THE ACQUISITION AND DISSEMINATION OF IDEAS: MANAGING THE INNOVATIVE INITIATIVE

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ABSTRACT

This study explores the innovation management of acquisition and dissemination, technological and radical, of product ideas. The nature and value of community learning are explored through four functional communities' interpretation and sense-making of their own, and other communities', practices associated with innovation management. An earlier research study, literature and an initial set of focus group findings, were used to identify four key themes: sub-cultural values, innovation goals, organizational enablers and barriers, and community learning outcomes; linked to functional communities' engagement with an informal innovation community. A combination of frameworks, i.e. 'communities of practice' (CoP), organisational and cultural, are reviewed, and an initial community learning process model constructed which is subsequently used to explore the four themes.

Central to this study is the interpretative ethnographic approach and the adoption of a single case participatory action research methodology, which is underpinned by the practice of grounded theory. The critical roles of the researcher and co-researchers are discussed, highlighting the importance of multiple methods of observing and collecting data: focus groups, interviews, observation, action workshops, collection of hall-talk, and documentation such as e-mails, memos, project notes and strategy documents.

The functional communities' value orientations are important to understanding their perceived and expected roles within innovation communities. Changes in the nature of the communities' interpretation of customer value are discussed together with an apparent increased role ambiguity.

Communities' outcome criteria associated with the innovation community are explored with a specific focus on performance, attitudinal and behavioural outcomes. The

findings attest to a strong link between the expected outcome measures and communities' mutual expectations of other innovation community members.

Community environment and its impact on CoP are explored through the practices of collaboration, conflict and innovative leadership. The initial findings suggest that the 'state of trust' between communities is directly related to the leadership style and the collaboration between members.

The principal contribution of this study was to the development of a community learning process model, which mapped their identities, practices and meanings associated with the innovative initiative and the interrelationship between sense-making and practices. The communities' 'legitimacy of contribution' in the case of the initiative was determined by their perspective of customer value orientation and the sense-making of their own, and others', practices. These practices, the research suggests, were influenced by their symbolic interpretation of the shared innovation goals of the innovation community. This research attests that perceived value orientation is directly linked to communities' practices, and the prospective sense-making of the relationship between practices and outcomes. Hence, desired value orientation is indirectly related to role ambiguity and functional community engagement with innovation communities. Future research needs to differentiate between desired and perceived value orientation and actions.

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LIST OF ABBREVIATIONS

BM	Business Manager
CoP	Communities of Practice
ILTs	Implicit Leadership Traits
MD	Managing Director
MUBS	Middlesex University Business School
NPD	New Product Development
PAR	Participatory Action Research
PDMA	Product Development and Management Association
QSR	Qualitative Study Research
R&D	Research and Development
SMEs	Small- to Medium-sized Enterprises
TQM	Total Quality Management

CHAPTER 1: INTRODUCTION

1.1 Introduction

This research study explores the social theory of learning pertaining to communities engaging in the pursuit of organisation-wide innovative initiatives. Particularly the problems and issues of social participation of these multiple formal functional community members to any informal innovation. 'Communities of Practice' (CoP) focused on the creation, development and delivery of new customer-valued products, when their membership of their respective functional communities and the associated identities, practices and meaning are sometimes at odds with those espoused by the innovation community. To provide an initial context to this study, this chapter undertakes an initial literature review to help ground both the theoretical and practical perspectives of innovation management research. A short section details and discusses the organisations, the industry and the author's personal interests concerning the research topic. The research aim then establishes the initial boundaries of the study, and the subsequent four research questions explore further the relationships between the emergent research themes, from early focus group sessions and secondary research. Some speculative learning outcomes are advanced and a structure is presented for the following seven chapters.

1.2 Introducing the Topic

Since the 1960s the academic community has become increasingly interested in investigating the determinants of new product success (Craig and Hart, 1992; Jones, 1997; Ernst, 2002). The approaches taken, however, have been numerous, resulting in a body of literature that is both complex and confusing, and it has been the task of a number of researchers (Craig and Hart, 1992) to attempt to gather these together, with the help of meta-analysis, to provide some generalised findings. As a consequence of these researchers' efforts, innovation management research has arrived at some

generalised factors associated with the success or failure of New Product Development (NPD), such as: firm culture; experience with innovation; the act of change; multidisciplinary teams; and the collective characteristics of innovation processes (Cooper, 1982; Rothwell, 1992; Crick and Jones, 1999; Van de Panne *et al.*, 2003). Subsequent research has endeavoured to benchmark these, and other factors, within specific industry sectors and/or national cultures (Clark *et al.*, 1991; Guimaraes and Langely, 1994; Dorabjee *et al.*, 1998). Although the dynamics of the marketplace and industry sector do influence product success or failure (Cobb *et al.*, 1998; Hyland *et al.*, 2001), they do not explain why some product developments fail, while others succeed, in organisations within the same industry – but internal dynamics might. Research is, at last, recognising the situational uniqueness of these organisations (Craig and Hart, 1992), both in their internal dynamics (organisational structure, culture and processes) and their interrelationship with the external environment. Hence the ongoing interest by researchers in exploring organisational and, specifically, formal and informal communities, dynamics and the influence these have on the innovation process. Such factors include: conflicting criteria (Dornblaser *et al.*, 2000); sponsorship (Mushin and Kiyong, 1994); formalisation of new product processes (Cooper, 1975); and group cohesiveness (Van de Ven *et al.*, 2000). The use of the terms 'community' and 'group' are used interchangeably within this thesis. The use of one or the other, is based on either the original source of the construct, the common usage within the case organisation, or an attempt by the author to ground the research findings within existing academic texts. Studies on NPD success and failure may not entirely agree on the relative importance of internal or external factors, but an increasing number of studies recognise the increasing importance of uncertainty and ambiguity in shaping organisational events (Dougherty, 1992).

Research on the effects of uncertainty and ambiguity (Angle, 2000; Ashill and Jobber, 2001) has suggested that organisations operate within rapidly shifting environments,

one in which information is often incomplete and ambiguous (Chapman and Hyland, 2004). McKenna (1999) argues that managers are subjected to increasing pressures arising out of these complexities. At the same time, it is commonly accepted in business (Sahdev and Vinnicombe, 1997) that managers receive the least amount of formal support, in terms of training and development, to manage these significant organisational and personnel transitions, and are unclear about their roles and responsibilities during these periods of uncertainty and ambiguity (Sahdev and Vinnicombe, 1997).

