manager for Anne in the workstation development team. Now in his 30's, he did a Maths degree then worked for Prosper plc. Together with Anne, he had joined in the business liaison meetings part way through the project.

Corporate values. Ray uses SDM for workstation development and within that, he is able to use a prototyping approach to developing workstation interface designs. In terms of the overall structure of the project, Ray feels the company approach, in which the IT team met with business users earlier than the workstation developers, was not helpful. He also feels that the company's move to a new more efficient technical environment was going to make life harder for the users.

Social values. Ray feels that in projects, nobody can "do it on their own". Therefore, he feels that the whole team should be recognised in any achievements. He also sees his role as to get the best out of people and he put effort into training new graduates. He believes that helping people develop is just as important as completing projects. He tries to keep staff active with the right level of work, meeting their needs for some challenge but does not believe in overstretching staff and realises that sometimes they need some breathing space. Also, he tries to notice if people are feeling tired or stressed. He thinks that if you know people well enough, you notice more of how they are feeling. He gains job satisfaction from knowing that users find a system easy to use. He disagrees with people who make things awkward to use to keep themselves in a job.

Economic values. His objectives include getting projects delivered. He likes to sort things out quickly if needed – getting quick wins as well as long term project completions. He finds pressure stimulating sometimes. He feels that planning analysis is difficult and realistically, planning in an unknown environment just for the sake of being methodical is not useful.

Theoretical values. Ray likes getting into systems and looking at theories of them.

Political values. It does not appeal to him to have a high level of involvement with senior managers. He thinks that having a higher grade gives you confidence, allows you to “flex your muscles” and get things done. He also thinks that being confident can give you power.

He uses work scheduling to enable people to have a good working life – this is an altruistic use of power.

Shaping of values. Ray thinks that the “people side” of his job has evolved. Training graduates has helped him be less reserved at work and more people-focussed. He takes time over it and works at it and feels rewarded because he is being helpful and supportive in staff development.

Observation findings

Ray tends to sit quietly at business liaison meetings, listening to the discussion, and contributes if asked questions e.g. for clarification of a requirement.

Tracy

Interview findings

Tracy is in her early 30s and manages Colin. Together, they represent the business users at business liaison meetings with the IT and workstation development staff. Tracy has a definite presence at business liaison meetings because of her lively contribution, strong personality, humour and expressive use of body language.

Corporate values. She is proud of working for Prosper plc and believes in the general values that it claims to follow, although she has some doubts about whether or not all of them are followed in practice, particularly regarding equal opportunities for women.

She is clearly aware of Prosper plc’s rules and the need to follow them; also, that for large scale projects, SDM is the only practical way of managing the project. She believes in SDM, although she does not think the current project has completely

followed the normal life cycle. She feels that SDM creates some deadlines that do not match with the real world, i.e. they were forced to decide on requirements too early when later it was realised that they needed to be changed because the environment had changed.

Social values. She has a clear need to support her staff team and to make sure they know their responsibilities. She wants to create an atmosphere where staff feel they can go to her with problems but otherwise feel empowered to get on with their job, confident in their own ability.

She believes that social events are essential for creating shared experiences and bonding the team.

She prefers learning rather than blaming if things go wrong. She believes in being fair. She is committed to doing things for the benefit of the business and she realises the need to spend enough time with the business users to properly understand what their needs are.

She uses humour to try and break tension.

She likes the fact that her boss listens to her and values what she has to say.

Theoretical values. She likes to understand detail and understand the “nitty gritty” of how things work. In her current role, which has extra responsibility, she was frustrated she could not do this because it would take too long.

Economic values. Tracy needs to know that systems will work within themselves and with all of the other systems they interface with. She needs to see the bigger picture and is aware that systems “have tentacles all over, generally further than you can see when you start to look at it.”

In putting her values into action, Tracy says she “sticks her nose in.” She keeps an eye on what is going on, looking over people’s shoulders. She gives more attention where she knows there is a problem.

She enjoys getting things completed and she puts priority on doing things that need to be done.

She realises the need for sufficient resources if her team is to operate properly.

Political values. She enjoys doing well and having it reflect well on her. She puts her point of view and would not compromise to “keep someone sweet”. She is aware that she likes getting her own way and that she can be “loud and bossy”.

Aesthetic values. Her comments on this were “I am not really a harmony, peace and love type ... I am a ‘get in there, stir it up, do it but get it done right’ person.

Shaping of values. Some of her values were shaped from her experience at school when she had low self-esteem and wanted to do well to boost her self worth. Through the experience of her job, she learned to value people. She realises that happy staff do their job well. Two quotations from interview transcripts illustrate very well Tracy’s attitudes:

“It boils down to wanting to do as good a job as I possibly can for my ego. And if that means being a hard-arsed bugger then that is what I have to do. If it means being a soft, fluffy one, I don’t do that as well, fluffy is not my nature, but I can definitely do the supportive and encouraging bit”.

“I have learnt about myself that I am not very good at giving praise because I want everything from me to be perfect. I have the same expectations of everyone else.”

Tracy thinks her values are her own but the things she does to support and meet them are what she picks up from other people.

Observation findings

From informal interviews and observation, it was seen that Tracy is hard-working, honest and open, self-aware, needs to engage with people and needs a challenge. During business liaison meetings, the following evidence of values was observed.

Social values. During meetings she tells stories, jokes and passes comments in a light-hearted and informal way, often using informal language. She openly expresses negative opinions in a non-aggressive way, often accompanied by expressive body language – facial expressions or gestures with her hands. She openly praises good ideas and acknowledges good work. She affirms people if they check their understanding of an issue with her. She openly expresses concern about issues that are a problem to her, including things that give her a “twitchy feeling”. She is considerate of others when

planning meetings. She occasionally takes part in community events organised by the company while at work.

Economic values. There were many examples of economic values being put into operation. Tracy showed that she is very pragmatic in organising her staff and her work. She has sufficient technical knowledge to be able to communicate sensibly but is not afraid to ask when she does not understand things. She is methodical in noting actions for which she is responsible and reliable in completing them. She is practical in arranging communication with the IT team outside meetings. She is responsible in planning ahead for the retirement of her senior manager, Tom.

Theoretical values. She was aware that in some circumstances she has a gut feel about problems, but chooses to get more evidence before making decisions.

Political values. Tracy often 'holds the floor' and becomes the centre of attention at business liaison meetings. She takes responsibility in line with her role. She uses her position to stagger demands on her staff for work from the IT team. She seems decisive, confident and in control.

7.2.3 Findings on Peter, the project manager with overall responsibility for the project

These findings are more detailed because of the bigger role played by Peter, hence the increased opportunity for observation. Also, observation and recording of a high level of detail on behaviour associated with values was a deliberate aim of this research.

Observation data gives details of how Peter puts his economic, social, political and theoretical values into action at formal meetings and outside of formal meetings. This includes time spent working at his desk and informal conversations on the way to meetings. Due to the large volume of observation data, the findings on how Peter applies personal values are structured slightly differently to previous sections.

Observation findings for each type of value are presented immediately after interview findings because they provide practical detail to enrich and illustrate the general statements made in interviews.

7.2.3.1 Briefprofile

Peter is the project manager for the IT team. He is line manager to James and he also chairs the business liaison meetings, comprising Peter and James from the IT department, Ray and Anne from workstation development and Tracy and Colin from the business. He is in his 30s and has progressed well in his career at Prosper pic. He gains satisfaction from approval of his superiors. He is clearly a well respected and effective manager but does not 'blow his own trumpet'.

7.2.3.2 Corporate values

Interviewfindings

When designing systems, Peter chooses options that will be cost effective in the long term, fitting in with one of the company's aims, 'Managing for Value'. He finds SDM helpful because its standards and manuals save one having to remember things and give formats and guidelines for documents. He uses Prosper pic's standard criteria for interviewing new staff but also relies on a gut feel about whether they will fit in with the team. This has turned out to be reliable in helping choose employees for his team successfully.

Observationfindings

Observations and interpretations were extracted from hand-written field-notes and are listed in Figure 7.1. These observations were made in informal settings, outside meetings. They show how Peter adheres to the corporate standards in practice and the comments show his positive attitude to, respect for, and compliance with corporate values and standards. During meetings, Peter was seen to fit in with company policies regarding Group Audit. He was clearly compliant with his department's local standards. He was aware of the IT department's view of producing stated requirements on time and tried to fit in with this. He was aware of operating under the IT director's ground rules. He would ask for details so he could feed back to his line manager.

Observation	Comments
Refers to standards for project documentation as necessary	Thorough and careful in doing documentation as recommended by company standards
Received a memo from senior manager pointing out a small error in use of standards in a document he had done, signed 'Mr. Picky'	Even though the error was small, he was not resentful about having it pointed out but was good-natured about it and found it quite amusing; showed respect for his superiors
Believes in being honest in documents reporting on progress for official checkpoints	He is willing to report truthfully rather than hiding things
Comments made by his senior manager on documents he has produced are accepted without further question	Complies with and respects those in more senior positions
When a colleague described him as 'Document Police' because of his insistence on adhering to standards, he did not argue. He was realistic that some people are going to do it their own way anyway	Maintains his own beliefs in the face of disagreement; realistic about the fact that some others may have different views and will not always agree with standards
Believes documentation should be written simply and concisely in plain English, avoiding un-necessary technical jargon, especially if the documents are to be reviewed by business users	Concerned that users should understand documents; not afraid to express his views

Figure 7.1 Observations on the project manager's adherence to standards in informal settings i.e. outside formal meetings

7.2.3.3 *Economic values*

Interview findings

Peter would only fulfil a system requirement if it were going to be cost effective and simple to do. He is wary of doing things that seem complicated because it may indicate that there is a problem. He gets satisfaction from completing tasks. He also gets satisfaction from doing good documentation and from encouraging others to do so. He would never ask people to do things that he thought were a waste of their time. He is keen to get the right solution to problems. When up against a deadline, he makes it a priority to meet it. He chooses good quality, long lasting solutions rather than quick ones.

Observation findings

Evidence of the application of economic values consisted of pragmatic and methodical behaviour that led to completion of the basic tasks of a project manager (Field and Keller, 1998). Findings are presented in Figures 7.2 to 7.6.

Observations	Comments
Notes neatly organised in lever arch files	Organised and methodical
Does minutes immediately following meetings	Efficient and sensible; should produce more accurate minutes
Has an issues list holding printouts of all emails and memos relating to the project; used this frequently	Ensures nothing gets forgotten
Has a well-thumbed planning folder i.e. evidence that it is used frequently	Regularly checks plans
Notes down relevant information following informal chats with colleagues about the project	Ensures nothing gets forgotten
Avoids getting involved in issues to do with the project which are the business's responsibility e.g. plans for BPR	Focussed, not distracted to spend time on things which are not his concern.
Following re-scoping of the project, made a list of requirements arising from first attempt at the project	Methodical
In a meeting with line manager about a document, Peter marked points for amendment brought up by line manager on his own copy	Methodical, organised
Efficient, methodical, systematic in doing tasks	
Anticipates needs and plans ahead	

Figure 7.2 Observations on the project manager showing methodical and pragmatic approach to self-management

The observations in Figure 7.2 show Peter's focussed, organised and methodical approach to information and time management. He has systems for recording project-relevant information efficiently and accurately and storing it so that it is readily accessible when needed. He avoids becoming involved in issues that do not concern his project. The result of this careful self-management is that Peter maximises the amount of time to be available to respond to queries and actions requiring access to project information. It also means that he is well informed about all aspects of the project.

Observations	Comments
Keeps to schedule – meetings rarely cancelled or over-ran.	Reliable.
Methodical and consistent in running meetings and writing minutes	Efficient, plus people get used to the format and know what to expect
Goes through actions, reports back on progress or asks others to report back	Methodical, responsible chairing
Waited until Colin arrived to start the meeting properly – he was aware that Colin’s train was delayed	Understanding when delay is beyond control of team member
Request by Tracy to be free to leave the meeting at 2.45pm to attend another meeting – the meeting finished promptly at that time	Honoured request
Takes notes at meetings to remind himself to do things he has agreed to do	Careful and responsible
Commented on another meeting he had attended which ‘was not the most structured meeting, 1.5 hours long, 1.25 hours too long’	Shows he likes meetings to be fairly efficient, structured and business-like
Sums up at the end what was agreed	Useful and pragmatic
Minutes meticulously presented – good layout and no spelling or grammatical errors	Careful and precise

Figure 7.3 Observations showing the project manager’s approach to chairing and minuting meetings

Figure 7.3 shows that Peter’s systematic, methodical approach to chairing and minuting meetings is consistent with his approach to self-management shown by Figure 7.2. He makes disciplined and efficient use of time and respects the schedules of the other members of the project team. He is careful and responsible in clarifying actions and minuting meetings accurately.

More details on Peter’s pragmatic approach and attitude to basic project tasks during meetings are listed in Figure 7.4.

Makes sensible, realistic and practical suggestions, e.g. use of current abbreviations rather than re-inventing the wheel; producing one common set of timesheets for all project teams; including contingency in timesheet – ‘unassigned amount’; seeks clarity on wording of a letter; delegating some of Tracy’s work while she is on holiday; not afraid to offer alternative suggestions; Altered resourcing estimate due to other interfacing projects taking longer than expected to give him their information.

Not afraid to comment or question, e.g. asks for proposed finish time for a planned task; would prefer Colin to take his time rather than making snap decisions; External design is about WHAT not HOW; questioned a proposed design – believes it should be simple to maintain and made an alternative suggestion; “We can do something ‘un-canny’”; not hesitant about asking for clarification if there is something he does not understand; asks intelligent and meaningful questions; pointed out typing errors on parameters document; Offers alternatives – shows open-mindedness and knowledge.

Thorough, cautious and meticulous, e.g. Notices details and checks on them; “We may want to send a letter saying ‘We cocked it up’”; Due to his wide experience, he believes in checking all interfaces that the project impinges on; Takes methodical approach so things don’t slip through the cracks; Believes that use of mechanisms (e.g. email, whiteboard diagrams or notes) to clarify decisions avoids wasting time with misunderstandings; Backs up verbal agreements and understanding using emails to clarify; When Tracy missed meeting, made plans to follow up some issues afterwards; Takes notes during meetings and files them; Careful – believes that double-checking some things is useful; Always enquires about absences at meetings if no apology given; Clarifies actions and outcomes; Checks availability of project team members over holiday period; Cautious and wise in reminding Colin about meeting when he saw him – useful as Colin had forgotten.

Efficient, thoughtful and well-organised e.g. – first to get functional overview document done; Anticipated something well re-receive funds process which Colin is responsible for; Aware users like to see dummy panels (screen designs) to help them fully understand the proposed system; Believes in the value of diagrams for simplifying and communicating, and finds them useful in face to face communication; Likes to keep things simple – not too much detail e.g. diagrams include simple boxes to represent more detailed processes; Thinks ahead; Peter’s team’s testing plan was submitted first, so the layout was adopted by the other teams; Believes in the importance of sorting things out at early stages, planning ahead; Does not jump to conclusions; does not believe in ‘knee-jerk’ reactions. “I will have to think about that”; Explained the problems he anticipated if a user mistypes something.

Applies personal experience and qualities, e.g. Humble, modest, honest, flexible – open to future changes. “It is not a done deal, just our understanding, however crude it might be.” Practical, honest, open-minded, co-operative; Sees the wider picture, including all of the things his project impacts on; Aware of needs of operators (users) who will need to know what to do in the new system; Aware of original scope of project; Takes a top down view.

Figure 7.4 Observations of the project manager during meetings, showing his pragmatic approach to basic project tasks

Figure 7.4 shows fine-grained detail of how Peter organises project tasks efficiently and pragmatically during project team meetings and makes practical suggestions. He is thorough and meticulous but he also believes in simplifying where appropriate. Using

his experience and resulting personal beliefs and qualities, he anticipates future needs and plans for them and he is open-minded in situations that benefit such an approach; he has a wide knowledge of the project and how it fits in to the ‘bigger picture’; he uses diagrams to aid communication. Peter readily comments and questions where appropriate and is not afraid to ask for clarification.

Peter’s behaviour outside the formal setting of meetings is described and evaluated in the Figures 7.5 and 7.6.

Observations	Comments
Responds immediately to queries about the project from people who come to his desk or phone	Responsive, accessible, approachable, efficient
Chats informally about the project with colleagues around him in the open plan office, e.g. reflecting on how business liaison meetings went	Involves colleagues, includes them, trusts them, keeps channels of communication open, creates an air of equality rather than superiority and diminishes sense of hierarchy
Asks James to check the minutes he has done	Involving colleague as an equal, valuing his comments; pragmatic
Copies James in on memos and emails	Trusts, involves and informs James and keeps communication channels open
Sends emails to clarify what was agreed following informal chats away from his desk about the project	Avoids any misunderstanding or disagreement; ensures things do not get forgotten
Refers to colleague sometimes as Mr P e.g. We need to review the Test Plan, Mr P	Respectful, not domineering but managing James in a non-threatening and friendly way
Agreed to make amendments to document then show amendment to line manager the next day	Creates clear deadlines for himself, efficient and manages his line manager’s expectations of his work

Figure 7.5 Observation findings on the project manager in informal settings showing a pragmatic approach to interactions with staff

The observations and comments in Figure 7.5 show Peter’s approach to managing staff in a manner that is both pragmatic and sociable, combining his position of authority as project manager with a non-domineering attitude to staff that shows respect, values them and creates a feeling of equality.

Details of Peter’s attitudes and approaches to a wide range of other project management tasks are listed in Figure 7.6.

Applies his technical expertise to the project, e.g. Believes in the flexibility offered by relational database technology; Has a “bee in my bonnet” about saying WHAT not HOW because this is more useful for programmers and more understandable by all; concerned that documentation should be useful and not over-prescriptive about how something should be done; Believes that if documents are too long they will not get read; Held out for what he wanted from the workstation developers i.e. something new that they had not done before, because he was convinced that it was possible - Sticks to his guns if he believes he is right; believes that if the technology is capable of doing something, there is no need to be afraid of using it just because it has never been used before; Attitude to testing – need to focus on what they want to do with the system; Understands processes and is confident in his understanding; Wise and forward looking – builds flexibility in the system design to allow for possible changes.

Applies the status he has in his role as project manager with confidence, while being respectful of management e.g. Was promoted to Systems Manager in November 2000 - Ambitious; capable; Got the job of compiling a key document for all component projects in project - Management respects his approach; Good at recruiting suitable staff - responsible for selecting and recruiting Jane, a member of staff to do testing. Jane is very happy and working well in the team; Feels he is influenced by managers above him, in what they pick up on - Wants to comply with management wishes and concerns; If a senior manager makes a comment about an issue on a document he will take it on board. Respect for and compliance with senior, more experienced colleagues; In response to a comment by a more senior colleague that he was a management lackey, he later explained that this person who is one grade higher was probably trying to put him in his place. Has enough confidence in his ability and stature that he is not easily offended; possibly the senior colleague is jealous? Has attended the 2-week project management course.

Expressive about his views on project-related issues, e.g. Angry that Colin had not turned up for a meeting and no apology given, so the meeting was abandoned - Felt concerned that people should not be inconvenienced; Expressed criticism about a poorly-written leaflet promoting good writing style produced centrally by top manager; Disapproves of Integration Systems testing as he thinks it may be used as a dumping ground for things people cannot be bothered to test themselves. Also, it is not lifelike – there are not enough interfaces. Pragmatic and realistic. Disapproves of people being lazy. Wants testing to be realistic and useful and not simply a case of going through the motions; Notices small details e.g. conflicting comments at two different meetings, and comments on them; Believes in copying emails to all relevant parties. He pointed this out to a business colleague who did not do this, resulting in some disagreement but eventually the business colleague complied. “I won,” said Peter. Likes to triumph when he feels he is right.

Conscientious, cautious and practical, e.g. Believes in learning from others in terms of developing a testing strategy - Does not believe in re-inventing the wheel – pragmatic; belief in learning from experience; Believes that testing should be more specific to the mortgage process but is afraid to suggest it in case he gets the job. Not afraid to express his opinions. Serious about wanting the best for the system. Concerned that he should not take on too much; Read training update while eating his sandwiches; puts a lot of work in so he is well prepared for meetings i.e. reads through documents first and notes any queries; makes sure he is knowledgeable about background and intentions of meeting; Pragmatic, thoughtful and realistic about planning meeting times – does not plan meetings at 9am because some people on flexitime do not come to work until 9.30am; Concerned to share out work evenly across team members; Cautious with estimates; Cautious – “In the long run, it is best to have the lot, just in case”; Makes no assumptions about how a system will be designed.

Figure 7.6 Observations of the project manager in informal settings, showing his pragmatic approach to basic project tasks

Figure 7.6 shows Peter's approach and attitude to project issues and tasks in the wider context, e.g. staff recruitment, documentation, co-ordinating work of other project staff, systems testing. He has an eye for detail; he is knowledgeable, confident in his own understanding due to his experience and status, conscientious and cautious. He usually takes a long-term view rather than a short-term view when planning. It is clear that he has strong views on some project issues and is not afraid to express them, e.g. communication with programmers, the need for realistic and useful approaches to system testing, use of email to keep all staff informed of progress. His adherence to company standards and respect for guidance from senior management is also shown.

7.2.3.4 Social values

Interview findings

Peter tries to have good relationships within his local team and with other departments and business areas. He tries to break the ice and get on well with people socially but respects those who want to be more formal. He enjoys working with people around him on a daily basis and 'having some fun at each other's expense'. He would not ask anyone to do anything that he would not do himself. He gains satisfaction from knowing that people are happy in what they are doing and he tries to 'give pats on the back' to his team. Please see Appendix 12 for further details.

Observation findings

Following Figure 7.5, it was noted that some of Peter's interactions with staff regarding basic project tasks are done in a sociable manner. Therefore, some of the findings could also have been presented as evidence of social values in action. The findings reported below show more specifically how Peter applies social values in management of the project. This is demonstrated by the manner in which Peter communicates with team members, builds the team, empowers, motivates and trusts staff, both in informal settings and within the formal structure of meetings. Evidence is provided in Figures 7.7 and 7.8.