To make sense of managing innovation in this uncertain and ambiguous environment, organisations and managers need to interpret how this complexity (Porter and Smith, 2005), changing organisational context and increasing disparity between organisational and group-based goals, influences innovative initiatives. There is a growing body of research (Appelbaum and Goransson, 1997; Conrad and Poole, 1998; Poole and Van de Ven, 2000) which concludes that industries are not short of ideas for change, but are uncertain about the means by which to undertake them. The same factors that create unique differentiators for organisations and allows them successfully to compete in highly competitive marketplaces (Craig and Hart, 1992; Doyle, 1995), also increases the complexity of this innovation process, and its subsequent management. To make sense of this complexity, it has been suggested that organisations must learn, adapt and change their processes (Aram and Noble, 1999). But this learning activity involves other members of the organisation, as they attempt to draw on their own and other communities' experiences of successful innovative practices, and apply them to existing problems. These innovative practices are embedded in the communities' interpretative systems (Fiol, 1995) and then used to attribute meaning to the others' collective actions and resulting outcomes, and this influences their thought worlds.

These thought worlds reflect the social world, as they perceive it, and are the implicit rules by which they attribute meaning to their position and task within the organisation (Rafiq and Saxon, 2000), a relationship which will be continually referred to in this thesis. Functional communities like Sales, Marketing, Research & Development (R&D) and senior management, have strong perceptions of their position and task within an organisation (Kwantes and Boglarsky, 2004). Community thought worlds are implicitly and explicitly communicated to other communities through their value orientations (Dougherty, 1992). Because these value orientations describe how individuals or communities feel the world should work, or how they would like it to work, they infer general standards of conduct and expected collective actions for themselves and others (Bates and Chen, 2004). These value orientations will, therefore, influence both their own and other communities' collective actions, particularly the interactions between them (Storey, 2000), because they reflect their perception of what innovation is and how it happens. Community interrelationship research (Ashill and Jobber, 2001), associated with innovative processes, has become increasingly marked over the last fifteen years (Jones, 1998; Holland *et al.*, 2000) for its interest in quantifying the associated organisational contextual factors and community dynamic issues. Some of these innovative processes require functional community members to work together in very formal communities, where their role is explicitly defined. However, there are other instances where more informal communities are created around specific joint enterprises, such as acquiring and disseminating product ideas or attaining knowledge and learning. These 'Communities of Practice' (CoP) (Wenger, 2000) have active participants focused on social communication, and on constructing new identities surrounding these joint enterprises, and so share their expertise and passion. The CoP literature (Morgan, 2006; Wenger, 1999) refers to 'engagement' as a term to suggest the dedication or application of an individual or communities to a particular act, but other organisational literature uses the term 'commitment', these two terms are used interchangeably within this thesis to denote the same meaning.

Some of these community interrelationship studies (Craig and Hart, 1992; Larson and Gobeli, 1988) have hinted at interaction effectiveness being largely influenced by their dynamics and task design. Community dynamics, measured in terms of psychosocial traits and internal processes (Cohen and Bailey, 1997), are key elements in determining their collective actions, and subsequent effectiveness, for any given task. Community psychosocial traits are determined by their norms and thought worlds. Key to each community's norms and thought worlds, associated with any innovative process, is the interpretation, sense-making and commitment they have towards it (Hackman, 1986). This sense-making and resultant learning helps communities to construct a relationship between present outcomes and past collective actions (Conrad and Poole, 1998), and is often referred to as experiential learning (Van de Ven *et al.*, 1999). Each community's experiential learning is highly subjective (Levitt and March, 1996) and socially constructed, and made up of their interpretation of their own and others' collective actions, and any resulting outcomes. These community interpretative systems encourage value orientations which promote the collective actions that are most likely to produce positive innovative outcomes, storing these away as positive experiences (Van de Ven *et al.*, 1999). But negative experiences from collective actions, resulting in innovative outcomes that are markedly different from those expected, are likely to challenge a community's interpretative system and promote a change in their thought world.

It has been suggested that success in innovation management for the 21st century will be about facilitating this community experiential learning process, by creating the right conditions for them to succeed, rather than trying to manage their collective actions (Holland *et al.*, 2000; Warren, 2003). For the rest of this thesis the use of 'sub-cultures' and 'communities' as terms to describe a collection of people sharing similar thought worlds, are used interchangeably. Each functional community in this study shares more than the same thought worlds; they share similar functional and professional

competencies, skills and training, the significance of which is explored in Chapters 2 and 5.

The environment for NPD is often complex, uncertain and ambiguous; failure is as common as success, and the management of product, radical or technological innovation processes, is beset with problems associated with community dynamics, internal processes and changing goals. Early focus group sessions in the case study organisation supported these identified research themes and the value of a research study to explore the issues surrounding the management of an innovative initiative. The innovative initiative sought to address a particular NPD problem – the acquisition and dissemination of product innovative ideas – one that is fairly common throughout this organisation type (Brookbank *et al.*, 1999; Angle, 2000). The research involved the study of four functional communities (Marketing, Sales, research and development [R&D], and senior management) within one UK manufacturing organisation, divided into four separate business units, between 1997 and 2000. These business units had different products and marketplaces, with identifiable personnel associated with them. Each unit also had separate objectives relating to their business and market goals. The study initially focused on one of these units.

The empirical data was collected using observations, workshops, focus communities and interviews, and the research methodology underpinning this was an interpretative ethnographic approach, which allowed the researchers to study the cultural dynamics of innovation management. The research methodology is discussed in greater detail in Chapter 3.

1.3 Origins of the Research

The interest in this innovation management research study originated from earlier work undertaken for the author's MA dissertation (Brown, 1997). This study looked at the

issues of innovation management, as discussed in Peter's (1994) publication, *Crazy Times Call For Crazy Organisations*, and his earlier research findings with Waterman (Peters and Waterman, 1982), particularly those factors contributing to success in selected US organisations. The latter study, by Peters and Waterman (1982), investigated the association of organisational success to seven identified organisational factors: staff, style, structure, skills, system, strategy and shared values.