Generally, outside meetings, spends quite a lot of time talking to people as opposed to working on his own at his desk	Open to communication, responsive, approachable
Creates team spirit by organising team building social activities, inside and outside work e.g. sweepstakes, competitions and quizzes, social outings	Places importance on building team spirit and making work fun
Makes the regular Friday lunchtime pub lunch a priority – describes himself as the ‘hard core’	Maintains team spirit by regular social occasions outside the workplace
Occasionally talks about his family	Has a balanced view of work and home life; this is as a way of socialising and being approachable
Enquires about colleagues back problem	Friendly, listening attitude; approachable; sociable
Takes his turn in getting a round of drinks for colleagues from the office drinks machine	Equality with colleagues

Figure 7.7 Observations of the project manager showing social behaviour in informal settings

It is significant that Peter chooses to spend a lot of time outside meetings talking to others rather than working in isolation at his desk. This shows that he gives priority to face-to-face interaction in his role as project manager, taking a hands-on approach, and it enables him to engage sociably with his staff. Figure 7.7 also shows that Peter chooses to spend some time at work socialising with staff, talking about common topics of interest and enquiring about colleagues’ health. He also organises social events outside working hours, thus creating team spirit and shared experiences. By taking his turn at collecting drinks from the office drinks machine, he is showing equality with staff, a willingness to serve, and not abusing his position of power.

Figure 7.8 gives a detailed list of observations showing how Peter interacts with staff at meetings. There was much evidence of humour and light-heartedness in the approach to dealing with project tasks. This did not detract from getting the work done and was no more time consuming than a purely serious approach. Peter executed his role as project manager effectively without appearing dominant or authoritarian. He achieved this by his body language and the respectful manner in which he communicated with staff.

Uses humour and light-heartedness including some informal language e.g. Takes jokes light-heartedly e.g. before a meeting started, there were jokes about Peter being Action Man, putting tables together; Sorted out the office sweepstake when the meeting had finished; "I felt we had over-egged the pudding judging by feedback from the functional overview"; "It is a fair cop"; "We can do something un-canny"; Called the person who designs mock-ups of screens using PowerPoint 'Slide-show Rob'; "Let's see if 'Mystic Poole's prediction is correct"; "It is a double win – we get the interest and we get to blame the solicitors"; Creating light-hearted atmosphere at beginning of a meeting when going through minutes of last meeting – "Is there anything libellous, anything scandalous?"; Made a pun on team member's name; Offers a "cash prize" for anyone who knows the full meaning of 'UNUM'; Makes light-hearted comment about internal documents which have to be checked – "They will not be Pulitzer Prize winning"; Made a light-hearted comment about an action that had appeared on several consecutive sets of minutes, "Action 38A has gone" "But it is an old friend!"; in response to congratulations on his new baby, said "Thanks, I think!".

Respects and values colleagues, e.g. politeness - "Can I make that an action?" Gives credit and respect where someone present at the meeting has done a piece of work e.g. acknowledged document (U218) was mainly written by the programmer; Asked other participants in a meeting that he was not chairing if it was OK for researcher to be present; Brings in Colin for comment; Accommodates needs e.g. Tracy anticipated being bombarded with Functional Specs all at the same time, so asked Peter to plan work so it did not all come at once. Peter agreed; Likes face to face meetings; Peter is aware of the fact that people have different assumptions and interpretations, therefore aware of the need to check everyone's understanding e.g. by use of whiteboard to summarise points; Backs up verbal arrangements made outside meetings by sending emails to clarify what was agreed; does it promptly; Honoured request for Tracy to be free for next meeting at 2.45pm; Invites James to contribute to the meeting; Shows respect for others' questions; Non-blaming – "We were told ..." i.e. did not mention a name. Tracy asked 'Who told you that?' Peter replied with a name and "Sorry to be a snitch"; Notices and comments facial expressions e.g. commented on Tracy smirking; Only occasionally uses technical terms to explain problems, e.g. "The original entity was wrong"; Uses jargon but qualifies it, e.g. "SQL as we call it"; Bringing in James, "I will hand over to Mr P", showing respect; Takes his turn at getting drinks at start of meetings, "Shall I be Mother?" Complimented James on minutes and asked if he wanted to go through them at the start of the meeting, valuing his colleague; Spent time with Colin communicating details; Explained to Colin why Colin does not need to see a particular document; Inquires about people's holiday arrangements in an informal manner e.g. How are you fixed, Mr T, not going on holiday?; That's it from my point of view. Trace? (First time I have heard him call Tracy by abbreviated name); Explained to Colin why data had to be spread thinly for efficient use of database; "Beautiful minutes" – compliments colleague; Listens to and respects people he feels are more experienced and knowledgeable in their specialist areas; Peter looked at Colin to get a 'user reaction' to something – Shows the value of face-to-face communication.

Manages project tasks in a non-dominant, non-authoritarian way and is open and honest, e.g. "All right if I action you on it?" – Polite, not pushy; Modestly said 'Trail blazing' as Tracy said Peter's process description was the only one ready; Introduced everyone around the table, smiled; Smiles a lot when speaking; Put point several times but did not push it. Softer tone of voice showed he would not argue strongly; Relaxed posture, non-threatening, non-dominant; 'To be honest, I don't know enough about it'; Not afraid to be critical in an objective way; Rests chin on arms and listens; Honest – "I must confess, I have not done ..."; Practical, honest, open minded, co-operative; Not pushy in checking progress, e.g. "I don't suppose you have had time to do ...?"; Observant of colleagues e.g. Moving towards end of a meeting, "Not much else; Tracy has reams of paper; Makes light-hearted comment to James about small typo on minutes, pointing out the mistake in a non-threatening way; usually has an open, half smiling expression. Occasionally modest – "My naive assumption is ..."; Seeks clarification if he wants to check he understands something, e.g. "If I am a mortgage, these are the stages I go through"; Honest if he does not know about something; Not afraid to be critical in an objective way.

Figure 7.8 Observations of the project manager showing how he applied social values in communicating with the team

Several of the actions in Figures 7.7 and 7.8 demonstrate a combination of economic and social values e.g. chatting informally about how the project is going is pragmatic because it is good to communicate information and enables minor problems to be flagged up. It is also sociable because it creates a feeling of approachability and equality. Use of pet names to give instructions informally is a pragmatic way of managing without being domineering.

On analysing Figure 7.8, a number of personal qualities and behaviour emerge that lead to the application of social values in project management. They are listed in Figure 7.9. These qualities are an important complement to the pragmatic behaviour associated with economic values because they create an atmosphere of openness and equality in which staff feel valued, listened to, trusted and respected as individuals and employees.

Body language – smiles a lot; relaxed posture – non threatening, non-dominant; makes eye contact with speakers; rests chin on arms and listens

Respects colleagues

Values people

Listens

Is honest, open-minded, co-operative

Likes social contact – likes face to face meetings

Non-blaming - deals with problems constructively

Will question things in a critical manner but in a non-threatening way

Aware of different assumptions and understanding in other people

Observant of colleagues

Not pushy

Polite

Uses the minimum of jargon and explains it when he does

Compliments people on good work

Thanks team members for their contribution

Directs actions in a polite and courteous way

Use of humour; creates a pleasant, light-hearted, positive atmosphere; has a sense of fun.

Sensible, pragmatic, committed and responsible attitude to the project but does not appear anxious or stressed

Figure 7.9 Summary of personal qualities of the project manager arising from observation data on application of social values

7.3.2.5 Political values

Interview findings

Peter did not think he had any political values according to the Spranger (1928) definition, i.e. he does not seek power for personal renown. However, it was clear that he uses his position of power to serve the needs of the project.

Observation findings

Evidence of how Peter applied political values is provided in data on how he used his position of power. Details are presented in Figure 7.10. They show how the role of project manager gives Peter power, e.g. he writes minutes, does plans and resourcing estimates, chairs meetings and is responsible for the logical data model. This puts him in a powerful position for controlling major features of the project. His body language shows that he is not trying to appear dominant and controlling. When asking staff to do tasks, he is polite rather than authoritarian. This brings together economic, social and political values – in his position of power, he has the authority to direct the project work and staff; economic values determine pragmatic approaches to planning tasks and social values enable him to communicate the tasks to team members in an acceptable manner that makes them feel valued and respected.

In an initial meeting of the researcher, James and Peter prior to beginning observation of business liaison meetings, Peter did most of the talking. James said little

Writes minutes of meetings.

Did PMW plans.

Controls logical data model.

“I will set Jane on Derek – he will come round to it!”. Forceful in a light-hearted way.

Non-dominant posture.

Holds firm in certain situations. “Two points. 1. I don’t do ...2. With my migration hat on, this is outside the scope”.

Holds his ground on some things. Has a firm grasp of what he is open to and what he is not open to.

Sits attentively, not dominantly. Lets discussion go on as necessary.

Politely asked if he could make something an action – not obviously controlling or dominant.

Body language non-dominant – sits low in chair, yet fully concentrating on meeting.

Would prefer to tell the Business what the IT team will do for them. For this reason, it is some disadvantage to have the business users in close proximity on this project, especially as these business users have been used in the past to having a dedicated team to work for them to meet their demands. Peter has found that if Business users are more removed from the IT team, they are more ready to accept what the IT team says.

Altered resourcing estimate due to other interfacing projects taking longer than expected to give him their information – responsible, realistic, practical

May put a point several times but does not raise his voice.

Posture relaxed, smiley, non-threatening.

Does not give the impression of wanting to appear powerful.

Rests his chin on his arms and listens.

Uses informal language

Said “Smug” accompanied by smug facial expression. “This is what we had thought all along”.

Not obviously pushy in dealing with team members, e.g. I don’t suppose you have had time to do ..?”

Stuck to his guns in a situation, even if it makes him unpopular. “I guess I am not Bob’s favourite person”.

“I know you are pushed with this other stuff...” – preface to a request. Polite or manipulative?

Figure 7.10 Observations on the project manager showing how he applied political values

7.2.3.6 Theoretical values

Interview findings

Peter would always prefer to have a reason, a sound basis for doing something in a particular way in the system design. He would not rely on a gut feeling. Often, this would be based on experience of previous systems. He believes in describing WHAT is wanted and leaving the HOW to the programmers. He also believes that too much

detail in the specification can lead to assumptions about how it will be done which may turn out to be wrong. This is evidence of a rational and objective approach that is not swayed by emotion.

Observation findings

There was a small amount of evidence of how the Peter applied theoretical values. This supported the findings from the interview, i.e. Peter believes that external design is about WHAT not HOW; he is aware of the wider picture, and the original scope of the project, thus enabling him to take a more objective view of situations. Also, he is able to take a top-down view, important for retaining the larger picture rather than becoming disproportionately distracted by small details.

7.2.3.7 Shaping of values.

Peter noticed that his attitude to work has changed since he became a father - he realises he needs to have a stable career. Some values have evolved with age and experience and he acquired some of his values from his parents. On the whole, he feels that his values have remained the same but his ability to apply them has increased.

It is interesting to note that Peter thinks his values influence people at the same level as him or below, and his immediate boss i.e. people with whom he comes into regular contact, but no-one at a higher level.

7.2.3.8 Supporting evidence from project group members

Figure 7.11 shows how the members of the project group perceived Peter. These views were expressed in values interviews conducted during the period of the business liaison meetings and are extracted from Appendix 10. They support the findings above and verify the observation that Peter applies social, economic and political values when managing the project. They show that the project group think that Peter is a good communicator, methodical, organised, experienced, respected, competent and sociable. His senior manager, Alan, is pleased with his work and can see that Peter has the respect of his peers. They also show that he is a good role model. This may lead to shaping of the team members' values and behaviour.

<p><i>Colin</i></p> <p>“Peter is more organised than others. There is good communication – he checks – ‘Is this OK?’” He is more structured in the way he is doing it.”</p> <p>He minutes the fortnightly meetings. Issues are two-week issues. Emails are used to confirm decisions if made over the phone or outside meetings.</p> <p>Peter sends questions to the business about things that they have not thought of.</p>
<p><i>James</i></p> <p>I’ve got a lot of respect for Peter and, his knowledge and his ability, and we have a laugh and a joke. But there is also respect there as well.</p> <p>It is quite clear that Peter is the boss, the one who is, I won’t say holding it together but he is the one who has got the overall control of it and hence responsibility but that we are working to support him and obviously to support the project....</p> <p>Before Peter got his recent promotion I said to him from what he was doing and from what other people of comparable grades were doing, I couldn’t understand why he wasn’t a higher grade, so when he got his promotion, I think I had already said that he deserved it so I have no problems with other people’s success with promotion.</p> <p>I think to an extent because the way Peter has driven it, I think we have been in a position where we have reached certain milestones ahead of other areas and as a consequence of that, what we have done has been used as a template for other areas. The initial functional overview, the external design management report. The first one that I did,... the one that Peter did, was the testing approach manual that I did, was used as a template and has gone out so, in a way, that has been, we are driving ahead of other people.</p>
<p><i>Alan</i></p> <p>Well, I think Peter has done pretty well with the work with his project. This is the first time we have given him as big a set of responsibilities and we promoted him a little way into the process. Very pleased. I think he’s, as you grow in your responsibilities, you have got to learn to look out a bit more and not worry about your own little piece. There are loads of people who just look after their own little piece, but Peter’s demonstrating very well that he is making sure that not only he develops his piece properly but his piece fits together with everyone else’s pieces. And he is willing and able and does help his colleagues around him. So, there’s loads of instances where Peter has picked up on a topic and helped develop a solution that fits across the board and he is more than willing to participate when other people are trying to organise the reciprocal of that. And he’s quite a quiet person and you wonder whether he would be able to operate like that but I think he does and I think he has got the respect of his peers, that is my view anyway. I am not doing his review (laugh)</p>
<p><i>Jane</i></p> <p>“Peter is organised – riding on the back of the PRS migration which was well organised, and applying things which worked again.”</p>
<p><i>Tracy</i></p> <p>“We talk more to Peter’s team.” “All meetings are minuted.” “Meetings are fortnightly.”</p>
<p><i>Sadie (another IT project manager at the same level as Peter)</i></p> <p>“Interesting you are observing Peter – he is quite a character.” Why? “More experienced.”</p>

Figure 7.11 Project Group perceptions of the project manager

7.3 Supporting evidence from preliminary studies

Relatively little data was produced in Phase 1 of the preliminary studies on values in action because that phase did not include any observation and at that stage, Spranger's (1928) categorisation of values was not included in interview or survey questions. However, on revisiting field notes, it was found that those interviewees with management responsibilities showed a greater desire than those without management responsibilities to support staff. This was indicated by comments they made about the value of helping staff understand the value of the systems development methodology by sending them on training courses, explaining why tasks were necessary and showing how their role fitted into the wider picture; hence, the importance of applying social values in project management.

The comments from Phase 2 that reveal outcomes of values in operation at work mainly concern project management, as presented in Chapter 4, Figure 4.5. This showed similar attitudes in a wider cross section of developers outside the context of a project and supports the case study findings.

7.4 The importance of social values in project management

Field and Keller (1998) claim that software development projects are particularly vulnerable to problems because of their complexity and the intangible nature of the product. Therefore, project management is deemed to be essential and a number of basic tasks need to be done. Typically, these include:

- Estimating and planning
- Assembling a team
- Reporting and liaising
- Putting tools into place
- Managing and co-ordinating work
- Managing Change

At Prosper plc, most of these tasks are incorporated into a structured methodology, SDM, as shown by the following extracts from the SDM handbook:

“The Project Manager is responsible for the delivery of quality and cost effective solutions which meet the real needs of the business in a timely and orderly manner. In fulfilling these responsibilities, the Project Manager will be accountable to the Project Sponsor.”

The Project Manager has responsibilities throughout all phases and aspects of a project - Project methodology, ensuring that the project conforms to SDM; Project organization; Project planning; Project control; Progress Reporting.

All of the above tasks are practical and necessary to enable successful conduct of the project. Therefore, at first sight, it may appear that the role of the project manager is primarily pragmatic, thus placing highest importance on economic values. However, softer skills provided by application of social values are needed for assembling a team, communicating and managing the team.

The findings at Prosper plc suggest that certain social values are of prime importance in systems development project management, in conjunction with some economic, political and theoretical values. Also, the areas in which social values have the most impact on project outcomes are all inter-related and include:

communication,
use of power,
team working, motivation, empowerment and trust.

Communication

Communication is both a pragmatic activity and a social activity. It is necessary for managing and co-ordinating work. The application of social values can alter the manner in which the communication takes place. Whitten's Lessons (1995) for Communicating in Harmony listed in Chapter 2, Figure 2.6 show the importance of social values in communication generally. This suggests that communication that is done altruistically, selflessly and kindly is more likely to lead to harmony than if done aggressively, authoritatively or unkindly. If conflict does arise, Keeling (2002) recommends that harmony may be achieved if the parties are communicating in sympathy, in 'parallel

transactions'. Quoting Harris's work (1967), based on Berne's Transactional Analysis, he claims:

"When the ego states of parties to a transaction (communication exchange) are in sympathy, the transaction is likely to proceed in a reasonably harmonious (though not necessarily advantageous) way. When ego states are not in harmony, crossed transactions take place and conflict will result. Parent and child programmes are usually less productive than the reasoning, logical 'adult' ego state."

(Keeling, 2002:179)

Hayes (1997) describes a small, new accountancy company that was concerned because there was a high staff turnover. The consultants who had been called in to help found that the desks had been unconsciously arranged like a school room, with employees sitting in rows and a senior member of staff sitting at the front facing them. This induced parent-child behaviour. On being made aware of this, the desks were rearranged and the atmosphere and behaviour changed – more discussion of projects took place, more interaction and feedback was given, people worked harder, enjoyed their work more and acted more professionally.

There is more possibility of this type of situation happening if all parties apply some degree of selflessness, hence social values.

Meetings provide a specific arena where communication is important. A categorisation of interaction processes was devised by Bales (Hayes, 1997) - please see Figure 7.6. In terms of values, the examples in the table may be categorised as applying social, economic or political values, e.g. helping, rewarding and offering opportunity for others to contribute is based on applying social values; seeking facts or information, evaluating ideas and contributing facts is based on applying economic values and imposing own ideas and withholding help belies underlying political values.

Findings at Prosper plc showed evidence of application of social, economic and political values by the project manager in the way he interacted with members of the project team. At Prosper plc, the project manager created an atmosphere where both he and the others felt comfortable in their interactions at the meeting in categories 1-7 in Figure

7.12, and all felt able to contribute as necessary. This included giving their opinions and showing disagreement in a non-antagonistic way.

<i>Category</i>	<i>Examples</i>
1. Gives support	Helping, rewarding, building on suggestions, raising others' esteem, showing acceptance
2. Gives suggestion	Making proposals, suggesting direction, offering opportunity for others to contribute
3. Gives opinion	Evaluating or analysing ideas, expressing feelings or wishes, interpreting, imposing own ideas
4. Gives information	Contributing new facts, repeating or rephrasing previous contributions, clarifying, confirming
5. Asks for information	Seeking facts or information, asking for reiteration or clarification
6. Asks for opinion	Seeking feelings or wishes, asking for interpretations or evaluation from others
7. Asks for suggestions	Seeking ideas, directions or proposals, looking for ways of taking action
8. Shows disagreement	Showing resistance or rejection, withholding help, defending, antagonising others, attacking others

Figure 7.12 Categories for interaction process analysis
(adapted from Hayes (1997:71))

Power

The role of project manager, by definition, is a position of power and authority. However, as shown at Prosper plc, power may be applied altruistically if used in conjunction with social values. Eight types of power are defined in Hayes (1997). Please see Figure 7.13.

Reward power	Power which stems from the ability to control organizational resources and rewards, such as pay and bonuses
Coercive power	Power which stems from having control over sanctions or punishments, such as reprimands or suspension
Legitimate power	Power which stems from the organizational position held by that person, which puts them in a position of authority
Referent power	Power which stems from subordinates liking, or respecting, the person concerned
Expert power	Power which stems from that person being recognised as having a particular area of expertise or skill
Information power	Power which stems from having control over information sources and information transmission in the organization
Persuasive power	Power which stems from having an ability to convince other people as to a particular course of action or decision
Charisma	Power which stems from personal attractiveness and transmitting a sense of dynamism, such that other people enjoy cooperating with and helping that person to achieve their goals

Figure 7.13 Types of power (adapted from Hayes, 1997:98)

Hayes (1997) explains that Podsakoff and Schriesheim (1985) reviewed a large number of studies of power in the workplace, using the first five categories in the list and found that reward power, legitimate power and coercive power seem to be the least effective: they have either no influence or a negative influence, both on how people act at work or on job satisfaction. In contrast, expert and referent power tend to produce positive outcomes – people become more involved with their work and are less inclined to leave or withdraw.

The findings at Prosper plc support this. Peter had legitimate power because of his role; he also had referent power and expert power; he did not apply reward or coercive power. This may be explained by the social values that he held, i.e. a person with a selfless and altruistic attitude is less likely to apply coercive, reward, information or persuasive power or charisma purely for personal gain especially where it may ignore the needs of others for equality and empowerment.

Team working, motivation, empowerment and trust

Katzenbach and Smith (1993) state in Hayes (1997) that high performance teams are deeply committed to the team's success and to one another's personal growth and development. To enable this, social values such as altruism and selflessness are

necessary. Some examples of this were found at Prosper plc, e.g. Ray gained satisfaction from helping graduates develop in their career; Tracy wanted to create an atmosphere where staff felt empowered, confident in their own ability.

Hayes and Lemon (1990) in Hayes (1997) found that articulation and communication of team values to staff was important in shaping how a company's employees interacted with one another and with outsiders. At Prosper plc, the company values are articulated and promoted via standards and procedures. Project managers have an important role in passing them on to their teams. Application of social values leads to communication in an acceptable manner .

Brown (1998) emphasises the role of the project manager in motivating staff by nurturing their qualities and achieving alignment between their personal objectives and the project objectives. This involves the project manager being aware of what the staff want. At Prosper plc, findings on requirements for job satisfaction gave an indication of what staff wanted. The role of the project manager was important in meeting these needs by applying a combination of social, economic and political values to try to achieve success by careful and wise planning and creation of an open atmosphere where staff felt trusted and empowered. Keeling (2002) explains how the concept of empowerment is based on research demonstrating an inherent human need for people to control their own environments and this is likely to enhance the probability of success.

Small (2002) concludes that moral values such as trust, honesty and integrity are important if organizations are to survive and prosper, where trust is defined variously as:

A relatively informed attitude or propensity to allow oneself and perhaps others to be vulnerable to harm in the interests of some perceived greater good.

(Small, 2002:403)

The expectation on the part of members of a community, that, based on commonly shared norms, other members of that community would engage in regular, honest and co-operative behaviour.

(Small, 2002:403)

Applying these definitions to systems development project management, it has been shown that application of social values such as altruism and selflessness may result in supporting the interests of 'some perceived greater good' and 'honest and co-operative behaviour'.

7.5 Conclusions

Most of the findings on values in action at work came from the case study because it was specifically targeted at this topic and included both observation and interviews. They showed that project managers and team members put their values into action in different ways, appropriate to their role. Project managers put social values into action by supporting team members and managing relationships. They gained job satisfaction from building the team. Economic values were put into action by pragmatism in planning and wise use of resources. The project managers studied were confident to challenge procedures if they did not agree with them. A pragmatic approach to information management leads to greater efficiency in providing project information when needed. Theoretical values were used to ensure decisions were made rationally with a view to the wider picture. Although not pursuing power for its own sake, project managers used the power of their position to lead the team responsibly in the way they believed to be most effective, based on social, economic and theoretical values, with an eye on longer term goals. Team members were more focussed on short-term goals. They put their social values into action by being sociable within the team. They liked talking to people, important for development work. Gaining job satisfaction from completing short-term tasks showed economic values.

When analysing results it was clear that the project manager has the most important influence on project outcomes as he guides much of the team members' work. Values interviews in the preliminary studies prior to the case study give some general indicators of the type of activity performed by project managers when they apply their values at work and manage people. These include creating a team, supporting people, making the team work effectively, creating an atmosphere of open-ness and being aware of relationships with the business users. These findings were verified in the case study by observation of the project manager. He applies social values by building good internal relationships with the team and also thinks that relationships with other departments are

important. He applies economic values by his pragmatism in doing tasks that will get the job done effectively. This includes a belief that it is useful to get on well with people for the benefit of the project. In this case it could be argued that apparently social values are applied for utilitarian ends, i.e. to serve economic values.

Observation data gave detailed descriptions of small day-to-day tasks and activities that demonstrate the project manager's values in action. Findings on application of social values include:

- details of how he creates team spirit e.g. by organising sweepstakes and outings to the pub;
- building up a rapport with individuals e.g. by enquiring about their health or family;
- building up trust, open-ness and feelings of equality with individuals e.g. by delegating tasks, being approachable and taking his turn at getting drinks from the office machine;
- use of non-dominant body language e.g. smiling, listening, taking a non-dominant posture during meetings.

Findings on application of economic values include:

- Being efficient and responsive e.g. answering phone queries immediately instead of delaying;
- Clarifying informal communication e.g. by sending emails to re-state his understanding of work-related conversations in informal settings;
- Creating clear deadlines for himself and others and managing expectations e.g. on agreeing to make amendments to a document, he said he would show it to the line manager by the next day.

Comments about the project manager from interviews with colleagues who work alongside him verify the researcher's observations and the statements made by the project manager. These include:

- respected by line manager because of success on a former project;
- organised and good at communication, including giving email confirmation of arrangements made by phone;

- methodical about holding meetings, writing minutes and dealing with actions;
- very co-operative with the business during the requirements definition phase, when it was his job to clarify requirements. However, at the end of that phase, when regular business liaison meetings ceased, he was no longer willing to give time to amending requirements.

Social values were shown to be of prime importance for good project management.

This was supported by reflecting on the academic and practitioner literature and relating it to the findings from Prosper pic on communication, power, team working, motivation, empowerment and trust. It is notable that the application of values that lead to good project management does not demand extra resource in time or money.

Finally, it is concluded that these findings were made possible because a high level of detail was recorded during fieldwork and published in this thesis. This is a significant contribution of this research.

PART THREE

RETURNING TO THE WIDER CONTEXT

CHAPTER 8

THE IMPORTANCE OF THE VALUES OF PROJECT MANAGERS

Summary

Findings from ISD success and failure literature and from practical work in this research have led to increasing evidence that the values of project managers are of extreme importance in determining the outcome of systems development projects.

This chapter reflects on findings at Prosper pic in relation to success and failure literature. It brings together findings from Chapters 4 to 7 on the impact of values on ISD projects at Prosper pic. It explains the importance of the ISD project manager's position at the interface of three sets of values - corporate values, personal values of the project manager and personal values of the project team.

Justification is given for generalising these findings to the wider context. Implications for practice are described using the NIMSAD framework to structure recommendations.

8.1 Reflections on findings at Prosper pic in relation to success and failure literature

The findings at Prosper pic have addressed some of the important issues reported in the literature about success and failure of ISD projects.

Three main points emerge from reflecting on the literature on success and failure in the light of the findings in Chapters 4 to 7.

Firstly, evidence from case studies of failure, recommendations from practitioners and theories from academics suggests that two main sets of concerns are relevant to addressing ISD success:

Economic issues, related to technical success and efficient use of resources and

Humanistic issues, related to social and behavioural factors.

It was agreed that the humanistic issues, i.e. issues related to social and behavioural factors, are the more likely to be the cause of failure. Two concerns cropped up frequently in the literature: the importance of good project management and the need to be aware of politics. Findings from the fieldwork reinforced this and in Chapter 7 there was discussion of the important role of the values of project managers in addressing these issues by applying their personal values, particularly social values.

Secondly, it became clear during fieldwork that corporate values are important because they provide the context in which ISD projects take place, as reported in Chapter 6. In organizations that use ISD methodologies, the type of methodology chosen is likely to reflect the corporate values. Corporate values also affect the culture, work environment and business objectives, and ultimately the daily ISD project tasks. The project manager has an important role in acknowledging corporate values, adhering to them and communicating them appropriately.

Thirdly, findings from fieldwork showed that project team members' personal values and needs must be taken into account to enable job satisfaction, as reported in Chapter 5. Project managers have an important role in balancing corporate values with the needs of project team members. Therefore, the project manager needs effectively to combine corporate and personal requirements, thus enabling corporate values to come to fruition when ISD tasks are done by project teams, whilst providing job satisfaction for staff.

Chapter 2 reviewed literature on success and failure of information systems and its relation to social and behavioural factors. Definitions of success ranged from purely business-oriented criteria to some more humanistic criteria. The findings from Prosper plc imply that the organisation is primarily driven by business-oriented goals and has business-oriented criteria for success. They place importance on awareness of competitors, good customer service and maintaining a reputation for provision of good quality financial services. They are responsible with resources and highly risk conscious in IT projects. However, the phase of the project observed in the case study could also be defined as a success by less business-driven criteria in that the team

members were all employed and gaining job satisfaction from their current work, regardless of the eventual outcome of the project as a whole.

High level recommendations for achieving success and avoiding failure presented in Chapter 2 section 2.3 include wise advice on processes and organizational arrangements that are under the control of senior managers. At Prosper plc, these recommendations are put into place by the existence of the methodology and the wealth of corporate standards and procedures. Individuals with economic values should feel comfortable putting them into practice because of the pragmatic nature of the standards and procedures.

More detailed and practical recommendations for successful projects arose from studies on cases of failed IT projects presented in Chapter 2 section 2.3, e.g. realistic timescales, consultation with users, good project management, well managed project phases, overall monitoring of projects, cost benefit calculations continually updated, open-ness and realism about problems, avoidance of fear-based culture and involvement of an external steering committee. Some of these are pragmatic concerns, which could be put into place by methodologies and structures and managed well by people with economic values. However, many of them are not factors that could be built into a methodology but rely more on the interpersonal skills of a project manager who is able to create an atmosphere of open-ness and trust: this requires social values. At Prosper plc, it was found that the SDM methodology plays an important part in structuring activities that deal with pragmatic concerns but this must be complemented by application of social, economic, political and theoretical values by the project manager.

The literature on social and behavioural factors relevant to IT projects, summarised in Chapter 2 section 2.3, reiterates the need for project managers with social values to apply them to create an atmosphere of honesty and communication, be aware of politics, empower, respect and motivate staff and give teams good direction. The findings in this research endorse all of these.

8.2 The impact of values on systems development at Prosper plc

In the previous section, reflection on the findings at Prosper plc in the context of success and failure literature produced a summary of the relevance of values in relation to social and behavioural factors and ISD success. This section explains the breadth of the impact of values on the ISD project studied at Prosper plc.

8.2.1 Corporate and personal values

Findings from the case study showed that there are several sources of corporate influence. At the highest level, the chief executive is responsible for ensuring the success of the business so business related values have their origin at this level and are promoted company wide. The IT department has its own values specific to IT projects to ensure that they are carried out in line with high level objectives and these are promoted through IT manuals. The systems development methodology is also a manifestation of corporate values exercised by the IT department. Some departments within the IT department have devised their own local standards, which further ensures that corporate values are adhered to. Therefore corporate values originate at top management level and pervade all layers through the use of specific local standards and procedures.

Personal values, by definition, have their origin in the individual's personality. The literature describes values as persistent over time. However, interviews showed how some individuals felt their values had been shaped by external influences such as life experiences. This may include some influence from line managers at work. There was also evidence that some senior staff feel they take on the company's values as they become more senior and have more responsibility.

8.2.2 Consideration of the interplay of personal and corporate values

Evidence for the interplay of corporate and individual values was gathered in the case study by noting attitudes to corporate culture, described in Chapter 6. Results presented in Chapter 6 showed staff in the organization were largely compliant with corporate values and there were no major issues of conflict. This is partly due to the recruitment

procedures, which carefully select individuals with desirable characteristics. It is also due to the culture, in which staff are aware that they are expected to adhere to company standards. Individuals who do not like this type of culture are unlikely to accept a job there, or unlikely to stay long if they take a job. Therefore a stable environment is produced within the IT department, which achieves the goal of providing secure, reliable IT systems with a minimum of risk, ultimately meeting the critical business goals of a financial services organization.

8.2.3 The wide impact of values on systems development at Prosper plc

Values have been shown to have an impact on systems development at all levels in several ways, as follows.

Choice of systems development methodology

Corporate values determine choice of systems development methodology. A methodology must be chosen that will fulfil corporate aims. Prosper plc needs to develop IT systems with the minimum of risk to the business. Therefore it uses a highly structured methodology, which gives clear guidelines for all phases of the project.

Mode of application of the methodology

Corporate values also determine how the methodology will be put into practice. Since Prosper plc have a highly structured methodology with clear and detailed guidance, they intend the methodology's guidelines to be used unless there are valid reasons not to. Therefore they manage its use via the hierarchical management structure and have procedures to check that key tasks are being done.

Definitions of success in IT projects

Corporate values partly determine what counts as a successful IT project. At Prosper plc, a private sector organization, it is important that projects should be completed within time and budget in order to remain competitive and to use company resources responsibly, i.e. giving priority to economic values. In contrast, a public sector project described by Lauener (2002) was still considered a success even though it went over budget because it met the longer-term aim of providing learning opportunities for people on the fringe of society, i.e. giving priority to social values in the wider context.

Project management

In the project studied at Prosper plc, the project manager has a combination of economic and social values together with appropriately exercised political values. Therefore he meets corporate needs by applying his economic values and he meets the needs of his team by applying his social values. He applies political values to serve the project for the benefit of the team and organization. This leads to a successful team because it meets its targets and there is a good team atmosphere, leading to job satisfaction for all including the project manager himself.

Economic values held at corporate level placed strong emphasis on discipline and structure and there are local standards at department level to ensure this. This means that the role and responsibilities of the project manager are clearly defined in terms of tasks required to keep the project on time and within budget. It also fulfils employees' needs for job satisfaction by meeting targets and being involved in successful projects.

At Prosper plc, there is little guidance at corporate level on the application of social values. However, the employees' needs, e.g. openness and trust, empowerment, clear communication, are met because of the personal values of the project manager.

Political values were also found to be important in project management. Project managers have legitimate power because of their role. The position of power is essential to enable them to do their job but expert power and referent power are also important in producing positive outcomes (Hayes, 1997). Peter, the IT project manager studied in detail at Prosper plc, has the respect of his team and his managers and he is good at his job. He uses his power primarily to get the job done well and to instil his values into the team members.

Project tasks

Values have an impact on some of the tasks that form the building blocks of projects because they determine the manner in which they are done. An IT project is composed of ingredients such as meetings, writing minutes, discussing requirements, reviewing progress, planning, using emails and memos, reading documents, document production, interpersonal interaction and sharing information. Values have an impact on precisely how these activities are done. For example, an individual applying social values would

have the interests of others at heart when doing these tasks so would put in the necessary effort and communicate appropriately. This should lead to clarity in communication and documentation, well-managed meetings, care taken in understanding requirements and interpersonal interaction that values people.

Findings from the project observed at Prosper plc showed that project tasks are put into practice under the direction of the project manager and within the company structures. Documents are written in jargon-free language at the right level of detail to achieve optimum communication with users and programmers. Email is used to clarify informal agreements. Meetings are efficiently and methodically minuted and actions followed up promptly. Communication is open and friendly and the project manager is approachable and available.

8.2.4 The relevance of values to other mental construct elements

Although the main focus of the research was restricted to values, a small amount of associated data also emerged on other mental construct elements. These will now be considered (*mental construct elements in italic text*) in relation to **values (in bold text)**.

Findings on *experience, knowledge and skills, models and frameworks* are all relevant to **economic values** because they result in useful practical outcomes that aid the project, e.g. a developer who has learned from *experience* needs to look at manuals less frequently and understands better how the project fits into a wider picture, including awareness of possible problems from impacts on other systems, e.g. a new project manager who was responsible for a challenging project learned to be more perceptive about skills of those above and below her, to have more confidence in her own abilities and to be realistic about the abilities of team members. She also learned the value of structure, organization and long term planning; another project manager used his *experience* to design documents in the most useful manner. Gaining insights from working alongside an experienced manager leads to learning by experience.

Knowledge and skills, e.g. as gained in education and methodology training, provide practical guidance (related to **economic values**) and help the developer understand why certain project tasks are necessary for the project overall.

Postgraduate study may lead to awareness of *models and frameworks* that can be applied in practice to analyse and understand project issues (related to **theoretical values**). The existence of recognised *roles* in the project team is practical because it divides the labour and ensures certain tasks are done (**economic values**).

Experience has also led to some project managers realising the need for good communication and social interaction e.g. planning social events so the team has shared experiences, hence the need to apply **social values**.

Findings on *models and frameworks* serve the needs of people with **theoretical values** in that they provide mechanisms for systematizing knowledge relevant to the project.

Role is relevant to **political values** in that having a recognised position of authority legitimises what is done, e.g. project managers are given responsibility for managing people and allocating tasks, therefore they necessarily use their power and position to do their job; systems testers are given authority to try and find bugs in programs and to liaise with programmers to rectify problems. It is up to individuals to decide whether or not to use the position of power for their own ends.

8.3 Applying the findings to a wider context

The question will now be considered of whether the findings from the case study research have any wider resonance outside the context of Prosper plc. The issue of generalizability has already been discussed in Chapter 3, where it was stated that the results of this research support Lee and Baskerville's (2003) proposal that generalization from description to theory is possible, especially generalization beyond the sample or domain that the researcher observes. This is now explained in more detail in the context of the findings of this research. It also adheres to Mason's (1996) logical statement that, as the research question aims to provide explanation that aims to describe, the nature of any generalizations will also be to provide description in other settings.

Firstly, as suggested by Mason (1996), similarities to other settings will be considered. During observation at Prosper plc, it was possible to list a selection of tasks that make

up information systems development work at Prosper pic during the requirements definition phase, all of which are affected by values. These tasks, carried out by either the project manager and/or team members included:

- Production of documents in standard format
- Communication by phone, email and in face to face conversation in formal and informal settings
- Chairing and attending meetings about the project
- Reporting on project progress
- Keeping records for monitoring purposes and management information
- Discussing and clarifying requirements with business users
- Keeping minutes of meetings
- Adhering to a methodology chosen by the organization
- Interpreting and documenting requirements clearly while avoiding unnecessary detail and jargon to make them readable and understandable to non-technical staff
- Avoiding making assumptions in communication
- Gathering information in order to be aware of corporate procedures, project progress and related issues

All of these tasks would be necessary in the requirements definition stage of any ISD project using a methodology. In the absence of a methodology, most would still be applicable. Therefore, it follows logically that the findings from the research at Prosper pic may be generalized to the requirements definition phase of other systems development projects. However, the specific characteristics of the project and organization must also be taken into account:

It was a large project;

'Traditional' as opposed to leading edge;

It was expected to take three years;

It took place in a large financial institution heavily reliant on the use of IT;

Use of the corporate IT methodology was strongly encouraged and

It was a 'controlled' organization.

Clearly, some of the project tasks listed above are necessary because of the size of the project and the nature of the organization. Nevertheless, activities such as good communication, clarification of requirements, not making assumptions and gathering information on project progress would be necessary in any project and any organization. Hence, they would be subject to the effects of the values of project managers and staff, so the findings in this research would apply. An investigation of the impact of values was carried out during the requirements definition stage of a contrasting project (Lauener, 2002), which was:

Government sponsored;

Large;

Leading edge;

Taking place in a much freer environment where creativity and innovation was valued.

No methodology was used and

The building of the system was outsourced to a consortium of suppliers.

Despite the huge contrast in project characteristics, findings on the importance of social values in the project manager agreed with the findings in this research.

In later phases of the project, such as programming, system testing and implementation, clarification of the requirements should be complete but the other activities would still be relevant so the findings may be generalized to those stages. At earlier stages in the project, e.g. feasibility study, other tasks and skills would be necessary so these findings may not be generalized there.

Another way of generalizing suggested by Mason (1996) is to build strategic comparisons into the research. This was done in the research at Prosper plc by separate analysis of data of values of project managers and project team staff and differences were shown in terms of the range of types of values that were used and the activities they were used in, i.e. findings were different for project managers and staff who were managed. Again, this may apply more widely in other situations where there are such roles and this suggests generalizing beyond the field of ISD to management of other design projects.

Some of the findings may not apply to projects outsourced to consultants because they are external to the organization and therefore have a separate culture and value system to the company employing them. Therefore, findings on corporate values and the interplay of corporate and personal values would not apply. Findings on the application of social values by a project manager to motivate project team members should still apply.

8.4 Implications for practice: the role of the project manager as a manager of values

The preceding discussion of findings leads to the conclusion that, essentially, the role of a project manager in any organisation and in any discipline involves managing tasks sponsored and supported by the organisation's corporate aims and values and carried out by employees with personal values and needs, ultimately to fulfil the organisation's goals. Therefore, project managers need to manage values in addition to project tasks.

This research has shown that project managers are at three subtly different interfaces in terms of values:

The interface between the organization and the staff

The interface between corporate values and personal values

The interface between serving ones own needs and serving the needs of others

1. The interface between the organization and the staff

Project managers have responsibility to the organization to manage staff to carry out the project in compliance with corporate values. For ISD projects, this includes adhering to the requirements of a systems development methodology, if used. By working closely with staff, they are also in a position to meet employees' needs.

2. The interface between corporate values and personal values

Responsibility to the organization implies adherence to organizational values and standards. As individuals, project managers have personal values that act as guides to their behaviour.

3. *The interface between serving ones own needs and serving the needs of others –* Values interviews have shown the type of activities that give project managers job satisfaction; the role of project manager demands that they serve the needs of both organization and project staff.

The fact that project managers are at these three interfaces does not necessarily mean that they have to then choose between conflicting alternatives. It depends on how well individuals' needs are in harmony with those of the organization.

In an ideal situation, a project manager would gain satisfaction from serving others and work in an organization that had recruited staff happy to comply with the organization's values and procedures. These values and procedures would be well communicated and universally accepted. In this situation, a project manager should not find they have to make difficult decisions and balance conflicting priorities. However, some value conflict is inevitable and it is more likely that project managers would have to choose the extent to which they meet competing corporate, personal and project staff needs. Even this may be a simplification, as in reality a project manager may experience different and conflicting sets of needs and requirements from different facets of the organization and from different groups of staff in the project. This is highly likely in systems development projects, which usually involve IT staff catering for the needs of business users but working more closely with teams of IT developers.

Therefore, the challenge for successful project management is to balance the conflicting demands at the three interfaces to maximize values congruence and minimize values conflict. This requires a good understanding of the organisation, the methodology and the members of the project team combined with appropriate application of social, economic, political and theoretical values. Peter, the project manager in the Prosper plc case study, demonstrated such ability as shown by the detailed findings presented in Chapter 7.

Interestingly, these conclusions expand the focus of the findings to the broader context addressed by the NIMSAD framework, which was the starting point for this research, i.e. context, methodology user and methodology. As explained in Chapter 2, the research began by evaluating the role of the mental construct of methodology users in

information systems development projects, in the context of the NIMSAD framework. The NIMSAD framework was a useful starting point because it acknowledged the wider context in which systems development projects take place. However, a critique of the mental construct led to justification for refining the focus of this research to studying the impact of values in ISD. This proved to be fruitful and productive in generating results. Further reflection on the results now takes us back to the wider context. Therefore, NIMSAD is an appropriate framework on which to base implications for practice.

Before presenting implications for practice, some clarification is needed of how they will be presented and how they should be interpreted. A case was made above for generalising the findings from this research to wider contexts. However, it is not appropriate to produce a prescriptive list of detailed recommendations on application of values of project managers, to be followed in other settings. A preferable approach is to present some general points that are abstractions and distillations of the main findings at Prosper plc. They should provide general description, explanation, guidance and understanding that may be interpreted and used as appropriate to aid awareness and suggest recommendations in other settings. They should indicate the spirit and the essence of the implications for practice arising from findings at Prosper plc without being too specific.

Therefore, implications are presented below as descriptive text, structured using the NIMSAD framework, and should be interpreted according to the suggestions above. They consist of a series of statements based on summarised findings from the case study research at Prosper plc. With each statement, there is:

- A brief explanation;
- Reference to findings in the thesis that illustrate how the points made in the statement were operationalised at Prosper plc;
- Recommendations for practice. These are intended as suggested starting points to aid other organisations in translating the findings from this research into their own setting. Ideally they should be discussed and explored in facilitated workshops. The workshop should be supported by senior management but should involve employees at all levels.

Generally, organisations are advised to examine their own situation in the light of findings at Prosper pic as an aid to challenging their current practice. The intention is to increase the organisation’s awareness about its values, in the belief that increased awareness is beneficial.

Each point is numbered and appears on the modified NIMSAD diagram in Figure 8.1, showing its affiliation to the three elements. The positioning of the points shows that several of them are related to more than one element; the clustering of points around the methodology user (project manager) and team shows the abundance of findings relevant to project management.



Figure 8.1 Summary of research outcomes using adapted NIMSAD framework

Context

1. An awareness of corporate values is essential in understanding the context of ISD projects.

Corporate values may be influenced by the nature of the business, e.g. organizations providing financial services may need certain economic values to function appropriately for the sector. Related to this is the fact that some values may arise in response to external demands e.g. banks are subject to regulatory requirements of the Financial Services Authority.

Corporate values at Prosper plc are summarized in Chapter 6, section 6.1.1. Examples of corporate values from other organizations are presented in Figure 6.7.