The author's study (Brown, 1997) explored these seven factors within the context of one organisation and identified a number of potential issues for innovation management associated with shared values. The study (Brown, 1997) suggested that the functional community's differentiated values, concerning how an organisation could be successful, were related to their interpretation of customer orientation and the means by which they and others could create, develop and deliver superior customer value. Communities were found to adopt one of two approaches: a short-term perspective addressing the expressed customer needs; or a longer-term perspective attempting to develop products and services to address the latent customer needs. This differentiated interpretation of both what customer orientation is and, importantly, how to deliver it, could create problems concerning communities' collective actions surrounding cross-functional product innovation activities. This interested both the senior management of the organisation and the author, due to the recognised importance of customer orientation to business performance (Jaworski and Kohli, 1993). Subsequent discussions with senior management suggested that a research study investigating communities' value orientations, expectations and sense-making of their own and others' collective actions associated with NPD, could provide useful insights for both the management and the wider research community on increased effectiveness of innovation management. The author proposed to the organisation that this initial research topic should be broadened to include other community dynamics known to influence their collective actions and innovative outcomes (Cohen and Bailey, 1997). This links with the suggested literature

from the section above, i.e. that internal dynamics might be a significant factor determining success or failure of NPD. The next section discusses the author's personal interest in this research study.

1.3.1 Personal Interest

The author trained as an engineer, and only in his thirties did he progress to management, and then to becoming a marketer. As an Engineering Manager, the author had been confronted with the problems of innovation management within the NPD environment, the difficulties of fostering collaborative relationships with other functional communities, the conflicts arising from their different value orientations, and the issues related to their sense-making of their own, and others' collective actions on cross-functional product innovation activities. As a consequence of this, the author undertook an additional period of study at Middlesex University Business School (MUBS) to gain additional management skills; part of which was a dissertation based on his own manufacturing organisation. The initial study (Brown, 1997) had been exploratory research into the broad issues of innovation management within his organisation. The results of this study, presented before the senior management of the organisation in question, gave rise to significant interest in a follow-up study. Such a study would focus particularly on the innovation management of NPD and explore the research themes of community value orientations, mutual expectations, internal processes and their sense-making. The author was keen to undertake this research and approached his original dissertation supervisor to request his help in enrolling for a research doctorate at MUBS. For the author, the rewards for undertaking this research study were an opportunity to study, under the guidance of his Director of Studies, a unique innovation management problem that would provide the opportunity to deliver knowledge, skills and learning to the author and his organisation, and contribute to the overall academic NPD knowledge base.

1.3.2 Organisational Interest

At the beginning of the 1990s, the case organisation's product lines were market leaders, revenue and profit were growing, and the organisational environment was both creative and innovative. In the early 1990s, as the global markets became increasingly competitive and price sensitive, competition steadily increased in all territories. Product issues like 'time to market', 'works cost', 'product quality' and 'competitive advantage' became the significant factors determining this organisation's success. As shareholders' expectations on revenue and profits became increasingly important, management cut costs; for example, R&D, training and development, and general recruitment. Consequently, the more creative and innovative employees left to join businesses that had well-funded R&D programmes. The actions of the organisation suggested that they were focusing on short-term cost savings and not on long-term investment in products or people. This was evidenced by the observed scaling down of most departmental budgets, limiting marketing expenditure on market intelligence gathering and general resource cutbacks, such as not replacing people who left. The senior management in this organisation were increasingly called on to motivate the employees to action, but felt ill-equipped to do so (see Chapter 7). General organisational activities, such as team building, mission and vision workshops, and strategic planning, had been tried, but these initiatives had few positive outcomes. One positive step the organisation made was to provide both financial and moral support for this research study.

1.3.3 Industry Interest

The uncertain economic climate and emerging global marketplace has resulted in organisations re-evaluating how they function (Appelbaum *et al.*, 1999). Firstly, how the organisation orientates itself in the marketplace, their positioning and values, against their nearest competitors; and secondly, how the organisation creates, develops and delivers superior customer value, discussed earlier in section 1.2. Over the last ten to

fifteen years, downsizing has been used as a strategic option for many organisations (Appelbaum and Donia, 2001). These organisations are striving to reduce costs and increase efficiency, and the most common way to reduce costs, as perceived by senior management, is to reduce the number of employees (Buchanan, 1997). However, a survey by the Society for Human Resource Management (Conrad and Poole, 1998) suggested that downsizing in organisations only resulted in 29% of them achieving any increased efficiency. More distressing than this lack of efficiency outcome was that in 62% of the organisations lower morale was recorded, resulting in increased absenteeism and voluntary job turnover. The continual use of downsizing to achieve short-term goals when the organisations are faced with longer-term problems will, almost always, result in failure (Appelbaum *et al.*, 1999). These downsized organisations, with their disaffected workers and middle managers, are unable to fulfil their longer-term goals, those goals expected by their loyal customers and shareholders (Conrad and Poole, 1998). Their customers expect the continual improvements in goods and services that result from innovation (Heller, 1996). Customer research proposes that:

> '. . . customers will be inclined to maintain their relationship only if the firm maintains its market leadership, both in exceptional service and in its innovativeness' (Kandampully and Duddy, 1999:51).

With the uncertain global marketplace and increasing global competition, maintaining an existing product range, by enhancements, is no longer sufficient to keep market leadership. Kiernan observed that:

> 'It has become tougher and tougher to generate competitive advantage by simply doing the same old things a little bit better . . . A single innovation or advantage is never enough. You must keep generating new innovations faster than your competitors can copy the last one' (1995:47).

This is a reference to the longer-term organisational problems concerning the development of new products. Management are under severe pressure to innovate effectively, to balance up the shorter- and longer-term requirements of product development. However, management are also under pressure to meet ever stricter financial remits from the different organisational stakeholders (Bechtold, 1997): shareholders to deliver revenue and profits; customers to deliver on expressed needs and longer-term latent needs; and from employees to provide security and development (Baruch and Hind, 2000). Organisations are constantly having to re-evaluate how they function, and their management are being pressurised into making changes:

> 'It is an accepted fact today that change is constant. Change has become the nature of things . . . an enormous amount of management's time and energy is invested in changing, transforming, or revitalising today's organisations' (Galbraith, 1997:87).