Recommendations for practice: Clarify what the organization's corporate values are. If corporate values are not explicitly stated, discussion at senior level is needed. Be aware of external influences and business-specific influences. A useful technique for investigating and recording possible values, including external influences, would be to use a rich picture, as used in Soft Systems Methodology (Checkland, 1999).

2. Organizations may be controlled or permissive according to Mumford's (1981) organizational values continuum.

The extent to which organizations want to control the behaviour of employees may be analysed by considering their attitudes to shared values, discipline, methods, level of emphasis on performance and how tightly structured jobs are. Findings at Prosper plc showed that it is a controlled organization – explanation is given in Chapter 6, section 6.4.

Recommendation for practice: Use Figure 6.6 to identify where the organization is placed on each element of Mumford's (1981) organizational values continuum.

3. It is important to be aware of expectations regarding adherence to corporate values, how they will be communicated and how adherence will be monitored and controlled

This is more important for organizations whose values are explicitly stated and to which adherence is highly desirable. At Prosper plc, adherence to company standards, and ultimately values, was strongly expected, communicated efficiently and monitored and controlled by hierarchical management. Further explanation can be found in Chapter 6, Section 6.1. Evidence of how the project manager fulfilled his role in adhering to standards are presented in Chapter 7, Figure. 7.1. Employees were generally compliant and had little conflict with corporate values. Evidence of compliance with corporate standards is presented in Chapter 6, Figures 6.1 and 6.2.

Recommendations for practice: If adherence to corporate values is important in an organisation, top down communication and hierarchical management as used at Prosper plc are effective in promoting values company-wide. It is especially important that project managers are informed, aware and supportive of corporate values and act as

good role models. Staff are more likely to support corporate values if they understand why they are important, hence the importance of communication and training.

Methodology

4. ISD methodologies reflect corporate values but may not address personal needs of project team members

If an organisation uses an ISD methodology, it is likely that the choice of methodology will reflect corporate values. At Prosper plc, a highly structured methodology aims to ensure that projects are carried out with integrity, fairness and respect for regulations. However, highly structured, task-based methodologies may not address personal values of employees using them. Therefore, to ensure job satisfaction for project teams, the project manager may need to build in other people-focussed activities to complement the methodology. Much evidence of this was provided in Chapter 7, section 7.2.3, especially Figures 7.3, 7.7, 7.8 and 7.9.

Common problems with use of methodologies may be avoided if the project manager fully understands the underlying aims of the methodology and their link to corporate values, and communicates this to the project team.

Recommendations for practice: If an ISD methodology is used, assess it for the level to which it addresses personal needs and values. If purely mechanistic and practical, project managers need to address human issues, using suggested activities as used by the project manager at Prosper plc. It is important that project managers are trained in use and understanding of the methodology and how it fulfils corporate goals, and that the project manager communicates this effectively to staff so they understand why they need to do project tasks.

5. ISD projects are done by teams led by a project manager in a hierarchical management structure, resulting in active and passive use of the methodology

Application of ISD methodologies takes place at all levels in the management structure but awareness of the methodology varies. At senior management level in Prosper plc, the main concern is with monitoring and controlling, to ensure that the methodology is applied. At project manager level, the tasks are organised and delegated to team

members. At the team member level, tasks are completed under the direction of the project manager, so team members may not be fully aware of using the methodology; rather, they are 'passive methodology users', as opposed to 'active methodology users'.

Recommendations for practice: Project managers need good training in the methodology to use it flexibly and effectively and to comply with senior management guidelines. It should not be assumed that team members do not need to understand the methodology. They are more likely to complete seemingly unnecessary tasks if they understand why they benefit the project in the wider context.

Methodology user

6. Detailed project tasks may be explained in terms of application of social, economic, political and theoretical values

The fine-grained tasks and activities that make up an ISD project consist of more than efficient, methodical and systematic conduct of technical activities, which would naturally be the product of economic values. As shown by findings at Prosper plc, team building requires social values; managing projects requires appropriate exercise of political values and systems modelling and design requires theoretical values. More detail is given below.

Recommendations for practice: It is important to consider personal values when recruiting staff and forming project teams – technical skills are essential but application of social, theoretical and political values should also be considered.

7. Application of economic values is essential by both project managers and team members but they apply them differently due to their different roles

Values of the project manager are paramount in determining tasks and interactions of the whole team. Application of economic values by project managers leads to good planning of projects and pragmatic delegation of tasks to achieve targets. At Prosper plc, the project manager was pragmatic in self-management, thus creating good information systems for personal use and maximizing the amount of time available to manage the team. Detailed observations are listed in Figure 7.2. The same methodical approach was taken when chairing meetings. Detailed observations are listed in Figure

7.3. Detailed observations are presented in Figures 7.4 and 7.5 showing his pragmatic approach to daily project tasks. In addition to practical and sensible planning and management, they demonstrate his holistic view of the project, showing awareness of all aspects and how they fit into the wider picture.

Application of economic values by team members results in the desire to meet targets and achieve objectives. This is complemented by the desire on the part of the project manager to organize work so they can achieve this. Further examples are given in findings from Prosper plc, presented in Chapter 5, Figures 5.6 and 5.7.

Recommendations for practice: The detailed findings at Prosper plc on application of economic values by the project manager are a good starting point for discussion about the value of pragmatic approaches in other organizational settings.

8. Application of social values is essential by both project managers and team members but they apply them differently due to their different roles

Application of social values is important for communication, use of power, effective team working, motivation and trust.

Application of social values by project managers leads to generation of team spirit, supporting and valuing staff and meeting their personal job satisfaction needs. At Prosper plc, the project manager demonstrated this in the manner by which he interacted with staff. Detailed observations are presented in Chapter 7, Figures 7.7, 7.8 and 7.9.

Application of social values by team members leads to good relationships within the team and externally. This is a necessary complement to the project manager's desire to build an effective team. Further examples are given in findings from Prosper plc, presented in Chapter 5, Figures 5.4 and 5.5.

Recommendations for practice: The findings from Prosper plc provide a good checklist of suggestions for putting social values into practice in ISD projects in other settings. A structured approach to analysing interactions is presented in Chapter 7, Figure 7.11.

9. It is essential to understand and make explicit the application of political values and power in projects in the organization

There is some reluctance to admit to having power and using politics, but application of power needs to be acknowledged. This is partly because frequently, there is an assumption that power and politics are used to serve the needs of the power holder rather than to serve the needs of the project team and the organization as a whole, hence negative connotations and accusations of ‘game playing’. Project managers have legitimate power because of their role and if they choose to use it to serve the needs of the team and the project, this has a positive impact on the project outcome. Referent and expert power are more effective than other forms of power, as demonstrated by the project manager at Prosper plc. Further information is presented in Chapter 7, Figure 7.9, section 7.4 and in Figure 7.7. This is complemented by the desire of team members who prefer not to have the responsibility of a position of power and are therefore happy to comply with the project manager, who takes on the responsibility for organizing tasks, as shown in Chapter 5, Figures 5.10 and 5.11.

It is important to recognize the potential for conflict and to be prepared for dealing with it. Findings on conflict and mechanisms for handling it at Prosper plc are to be found in Chapter 6, Section 6.5.

Recommendations for practice: To raise awareness of issues of power, it would be useful to do a ‘power audit’ within project teams to assess and acknowledge what type of power is applied and how team members receive it. The framework in Figure 7.7 is a useful starting point. It is also useful to discuss the inevitability of conflict, devise mechanisms for handling it and to attempt to use it positively and constructively, this avoiding the assumption that it is undesirable.

10. Application of theoretical values is relevant to project management and systems modelling and design

Project managers need to take a rational and objective view of the projects, understanding where they fit into the wider context so that they are aware of how changes may impact on connected systems. When modelling systems, analysts need to place emphasis on ordering systematizing features of the system to produce a useful model. Findings from Prosper presented in Figure 5.8 and 5.9 give further examples.

They also show that team members at Prosper plc do not think that theoretical values apply to them; however, they are passive recipients of the application of theoretical values by the project manager when planning and producing systems models.

Recommendations for practice: The importance of taking a rational, objective and holistic view of systems in the wider context is highlighted by the findings at Prosper. This should be a consideration for ISD projects in any organization, and is naturally addressed by Soft Systems Methodology in its early stages.

11. A symbiotic relationship exists between project team and project manager in terms of job satisfaction needs and provision

In the field of biology, symbiosis is defined as “association of dissimilar organisms to their mutual advantage”, (Abercrombie et al, 1973:278). Findings on values at Prosper plc have revealed that the association between project managers and team members is symbiotic, leading to harmonious team working. Project managers meet team members’ needs for job satisfaction in ISD projects by applying their economic, social, political and theoretical values. This produces a project environment that allows the team to meet targets and be associated with successful projects and feel empowered, valued, trusted and secure that responsibility is shouldered by the project manager. In return, the project managers’ needs for job satisfaction are met because they have the opportunity to build a team and empower and motivate team members. Further examples are presented in Chapter 5, Section 5.4 and Figures 5.13 and 5.14.

Recommendations for practice: It is worthwhile understanding the interpersonal needs of team members. This will help achieve a symbiotic relationship and a harmonious team, which may become greater than the sum of the parts. Many tools exist that can help individuals understand how they interact, e.g. the Myers Briggs Type Indicator, which groups people into different personality types, shows the value of each and explains how different types interact; the Belbin team roles inventory, which shows that people have different roles when working in teams, and that all have something useful to contribute; the Firo-B questionnaire, which measures the level to which individuals working together have a need for inclusion, control and affection and the level at which they desire to express these three characteristics, and the MyPotential questionnaire on values which shows the importance of a wide range of values to individuals.

8.5 Conclusions

The discussion above shows that project managers in systems development are in a pivotal role. They have the power to choose and guide the detail of the project tasks. They need to be both pragmatic and altruistic i.e. they need to apply some economic and some social values, especially in minor and low level tasks, including some social activities which may be seen as optional or trivial. In the case study, application of economic values resulted in tasks such as keeping files and lists of plans, minutes and timesheets for monitoring resources, dealing promptly with emails, sending follow-up emails to clarify agreements made in informal situations, writing clear, jargon-free documents and complying with company standards for submitting progress reports. Application of social values included activities such as smiling, listening, sitting and talking using approachable and non-dominant body language, using humour to create an open atmosphere at meetings, being friendly and sociable in conversation, using language and nicknames that both values and respects individuals.

At Prosper plc, it has been shown that systems developers put social, economic, theoretical and political values into action in systems development projects, within the structure of corporate values and standards. The project manager is located at three important interfaces within the organization. The systems development methodology forms a framework for project management but is supplemented by the values and resulting actions of the project managers. These in turn influence the team members.

A case was made for generalising these findings to other situations because although the organisational context may be different, the detailed project tasks remain the same for any ISD project. Therefore, projects are likely to proceed well and create job satisfaction for all staff in conditions where:

- Senior management of the department encourages a positive attitude to corporate values and use of systems development methodologies;

- IT project managers apply social values to lead project teams, using their power altruistically;

- IT project managers apply economic values to use resources wisely and they use theoretical values to aid rational decision-making.

It was helpful to return to the NIMSAD framework and use it to summarize implications for practice. Findings from the research on values have resulted in a richer understanding of the methodology, context and methodology user components of the NIMSAD model. They have reinforced and enriched the general propositions made by the model and provided some helpful suggestions for practice in eleven areas related to values in ISD projects. A key recommendation is the need to create a symbiotic relationship between the project manager and team members. This necessitates increased mutual understanding within the team, achievable by the application of tools to help understand interpersonal needs. This is related to the need for a holistic view on the part of the project manager, recognizing that the whole is greater than the sum of the parts, a feature well understood by supporters of Soft Systems Methodology.

CHAPTER 9

CONCLUSIONS

Summary

This chapter reflects on the research overall. It summarises the findings in relation to issues identified at the beginning of the research in Chapter 2 and clarifies the new knowledge that has been produced from the findings and resulting implications for practice reported in Chapters 4 to 8. Finally, it suggests ideas for future research.

9.1 Contribution to knowledge

Chapter 2 described how the research question was refined from the initial broad focus of the mental construct of ISD methodology users to a study of the impact of values on ISD.

The stimulus for this research was the need to increase ISD success and decrease failure. Literature addressing this need was categorised into two main strands of research – ISD methodology research and research on ISD success and failure. This was summarised in Chapter 2, Figure 2.2. The resulting research question, ‘What is the impact of values on ISD’, aimed to produce findings that would provide the required detail on how social and behavioural factors affect ISD success and failure.

The issues of concern expressed in the literature accessed during that process are summarised below. This is followed by a brief explanation of how these issues have been addressed by the findings of this research and show the contribution to knowledge in those areas.

1. Three issues arose from the literature on ISD methodology research:
 - a. It was acknowledged that attempts to increase success in ISD by devising methodologies have not provided the desired outcomes.

- b. It was acknowledged that human issues are important when using methodologies but attempts to build them in to methodologies have not produced complete success.
 - c. The NIMSAD framework (Jayaratna, 1994) was proposed to help understanding of ISD methodology use by addressing the wider context in which methodologies operate and by considering the mental construct of the methodology user. A critique of the NIMSAD framework and mental construct concept led to the proposal that research on values of methodology users would be a useful research focus. This should produce new knowledge on methodology use that would contribute to ISD methodology research.
2. A review of the ISD success and failure literature arrived at the following conclusions:
 - a. Social and behavioural factors are responsible for the outcome of ISD projects but current knowledge is not described with enough detail.
 - b. Research on values could produce more detailed knowledge on the contribution of social and behavioural factors to ISD success.
3. Use of the Spranger (1928) classification of values was justified by reflecting on the possible contribution of social, economic, political, theoretical, aesthetic and religious values to ISD projects. Limitations of Spranger's definitions of political and religious values were recognised and mechanisms were proposed for dealing with them.
4. Discussion of definitions of success and failure led to speculation on the relevance of both personal and corporate values to ISD success.
5. It was proposed that an interpretive case study would be the best research approach and that research findings should be published in fine detail.
6. An implicit assumption of the research was the expectation of producing implications for practice.

A description is now given of how the research findings on the impact of values to ISD contributed to knowledge in each of these six areas.

1. ISD methodology research

- a. The appropriate application of methodology users' values is shown to be crucial to the outcome of ISD projects. This explains why methodologies alone are not adequate to address ISD failure.
- b. Findings on application of values provide more detail on human issues relevant to successful methodology use.
- c. The NIMSAD framework as proposed by Jayaratna (1994) has been developed. Findings on corporate values, personal values and application of values during methodology use have enriched the model. The concept of the mental construct has been modified to show the prime importance of values and their relationship to other mental construct elements. Implications for practice in eleven areas related to values in ISD have emerged as a practical outcome.

Although the focus of the research was on values, a mental construct element from the methodology user component of the NIMSAD framework, findings addressed three components of the NIMSAD framework – context, methodology user and methodology.

Findings on *context* add to the literature on corporate values by providing detail on how corporate values may be communicated to all levels in the organisation via a hierarchical management structure. This includes adherence to the ISD methodology. Project managers have a vital role in this. Findings also support Jayaratna's (1999) speculation that methodologies reflect corporate values.

The findings contribute to knowledge on *methodology* use by providing a more elaborate explanation of the NIMSAD framework. In particular, they introduce the concept of *active and passive methodology users*.

Project managers are *active methodology users*. They interpret the requirements of the methodology and direct the team to do tasks, therefore influencing use of

the methodology. The project manager interprets the requirements of the methodology in the context of the needs specific to the project, the project team and the business users and also in the wider context of corporate values. Senior managers who monitor usage of the methodology may also be classed as active methodology users because they are conscious of it being applied. However, the fine detail of planning tasks is the domain of project managers.

Project team members with no management responsibilities are *passive methodology users*. These people work under the direction of the project manager in doing methodology tasks.

2. Research on social and behavioural factors

- a. The findings of this research consist of detailed descriptions of social and behavioural factors in operation in an ISD project. These findings may be generalised to other ISD projects and some of them may be generalised to projects in other disciplines.
- b. Implications for practice resulting from the findings on values address the following important social and behavioural factors identified in Chapter 2, section 2.3:

Honesty

Communication

Empowerment

Politics

Team skill

Managerial involvement in teams

Project management

Good leadership.

The findings show how these factors are related to good project management by appropriate application of personal values and awareness of corporate values. They also support Whitten's Lessons for Communicating in Harmony, listed in Chapter 2, Figure 2.6, by adding examples of how to put them into practice.

3. Use of Spranger (1928) classification of values

The Spranger (1928) values classification proved to be a useful framework for data gathering and analysis and limitations of the model did not prove to be problematic. Detailed findings have been produced on the application of social, economic, political and theoretical values in ISD projects.

Current awareness of literature on power, politics and value conflict proved useful in showing the relationship between political values and social values in project management.

An appreciation of literature on spirituality in the workplace compensated for the poor definition of religious values provided by Spranger (1928). It also showed that there is an overlap between findings on social values from this research and findings from the literature on spiritual values. In particular, the findings on application of social values identified in this research match most of the elements of spiritual leadership listed by Korac-Kakabadse et al (2002:172) i.e.

- Building shared values,
- Vision setting,
- Sharing meaning,
- Enabling by training, educating, coaching and providing motivation,
- Use of power and influence without manipulation,
- Trying to produce change that matters to people's enduring needs
- Service
- Transformation of self, others and the organisation.

In the wider values literature, the findings from this research add details on application of values in the IS discipline. This adds to the abundant literature on values in education and provides a case study to add to the psychology literature.

4. Definitions of success and failure and relevance of personal and corporate values

Detailed findings were produced on corporate values, personal values and interplay of corporate and personal values. Details on how the project manager manages values and increases values congruence were presented. Specifically, the findings showed the key role of the project manager at the interfaces between corporate, personal and team-member values.

5. The value of using an interpretive case study approach and publishing detailed findings

A central feature of this research was the decision to use an interpretive case study approach. This was enabled by the skills, personality characteristics and philosophy of the researcher. It meant that she had the required sensitivity and empathy to attune to the situations she was observing and interpret behaviour through a 'values-focussed lens', resulting in detailed data. Increased self-awareness was gained by using the Myers Briggs Type Indicator and MyPotential values questionnaire. It is recommended that such tools be used to aid interpretive researchers increase their self-awareness in the field.

Use of an interpretive method was essential to the successful use of the Spranger (1928) values categorization, both in maintaining an open-ended approach to the research and in interpreting the Spranger values descriptions in the context of information systems development. This was found to be more manageable than use of Rokeach's Value Survey (1973) or the Allport, Vernon and Lindzey (1960) questionnaire for determining value types.

It was realised that the detail needs to be preserved when publishing findings because this is the only way to give a true and complete representation of how values are put into practice. This provided a rich resource that could be referred to when recommending implications for practice.

6. Implications for practice were described. They consisted of detailed description of actions that demonstrate purposeful application of values. It is notable that these actions are not costly in terms of time or resources, e.g.

smiling, use of non-dominant body language and expressing thanks to colleagues. They do, however, require the willingness to do them.

9.2 Suggestions for future research

Approaches to providing suggestions for further research vary in the amount of creativity employed. A less creative approach is to think of thinking of logical extensions to the work that has been completed in this research. A more creative approach is to venture into new areas suggested by the findings.

The suggestions below begin with the least creative ideas then move into increasingly creative areas for possible research. These ideas should be considered as starting points but it is important that each idea should be evaluated carefully before beginning research.

Further work on the existing case study

A practical and sensible source of ideas for future research is to build on the case study described in this thesis. This includes:

Further analysis of values of the IT project team members using alternative methods, possibly with some adaptation, for example:

- Allport, Vernon and Lindzey Study of Values Questionnaire (1960); Rokeach value survey (1973).
- Asking team members to comment on what values they think the project manager has, according to the Spranger definitions.
- If possible it would be interesting to administer the values interview with someone who was identified by others as having political values as originally defined by Spranger i.e. wanting power for ones own gain. In practice, this may be difficult.

Further analysis of the questionnaire

Much more statistical analysis could be done including use of cross tabulation. This would rely on asking relevant questions and using the data to provide answers.

Further document analysis

This would include analysis of videos, mission statement and material from values workshops.

Extending the research into other related areas

Examples of this include:

- Using the case study approach in a different organization, e.g. a public sector organization, or in an organization that has a different systems development methodology, or uses no methodology.
- Using the same organization and same approach but studying other phases of a project.
- Using the same approach in a failing project – this is unlikely to be accessible and organizations may be embarrassed by having a researcher involved.
- Investigating how relevant the findings from this case study are to failed IS implementations, which continue to be a costly problem in government and private sector organizations.

Using different approaches

It is interesting to speculate on an entirely different approach to studying social and behavioural factors linked to IS project success and failure. The case study method would be used. The focus of the research would be determined by:

- Analysing the literature
- Producing a list of relevant behavioural factors linked to success and failure, e.g. trust, openness, empowerment.
- Using these as a focus for observation and interview
- Analysing results to produce details of how these factors are operationalised and how successful they are in determining the outcome of projects.

Extending the research on the importance of social values in project management and incorporating the notion of spiritual values

This research has provided strong evidence for the importance of social values in project management. It has also recognised the overlap between social values and spiritual values.

One way of taking this forward would be to research a recently completed successful large-scale information systems development project by using an interpretive case study approach with the same project team in a later project. This would take a deductive research approach and the research question would be:

To what extent did the application of social and/or spiritual values by project managers contribute to the success of the project?

The aims would be:

- To determine what values the project manager and team members hold.
- To interview them on the recently completed successful project to find out what they thought made it successful. The interview guide would include prompts on social and behavioural factors found to be relevant in the research described in this thesis.
- To observe the team members and project manager in the current project to enable the researcher to produce evidence of how they put their values in action.
- Results would be interpreted and analysed using the Spranger (1928) categorisation of values combined with a definition of spiritual values.
- Reflections on findings would seek to explain whether or not social values and/or spiritual values had led to social and behavioural factors that caused the project to be a success.
- Further reflections would seek to clarify similarities and differences between social and spiritual values and their importance in project management.

Alternatively, an action research approach could be taken but this would only be possible with an informed project manager who was sympathetic to the aims of the research.

With either method, this would be a piece of qualitative research that would take a deductive approach. It is testing a theory that social and/or spiritual values cause information systems success. It would also build on the detail produced in this thesis on social and behavioural factors relevant to information systems development success.

Research on the possible correlation between values of researchers and preference for research approaches

This idea investigates the speculation in Chapter 1 that the values of the author of this thesis contributed to her preference for the interpretive research method and gave her the necessary skills and motivation.