The outcomes of these changes are being increasingly measured on short-term based metrics, revenue and profits in the current year (Brown and Eisenhardt, 1997), and not on the higher risk longer-term product developments. This underlies the increased research on NPD processes and innovation management, and the interest from organisations and industry in its focus and application to their real-time problems (Jones, 1998; Warren, 2003). Of particular interest is the key problem of managing product innovation in increasingly uncertain and ambiguous organisational environments (Angle and Van de Ven, 2000), where this only increases the complexity associated with high-risk NPDs.

The next section collates the research background, stated above, into a broad research aim, and then breaks this down into four specific research questions.

1.4 Research Questions

In section 1.2 above, the origins of the research study have been discussed together with the motives behind this study's research aim. The research aim was to explore the four functional communities' interpretations and sense-making of their own and others' identities and practices associated with the management of an innovative initiative, and the innovation community created with the express purpose to support this. To then better understand the level of engagement of these formal functional community members with this informal innovation community, and any other organisational enablers and barriers to this, at the sub-cultural and organisational level.

By conducting initial focus group sessions at the case study organisation, reflecting on the findings from an earlier study (Brown, 1997) and reviewing additional relevant literature four themes were initially identified. These themes were slightly re-written to provide four research questions that were then used throughout the duration of the study to stimulate further analysis and theory development of the original research aim:

- What is the relationship between the communities' value orientations, concerning the creation, development and delivery of superior customer values, and their thought worlds concerning the innovation community? (Chapter 4)

- What is the relationship between the communities' expectations of the innovation community and their implicit psychological contracts with each other? (Chapter 5)

- What are the organisational enablers and barriers influencing communities' engagement with the innovation community? (Chapter 6)

- What are the communities' interpretation and sense-making of their own and others' collective actions, and the resulting innovative outcomes associated with the innovation community? (Chapter 7)

This is not a thesis that starts out with a deductive framework, but instead adopts an inductive approach to the collection of empirical data, and uses this to map the communities' socially constructed realities; creating and developing constructs and causal relationships to explain their subsequent sense-making. It is these that were captured in the community-learning process model and then presented, during the study, to the communities to elicit feedback, to reinforce or modify any of the constructs and develop additional interpretations of the causal relationships between them.

1.5 Expected Contributions of this Research Study

This research study adopts an interpretative ethnographic epistemology to explore the social construction-ism of both their own and other functional communities' sense-making, interpretation of the innovative initiative and their engagement with the informal innovation community. By studying the different functional communities' perceptions and collective actions, and using a participatory action research (PAR) methodology to develop these, the author expects to contribute to academic and business knowledge in the following five areas:

- A community learning process model that maps the interconnectedness of the functional community members' interpretative systems, values, goals and actions concerning their engagement with an informal innovation community;

- An insight into the functional communities' meaning associated with membership of the innovation community, how they interpret the

inconsistencies and ambiguity associated with communities' behaviour, against their own symbolic interpretation of the innovative initiative;

- An insight into the reasons for the differentiation of the functional communities' value orientations, and the critical role that professional orientation plays in their sense-making of any joint enterprise associated with the innovation community;

- An insight into the situational uniqueness of organisational enablers and barriers and the challenge this presents to these formal and informal communities;

- An insight into the functional communities' engagement with informal innovation communities, where the level of engagement is implied by the shared activities, experiences, identities and relationships they hold in concert with others.

Through the use of interpretative ethnographical approaches in the collection, analysis and emergence of social constructs and causal relationships associated with formal and informal community interactions, the author attempts to achieve a level of analytical generalisation. Analytical generalisation endeavours to demonstrate the applicability of the social constructs to a wider range of innovation management problems in other organisations. The author discusses this more general outcome of the study in Chapter 8, and leaves it to the reader to come to their own conclusions.

1.6 The Structure of the Thesis

The structure of this thesis reflects both the iterative process of theory development and the underlying 'grounded theory' research methodology adopted.

Chapter 2 provides a broad introduction of the main literature areas relevant to the research aim and the questions identified in section 1.4. An initial community learning process model was developed and presented as a result of the initial literature review and early focus community research examination. As a result of analysing the primary data and subsequent changes in this model, additional literature is reviewed in the following chapters and links made between these and the research findings.

Chapter 3 discusses the interpretative ethnographic research approach, within which the author adopted other research methods to explore and review the emerging research themes and causal relationships: case study, PAR and grounded theory. A research process pathway is presented to reveal the experiential learning nature of the development of both the research themes, and the community learning process model. Each of these was examined in terms of the contribution it made to the rigour, relevance, reliability and validity of the data collection, the review of this primary data and the research findings.

Chapter 4 explores the first research question, studying the communities' value orientations associated with creating superior customer values. The communities' perceived and desired value orientations were explored to interpret their subsequent customer-valued collective actions. Increasing value discrepancies between their own and others' perceived and desired value orientations, were examined to relate these to both their changed perceptions of the means of creating superior customer value and their customer-valued collective actions towards the three observed innovation processes. Finally, the community learning process model was reviewed and modified.

Chapter 5 explores the second research question, examining the relationship between the communities' expectations of an innovation process and the implicit psychological contracts with the other communities. Three outcome measures were evaluated:

performance, attitudinal and behavioural. Relationships and additional themes were suggested. The community learning process model was reviewed and modified.

Chapter 6 explores the third research question, examining the internal process factors that emerged from the previous two chapters and their influence on the issues of innovation management. Three factors in particular were explored: collaborative relationships, affective conflict and innovative leadership; and the influence these had on the collective actions associated with the innovative initiative. The community learning process model was reviewed and modified.

Chapter 7 draws on the community learning outcomes arising from their own analysis of the communities' collective actions–outcomes relationships, and the part that retrospective and prospective sense-making contributes towards community meaning. Since this is closely related to the communities' customer-valued collective actions, the literature on this topic was reviewed and appropriate theories identified. The community learning process model was reviewed and modified.

Chapter 8 draws the chapters of this thesis together, and concludes on the issues of interpretation and sense-making in innovation management, the overall importance of engagement on all other themes within the community-learning process model, and the importance to innovation management. The chapter concludes with the contributions of this research to academia and business practitioners.

The next chapter, Chapter 2, explores the current research knowledge associated with the initial research aim and provides an important grounding for the rest of the thesis.

CHAPTER 2: INNOVATION MANAGEMENT RESEARCH

2.1 Introduction

This chapter explores the initial grounding of this research study within the body of innovation management and NPD research literature, suggesting that it occupies one particular stream of literature on innovation process management. But underlying this innovation process is a social process, and the author explores the social participation of the many different sub-cultures found in any organisation. The author explores these community members' thought worlds, values and expectations and the organisational barriers, and suggests how these influence their learning and belonging to both formal and informal communities. Existing organisational learning models associated with knowledge transfer are discussed and an initial community learning process model is developed.

2.2 Innovation Management Research

In the introduction to the research study (section 1.2), the author discussed the broad problems and issues associated with innovation management in uncertain and ambiguous environments. Innovation management research is the study of change management; changes that can include administrative, product, technology and just about any other facet of the business environment. But for this research study, the focus is on product development based innovations.

Innovation management research in the 1990s focused on the ability of organisations to innovate, determining the organisational contexts that enhanced or impeded the generation, diffusion and adoption of innovation (Warren, 2003). Karakaya and Kobu (1994) summarised these broad areas of innovation management research associated with product development, into six principal themes:

Innovation antecedents – research considers what causes innovations to be successful or fail;

Innovation strategy-performance relationships – study of the relationships between different types of innovation strategy and their performance or success;

Innovation benchmarking – an attempt to measure an organisation's innovation processes or capabilities against others;

Normative innovation models – studies have developed mathematical models to predict likely innovation success or failure;

Single factor-innovation performance relationships – studies examine the effect of a single aspect of innovation to overall innovation performance and success;

Innovation process – studies examine the most effective innovation processes, comparing the advantages and disadvantages of having formal or informal processes.

This last innovation management research theme focuses on the evaluation of the innovation process, particularly examining how such processes work and their subsequent effectiveness (Angle, 2000). The author's research study broadly fits into this research area, as the research aim was to identify the problems arising from these communities' management of an innovative initiative. In the research literature generated by writers from R&D, marketing and management areas, three terms are commonly used to describe the process by which a new product is developed: these are 'NPD', 'design' and 'innovation' (Craig and Hart, 1992). In this study, these terms are used interchangeably, reflecting the original term used from the source, whether that is

academic or participant. A useful definition of innovation, provided by Spence, suggests that:

> 'An innovation might be something, which has never previously existed. Conversely, it could be something quite new to our own personal situation or capable of having a fresh use at the time that we become aware of it' (Spence, 1994:25).

Innovations sometimes result in new products and others result in new processes, while others still result in new organisational structures. Because of the focus of this study, the innovation management literature review has been narrowed to that specifically on NPD, as the expected outcome of the innovative initiative studied would be new products.

Organisations are being forced to turn to NPD to ensure survival (Craig and Hart, 1992). But the NPD process, and its associated innovation, cannot be simply switched on or off when the organisation or manager wishes, as it is a continuous process requiring long-term commitment (Jones, 1998). This suggests the first of many areas of conflict for businesses – the balancing of short- and long-term objectives (Jashapara, 1995). Managers and academics have acknowledged that the long-term survival of organisations requires the balancing of these two perspectives (Gupta *et al.*, 1986; Gupta and Wilemon, 1996; Ernst and Teichert, 1998). Yet in many organisations it has been observed that the concept of shareholder value creation, often considered as the ultimate objective of an organisation, is interpreted by many managers as the need to focus on short-term profitability at the expense of long-term investment, specifically regarding the organisation's commitment towards NPD (Ernst and Teichert, 1998). Gupta and Wilemon's (1996) study surveying 120 R&D directors from technology-based organisations in the US, suggested that 79% of participants clearly felt that the pressure for short-term incremental results was increasing, and 76% admitted that funding for higher-risk basic research was becoming more difficult to obtain and justify.

Balancing this conflict between short- and long-term objectives requires an organisation to:

> ''. . . manage effectively for today while simultaneously creating innovation for tomorrow' (Drongelen and Weerd-Nederhof, 1999:398).

The longer-term commitment to riskier NPD and its associated innovations are no longer an option for manufacturing organisations (Laugen *et al.*, 2005). Economic survival is now dependent on developing new products to meet the ever-increasing competitive challenges of the domestic and international markets (Warren, 2003). This pressure is forcing organisations to re-examine their NPD processes, to reduce time to market, to gain access to new technologies and develop more and better products (McGrath, 1996). This conflict between the shareholder value drivers to maintain short-term revenue against the importance of long-term commitment to NPD to safeguard future survival only adds to the perceived complexities associated with NPD management.

2.2.1 NPD Process

Despite the increasing levels of internal complexity associated with NPD, mostly related to the increasing sophistication of the products being developed and the prioritisation of short- and long-term tasks, it has only recently been recognised that NPD, and its associated innovations, is a process (Song *et al.*, 1998). The NPD process is not a single function activity, but a multi-functional activity demanding closer collaboration and co-ordination of these separate functions (engineering, marketing, design, finance and manufacturing). So important is this cross-functional collaboration to NPD success, that significant research has been focused on the issue of cross-functional integration (Kahn, 1996; Rafiq and Saxon, 2000; Kahn, 2001). But, this cross-functional integration is

dependent on process integration: how the different stages of NPD are integrated (Craig and Hart, 1992).

Since the 1960s, the simple first generation NPD process models, based on the sequential process of product development (i.e. idea, design, implementation and manufacture) (Tidd *et al.*, 1997), have steadily developed; in the early stages because of the NASA challenge (Jones, 1998), but latterly because of the interest in improving NPD performance. This created the need for a second generation model, 'stage gate' (Song *et al.*, 1998), that considered events and stages in the NPD process to be linked or 'coupled'. However, this still represented developments as sequential and bounded. These sequential activities create hold-ups in the developments, waiting for management approval or commercial evaluation, which then slowed the overall 'time-to-market' of the resultant products. Therefore, a third generation model was developed which allowed overlapping processes (Song *et al.*, 1998), still accommodating the important 'stage-gate' process of requiring approval to move from one stage to the next, but now allowing flexibility to permit stages to overlap.