9.3 Concluding comments

Research methods were evaluated in Chapter 3 and it was concluded that although Spranger's (1928) classification of values had some limitations, it was rewarding to find that it was successful in producing useful findings. Further deliberation may have produced a case for an alternative method and approach, but Spranger's (1928) classification was sufficient. It is well summarized by a proverb from the Chinese communist politician Deng Xiao Ping,

“No matter if it's a black cat or a white cat, it is a good cat if it can catch a mouse”
(Chan, 2004).

One of the central findings of this research has been the importance of paying attention to detail. In ISD project management, small acts can influence the outcome of projects. When reporting on qualitative research in this area, detailed presentation of findings enabled fruitful interpretation of the data; it may also have compensated for possible limitations of the research approach. This attention to detail is also a feature with which the financial services sector would have much sympathy, and the proverb ‘Look after

the pennies and the pounds will look after themselves' is, amusingly, one that is highly applicable in this situation and a serious consideration for ISD project management in general.

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APPENDICES

Position Paper: An interpretive case study approach to the study of values of systems developers in a large financial institution.

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Abstract: *This paper describes a PhD research project in progress at a large UK financial institution. The aim of the research is to study the possible impact of values of systems developers on their conduct while carrying out a large project. It builds on literature of Jayaratna (1994) and the concept of the 'mental construct' of the systems analyst. It is also relevant to the literature on social and behavioural factors affecting project success and failure. The research method used is an interpretive case study carried out over a period of 18 months. The field work has been completed and analysis is in progress. **Part One** of the paper briefly describes the background to the research, **Part Two** explains the research approach and **Part Three** outlines how the approach may be considered interpretive and concludes by proposing that this case study exemplifies many of Klein and Myers' (1999) principles for conducting and evaluating interpretive research.*

Part One - Background to the Research

Jayaratna (1994) proposed that when 'problem solvers' (systems developers) work on projects their 'mental construct' determines how they view the problem situation that they are working in. He includes the following elements as components of the mental construct: perceptual process, motives and prejudices, values, ethics, reasoning ability, experiences, skills and knowledge sets, structuring process (including methodologies), roles, models and frameworks. While one may question whether this list is comprehensive, the underlying logic cannot be questioned, i.e. that human beings have different personal characteristics and this results in them perceiving and behaving differently. If they are systems developers, the mental construct elements listed above may all have an effect on the perceptions of the problem situation, their behaviour in carrying out the project and ultimately the outcome in terms of success or failure.

In order to make the research project manageable in terms of scope for a PhD, an investigation of values was chosen as a focus of the research because:

- 1. Values are important in guiding action.** Values are defined by Guth and Tagiuri (1965) as a guidance system used by an individual faced with a choice among alternatives'. Systems developers constantly have to make choices about the minor and major tasks, which comprise the project. Their perceptions, reasoning ability, skills etc, together with organisational standards, may give them perceptions of the task at hand but eventually they have to act and do something. It is proposed that it is the values which therefore guide the detail of the behaviour, of how the task is done, e.g. in doing documentation, communicating with users and managing other project team members.

2. **It allows other possible results to emerge.** An investigation of values using qualitative techniques does not rule out the possibility of recording field data which may include other mental construct elements and other factors which may emerge as being relevant to the behaviour of systems developers and project success and failure.

Part Two - The Research Approach: Case Study

The rationale for a case study approach as opposed to survey or interviews is that it is necessary to study the systems developers at work in their natural setting, working on a project. As Yin (1994) states, this is a case where 'a how or why question is being asked about a contemporary set of events over which the investigator has little or no control', where contextual conditions may be pertinent i.e. in addition to the personal values of individual systems developers, their interactions with each other and the corporate culture and values of the organisation in which they work may all contribute. A combination of techniques is appropriate - observation, interviews and document analysis. Observations will give the researcher data on behaviour and create hunches about values in action at work. Interviews will give access to the subjects' thoughts and feelings about their own and colleagues' values and behaviour and provide opportunities for checking hunches. Document analysis will provide some evidence of the culture, standards and corporate values of the organization, within which the systems developers operate.

Attempts have been made to define, classify and measure values e.g. Spranger in Allport, Vernon and Lindzey (1960) and Rokeach (1973). An application in the field of IS and review of some available techniques may be found in Hebei (1998). For the purposes of this research, it was decided that Spranger's categorisation into theoretical, economic, social, political, aesthetic and religious values would be most appropriate. A justification for this approach is given in Lauener (2002).

Part Three - How this Approach may be Considered Interpretive

A selection of quotations and definitions from authors in a range of fields indicates some important features of interpretive research, all of which apply to the study above, therefore defining the approach as interpretive - Figure 1.

A **dictionary definition (Pearsall, 1998)** of interpretation is the action of explaining the meaning of something'; to interpret is 1. 'to explain the meaning (of information, words or actions); 2. understand (an action, mood or way of behaving).

Walsham (2001) describes interpretive research as 'telling a truth through the lens of the researcher's subjectivity, giving the researcher's own ideas concerning the phenomenon at issue'.

Stake (1995) gives three defining characteristics of interpretive research: its researchers rely more on intuition, with many important criteria not specified; its on-site observers work to keep attention free to recognize problem-relevant events; and it is attuned to the fact that research is a researcher-subject interaction.

Ashworth (1997) describes interpretive (hermeneutic) research as aiming to 'make sense of experience'; it 'necessarily highlights matters of relevance to **the interests of the research**'.

Figure 1 - Definitions of Interpretive Research

This presents a picture of the various facets of interpretive research including the methods used e.g. observation, the type of data recorded e.g. moods, behaviour, the action of 'interpreting' during several stages of the research process e.g. field work, analysis and representation of results and the importance of the researcher-subject interaction, recognising that results are based on the 'researcher's subjectivity'. The researcher's interpretation is recognised in making sense of the data and formulating findings. Most of the concepts introduced here are summarised in Klein and Myers (1999) set of principles for conducting and evaluating interpretive research.

It is proposed that interpretation needs to take place at several stages in the research. Riessman's (1993) five levels of representation of primary experience - attending, telling, transcribing, analysing and reading (Figure 2) - act as a suitable framework to structure comments on how the researcher interprets events at each level, resulting in outcomes which are more and more dependent on the researcher's interpretation. This demonstrates Myers' (1997) view that interpretive researchers assume that they access reality (given or socially constructed), through social constructions such as language, consciousness and shared meanings. This is especially pertinent in this case study, which seeks to understand how values of systems developers impact on their own interpretations and actions in projects.

'Attending' - when doing observation or listening to the subject speak in a semi-structured interview the researcher makes choices about what they notice and the line of questioning that they choose to follow - certain things become meaningful and others are ignored. The researcher here is looking through a values-focussed lens, selecting observations and seeking comments which she interprets as examples of values in action, based on her interpretation of Spranger's categorisation of values.

'Telling' - in writing observation or interview field notes, the researcher interprets the original words and actions and re-presents the information in written form, ordered to some degree.

'Transcribing' -taped interviews or hand written observation notes may be transcribed as a document, with the potential for further ordering and selection of material. This again is not as rich or complete as the original conversation and is the result of some interpretation by the researcher.

'Analysing' - the researcher extracts data from the text, which she interprets as relevant to the research question and presents it as findings. Again, she is selective and is putting further meaning on the data.

'Reading' - people who read the researcher's findings bring their own interpretations and meanings to bear.

Figure 2 - Interpretation at each of Riessman's five levels of representation

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Sage

t Sheffield Hallam University

16 July 1999

Dear Prosper pic Employee

My name is Angie Lauener. I am a lecturer in the Information Systems Division of the School of Computing and Management Sciences, Sheffield Hallam University and I am registered for a post graduate degree in research. My research is on IS methodologies in general and the links between methodology users and methodologies in particular. As part of my research, I have to analyse current practice. In this context, I have agreed with Prosper pic to conduct a survey of systems staff as to their views on the use of SDM.

It is essential for research that the answers reflect the true views of the respondents. For this reason, please do not consult anyone when completing the questionnaire. The survey is anonymous and the individual feedback is treated confidentially. I will be the only person who sees the raw data. The survey is being sent to all employees in Prosper pic IT Headquarters, approximately 800. In order to ensure confidentiality, please return the form in the reply paid envelope provided as soon as possible and no later than **Friday 6 August**.

I will analyse the research data and provide you with summary findings.

I hope you will find the issues raised in the survey interesting and I am sure that they will be of benefit to all concerned in using SDM. In anticipation of your co-operation, I thank you for your help.

Yours sincerely

Angie Lauener

t Sheffield Hallam University

Confidential

A Questionnaire Survey on Use of SDM

Thank you for completing this questionnaire. It should take about 20 minutes to complete. All information will be treated as confidential. At no stage will individuals be named. Please return by post in the pre-addressed envelope provided at your earliest possible convenience, and by 6 August at the latest.

Please note

- For the majority of the questions, you are required to answer by ticking the appropriate box(es).
- Please feel free to make annotations alongside questions if you have any further comments or want to clarify any of your answers.
- There is space provided at the end of the questionnaire for any comments you may have related to any part of the survey.
- There are no 'right' answers - I am seeking your personal views.

The questionnaire is in five sections:

Section 1 - Use of documentation and manuals.

Section 2 - Projects in general.

Section 3 - Your views on a wide range of issues related to methodology use.

Section 4 - Personal details, experience and training.

Section 5 - Further comments - here you may add your own comments.

SECTION 1 This section asks questions related to your use of manuals and documentation

1. Please indicate how often, on average, you refer to the following manuals:

	Weekly	Monthly	Occasionally	Never
IT Instruction Manual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Handbook 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Handbook 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other - please specify.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Are these manuals within easy reach of where you usually sit?

Yes No

3. When producing documents as required by SDM how often do you refer to past documents as a starting point?

Always Usually Sometimes Never

SECTION 2 This section asks questions related to projects

4. Please state how much you like working in each of the following phases in the project life cycle; if you are unable to comment, please tick 'Not applicable'.

	Like	Don't mind	Dislike	Not Applicable
Initial request	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feasibility study	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
External design	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Internal design	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Programming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
System testing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Acceptance testing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Implementation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post implementation review	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Production system support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. List the top three factors which lead to projects which you personally have found to be the most successful in your experience.

- 1.....
- 2.....

6. Rank the following list of priorities in order of importance from your own point of view (1 = most important, 7 = least important):

Completion of project within timescale	<input type="checkbox"/>
Completion of project within budget	<input type="checkbox"/>
Meeting end-user needs	<input type="checkbox"/>
Meeting business requirements	EH
Adhering to group standards	<input type="checkbox"/>
Meeting my needs i.e. personal job satisfaction	HH
Error free product	<input type="checkbox"/>

7. Rank the following list of priorities according to the importance you think the SDM methodology demands (1 = most important, 7 = least important):

Completion of project within timescale	<input type="checkbox"/>
Completion of project within budget	<input type="checkbox"/>
Meeting end-user needs	<input type="checkbox"/>
Meeting business requirements	<input type="checkbox"/>
Adhering to group standards	<input type="checkbox"/>
Consultation with business users	<input type="checkbox"/>
Error free product	<input type="checkbox"/>

SECTION 3 In this section I am seeking your opinion on a range of issues related to systems development projects and use of SDM.

8. PART A

	Mostly agree Q	Slightly Agree	Slightly Disagree	Mostly Disagree Q	Not Applicable
<i>If I have done the tasks required by SDM, I am confident that the job has been well done</i>	Q		<input type="checkbox"/>	Q	
<i>SDM slows things down un-necessarily</i>	[]	[]	[]	[]	[]
<i>The consistency and familiarity provided by documentation standards makes it easier and quicker to read the documents</i>	V		D	ED	ED
<i>SDM helps clarify expected roles of project team members</i>	D	<input type="checkbox"/>	D	D	ED
<i>SDM helps encourage user involvement</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Delays to sign off of key SDM deliverables cause major disruption to the effectiveness of SDM</i>	D	D	D	D	ED

	<i>Mostly agree</i>	<i>Slightly Agree</i>	<i>Slightly Disagree</i>	<i>Mostly Disagree</i>	<i>Not Applicable</i>
PART B					
<i>I rely a lot on past experience when doing new projects.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>I have had sufficient training in SDM</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>When using SDM, time pressures force me to cut corners</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>I rarely see Post Implementation Review reports</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>I find Post Implementation Review reports valuable learning aids for future projects</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Training in SDM helps me understand WHY I should do the required activities</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>My line manager encourages use of SDM</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART C

<i>I need to feel that I have done a job thoroughly</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>I need to understand why I am doing a task</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>I prefer problems with clear cut solutions</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>It is important to me to have some freedom to operate using my own initiative</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>I find security in following guidelines</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>I enjoy the challenge of open ended problems</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Complex problems are more enjoyable</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>I need to see how my job fits into the bigger picture</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>I am a careful person who takes calculated risks</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Mostly agree	Slightly Agree	Slightly Disagree	Mostly Disagree	Not Applicable
PART D					
<i>SDM allows me to deviate from a standard method in cases where I believe it would meet the business user's needs better.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>We need more face-to-face meetings with business users</i>	EH	Q	CI	<input type="checkbox"/>	D
<i>Social contact with business users outside work helps improve communication on projects</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Business users do not understand SDM</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Business users do not think carefully enough about their requirements</i>	D	D	D	D	D
<i>Business users do not understand SDM documentation</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>User involvement needs to be carefully managed</i>	D	D	D	D	D
<i>User involvement is often more of a hindrance than a help</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PARTE					
<i>Prototyping detracts from the benefits of SDM</i>	r j	;j	f f	r 1	' j
<i>Object orientation is a technique I am interested in trying</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Principles and policies relating to Prosperpic's expectations and philosophy of IT are clearly communicated to me</i>	<input type="checkbox"/>	<input type="checkbox"/>	O	<input type="checkbox"/>	<input type="checkbox"/>
<i>Prosperpic expects high commitment to its IT principles and policies</i>	H	I 1	D	M	H
<i>Prosperpic has a culture which strongly encourages staff to adhere to group standards</i>	D	Q	D	D	D

SECTION 4 This section asks questions relating to your personal details, experience and training.

9. Which age group are you in?

Under 26	26-35	36-45	46-55	Over 55
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. What is your gender? Male Female

11. How many years have you worked for Prosper pic? years

12. What is your current job title?

13. How long have you had this current job title?..... years

14. Please indicate approximate duration, in years, of employment in previous posts in any of the following:

Programmer	yrs.	Team leader yrs.
Analyst	yrs.	Project manager yrs.
Systems tester.....	yrs.	Non-IT	yrs.
Other(s)	yrs		
(please specify).			

15. What is your current grade?

Non-managerial	1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. Which department do you work in?

- Card & Self Service Systems
- Retail Banking Infrastructure
- Financial Services Systems
- Customer and Credit Systems
- Central Operations Systems Support
- Prosper pic Management Services
- RPS Development

17. Please tell me about any educational qualifications you have achieved and whether they are in computing or non-computing areas? Please put a tick as appropriate, otherwise leave blank if none.

	Computing	Non-computing
Qualifications achieved at school	<input type="checkbox"/>	<input type="checkbox"/>
Higher education up to graduate level	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Higher education - post-graduate qualification	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

18. Which of the following training courses have you attended?

SDM course	EH	Project Management Workshop	EH
Developing Project Skills	CI	Project Management Course	EH
Planning and Control	EH	Basic Systems Analysis	EH

19. Please indicate if you have used and/or had training at any time in your career in any of the following:

Systems development methods			Project management methods		
	<i>Used</i>	<i>Had training</i>		<i>Used</i>	<i>Had training</i>
ProsperMethod	<input type="checkbox"/>	<input type="checkbox"/>	PRINCE	<input type="checkbox"/>	<input type="checkbox"/>
SSADM	<input type="checkbox"/>	<input type="checkbox"/>	Other -	<input type="checkbox"/>	<input type="checkbox"/>
JSD	<input type="checkbox"/>	<input type="checkbox"/>	please specify		
Other(s) - please specify	<input type="checkbox"/>	<input type="checkbox"/>			

SECTION 5 *if you have any further comments on any aspect related to this questionnaire, please write them here.*

20.

THANK YOU FOR YOUR HELP IN COMPLETING THIS QUESTIONNAIRE

Please tick the following boxes as appropriate:

I would like to discuss this questionnaire further EH

I would like to take part in a follow-up interview EH

If you have ticked either of the above boxes, please supply contact details here:

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An investigation into the impact of values on systems development

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Abstract. This research used the case study method to explore values of systems developers and the management of a project during specification of requirements of a major information systems development project in the public sector funded by the government. Here, the organisation is fictitiously named as ABC On-line Ltd. Allport, Vernon and Lindzey's adaptation (1960) of the German philosopher, Eduard Spranger's classification of values was used. It was found that aspects of theoretical, economic, social and political values were of relevance to successful management of the case studied and this led to the proposal of some general guidelines for desirable values of project managers involved in large IT projects. This research also acted as a pilot, prompting suggestions for conduct of future research in this area.

1. RATIONALE FOR THE STUDY OF VALUES IN INFORMATION SYSTEMS DEVELOPMENT

An investigation of how values impact on the daily conduct of systems developers may illuminate the process of systems development and ultimately help explain success and failure in information systems development projects. It has been accepted that the introduction of methodologies has not been totally effective in increasing project success (Fitzgerald, 2000). It was firmly established in 1985 that the basis of IS failure lies in social and behavioural factors (Boland and Hirschheim, 1985), 'soft' or 'human' issues' more frequently than in technical issues. An investigation into the impact of values on the work of systems developers may increase our understanding of social and behavioural issues and their effects on projects.

2. THEORETICAL BACKGROUND

The work of systems developers consists of completing a number of small tasks which collectively produce outcomes which form a project. In projects where a systems development methodology is used, the form and nature of the tasks may be structured to a greater or lesser degree and amount of detail depending on the methodology. The philosophy on which the methodology is based largely determines where the emphasis is concentrated in suggesting and describing necessary or advisable steps in a structured way (Avison and Fitzgerald, 1995). Where a recognised methodology is not used, the project still comprises a collection of tasks and steps.

The extent of individual control of behaviour of members of the project team depends on a number of factors. Project phases and small tasks may have corporate or methodological standards which dictate how something should be done and assuming that employees comply with standards, the individual therefore has limited choices to make. Individuals have more choices to make where such constraints do not exist, for example where there is no corporate standard, where the task is at a low level of detail not

covered by a methodology or where the 'task' has less tangible outputs, such as effective communication and team spirit. Here, the outcome of the task is under the control of the individual and is open to personal variation.

Choice and variation in individual behaviour creates complexity in systems development activities and this has given rise to methodologies which try to cope with this by offering some standardisation of approach. The inadequacy of a systems engineering approach was recognised and Soft Systems Methodology was developed (Checkland and Scholes, 1999). An appreciation of the Weltanschauung (W) originally derived by Dilthey 1931, is crucial to this methodology, which recognises that any problem situation involving humans is subject to a range of different interpretations depending on their W. It is interesting to speculate that if information systems development methodologies had been devised by social scientists they would have assumed from the beginning the complexity of the process of trying to organise unpredictable and variable human beings to develop an information system because of their fundamental acceptance that individuals all have their own interpretations of the world.

Jayaratra (1994:179) explains why he formed the concept of 'mental construct' of the problem solver as a necessary development of the concept of W in recognition of the fact that systems developers are individual human beings with their unique worldview and therefore will view problem situations in terms of their personal characteristics. He offers the following list as being relevant: values/ethics, perceptual process, motives and prejudices, reasoning ability, experiences, skills and knowledge sets, structuring process (including methodologies), roles, models and frameworks.

The term values is used widely in everyday language. Values are defined as 'a guidance system used by an individual faced with a choice among alternatives' (Guth and Tagiuri, 1965). Rokeach (1973) states 'A value is an enduring belief that a specific mode of conduct or end state of existence is personally or socially preferable to an opposite or converse mode of conduct or end state of existence'. Attempts to define, classify and measure values have been made e.g. Rokeach (1973), Allport Vernon and Lindzey (1960). Recent research to apply some of these measures of values in the IS field has been done by Hebei (1998; 2001). For the research described in this paper, Spranger's categorization of values was used, as adapted by Allport, Vernon and Lindzey (1960). A summary of this categorization is provided in Figure 1 and justification for this approach is provided in section 3.2.

3. METHOD

A non-positivist epistemology is adopted for this research. A qualitative research approach using an interpretive case study is appropriate because the aim of the investigation is to arrive at qualitative findings which describe how values impact on systems development. The benefit of this approach here is that it will also allow for the possibility of other relevant findings on related topics e.g. it may provide useful data on other personal characteristics or 'mental construct' elements in addition to values. Stake describes the function of research as "not necessarily to map and conquer the world but to sophisticate the beholding of it. "Thick description", "experiential understanding" and "multiple realities" are expected in qualitative case studies" (1995:43). Walsham (2001:7) describes interpretive research as 'telling a truth through the lens of the researcher's subjectivity giving the researcher's own ideas concerning the phenomenon at issue.' That will be the case in this research.

3.1 CASE STUDY ORGANISATION - ABC ON-LINE

ABC on-line is an e-learning network and was formed to fulfil the government's vision, published in March 1998, for 'a public-private partnership that would stimulate demand for lifelong learning among business and individuals and improve access to high quality learning through the use of information and communications technologies'. There was to be particular emphasis on reaching the socially excluded and to offer basic skills training in numeracy and literacy to improve business and the economy and with the ultimate goal of improving society. Marketing material advertised 'Now anyone can learn to do anything'. The implementation was a major undertaking using a consortium of external suppliers and managed by an Information and Communications Technology team within ABC On-Line. The launch of

the first phase of the system was scheduled for September 2000, a deadline which could not be missed.

ABC On-Line did not use a formalised systems development methodology consistently for the whole project. Soft Systems Methodology was used in the early stages when planning overall requirements but the detailed design and implementation was outsourced to a consortium with the ICT team acting as co-ordinators between the business users and the suppliers.

Most of this research was done during the requirements specification phase of the systems development life cycle. Although the team involved were working hard on a high profile project central to the governments education policy, access was granted by the director but opportunities for field work were limited and the approach somewhat opportunistic.

3.2 DATA COLLECTION USING INTERVIEWS, OBSERVATION AND DOCUMENT ANALYSIS

It was decided that the most useful classification of values to use when collecting field data was Spranger's, as in Figure 1. This shows that the classification is broad in scope and it is clear that some parts of the are not applicable to systems development. Questionnaires for measuring values, as reviewed by Hebei (1998) would not be appropriate in this research because of the time limitations on access. The Spranger classification may be interpreted flexibly and adaptably for use in this research.

When doing observation and interviews, the researcher was looking through a values-focussed lens at individuals at ICT team meetings, liaison meetings with business users and in semi-structured interviews. Evidence of personal characteristics of members of the project team were recorded as hand-written field notes. Analysis of documents provided information on background and aims of the project, corporate values and proposed performance indicators for measurement of project success.

Length of field contact was approximately 40 hours during the period April 2000 to February 2002. All interviews took place at the research organisation's premises or at venues hired for 'away-day' meetings or by telephone so there were also many opportunities for observation. It would have been preferable to tape record planned interviews but interviewees would have felt less comfortable about being open due to the sensitive nature of some of the information.

THEORETICAL: This person emphasises the search for truth

- MS* interested in discovery of truth
- gs* looks for identities and differences
- gs* divests itself of judgements regarding the beauty or utility of objects
- gS* seeks only to observe and reason
- gs* interests are empirical, critical and rational
- gs* chief aim in life is to order and systematize his knowledge

ECONOMIC: Whatever is useful is valued. This is a pragmatic person.

- jeS* characteristically interested in what is **useful**
- gS* based originally upon satisfaction of bodily needs (self-preservation), interest in utilities developed to embrace the practical affairs of the business world - production, marketing and consumption of goods, the elaboration of credit and the accumulation of tangible wealth
- g<* thoroughly "practical"
- gS* regards unapplied knowledge as waste
- gS* only interested in art if it serves commercial ends
- g<* may confuse luxury with beauty
- gS* more interested in having wealth than dominating or serving people

AESTHETIC: Artistic experiences are sought. The value is on form and harmony.

- gS* sees his highest value in form and harmony
- gS* each experience judged from the standpoint of grace, symmetry or fitness
- gS* regards life as a procession of events; each single impression is enjoyed for its own sake
- gS* does not need to be artistic, is aesthetic if he finds his chief interest is in the artistic episodes of life
- gS* concerned with identities of experience
- gS* chooses to consider truth as equivalent to beauty
- gS* "To make a thing charming is a million times more important than to make it true"
- gS* tends towards individualism and self sufficiency

SOCIAL: Love of people characterises this person. Warm human relationships are vital.

- gS* highest value is love of people, e.g. altruistic or philanthropic
- gS* prizes other people as ends
- gs* kind, sympathetic and unselfish
- gS* regards love itself as the only suitable form of human relationship
- gS* selfless

POLITICAL: This person is motivated by the search for power and influence

- gS* interested primarily in power
- gS* wishes for personal power, influence and renown

RELIGIOUS: An almost mystical belief in the essential unity in the universe describes this person.

- gS* interested in unity
- gs* mystical, seeks to understand the cosmos as a whole
- gS* mental structure permanently directed toward the creation of the highest and absolutely satisfying value experience
- gS* sees something divine in every event

Figure 1 Spranger's classification of values summarised by Phares and Chaplin (1997:458) (bold type) and Allport, Vernon and Lindzey (1960) (regular type)

4. RESULTS

4.1 ANALYSIS OF FIELD NOTES

Use of a computer based tool for data analysis was considered but rejected. The richness of interpretation afforded by a holistic appreciation of field notes spread visibly over a large area and highlighted with colours and arrows would be lost with the use of a computer-based tool.

The text in Figure 2 shows selected extracts from field notes which demonstrate personal characteristics in operation in the project activities observed. These extracts were selected because of their potential for providing evidence on the application of values in systems development activities. On analysis, it was found that there was a lot of commonality between the characteristics of the Director and Programme Manager so the results are presented jointly. There was insufficient evidence on other participants to enable any valid conclusions to be made.

4.2 ANALYSIS OF SELECTED PERSONAL CHARACTERISTICS OF DIRECTOR AND PROGRAMME MANAGER

The data recorded in Figure 2 were interpreted in terms of the value definitions in Figure 1. Figure 3 represents the subset of relevant value definitions emerging from the analysis as relevant to managing systems development projects.

4.3 FINDINGS ON PROJECT SUCCESS

ABC On-Line was considered to be a successful project. Two types of data are provided here.

Factual Data on measures of performance: Internal monitoring reports show that all of the major targets relating to the ICT system have been met. It was launched on target in September 2000 and provided the basic functionality required; further enhancements have been phased in mostly on target. The cost was over £10 million which was considered expensive. However, it is unrealistic to produce an accurate budget in a leading edge development on a greenfield site. Government targets for availability of the system, enrolments to courses and web hits have been met. Daily figures from February 2002 show that at peak times, well over 1000 users are on-line using learning materials.

Qualitative data: Semi-structured interviews with the Director, Programme manager and other members of the ICT team produced positive comments. They feel that the project was a success and remain highly motivated now that the project has moved on to an operational phase. They feel that it is a good team to work in with mutual respect, co-operation and support and generally good relationships which carried them through difficult periods. It is generally admitted that there were some difficult times during the project but these were dealt with as a team and overcome. None of the original recruits to the team have left. They also feel that they have received good support from the government. Press coverage has been positive. The senior civil servant in the department responsible for the policy framework for ABC On-line said that during development, he as a customer was concerned about apparent secrecy and over-promising by the ICT team. Now that the system has been delivered, is working and meeting required targets, he is happy with the outcome.

Director:

astute, wise, honest, frank
 appreciates and values commitment of staff and tells them so publicly
 complimented colleague, put his hand on his shoulder and showed that he appreciated his frustrations at lack of delivery by the suppliers
 knows strong points of staff relevant to project and compliments people on them
 brings results of discussions together and reflects back to people the main outcomes of the day, including comments on what the important gaps are
 keeps the bigger, overall picture in mind
 not political, dominating, self-centred,
 not wanting personal renown; acknowledges the contribution of individuals
 passionate about success of the project
 takes targets very realistically and is pragmatic about what is achievable and what is not within timescales
 pleased when project launched and operational - 'It's good'
 admitted getting angry at IT suppliers for non-delivery
 forward looking
 plans ahead, cautious; aware of enormity of risk to project if disaster happened - insisted on purchasing second server as a backup
 practical
 thoughtful
 responsible
 gets alongside staff - during syndicate group working, toured around the groups and listened at the back in a non-threatening way
 not strict or dominating or manipulative - when extra work was needed in a syndicate group, offered them the choice of doing it - did not demand it
 trusts staff
 humble manner and tone of voice when addressing staff
 approachable - does not keep himself aloof or distant
 dresses fairly casually - short sleeved shirt, no jacket or tie in all meetings I saw him at
 not trying to create a superior image e.g. crawled under table to disconnect lap top at end of large meeting!
 positive, engenders positive spirit amongst staff

Programme manager:

most of the above plus:
 creativity in presenting information to staff in an interesting and exciting way e.g. multimedia presentations, use of 'Quiz' for relating statistics on project progress; cartoons
 avoids the use of jargon and creates his own words and expressions to represent relevant concepts instead of traditional, formal terminology
 described by the Director as 'the acceptable face of IT - important when dealing with business users'
 described by a member of the ICT team as 'more cuddly' than the Director
 flexible and adaptable
 non-dominant body language - posture and facial expressions _____

Figure 2 Evidence of personal characteristics of the Director and Programme Manager - selected extracts from field notes

<i>Theoretical</i>	interests are empirical, critical and rational	
<i>Economic</i>	interested in what is useful thoroughly practical	
<i>Aesthetic</i>		<i>not applicable</i>
<i>Social</i>	love of people - altruistic or philanthropic prizes other people as ends kind, sympathetic, unselfish	
<i>Political</i>	personal power, influence and renown	
<i>Religious</i>		<i>not applicable</i>

Figure 3 Values analysis of personal characteristics of Director and Programme Manager

4.4 RELIABILITY AND VALIDITY

The researcher relied heavily on her own interpretations during field work and analysis. When analysing field notes, these were complemented by images and impressions formed during observation at the field site. As a means of verifying the researcher's observations on values of the Director and Programme Manager, members of the ICT team, the Director and Programme Manager were asked to comment on Figure 2. There was general agreement with the observations in terms of values portrayed in a semi-public arena. An additional characteristic of the Director which was not demonstrated in the settings observed was that he was strongly driven with a sharp focus and a strong personal commitment to succeed, which sometimes resulted in lack of interaction with others and high demands on staff. This was accepted by those who worked closely with him as integral to his passion and commitment to deliver the project.

4.5 IMPLICATIONS OF THESE ANALYSES FOR MANAGEMENT OF IS DEVELOPMENT PROJECTS

Resulting from these analyses, the following summary of social and behavioural factors applied by the Director and Programme manager relevant to the successful conduct of the ABC On-line project has been produced. The Director and programme manager were found to:

- .SS inspire staff with commitment and leadership in passionately caring about the success of the project for the sake of the project, not personal renown;
- show that the best interests of the staff are foremost when dealing with the external suppliers;
- .SS be approachable, realistic and sympathetic about difficulties and supportive of staff, resulting in openness so that problems are not hidden and may be dealt with quickly therefore creating least damage;
- & instil confidence in staff showing responsibility for the bigger picture and the overall aims so that their work is correctly targeted and useful;
- & be responsible in risk management and disaster recovery plans so that the project is adequately protected and staff feel secure.

Reference to the original detailed field data provides concrete examples of how these features can be put into operation in practice. It is notable that many of these desirable values cover important areas identified in government recommendations on 'Successful IT' (Cabinet Office, 2000), especially the guidelines on leadership and responsibility, project management, risk management and procurement and supplier relationships.

5. DISCUSSION

These findings bring up a number of issues and questions relevant to projects, success and values and the research approach used here. This may inform future research in this area.

This project was considered to be a success and the findings about values are considered to have contributed towards that success. Most of the findings have little to do with technical aspects of IS development and a lot to do with communication, management style and engendering good team spirit. This is acceptable as one of the aims of the research was to investigate social and behavioural factors which lead to project success. Evidence of 'success' was reported at three levels - corporate, team and individual. In any future research one must be clear about definitions of success at different levels.

Field observations were limited mainly to semi-public gatherings. It emerged from later interviews with individuals that although the observations on the Director and Programme Manager were a hue representation of their behaviour in public settings, there were some additional social and behavioural factors which applied in private or less formal settings. Any future research must include observations in both types of setting. It was also found valuable to use initial findings as a prompt in interviews to reveal more characteristics of the interviewee. This would be a useful practice in future research.

Spranger's categorization of values was found to be a useful framework for observation and analysis. Aspects of four categories were seen in operation to varying degrees - economic, social, theoretical and political. There was more evidence of social values than of the others. Religious and aesthetic values were not applicable. It is the researcher's proposal that the presence of some social values in the Director and Programme Manager led to the social and behavioural factors identified which contributed to project success. The relevance of political values here is that they may be used purely for the good of the project or purely for personal gain or a mixture of the two, depending on other values. In this case study, the director used his power and to get the job done well and to deal authoritatively with suppliers while showing some social values in dealing with staff which meant that they all gained satisfaction and felt part of the successful outcome. Therefore power may be used to good effect if serving the aims of the project and not mis-used in a manipulative or dominating way. Regarding theoretical values, Guth and Tagiuri (1965) explain the 'surprising' contribution of theoretical values to businessmen - 'The high level executive needs to have theories and cognitive and rational approaches to his work in order to satisfy his economic and political values.'

In this research, observations on values were limited to field observation and semi-structured interviews. In future research it would be essential to include more targeted interviews with individuals specifically on the theme of values.

The research took place at the specification of requirements phase of the systems development life cycle. Further investigation would be needed to find out if the same values apply equally at other phases. The importance of values at the requirements specification phase is that they guide action. Therefore, success at this phase depends on successful specification and interpretation of requirements followed by successful action. Some of the evidence produced here shows how a climate of communication was produced due to the personal values of the programme manager which aided this success. Social values may also guide the amount of effort individuals make in clearly specifying or understanding requirements. A pragmatic approach used by a person who has economic values may urge the individual to get the job done but a more altruistic approach taken by someone with social values may prompt them to take necessary time and care over documentation and other forms of communication. Further detailed investigation of practical activities at the requirements specification stage would be needed to produce findings on values in operation at this level of activity, e.g. mundane everyday activities such as making phone calls, responding to emails and producing documentation and dealing with programmers and business users in an informal setting. This would also locate the research more specifically in the field of information systems development rather than generally in project management.

ABC On-line is a public sector organisation which needs to operate as a business but is aimed ultimately at improving society. In future research, it would be interesting to compare findings from a private sector

organisation where the emphasis was primarily on making a profit.

In this research, the findings on values related to individuals. ABC On-Line as an organisation is motivated by government values aimed ultimately at 'improving society' and ABC On-Line has itself produced a statement of its organisational values in its Strategic Plan. The relationship between personal and organisational values would be an interesting facet of any future research. Do individuals choose to work at organisations whose values they respect? Do people take on corporate values when they have belonged to the culture for long enough?

Reliability and validity of qualitative research is an issue about which there is much debate in the social science literature. In this research, interpretations and values of the researcher played a large part in the field activity and analysis. Some attempt at verifying findings was done by triangulation of data from observation and interviews and by respondent validation (Silverman, 2001:233) although Silverman questions these methods and suggests more appropriate methods - analytic induction, the constant comparative method, deviant case analysis, comprehensive data treatment and use of appropriate tabulations. The relevance of these approaches needs evaluating for any future research.

6. CONCLUSIONS

This is an 'opportunistic' piece of research which has been fruitful in evaluating an approach to the investigation of values of systems developers. It has acted as a useful pilot study for further research in this area.

The use of Spranger's categorisation of values provided a useful framework for field work and analysis. This produced some findings on details of social and behavioural factors which contributed to the success of ABC On-line. It has led to suggestions for gaining further detail at a practical level on the operation of values in the day-to-day work of systems developers in the small tasks which combine to make up a project.

This is an example of an interpretive case study approach to IS research and has prompted awareness of some current recommendations from the social science literature on reliability and validity of qualitative research.

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Researcher Reflexivity

This appendix is a transcript of field notes including comments by the researcher on the research process, her feelings about the research situation, how she felt during observation and interviews, evidence of building up a rapport with the organisation and individuals, how she felt she was viewed by participants, awareness of her own values and how they shape what she notices and what she does not notice, how she interprets what she observes and how it shapes what questions she asks.

Evidence of building up a good rapport is useful because it indicates that the subjects may be behaving naturally and openly, giving honest views and answers, less likely to be trying to give a false impression; not feeling threatened by researcher's presence.

Approach to analysis

NB The notes were written in the first person, therefore they are reported here as such.

Portions of text from field notes were highlighted which indicated the following:

How I felt I was viewed by subjects
 Hunches and validation of hunches
 How I built up rapport, established credibility
 How I behaved in the different research situations

Results

Tracy become more knowledgeable because of contact with this team
 Peter ambitious
 Peter has power due to his position - desire to be in control to suit IT needs, or to be sensible and pragmatic to get the job done?
 More communication by body language possible in face to face meetings where business and IT people come together in the same room
 Appreciation of how busy it must be for business people if they attend the same number of meetings with other sub projects as they do with Peter's team
 In observing the meetings, I realised that projects are all made up of nitty-gritty detail. There is much evidence of nitty-gritty business detail being discussed, also technical constraints.
 Peter holds his ground some times - has a firm grasp of what he is open to and what he is not open to.
 Informal meeting with Peter-this meeting was very useful in allowing me to check out a few hunches, most of which were verified.
 Not sure how new actions come up at meetings - from communications and events happening between meetings?
 I am not sure how much the social behaviour - outings etc - is the culture of this department or something Peter has brought in.

My hunches about Peter being valued and respected by management were verified when his standards for documents were taken on for other project teams.

Personal reflections

How good am I at noticing people practicing politics and power, as it is not something I seek to do myself? I was not aware of anyone with obviously strong agendas and people seemed to feel equal at the meetings. Am I being naive?

To notice and observe motivation, I may need some psychological training

When sitting in on a meeting held in the canteen, we all sat closer together. I felt less comfortable doing participant observation and writing notes - conscious and embarrassed that they may be able to read what I was writing - may seem trivial or too 'touchy-feely' for this technical group.

Field notes early on in series of business liaison meetings were mainly factual - due to my lack of experience I think. Later on they included more observations of people's behaviour. I left out factual details on project progress because this is not what I want to record, I do not understand a lot of it and brief detail is produced in minutes.

I noticed that Tracy appears to be in control of her life - this is something I admire, partly because I feel it is something I do not do so well.

The atmosphere here is different to Ufl (University for Industry). I preferred the more creative nature and behaviour of the Ufl people in and out of meetings, because creativity is something I appreciate and value more than the safe, constrained approach to Prosper pic project. However, I can appreciate that this is necessary in Prosper pic because of the nature of the business.

During informal meeting with Peter I was pleased to find that my presence is not seen as consuming extra time. Notable that Peter's line manager had asked him to keep an eye on how much time my involvement was adding to his work, and the answer was none, except for the hour meeting we had at the start.

The way that Peter conducts meetings using his personal style is the kind of thing my research is looking for.

Evidence of how Peter operationalises his values came out at informal meeting. I had already had hunches about this. The conversation confirmed that he has some underlying world views (W) which manifest themselves in his values e.g. clear communication is desirable and often pictures are better than words; operationally that means using pictures and simple diagrams. Peter wants people to understand - social values and economic values.

I do not feel too odd sitting here saying nothing as most of the others are silent most of the time.

I was able to note 'outcroppings' (Fetterman,1989) - unobtrusive measures of observation e.g. dress, corporate pen or not, artefacts e.g. folders.

4 months in - People seem to be at ease with each other and comfortable with me.

8 months in - I had no hesitation asking what an abbreviation stood for. Earlier on, I was conscious of trying not to divert the meeting at all. I also felt less inhibited about asking some questions to clarify other things I did not understand, even if I appeared a little naive.

It was good to do interviews with other Prosper pic staff because it gave me a wider set of attitudes and view to compare the current project team's with, e.g. this team seem dedicated to getting the project done well. Compare this with an attitude I heard from another interview where it was proposed that some almost welcome problems which could have been avoided by better planning because they then have the opportunity to appear like heroes because they sort it out.

Peter asking semi-apologetically for Tracy's response to a note, knowing that she has been busy - I can empathise with this approach because it is the kind of thing I would do, not wanting to put someone under pressure.

Sometimes I felt that I needed to stand back and check where the project was in terms of the wider picture and overall plan. For the team members, they would be constantly aware of which phase they are in, when the next deadline is etc because they are working in it every day.

I noticed that Tracy made fun of doing 'girly stuff' - was she conscious that she was in a male world so did not want to appear too feminine? Or is this me projecting on her my desire to fit in?

I felt that the general atmosphere in the meeting was more relaxed when Peter was absent - is this because I also felt that 'the boss' was away?

Peter occasionally invited me at short notice to attend meetings, but also advised whether or not it would be valuable. Evidence of a good rapport, confident that my presence would be acceptable, understanding of what my needs are.

Peter showed me his filing cabinets and invited me to help myself to documents to browse. Also logged me on to the staff intranet to browse. Evidence that he was helpful, trusted me and was open.

Arranged for a James to talk me through a document but James had to leave.

Peter did it instead - evidence that he is reliable and responsible.

Introduced me to a programmer whom I had never met before.

When a meeting had to be cancelled because a key attendee (Colin) from the business had not turned up with no apology, Peter was angry. He invited me to stay for the morning and attend a later meeting. This showed Peter to be responsible; I felt respected. He offered me an alternative so I did not have a wasted journey. Obviously disapproved of Colin's lack of communication

Findings from pre-survey semi-structured interviews

These are relevant extracts selected from hand-written field-notes and include both verbatim quotes and paraphrased statements by interviewees.

Findings are divided into two tables as appropriate:

Corporate values, culture and procedures
Personal values

Corporate values, culture and procedures

Interviewee 1

In a competitive market, you can't afford to stand still.

If the project goes more than 10% over budget, we need to submit a new business case.

There is an annual technology plan, for which all proposed work must be submitted by a deadline.

Thinks the training in use of methodology is rigid and impractical.

Interviewee 3

There is an audit department, which audits IT projects.

Training is held in use of systems development methodology.

Success in information systems implementation is very important therefore a structured methodology is used.

Systems are highly integrated so the impacts (of new systems) are immense because of knock-on effects.

Risk and security are very important.

Interviewee 4

The organisation is interested in the methodology being widely used. A course teaches about use of the methodology.

Interviewee 5

The project management workshop gets business and IT people together.

Implementation workshops show people how their bit fits in.

There is a Group Manual for IT. _____

Interviewee 6

There is a clear desk policy. Manuals are locked in cupboards when people are not at their desks.

Interviewee 7

IT Audit is a separate function. They can comment on documents but not sign them off. They give advice and guidance on IT security matters. Project managers are supposed to send copies of documents to IT Audit -most don't. Quality Assurance checks are part of the SDM methodology. Use of the methodology provides the key documentation for the system. Documentation is very important in this organisation. A project steering committee exists i.e. there are structures in place to keep an eye on projects. IT Audit decides where to do audits.

Interviewee 8

SDM gives a structure which people can buy into and understand.

Interviewee 9

Rational Unified Process (RUP) is being investigated, as it may be more suitable for some projects.

Interviewee 10

SDM replaced a more highly structured and detailed methodology after the merger.

Interviewee 12

IT Audit can come at any time. The documents must be there.

Interviewee 13

There is no course for system testing. Testers need to know the existing functionality of the system. They need to know what the business wants.

Personal values

Interviewee 1

Found programming too restrictive - likes to be more creative. Likes to get involved in technical stuff therefore has less time for planning.

Did computing at University so has a wide view. Thinks having wide knowledge helps when doing analysis..

Feels some people like to work in little boxes. Some programmers do not understand what happens outside.

Researcher comments: This person seems to do his own thing quite a lot. A bit of a rebel. Seems confident of his own view of things. Someone else had hinted that this person had not done a very good job in a recent project. The interviewee had expressed pride in this same project - even though it went over time and budget and looking back some things could have been done better.

Interviewee 2

Moved from programming to analysis. Found it more interesting with more challenges and more people issues.

Does not like to follow a recipe blindly - likes to think for herself. _____

Interviewee 3

Believes in sending her programmers on courses to see where their part fits into the wider picture.

Values programmers who have moved into IT from business because they understand the business and question things, then useful changes result.


Generally, believes in people knowing and understanding the wider picture and the standards and rules and procedures e.g. when using the methodology, believes in all understanding their role. Values input from all levels. Suggested people at other levels that researcher should interview.

Sends people on training to aid their understanding. _____

Interviewee 6

Believes that it is important for analysts, system testers and project managers to know about the project life cycle; less important for programmers.

Believes in the value of communication with business users.