Not only were researchers interested in the process of moving from one stage to the next, they also became captivated with the characteristics of each of these stages, and with understanding the effectiveness of its implementation within given organisational contexts (Hart *et al.*, 1999; Lenders and Wierenga, 2002). The first stage of an NPD process is the 'idea generation' stage (Booz-Allen Hamilton Model, 1982), sourcing ideas for new product extensions or new product ideas from outside the organisation. Researchers (Freel, 1998; Freel, 1999; Van de Ven *et al.*, 1999; Samli and Weber, 2000) generally agree that an organisation should integrate and collaborate with a network of external sources. These external sources should include customers, distributors, competitors, suppliers and research agencies (Allam, 2003), to increase the likelihood of success. This asserts an important relationship between the NPD process, the customer

and the acquisition and dissemination of market information, and is discussed further in sections 2.3.3 and 2.5.2.

2.2.2 NPD Success and Failure

NPD research (Cooper, 1982; Maidique and Zirger, 1984; Rafii, 1995; Griffin and Page, 1996; Brown and Eisenhardt, 1997; Ottum and Moore, 1997; Hart *et al.*, 1999; Samli and Weber, 2000; Bonner *et al.*, 2002) has extensively analysed both successful and failed product developments to identify those factors most likely to influence positive outcomes. But, these success measures, when adopted and applied by other organisations have never guaranteed success (Maidique and Zirger, 1984; Griffin and Page, 1996). This suggested that there were other influences affecting product development, not previously identified in the studies, that came from either inside or outside the organisation (Cooper, 1998b). How can these factors be associated with product success, but not lead to success? The answer was partly provided by Jones' (1998) review of the factors consistently and clearly contributing to successful NPD outcomes. In the product and service sectors, these factors were both broad and general.

The six factors described below are generalised from other researchers' findings on NPD (Jones, 1998). This empirical data encompassed many different organisations of varying sizes, from many different industries, and associated with very different and diverse products and service developments. Because of the subjectiveness, the situational uniqueness (discussed in section 1.2) and highly distinctive community dynamics of cross-functional interactions in the many organisations, managers and communities involved in NPD found it difficult, if not impossible, to apply any or all of these prescriptive factors to their specific NPD problems and achieve guaranteed successful outcomes. But they did identify the key problems and issues associated with innovation management, which the author and participants of this research study found

useful in helping to initially link the four research themes identified in Chapter 1.These were:

Company synergy – this suggests that product development should match the resources and capabilities of the organisation. The challenge facing organisations today is integrating the new demanding technological and product-based strategies into an overall business strategy, and this is neither easy, nor possible to do by simple formal tasks (Kodama, 1992). Smeds (1994) suggests that NPD processes must still rely on informal structures and collaboration between the different functional communities to facilitate the integration of these complex strategies. Two important themes emerge from this body of research on company synergy: the criticality of community dynamics; and the internal processes of managing cross-functional interactions. Both of these are discussed in sections 2.3 to 2.5.

Activity execution - ensures that activities associated with all phases of the project are well executed. This continues a theme from section 2.2.1 above, that the acquisition and dissemination of market information pertaining to customers, competitors and other important market factors, are linked to communities' commitment to organisational-based objectives (Day, 1994a). In the last fifteen years, market orientation has become a fashionable objective for organisations, and has been linked to business performance success (Harmsen *et al.*, 2000). Research on market orientation (Jaworski and Kohli, 1993) has proposed a relationship between information acquisition and dissemination, and the collaboration of these individuals and communities. Increasingly, these collaborative relationships between communities depend on the level of trust, shared values and conflict resolution, and this is discussed later in this chapter and again in Chapter 7.

Product attributes – that products have some unique and intrinsic qualities. Innovation and creativity are two very important factors associated with NPD success (Gluck, 1985; Johne and Snelson, 1990). Innovative organisations, those that are able to use innovation to differentiate their products and services, are twice as profitable as other organisations (Pavitt, 1991). Innovation creates more opportunity for differentiation and competitive advantage, and hence impacts positively on organisational performance (Kleinschmidt and Cooper, 1991). However, the interaction between product innovation, technology and the business is a highly complex and difficult strategy for organisations, and particularly managers, to control (Peters, 1991). An insight into the management of an innovation process, one involving acquisition and dissemination of product ideas, is the overriding aim of this research and is therefore discussed repeatedly throughout this thesis.

Market character – ascertains that the market is strong and understood by the organisation. The challenge presented to organisations is how to capitalise on the various niche markets that are opening and closing around the world (Devinney, 1995). Understanding the marketplace, its competitors and customers, closely links an organisation's market orientation with business performance (Harmsen *et al.*, 2000). Market orientation, defined in this study as the interpretation by each of the communities of the means by which they can create, develop and deliver superior customer value to the market, is an overriding sub-theme linking all aspects of the research evaluation and analysis, and is therefore central to this study.

Programme support – ensures the programme receives high-level management support. Organisations are starting to compete on their ability to improve their performance, measured in terms of profit and product launches, faster and more efficiently than their rivals. To achieve this, organisations require new ways to recognise, encourage, enhance and build upon people's capacity for learning (Maira and

Scott-Morgan, 1995; Jones, 1998). Leadership has been strongly linked with individual, community and organisational learning, and is a strong motivational factor in promoting collaboration between communities. This theme is taken up later in sections 2.5 and 6.2, along with community learning in Chapter 7.

External alliances – that all available resources outside the organisation are utilised. Organisations are still struggling with the broad concept of networking (Martensen and Dahlgaard, 1999). Worries over the dependency on external sources of knowledge and the threat this poses to an organisation's core competencies, create a barrier to the wider implementation of networking for technology acquisition (Anderson and Tushman, 1991). Research on organisational networking (Jashapara, 1995; Jones, 1998; Szeto, 2000) links information acquisition and dissemination to community value orientations and to the organisations' market-oriented strategies. The topics above (community value orientation, information acquisition and dissemination) are explored further in Chapter 4 and section 6.2.