 *Sheffield Hallam University*

SURVEY OF THE USE OF SDM AT PROSPER PLC

**Report of Findings
(extracts)**

Angela Lauener

October 1999

SURVEY OF USE OF SDM AT PROSPER PLC

Report of Findings

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Survey of use of SDM at Prosper pic

Report of Findings

Introduction

This report sets out the findings of a survey of the use of Systems Development Methodology (SDM), the group standard systems development methodology used in the majority of information systems (IS) projects at Prosper pic.

The survey was carried out in July/August by Angela Lauener, a lecturer at Sheffield Hallam University, with the agreement of Prosper pic.

Aims

To provide information for Prosper pic on the use of SDM.

To provide data for academic research being carried out by Angela Lauener on use of methodologies in IS projects in general and the links between methodology users and methodologies in particular.

Method

Initial interviews were carried out with 12 systems staff covering all departments in Prosper pic to gain some appreciation of their views of the main issues concerning use of SDM.

A questionnaire was designed (copy provided in appendix 1) with a twofold purpose to meet the aims listed above, i.e.:

firstly, to cover the main issues relevant to the use of SDM by Prosper pic staff;

secondly, to gain data relating to the issues relevant for academic research.

Executive Summary of Findings

This summary highlights the core findings which I believe are of most interest to Prosper pic. For a more comprehensive presentation of results, please refer to the charts and tables of results in appendix 2.

Respondents: The results presented here summarise responses from 335 staff from Prosper pic in a range of grades, ages and job titles.

Overall Views on SDM: There is strong agreement that Prosper pic has a culture which expects staff to adhere to group standards and development staff think that one of the top priorities of SDM is adherence to group standards. In contrast, adherence to group standards was lowest in the ranking of priorities from their own point of view, so there was a big discrepancy here. On the other hand, staff rated 'error free product' much more highly from their own point of view but they thought SDM put a low priority on this.

Most staff like SDM but it is recognised that successful projects do not result from use of SDM alone - other factors need to complement the methodology. Teamwork and communication feature highly.

Experience in using SDM is produced to varying degrees by training, use of manuals and learning by experience. Those who do training find it helps them understand better the purpose of SDM phases, but almost 40% do not feel they have had enough training. Most people rely heavily on using past documents when producing documents as required by SDM.

Communication with business users: Development staff place high priority on meeting business user needs. Although they also think that SDM is highly geared towards meeting what the business wants, there is also evidence that developers think that business users do not understand SDM very well and that communication with business users needs to be better generally.

Clear statement of requirements was the most commonly chosen factor which leads to project success and this ties in with the need for business user involvement, another frequently cited factor for producing successful projects.

Testing and reviews: These phases of the project life cycle appear to be liked least overall. In contrast to this, thorough testing and reviewing of the project were factors which were commonly chosen as leading to successful projects.

Interdepartmental differences: there is a variation between departments on a range of issues concerning training, attitudes to business users, use of documentation, length of service at Prosper pic and preference for working in different phases of the life cycle.

Summary of Findings

You may find it useful to refer to the questionnaire and to the tables and charts of results while reading this summary. These are provided in appendices 1 and 2.

SECTION 1 Manuals and Documentation

Question 1 - Use of Manuals

The majority of people use the Group IT Instruction Manual, IT Handbook 1 and IT Handbook 2 *occasionally*, i.e. less than once a month. Other manuals are used by a small proportion of people, some of which are used weekly. These are mainly technical manuals such as language specific manuals and host local standards manuals (see appendix 3).

About one third of staff never use any of the above manuals. These are mainly non-managerial and grade 1 personnel.

Question 2 - Location of Manuals

Over two thirds of people said that the manuals are within easy reach of where they usually sit; just over a quarter said they were not. Some simply did not know where they were (mainly non-managerial and grade 1 personnel).

Question 3 - Reference to Past Documentation

The majority of staff refer to past documents as a starting point when producing documents required by SDM. Only 5% claim never to do this.

SECTION 2 Projects

Question 4 - Preference for Project Life Cycle Phases

Generally, people have a positive view of the different project phases. External design and internal design are the most popular project life cycle phases, being liked by almost half of respondents, closely followed by implementation and feasibility study (about 45%) then programming and initial request (about 40%).

Relatively few (10% or less) dislike any of the phases; the exception is Systems Testing which about 20% dislike. However, for a small proportion of people who interpreted Question 5 on factors leading to project success in the context of Question 4 on preference for life cycle phases, System Testing was seen as one of the most important factors leading to success in projects; External Design and Internal Design were also considered important.

Question 5 - Factors leading to Project Success

A wide range of views was expressed here, but there were a number of commonly occurring themes: clear statement of requirements; good teamwork; communication; good project management; realistic timescales; user involvement; planning; testing; reviews. Please see appendices 4 and 5 for a keyword analysis and a complete set of comments.

Question 6 - ranking project priorities from your own point of view.

Meeting business requirements and end user needs were ranked as top priorities followed by error free product; adhering to group standards was ranked lowest.

Question 7 - ranking project priorities according to the importance of SDM demands.

As in question 6, meeting business requirements was a top priority; however, error free product was perceived to be of lowest priority according to SDM. Adherence to group standards is also perceived as being very important from the point of view of the methodology, in contrast to the users' personal views.

SECTION 3 Opinions on a range of issues related to systems development projects and use of SDM

PART A - Opinions on SDM

Use of SDM is found to be beneficial in giving confidence that the project has been done well, in clarifying expected roles of team members and in producing easy-to-read documents due to the consistency and familiarity provided by documentation standards. The majority of users feel that it allows flexibility but 40% disagree with this. Some feel that SDM slows things down unnecessarily. There is some concern that business users do not understand SDM documentation and that SDM does not encourage user involvement. Almost 80% of respondents agree that delays to sign-off of key SDM deliverables cause major disruption to the effectiveness of SDM.

PART B - Projects and use of SDM

There was almost unanimous agreement that when doing new projects, developers rely a lot on past experience. Most line managers encourage use of SDM and training is found to be helpful for understanding why the activities required by SDM should be done. However, almost half of respondents do not feel they have had sufficient training in SDM. When constrained by time, over 60% are forced to cut corners when using SDM. Post implementation review (PIR) reports are agreed to be valuable learning aids for future projects, but three quarters of staff say they rarely see them.

PART C - Personal motivation

Respondents are highly motivated to do a job thoroughly, to understand why they are doing a task and to see how their job fits into the bigger picture. Over half find security in following guidelines. From the results in Part A, this is shown to be provided by use of SDM and by training in SDM. Most respondents like complex, open ended problems and the freedom to use their own initiative. However, over half say they like the solution to be clear cut. Most respondents describe themselves as 'a careful person who takes calculated risks'.

PART D - SDM and communication with business users.

Overall, there are some problems concerning communication with business users. User involvement is seen to be helpful but respondents are almost unanimous in agreeing that it needs to be carefully managed. It is felt that users do not think carefully about their requirements and do not understand SDM documentation. More face-to-face meetings and social contact outside work are agreed to be ways of improving this.

PART E - Prosper pic culture

Most respondents agree that Prosper pic strongly encourages staff to adhere to group standards and expects high commitment to its IT principles and policies. However, only just over half agree that these things are clearly communicated to them.

PART F - Object orientation and prototyping

Most respondents who were able to comment on these two techniques view them favourably.

SECTION 4 - Personal details, experience and training (questions 9-19)

Age groups: 41% 35 and under
46% 36-45
13% 46 and over

Gender: 26% female
74% male

Years worked for Prosper pic: Average 12 years

Current job title: Respondents covered a comprehensive range. Please see appendix 6 for a full list.

Service in current job title: Average 2.9 years

Mean length of employment in previous posts

The largest mean amount of experience in previous posts was as a programmer - 3.5 years; the smallest was in systems testing - just under one year. Mean length of employment in Non-IT posts was just under 3 years, and 'other' almost four years.

Current grade: 11% Non-managerial
77% Grades 1 and 2
11% Grade 3
1% Grade 4

Department: 16% CSSS
16% RBI
19% FSS
10% CCS
10% COSS
2% RSMS
27% RPS

Educational qualifications: Approximately half of respondents have some form of non-computing higher education qualification and about one quarter have this level of qualification in computing . Less than 10% have post graduate qualifications.

Training courses: Just over half of respondents have done the Basic Systems Analysis course; about one third have done the SDM course and Planning and Control course. Just over 20% appear not to have done any of the training courses listed.

Other systems development and project management methods: Over half have used Method 1, and about one third have received training in it. Of the other methodologies listed, about 20% have had training in SSADM. Other systems development methods which a few staff have experienced include Yourdon, RUP, RAD and SSM. Experience in other project management methods such as PMW and PRINCE is rare; other project management methods which a few staff have used include LBMS and TIP (please see appendix 7).

SECTION 5 - Further comments

12% of respondents added further comments. These covered a range of issues - please see appendix 8 where a precis is provided. Some explained in more detail their concerns about SDM - documentation, inconsistency in use, rigid adherence to the methodology, duplication, lack of training; others expressed their support for it.

9% of respondents volunteered to do follow-up interviews.

Survey of Use of SDM at Prosper pic

Comparison of results for departments within Prosper pic

Response rate by department is given below:

Department	Number of staff	Number of responses	Percentage of total staff in department
<i>Card & Self Service Systems</i>	160	54	34%
<i>Retail Banking Infrastructure</i>	132	54	41%
<i>Financial Services Systems</i>	138	62	45%
<i>Customer and Credit Systems</i>	107	32	30%
<i>Central Operations Systems Support</i>	80	34	43%
<i>Prosper pic Management Services</i>	9	6	67%
<i>RPS Development</i>	176	88	50%

Response rate for Prosper pic overall - 42%

Results for each department were compared with results for Prosper pic as a whole for each question on the SDM survey and presented in a series of tables (appendix 9) which includes all results where there was a variation of 8% or more between an individual department and Prosper pic as a whole. Figures for Prosper pic as a whole and for individual departments are included in appendices 10 and 11.

The most striking variations are listed below, i.e. where there was a difference of 20% or more between a department and Prosper pic as a whole:

Cards and Credit Systems

12.5% of respondents in this department have attended the SDM training course as opposed to 33% for Prosper pic as a whole.

Central Operations Systems Support

91.4% of respondents agree that they need more face-to-face meetings with business users as opposed to 71% for Prosper pic as a whole.

71.4% of respondents mostly agree that business users do not think carefully enough about their requirements as opposed to 49.2 in Prosper pic as a whole.

40% of respondents have been on the Developing Project Skills course as opposed to 18.6% for Prosper pic as a whole.

48.6% of respondents have been on the Project Management Workshop as opposed to 25.8% for Prosper pic as a whole.

82.9% of respondents have used ProsperMethod as opposed to 53% for Prosper pic as a whole.

Prosperpic Management Services - please refer directly to table in appendix.

Comparison of results between departments in Prosper pic for Questions 6, 7, 11, 13 and 14 - these questions produced results in the form of scores or absolute values. Comments are presented below.

Question 6 *Rank the following list of priorities in order of importance from your own point of view:* results are similar across all departments

Question 7 *Rank a similar list of priorities according to the importance you think the SDM methodology demands:* results are largely similar across all departments. RSMS rank 'Adhering to group standards' as fourth highest priority from the SDM methodology perspective, which is higher than other departments where it is frequently ranked 6th or 7th.

Question 11 - *How long have you worked for Prosper pic?*

Question 13 - *How long have you had your current job title?*

Please see table below:

	Question 11 <i>Mean no. years</i>	Question 13 <i>Mean no. years</i>
CSSS	13.5 years	3.4 years
RBI	9.3	2.6
FSS	10.1	2.2
CCS	10.8	2.4
COSS	15.6	2.4
RSMS	20.8	3.5
RPS	12.3	2.9

COSS and RSMS have staff who have worked for Prosper pic longer than those in other departments.

Question 14 - *Please indicate approximate duration, in years, of employment in previous posts in any of the following:*

Programmer, Analyst, Systems tester, Team leader, Project Manager, Non-IT, Other

There is no difference between departments. In most cases, systems tester is the role in which people have had the lowest amount of experience in previous posts.

Findings from semi-structured follow-up interviews

These are selected extracts from hand-written field-notes.

Job titles of interviewees

Interviewee no.	Job title
1	Chief programmer
2	Chief systems manager
3	Programmer
4	Systems manager
5	Systems manager
6	Analyst/programmer
7	Assistant systems analyst
8	Senior systems manager
9	Senior analyst
10	Lead programmer

Overall headings

Evidence of corporate values
 Evidence of individual values and other mental construct elements
 Attitudes to corporate values
 Attitudes to methodology
 Comments on the methodology

Evidence of corporate values

NB These are the perceptions of the interviewee. Numbers in brackets indicate interviewee number.

The organisation has a rule - Don't re-write existing systems. (1)
 The organisation is bureaucratic and procedural. (1)
 Mostly, they look for non-rebellious types when recruiting graduates. (4)
 There is a history in mainframes. (4)
 There is a difference in culture between UK and the other country joined in the merger. (2)
 There are separate IT and business teams in projects. (2)
 Audit drives use of SDM (7)
 Thinks the culture is more authoritarian since the merger. (8)

Evidence of individual values and other mental construct elements

NB These are mainly interpretations by the researcher. Some of the text is quoted verbatim from what the interviewee said, as recorded in the original raw data

Values

Beliefs and personal characteristics:

- He appreciates people's need for satisfaction. (4)
- She wants genuine success by careful planning and checking. (5)
- Thoroughness is important, especially in checking. (5)
- Thoroughness is needed in documentation. (4)
- Planning is necessary. (4)
- Planning is necessary so firefighting is not needed. (5)
- It is best to try to anticipate problems before they arise. (6)
- Believes in empowering staff, valuing them and delegating work to them. (4,5)
- Values friends (7)
- Is a perfectionist for his own satisfaction - would prefer to design a perfect system. (7)
- On project management, feels you cannot learn to do it. A project manager needs both to plan and be flexible. (7)
- In projects, likes the fact that there is a definite finish.
- Likes variety, new things to think about and learn - easily gets bored; likes acquiring new knowledge and meeting new people. (7)
- He does rock climbing as a hobby. This involves taking precautions and minimizing risks. (7)
- Thinks that trust is important in teams. (8)
- Keen to 'get it right' both personally and in the team. (8)
- Was competitive when younger. (8)
- Believes in the importance of the manager in motivating. (8)
- Likes creating things; likes using his brain. (9)
- Likes to know boundaries. Likes thinking and planning and conceptualising. (9)
- Likes managing. Gets job satisfaction from creating teams which work well.
- Liked helping a member of staff back at work recovering after illness. (9)

Social interaction and interpersonal skills:

- Likes social interaction and is people-focussed (1).
- Not good at networking. (3)
- Don't like being distracted. (3)
- Favoured work is coding; likes detailed, well defined work. (3)
- Likes the analyst role because he likes social interaction, using interpersonal skills and talking to people at different levels. (6)
- Describes himself as a people person. (8)
- Feels it is important that people are happy, then they will perform better.
- Likes playing team sports and motivating people. (8)
- Likes teamwork, working with people. (9)
- Like producing good quality work; likes writing. (9)

Shaping of values:

- Was brought up as a Marxist and taught not to be exploited. (3)
- Has Christian beliefs, which give him a strong conscience. (4)

Worked as a primary school teacher. This taught her to value and trust people; not to undermine; to create an open atmosphere for sharing of problems; to give people confidence in their own ability. (5)

Knowledge and skills; models and frameworks

Doing an MBA helped him understand the wider picture. Case studies help one understand projects through managers' eyes. (7)

Experience

He feels he gains from his manager's experience. (7)

Experience is useful if not following the methodology. (8)

Motivation

He is motivated by challenge;

Also motivated by good quality work. (6)

Roles

The role of intermediary between users and IT people in systems development projects does not work (1)

Checks need to be done by someone who understands what the system is about (5)

The analyst/programmer role is better than separate analysts and programmers. (6)

Having analyst/programmers involved in testing is beneficial because they understand the system. (6)

Reasoning ability

It is better to sell ideas by knowledge and reasoning rather than force. (6)

Attitudes to corporate values

Interviewees perceptions

Bureaucracy can slow down and complicate things (1)

In terms of reward, the project manager gets noticed, not the individuals (7)

Attitudes to methodology

It can be a protection. (2)

It is not a straitjacket. (2)

People are rewarded if boxes are ticked (2)

Document templates help but may channel thinking;

some sections of the methodology seem irrelevant but you feel you have to put something there;

there does not seem any point in issues logs;

some people will write documents to show off;
 if the functional specification is written in jargon, testers do not understand it;
 not enough training is given in the methodology. (7)
 Believes that SDM should be used practically not rigidly. (8)
 Believes in the importance of post implementation reviews, as there are always
 things to learn. (8)
 Feels there is no need for the full methodology in some cases. (9)
 Feels that there is freedom and flexibility in methodology. (9)
 Thinks that things are less clear-cut in the methodology used following the
 merger. (9)

Comments on the methodology

It does not help you build the team. (4)
 It does not build in checking. (5)
 It does not recognise that development is a skill. You need to work alongside
 skilled people to develop it.
 There is a need for thoroughness in documentation (1)
 Good document templates get re-used (3)
 Some documents are too technical - users do not understand what they are
 signing off. (2)
 Post implementation reviews can be a witch-hunt (1)
 There is little time to do Post Implementation Reviews (4)
 Training is needed in how to use it. (5)
 Documentation drives the methodology;
 you need to know WHY you have to do something - management should SELL
 the methodology. (7)
 Feels there is some emotional attachment during the feasibility study - people
 don't want it to be wrong. (7)
 Many pay lipservice to the methodology but do not do it well. A quality
 assurance checklist helps give more detail.. (8)
 Thinks that documents should be written bullet point form. Believes that
 programmers like a minimum amount of words. (8)
 Post implementation reviews are taken quite seriously in his department. (8)
 Always looks in the manual to see what should be in documentation. (9)

Table of findings from Values Interviews pre-case study

Int. No. = Interviewee number

Use of double quote marks signifies comment reproduced verbatim from interview

NB the themes in the columns match the themes in the interview guide. The themes also map onto the themes chosen for analysis - corporate values (Theme 4), individual values (Theme 2 and Theme 5), interplay between corporate and individual values (Theme 4), methodology (Theme 4), outcomes (Theme 1 and Theme 3)

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Table of findings from Values Interviews Conducted During Case Study

Int. No. = Interviewee number

Use of double quote marks signifies comment reproduced verbatim from interview

All interviews were taped and transcribed.

NB the themes in the columns match the themes in the interview guide.

The themes also map onto themes chosen for analysis - corporate values (Theme 4), individual values (Theme 2 and Theme 5), interplay between corporate and individual values (Theme 4), methodology (Theme 4), outcomes (Theme 3)

Observation data on corporate values

This includes transcripts of selected extracts of data recorded in field notes during observation.

Observations on the environment - quiet atmosphere with the sound of keyboards being tapped, open plan office, well lit, large windows, pale grey furniture and pink carpet, drinks machine on every floor (drinks free), smart dress - shirts and ties worn by men,

Summary of main findings arising from the observation

- Many standards for all sorts of things
- Much communication and guidance from the centre, or top management
- Procedures to avoid risk
- Security abounds
- Quality is important
- Clear guidelines exist for recruitment processes
- Well established systems development methodology
- Documents are important and the more important ones require management sign off
- Business awareness is essential
- Tight reporting structures including progress reporting. This is taken very seriously
- Meetings and behaviour - generally disciplined
- Policies are explained

Detailed field notes

Aim to produce a common standard approach so resources can be planned.

Corporate success celebrated in operational circular.

Staff reward information begins 'We are pleased to inform you ..'

Interest rates document is signed by the 'big boss' showing importance of document.

Trainee recruitment document gives guidelines and checklists for interviewing.

'Let's Work Together' document lists policies and procedures.

New team in Peter's department described the office atmosphere as like a morgue. Peter's department sees the new team as 'loud'.

Atmosphere in business department is more "relaxed" (Peter).

Re- functional spec. - well established methodology. Have to get it right, quality is very important. The media jump on it if any errors.

Prosper pic standards are adhered to. Progress reports spot any problem.

Taken very seriously. Reporting structure from Peter via Jane (line manager) to Alan to Nicole, Head of Department.

Change is business driven.

Responds to environment.

In brief:

Differences in culture of America and China - differences in banking system.

Alan very keen on standards.

Standards exist for interface design.

Everything at Prosper pic is either produce based or customer based.

Quality, checking, validation - all very important and part of the culture.

Meetings start promptly. An 11am meeting of 12 people started at 11am exactly. All annotated their documents. Within the documents, points were numbered for easy reference.

It is part of the corporate business strategy to have a single database, to give competitive advantage.

Local standards exist for drawing data models.

Security abounds! This includes visitors signing in for a pass to the building and a pass for the car park.

In the relational database model, all attributes are owned by one or other of the project teams.

Culture of meetings - a meeting room is booked, all turn up, on time, professionally dressed, no moaning, the chair is respected and there are no interruptions.

Intranet gives detail of company policies, the IT philosophy and much more, information relevant to working for Prosper pic. Includes a 'Beginners Guide' which explains the value of it i.e. communication. Employees are asked not to pass on the address as a security measure.

Firebell testing is announced over a PA system throughout the building.

Two sets of values workshops mentioned on the Intranet.

Signatures are needed for important project documents.

Head of Department Nicole uses PMW to insert all data on the project.

Purpose and content of the External Design Management Report (EDMR) is given as: identify risks; confirm scope, costs, timescales; proposed implementation approach; security; practicality. I.e. business oriented aims and values.

At meetings there is usually mutual respect. People listen to the person speaking and do not interrupt or dominate. This is true for PW team and for meetings involving other project teams.

Open plan office allows Jane(line manager) to call across to Peter. Other project team members all sit close together so can easily talk to each other and overhear conversations

Sam M has a spreadsheet on which she records details of conversations or queries about the project she is dealing with

Pre-meeting preparation is taken seriously, reading documents beforehand and annotating them

One group of individuals who decided to phone work one Friday afternoon to say they would not return to work that afternoon (too drunk to work - could be said to be acting responsibly) were found out by line manager and were in trouble

List of documents accessed

Standards
 Project files
 Progress report file
 Newsletter
 Operational circular
 Videos
 Pack - Let's Listen, Understand and Deliver
 Memos
 Timesheets
 Review lists
 Correspondence file
 Issues list
 U218s
 Recruitment document
 'Let's Write it Right' booklet
 Job description
 Objectives for Peter
 Magazine
 Let's Work Together - Staff Handbook
 Review Index
 Planning folder
 Plus others collected during non-Pathway interviews

Notes

Some of the comments on corporate culture are observed in one project in one department. It should not be assumed that all of the comments can be generalised to the organisation as a whole as different cultures may exist in different departments

Just because documents exist, this does not mean that all suggestions are put into practice. Perhaps differences in 'take up' depending on whether they are locally produced i.e. in department where they can be enforced by people who devise them or centrally produced by top management

It appears that this company is very conscious of risk so it puts many procedures in place to avoid failures. This involves both standards and procedures, and is motivated by the corporate culture and values.

Some of the findings relate to the company as a whole; some findings relate to the IT department; some findings relate to a specific department within the IT department.

NVivo revision 1.2.142

Licensee: Computing & Management Sciences

Project: Values Interviews

User: Administrator

Date: 12/08/2002 - 16:52:52

NODE CODING REPORT

Node: /Social values

Treenode address: (2)

Created: 03/07/2002 - 10:42:36

Modified: 12/08/2002 - 16:46:39

Documents in Set: All Documents

Document 1 of 7 interview with Anne

Passage 1 of 4 Section 0, Paras 182 to 186, 212 chars.

182: Does any of the social thing ring a bell?

183 :

184: I suppose in that I am trying to think of what the people who are using it want to do.

185 :

186: So it is what they want, not what you want, which fits into the altruistic thing.

Passage 2 of 4 Section 0, Paras 215 to 216, 208 chars.

215 :

216: Yes, I think that was basically it. I am just trying to do the best for the users. And sometimes that means having to tell them what they want. And hopefully, you always do it with the best of intentions.

Passage 3 of 4 Section 0, Paras 235 to 249, 857 chars.

235: s there something better about the longer term projects mode that you are in rather than a daily thing,?

236 :

237: Yes, it suits me. Plus which, branches have changed beyond recognition more directed towards selling.

238 :

239: What is it about the longer term thing that suits you better?

240 :

241: You get more involved in things.

242 :

243: Is there more team work involved in this than there was in the branch? OR just different?

244 :

245: Different kind of team work.

246 :

247: I suppose in both cases it is important that you can get on with the people around

you, who you work alongside.

2 4 8 :

2 4 9: This is quite different in that you are actually in a team of people yet it is very rare I work with those people on a project, but we all get on very well and we will all sit around and discuss our individual projects with each other and get lots of feedback but we are all usually working on different things.

Passage 4 of 4 Section 0, Paras 251 to 257, 360 chars.

2 5 i: Right, so you are the workstation person on Drawdown and Redemption. You are the only one, so you have got that bit on your own?

2 5 2

2 5 3 Yes.

2 5 4

2 5 5 But you might discuss similar kind of problems with other people.

2 5 6

2 5 7 Yes, either in the team or workstation analysts all working on separate projects. As much as I see them as my team, we are not actually working together.

Document 2 of 7 Colin

Passage 1 of 6 Section 1, Paras 134 to 138, 1092 chars.

1 3 4: You are certainly looking at economical, I do think that, it is more of a pragmatic approach, if we don't need to do it, let's not do it [different interpretation of the definition, perhaps more of a lazy interpretation?]

1 3 5 :

136: Is that your personal value, or what you think the bank thinks?

1 3 7 :

138: No, I think that is me personally. I think anything which someone says that is useful should be taken on board as much as possible ???????? then think, do we want to do that? But it is always good to get other people involved because often it is very easy for people to sit on the fence and criticise, or give a negative opinion because often you find by talking to the people across the areas you tell them how the system works, you hear this 'tut-tutting'. Because they are not used to how the bank works they are often negative as to 'Well if you do this, this is going to happen'. Yes, yes it is going to happen'. But there is no need to be alarmed about it. 'It is going to cause all sorts of trouble'. It may not do, it won't do. We will try and make sure it does not cause any trouble.

Passage 2 of 6 Section 1, Para 142, 2023 chars.

1 4 2: The people who work in Mortgage Service Centre. Change is a very very emotive thing and people, there is a lot of very different attitudes to change. I think when the project initially started it was always the case that, you know, that sort of idea, 'whatever is useful is valued', there is no such thing as a stupid comment if you see what I mean,

everything should be valued to start off with. I must say it was a bit blue sky sort of thing, how we do that in an ideal world. And then it became, in many ways, a lot more pragmatic inasmuch as that we always get the job done, we always do what we wanted to do. Is there any way we can reduce the amount that we have to do because we are trying to streamline. So certainly from that point of view, erm, I'm just thinking, generally speaking I'm a sort of team player, working in a team environment and very much team oriented, team support, people support, so that is my internal stuff if you see what I mean, is to, I will try and help anyone to do any job if I can. So that's how I conduct myself during the day, you know, inasmuch as that if I have got time there is not a problem. And I will always make time if something is boiling over or something like that. And give support wherever I can. Sometimes it is difficult because if you are being pulled in too many different directions you haven't got time to do it. That is what I am trying to do now, erm, for example I am supposed to be supporting someone on arrears but I am finding I have got less and less time to do that because other things are happening elsewhere. So my supporting role there is diminished quite a bit and I always feel sorry for her because I hope she knows where she is going with it if you see what I mean. You know, because sometimes two heads are better than one and the support of someone saying yes, I think you are going in the right direction is often very, you know, at least someone thinks I am doing it the right way, you know, direction, and the way I am doing it.

Passage 3 of 6 Section 1, Para 142, 154 chars.

142: Yes, I tend to think social as well. I would certainly go with that, inasmuch as that I do try to, I am not a loner. Team player, always been that way.

Passage 4 of 6 Section 1, Paras 156 to 168, 1144 chars.

156: Let me show you the more detailed descriptions on the economic and social, just in case there is anything you can build on that you have picked out.

157 :

158: This is actually an old paper.

159 :

160: It is an old paper, isn't it.

161 :

162: So the language might be a bit.....

163 :

164: It seems to be quite a harsh definition, Economic. Inasmuch as it is saying you are just driven by..

165 :

166: Business goals?

167 :

168: Yes, and I don't think that is the case. Yes, you are driven by business goals but it almost sounds ruthless, the ruthless pursuit of getting it right and whatever is useful we will have it, you know, I don't think that is, I think it is a bit harsh, from the way I feel anyway or the way I feel I work. It is a far more softly softly approach ??? as opposed to

a hard one. [This was just as informative as if he had agreed with the definition] [Long pause while he read the social definition] Social, I must say has gone a bit over the top on the love bit, but (laugh) I do care about people and what and how other people feel and how they are, so yes, certainly, I would think that was predominantly true. So I would be economic and social sort of like ethic (guy?).

Passage 5 of 6 Section 1, Paras 170 to 176, 2012 chars.

170: And you said definitely not political? So do you see political things as people using it for bad ends, you know using power for...

171:

172: No, it is just that I have never wanted to be that person on the front, necessarily. I don't mind. You know, I have never wanted to be that person leading, you know, taking on the responsibility. I mean to say, I have done jobs like that in the past, where you are on your own, ?? the jobs and things like that, you are responsible for 12-14 people, and you drive what goes on but I wouldn't necessarily say that I was particularly .. I didn't use that position, I only used that position so I could get the work done. I didn't use it to actually gain anything from it, it was an experience but I wasn't trying to move forward to further myself in that particular area, to show I was the best of the best. I wasn't trying to do that. I think political almost seems to be that you do things in order to make sure you get your own way. I don't know whether or not that is correct, you know, it is just an observation.

173:

174: Yes, that is what the political type do I suppose.

175:

176: Yes, you know, you do it to get your way, I mean to say, I didn't do the job in a manner that would have projected me forward in any way. I just did the job. So I didn't use the theoretical power i.e. you are in charge of 14 people, to actually gain anything. All I wanted to do was to make sure people were alright and they came into work every morning and they weren't going to break down crying. ?? Unless you look at it sometimes. So that is why, because I am not really, If someone said 'That is yours, go and do it', I'd go and do it. I would happily do it. But I don't need to be that person seen to be doing something, using it for 'I've been seen to be doing this, so that will get me there, or I will now, because I am in this position use this position to, it almost seems like manipulative. And I don't know whether that is correct but it seems that way, that particular definition.

Passage 6 of 6 Section 1, Paras 336 to 348, 4690 chars.

336: Yes, yes. Just going back to this thing about your values, some economic and some social. How do you think you actually put those into operation, specifically, in practice at work. You have already mentioned wanting to get the job done, having a clear desk, and a clear head, not worrying about anything, supporting people, and a sense of responsibility that things need to get done, even if it is something that you don't particularly want to do, but you will take it on because you think it will be bad for other people around, for the project ..

337 :

338: Almost, this particular thing, it is almost as if they are not interested. Really, we should be. It is giving the wrong signal if you see what I mean. But, from the way I conduct myself, I don't go in the office with a straight face if you see what I mean, you try and not conduct yourself in such a way as you come and sit at your desk and don't speak to anyone through the rest of the day.. I think there is a lot of team, is to do it interacting with people, talking to them. Not thinking because they sit over there in a different team, I don't talk to them, none of that. I always try, it is almost like do your best to create a reasonably happy working environment, don't go around with a sad look on your face, this sort of thing. So that is how, I try and be a bit up-beat, try and be, even when you are with the IT people, try and have a bit of a laugh and a giggle because, yet is serious, but it isn't deadly serious, no one has died. So if there is a laugh to be had have it, it makes things go a lot easier. The worse thing is dreading going to some of those meetings and thinking, this is going to be purgatory for two hours. At least if you can lighten the proceedings for a bit, while still keeping your mind on where you are going, and not taking things too far, I think there is certainly a balance in everyone as to the way they conduct themselves. You don't have to be miserable or mardy all day, you can add, just by smiling, making a bit of noise, nothing to be lost just for being, not flamboyant but certainly a presence if you see what I mean. Having a bit of a laugh and a joke when you want to, taking time to make sure that not everything is deadly serious, because it can be, throw you into depression in the end anyway. I just keep, I suppose, positive, because it is swings and roundabouts, it is busy one minute, not busy the next minute. So, you just take the swings with the roundabouts. Certainly from my point of view, I try not to be too straight laced about what you do, not too strict. There is another side to work and it is not the one where you have to sit at your desk and work for 12 hours. There is a bit of social contact, take people out for a drink, go for lunch, you know, interact really. So that is the way I tend to conduct myself. And I always go out of the office at lunchtime, don't like staying in too much. I will go out and about. Just give yourself fresh air and a breather. A lot of people sit in the office and just eat their sandwiches. Staying in the office for 8 hours I can't do that.

339 :

340: DO you think you have always had these sort of values?

341 :

342: I think so, that is why I have never got on in the bank, (laugh) It is probably true, actually. It is almost, people used to accuse me of having a casual approach but because I could just sit there and just talk and not be phased by someone sitting across the desk at you.. They would say 'You have got a casual approach'. What is wrong with that, as long as it gets the work done, it doesn't matter what your approach is. Because it is not your approach, there is nothing to say it is wrong. Whereas that is what they used to do. So I still think I got, you know, it didn't bother me. It is a judgement based on what you know, and what you think. If something does not worry you, it doesn't worry you. DO it, that is fine. No problem. Whereas some people would say 'Well you have to take three hours to analyse that and not just go with a gut reaction. So that is probably why I have never got on in the bank.

343 :

344: Do you feel you haven't then.

345:

346: in terms of what some people have possibly done, yeah. But I never, no, I never got on in the bank. I've always been earmarked, not as a trouble maker, but certainly I would always voice an opinion, when opinions aren't valued, in the past, often people only want to hear what they want to hear. SO if you say something different. I've always had interesting jobs and I have always moved around a lot. I'm not sure if that is because of what I am (laugh) but certainly I have always got on with everyone there, so.

347:

348: You sound like you enjoy it.

Document 3 of 7 Tracy

Passage 1 of 3 Section 1, Para 187, 621 chars.

187: I think in terms of the social aspect, that, I'm not sure whether social and political are reversed actually. I have a need to make sure that my guys feel supported and that they know what they are doing and that they know they can come to me and I'd be quite upset if they didn't. In fact, if I had the choice between my boss thinking I was good and my team thinking I was good, I would probably go for the team, on reflection, hav(ing?) been there before. Because if it is a case of just one person thinks I am a pain in the ass I'd rather go with one person rather than many, irrespective of who that person is.

Passage 2 of 3 Section 1, Paras 187 to 199, 968 chars.

187: Political and social, maybe social just has the edge, but..

188:

189: Is that because it is about people, wanting to get it right, for their sake, or for your sake, or a bit of both?

190:

i9i: Both. Because if they are happy, they will give a damn sight more and they will come to me with what they have truly got issues with and if they know I am confident with them they won't come to me with stuff that does not need my time. But I like an environment where everyone has got confidence in their own ability, and I work better if I don't have to monitor people day in day out, so I want them to know their trade and be comfortable in that, otherwise they won't ever make a decision, they will come to me for every decision.

192:

193: So you are empowering them, really, you want them to feel empowered.

194:

195: Yes.

196:

197: But at the same time, if there is a problem, they will feel open to come to you.

198:

199: Exactly, no one should have to make decisions on their own if they are not

comfortable doing it

Passage 3 of 3 Section 1, Para 380, 490 chars.

380: The next project I am going to be involved with, I am going to institute compulsory nights out. I am only semi-joking. Not even necessarily with the IT team but within the business project team itself. Even go out for one beer after work, or if it is a lemonade not a beer, just to go out and not talk about work. I know whenever we go out, which isn't enough, we come back and we have a laugh. You have got shared experiences to reminisce about, to have a laugh and swap stories about.

381:

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Passage 1 of 5 Section 0, Para 32, 236 chars.

32: I must confess initial looking at that is the social one I think. I won't say love of people but I have always enjoyed, I like to talk to people, it is just, it is one thing I have always enjoyed about analysis is the meeting new people

Passage 2 of 5 Section 0, Para 34, 366 chars.

34: and finding out what they are wanting and that is one of the things, years ago in the branch, I used to enjoy the most, customer contact. And I missed that when I left the branches and so, having got into analysis and being in the position of meeting and interacting with other people, I have enjoyed that so I think pause Yeah, I would probably go for social.

Passage 3 of 5 Section 0, Paras 43 to 44, 668 chars.

43: Going back to working with teams, you said you like working in a team Do you think this team is a good team for that?

44: I think so, yes, there is certainly a mixture of personalities. But I think it is important that your job, if you get on well together I think you work better as a team and I don't think, you know ?????? I've got a lot of respect for Steve and, his knowledge and his ability, and we have a laugh and a joke. But there is also respect there as well. So, I think it is, I mean I have usually been a fairly good, I don't think I have made that many mistakes, I am a fairly good judge of how far I can go with things. And not made many mistakes.

Passage 4 of 5 Section 0, Paras 45 to 46, 1192 chars.

45: And you are happy fitting in with the ??? I mean, does it feel like a hierarchy?

46: No, I don't think so, I think it is more of a subconscious one as opposed to a conscious one. Subconscious, you know, it is quite clear that Steve is the boss, the one who is, I won't say holding it together but he is the one who has got the overall control of it and hence responsibility but that we are working to support him and obviously to support

the project and Jenny who has just come in, she has impressed me already. She has brought something to the team, she has got a good sense of humour as well, she takes an awful lot of flack already. Not just from me, others as well, but she has brought some, she has got more of a technical background and she is using what technical knowledge she has got to good effect, so I think she has definitely been a benefit to the team as well. We are just part of a small team but I do consider that there are 3, possibly 4 with Steve Shaw, he is a bit with the programming team, I still see it as Margaret's team as well. I still see myself as being part of Margaret's team as well as opposed to just Steve's team so that is the bigger picture of it I think.

Passage 5 of 5 Section 0, Paras 75 to 77, 1242 chars.

75: have you heard about winning teams?

76: I have heard of it.

77: It is quite funny, people in IT have different views about it than others. Essentially, what happened was that it was very much a personnel orientated concept, what you would do is you would go down to George Street in London and spend a day and there used to be about ten different modules, exercises type thing that you would run and you would have people down there from different areas of the network who would facilitate, who would actually run this thing. I think they were designed by external management teams, and essentially it was to try and, it was all about team building, people building to try and build this concept about we are all part of one team working towards one end and I was actually a facilitator, I facilitated on the second one and spent about seven or eight weeks in London running one of these exercises and that was, ??? probably the best seven or eight weeks I have spent in the bank I think, because, strangely, I met so many different people. There was something like a couple of thousand people came through in the time that I was there. I met a lot of the senior managers, people like Bill Dalton, that ?? and at the end of the day introduced him.

Document 5 of 7 Ray

Passage 1 of 3 Section 0, Para 87, 290 chars.

87: Interesting, I was looking at these and I would have put myself as theoretical. But also in our work you can't do anything alone so I was looking at this about people, it is interesting that it actually finds those who have theoretical orientations rather cold. So they don't seem to mix.

Passage 2 of 3 Section 0, Paras 108 to 114, 4406 chars.

108: And I think you said the social because inevitably you have got to work with people. Is that right?

109:

110: Erm, the projects we work on, nobody can do it on their own. I mean, quite often it does happen where the project manager writes in a newsletter that is sent out 'Well done to so and so for getting this project done.' And I did notice when that happened last time,

I was worried if it was one of my projects because this guy had worked on my project and he was a bit annoyed about something that had been written in one of these magazines. But at least in the bits that said about the project I had been involved with it said well done to the team. And it is important that it said well done team because where it did say well done so and so, and not 'and team', people can take it badly. You can't do it on your own, that guy did it on his own and I think it doesn't show value for what people have done. And fortunately our job as well is to get the best out of people. I had a graduate 18 months and we do get very good comments from managers about him. And we have put a lot of effort into him. He is very good and we have spent a lot of time with him and that is great. If he moved on that is fine. But for the moment he is great in our team and for the bank in general that is the sort of person we want to bring in. And we, in retail workstation development, have taken a lot of graduates in over the last few years and we always ?? to programmers. Virtually all our programming team came from a graduate background. And two people looked after that team initially, got them trained up and they moved on and the people who have been trained are now training, and that is how they moved on. In analysis, I've always been reluctant. It was always easier if you got a graduate to put them into programming because that is what they want to do but nowadays this guy 18 months ago was the first I brought into analysis. I wasn't particularly sure whether it would work but it has and since then we have taken two more on and they are being trained. One has been a year, one six months. And they are doing alright, doing well. And it does, all the way through the team, not just myself but the other senior analysts, it gives them responsibilities for people and bringing people on. And it has worked well and that is as important as getting the project out, that people develop.

111:

ii2: Is that something you personally feel?

113:

ii4: I do now.. I was, initially I wasn't particularly comfortable with bring a graduate in as an analyst because I have always felt that the good analysts that we have got have spent some time in branches and then come in to our department. One guy I knew quite well, he worked in the business area and I encouraged him to apply for a job in our area and he had not been thinking of coming in. There was an analyst in our area and he was looking for other business jobs elsewhere. And he proved to be very good and he is very good. And I was wanting to do more recruitments like that. But he was easier to bring being graduate because they (weren't/went?) on headcount for a year and we do get quite a bit of support for them anyway. So my manager at the time said 'Well we are going to get one and we are going to have to train him. And he's done well and the other two since have done well and what we try and do is that as every graduate has been here six months, another one starts and we help them to start and give them background and it goes on. And we are getting another one in October for the securities project. Meanwhile other areas with the changes in departments, resources have been moved around and projects change and certain projects have higher priority and if the resource isn't there they go scouting for it and almost wanting to raid other areas and a lot of it is when they want workstation analysts. There is not a lot of people with that skill because primarily we have got seven or eight covering a variety of projects and if they come and

look at our eight analysts they want the most experienced ones just to cut straight into their team whereas in actual fact a lot of these areas should have been doing what we were doing and being proactive and bringing people in and training them up because it does take time. I think it is important as getting a project implemented, that you bring people on. SO that is the people side.

115 :

Passage 3 of 3 Section 0, Paras 123 to 137, 2660 chars.

123: 'What areas of your work do you feel your values can influence but I guess what you have just been describing really is what you do anyway.

124 :

125: I think sometimes you do these things, you just do them and you don't think about them. Our objective is to get projects delivered, developed. There is nothing worse with people than having them sitting around waiting for things. We try to keep people active with work, the right level of work also. What you don't want to do is overload somebody with work. You want people to enjoy work and if there is too much stress or pressure because of the volume of work then obviously that is not going to achieve that.

126 :

127: Thinking of people's welfare, really. That underlines what you have just said.

128 :

129: Yes, I do think you have to notice things. And you do notice it with certain people rather than others. There is one guy just gone off out of our department, two weeks sickness because he has got a history of depression and interestingly I was telling people that he had rung in ill and they had observed him going downhill, yesterday, the morning. He had failed to get a job, he was very very close to getting a job a few weeks ago and failed and they felt that really he had gone downhill since then. And they sit near him and were aware of it. I don't sit near him and he doesn't actually work for me and I wasn't aware of it. A lad who used to work for me, doesn't for the moment, but I still him quite well, he is the guy who came in from the business. And I am aware from when we were good friends that his wife has had some problems. I could see he looked really tired, so you notice it in certain people and not in others. And yet I am not sure anybody else noticed anything. Whereas I did because I know him quite well. [I think this is the first interviewee who has talked about concern for other people]

130 :

131: Give them too much and the performance level will drop; give them too little and performance level will drop and you need to give them something to try and get them up to speed again. I do think it is important. People get paid well, they get good rewards and so it is fair enough that they do have an amount of pressure

132 :

133: I don't think it is a bad thing as a project manager to make sure that some time they have a bit of breathing space.

134 :

135: If it is a couple of weeks where you have got chance to catch your breath and come into work and it is easy, and after that they are ready.

136 :

137: I guess as a project manager, you have got some leeway to enable that, choosing what to give people to do. If you feel someone is under pressure you can give them something that is less pressured for a while.

138 :

Document 6 of 7 Peter
Passage 1 of 4 Section 0, Para 20, 26 chars.

20: Social, yeah, definitely.

Passage 2 of 4 Section 0, Para 22, 89 chars.

22: Social because so much of what we do is a team thing. It is important to act together.

Passage 3 of 4 Section 0, Paras 26 to 27, 559 chars.

26: Could you define a bit more clearly, for example, how you put the social into practice?

27: Sort of trying to make sure we have good relationships with all the people, not just the local team but the people in this department and other departments, the business areas. Always try and break the ice and get on well with people socially because you can get more out of them when you want them to do something for you. You have to be a bit careful because some people want to keep things purely business like but most people like to have a laugh as they go along.

Passage 4 of 4 Section 0, Para 32, 160 chars.

32: Yes. Pause. That fits in with my impression, when I've seen you organising competitions and trips to the pub and all these things so that definitely fits in.

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