The six generalised factors identified in Jones' study (1998) only implied tentative links between the broad range of research carried out on NPD and business performance, and do not identify explicit solutions to its management. However, they do help to suggest why the research is not as connected or strongly linked as one would have first thought – because of the situational uniqueness of each organisation's internal environment. No two organisations are likely to share the same organisational culture, including sub-cultures, all of which affect the influential thought worlds of NPD cross-functional parties. The interconnectedness of these parties, the internal processes of their interaction and the important community value orientations and expectations, are the key elements of the interpretation and sense-making of the commitment to any innovative initiative. The next four sections further explore the existing research

literature associated with the four research themes and establish initial relationships between them.

2.3 Sub-cultural Values

In the above section, 'company synergy' was defined as the matching of the organisation's capability with that of the requirements of the NPD task. An organisation's culture is a reflection of that capability; it sums up the competencies and experiences of the organisation. Bechtold (1997) has suggested that organisations with strong cultures are both better at adapting to changing environments and have core beliefs that hold customers and other stakeholders as key motivators for learning and change. Culture is the shared learning of individuals and communities:

> '[a] . . . pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration that have worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems' (Schein, 1992:12).

Successful organisations are likely to focus on their customers and their needs, and reflect this in their culture (Appelbaum *et al.*, 1998). Organisational cultures, where the shared values and beliefs place the customer at the centre, better interpret their customers' needs and the relative importance of innovation in creating superior customer values (Kuczmarski, 1996). However, these shared values and beliefs may not be shared or accepted by all (Bennett and Durkin, 2000). There are some instances where sub-cultural value orientations hold greater power over the communities than organisational-wide value orientations (Angle, 2000).

> 'No one organisation has a homogeneous culture, and there are usually several different sub-cultures, which are in themselves a source of conflict' (Woodall, 1996:14).

The following section describes the important relationship between sub-culture value orientations and their collective actions.

2.3.1 Sub-cultures

The differences in organisational members' experiences and perceptions are reflected, and can be observed, in the sub-culture attitudes. Van Maanen and Barley suggest a definition of sub-culture that proposes a relationship between values and community action, which is something that is picked up later for discussion in this section and the next:

> 'A subset of an organisation's members, who interact regularly with one another, identify themselves as a distinct group within the organisation, share a set of problems commonly defined to be problems of all, and routinely take action on the basis of collective understandings unique to the group' (Van Maanen and Barley, 1985:38).

These sub-cultural groupings are more often formed because of functional and professional identities (Woodall, 1996). What draws these communities together is a shared set of values, based on their experiences of problem solving. These value orientations provide the communities with behavioural guides capable of being applied across diverse situations (Schwartz, 1992). They influence both affective and cognitive factors such as work motivation, job satisfaction and organisational commitment (Putti *et al.*, 1989; Bates and Chen, 2004). Most importantly, value orientations provide an evaluative process by which individuals and communities can judge, praise and criticise their own, and others', collective actions (Smith, 1969). This provides the individuals and the communities within which they practice a 'legitimacy of contribution', a rationale behind their behaviour. Bolon and Bolon (1994) proposed that if communities have different goals and interpretative systems, then it is very unlikely they will share with others the same interpretations of the social world (Alvesson, 2002; Martin, 1992),

and therefore assumptions within the organisation. It is therefore very unlikely that the communities' value orientations are a simple subset of the organisation's values (Flaherty *et al.*, 1999).

Because of the different schooling and training communities receive during their professional development they are likely to develop very different thought worlds, ones that could also indicate very different interpretative processes (Dougherty, 1990). These community thought worlds, and the analytical tools and methodologies adopted to solve problems and analyse events, are likely to reinforce differentiated value orientations (Dougherty, 1992). Research into marketing and R&D interfaces (Lawrence and Lorsch, 1967; Gupta *et al.*, 1986; Dougherty, 1992) lends support to these functions having very different perspectives regarding project characteristics such as time, preferences, ambiguity tolerance and structure requirements. These perspectives from which the communities interpret the observable world, are different (Souder, 1977). It follows that having multiple communities within an organisation with different perspectives and interpretative systems, can result in different community agendas and value orientations towards any NPD activity or process (Van Maanen and Barley, 1985). The supporting research (Roberts, 2006) suggested that concerns over boundary issues between formal and informal communities could have an impact on their interrelationship. In the next section, further discussion ensues on what defines the communities' differentiated or integrated value orientations, and the relationship this may have on their collective actions.

2.3.2 Community Differentiation and Integration

Both formal and informal communities will use their values and beliefs to interpret the changing environment in which they work (Schein, 1992). At times, their reasoning will be different from other communities and will be reflected in their collective actions, but

at other times they will seek collaboration with other communities to achieve joint objectives and superordinate organisational goals. Lawrence and Lorsch's (1967) study on functional and dysfunctional activities within the organisation and its environment noted a strong link between these activities and organisational performance. They defined two measures:

Differentiation – the difference in cognitive and emotional orientation among the organisational managers from different functional departments; while

Integration – referred to the quality of the state of collaboration that existed among departments required to achieve unity of effort by the demands of the environment.

Their research suggested that, at times, both differentiation and integration between functional communities could contribute to superior organisational performance. Later research (Lane *et al.*, 1981) proposed that high levels of differentiation and integration bring about adaptation and co-alignment between the communities. These high levels, however, can only be achieved if the managers can manage the boundaries between these communities and also, importantly, if they have the willingness to switch resources between the different value-oriented strategies and so resolve any potential conflicts. Because of the focus of this study on communities' interpretation of the means of creating, developing and delivering superior customer value, it is appropriate in the next section to define and discuss research associated with value orientation.

2.3.3 Customer Orientation

Research into customer orientation has been broadly split into two principal camps; one exploring the relationship between customer orientation and business performance (Kohli and Jaworski, 1990), and the other exploring the relationship between customer

orientation and cultural values (Narver and Slater, 1990). In the early literature on customer orientation (Deshpandé and Webster; 1989; Jaworski and Kohli, 1993; Piercy, 1995), it was suggested that an organisation's main purpose was to discover the customers' needs and wants and satisfy those needs more effectively and efficiently than its competitors. In this body of literature (Kohli and Jaworski, 1990; Narver and Slater, 1990; Atuahene-Gima, 1996; Gray *et al.*, 1998; Avlonitis and Gounaris, 1999), customer- and market- orientation were used interchangeably to cover the broad topic of meeting customer expressed and latent needs. However, lately, a subsequent division (Connor, 1999; Slater and Narver, 1998; Slater and Narver, 1999) has occurred separating customers' expressed wants from those longer-term commitments to provide innovative solutions to meet both expressed and latent customers' needs; the former being called 'customer-led' and the latter 'market-oriented'. The difference between short- and long-term customer orientation is a topic discussed further in Chapter 4.

Customer orientation relies on the acquisition and dissemination of marketing information pertaining to the customers' needs; and then initiating a corresponding response in the organisation, such as using this information to design, create, coordinate and execute product and service development to address these needs (Kohli and Jaworski, 1990). Meeting customers' needs, both short- and long-term, is positively related to organisational success (Appelbaum *et al.*, 1998), but what are the organisational characteristics needed to create this customer orientation? Narver and Slater (1990) focused on identifying those characteristics and behaviours of organisational culture that, in turn, would most likely create superior customer values. It was suggested that customer-oriented organisations are committed to interpreting these expressed customer needs through the acquisition and dissemination of market information (Slater and Narver, 1998); i.e. that the creation of superior customer values would only be achieved by the sharing of this knowledge, and then acting on it in a coordinated and focused manner (Slater and Narver, 1995). This, and similar research,

have focused on organisational-wide values and not acknowledged the differentiated agendas and perspectives that the underlying sub-cultures have. This study addresses this research gap and explores the sub-cultural value orientations and their relationship to their collective actions.

2.4 Innovation Goals

In the NPD process literature reviewed in section 2.2.1, the NPD process was described as a multi-functional activity demanding close collaboration and co-ordination of multiple functions. These functional communities can have distinctive values and beliefs, which in turn are influenced by their customer orientations (discussed in section 2.3.3). To explore the relationship between these communities' value orientations and their collective actions, it is perhaps useful to define what a community is. A community is a collection of individuals who collaborate with one another to achieve some superordinate goals, where the attainment of the goal is beyond the reach of the individual's experience and efforts, making them interdependent of each other (Sherif, 1954; Cartwright and Zander, 1968). Organisations enable these formal and informal communities to emerge and develop (Sherif, 1954). Individuals prefer to be part of a community to satisfy a basic psychological need to be with others, to help test and establish some social reality, provide security and mutual support, and finally, to help solve problems (Schein, 1990). In organisations, almost all communities develop a structure (Jones, 1998), defining a stable pattern of relationships among their members, and are defined by:

Roles – the collective actions expected of them by others;

Norms – the rules that help to identify and describe appropriate collective action; and

Inter-member relations – which are based on the authority, attraction and communication they have (Tyson and Jackson, 1992).

The community members' norms, or values, denote the range of expected and tolerable collective actions, and are strongly linked to their superordinate goals. Having superordinate goals is a major unifying factor within communities, and motivates community members to behave in a way that will reduce intra-community tension and lead to the successful achievement of the community's objectives (Sherif, 1954).

2.4.1 Communities' Expected Outcome Measures

If the superordinate goals of a community provide the motivation and commitment to unite these communities, then it is reasonable to assume that the superordinate goals associated with individual NPD processes will influence cross-functional cooperation and subsequent task outcomes (Pinto *et al.*, 1993). But, what are those NPD superordinate goals; what do the organisation or its communities expect from the NPD process? The expected outcome of most NPDs is the commercialisation of a successful and profitable product in a timely fashion (Griffin and Hauser, 1996). However, this 'measure of success' is neither clear, precise nor readily agreed upon within the academic community. The Product Development and Management Association (PDMA) task force (Griffin and Page, 1996) reviewed the most common measures currently used in research studies, and reinterpreted these into five general categories:

Customer measures	market share, customer satisfaction;
Financial measures	profit goals, margins;
Process measures	subjective success, technical performance, on-time delivery;
Firm-level measures	success/failure rates, percentage of sales from new products;
Programme measures	new product programme achieving its objectives, the team satisfied with the overall outcomes.

It had been suggested (Griffin and Hauser, 1996) that academics generally employ firm-level and process measures to qualify success, partly because they are generally interested in linking cause to outcome, but also because they seek measures that allow them to compare organisations across an industry or within national boundaries. It has been suggested (Jashapara, 1995) that organisations prefer to use customer and financial measures, because of the interest and need to evaluate both people and projects. A community's values and beliefs are likely to be different, but closely linked, to their customer-oriented strategies (see also section 2.3).

These communities are frequently influenced by their professional orientation (Craig and Hart, 1992), as discussed in section 2.3.2. It is reasonable to suggest that because the communities' agendas and values are different, then they are also likely to have different success criteria to measure NPD outcomes (Poole and Van de Ven, 2000). These success criteria are likely to reflect their expectations for any given NPD process, both that which the community hopes to achieve, and that reflecting the superordinate goals of the organisation (Van de Ven *et al.*, 1999). These expectations may be linked to the community's values and beliefs, and so influence their future collective action towards the NPD process.

2.5 Organisational Enablers and Barriers

Organisations around the world are experiencing ever-increasing levels of ethical and economic crises, which in turn create further uncertainty and suspicion amongst the different stakeholders (Adams *et al.*, 1998). This increases the pressure on organisations to actively pursue innovation, but it also increases the expectations from these stakeholders. Continuous innovation requires careful management of the organisation's technical competence, a nurturing innovative culture, and collaborative relationships.

The management of these internal processes of communication and conflict resolution, associated with successful collaborative relationships, have consistently been shown to be key factors in NPD success and failure (Ancona and Caldwell, 1992). NPD research (Donnellon, 1993; Hart and Service, 1993; Henke *et al.*, 1993; Pinto *et al.*, 1993; Cordero *et al.*, 1998) acknowledges the process as a multi-functional activity requiring the coordination of multiple functions and sufficient communications to meet the overall objectives. Research (Ensley *et al.*, 2002) into the interaction between these functional communities has identified three important obstacles: lack of cooperation, conflicting organisational goals and no clear direction.

Relationship research suggests that cooperation between functional communities associated with innovative initiatives, like NPD, is no longer sufficient to create innovative cultural norms (Hattori and Lapidus, 2004). A cooperative relationship does not have sufficient levels of trust, is not sufficiently motivating, nor does it encourage responsible collective actions to facilitate breakthrough innovations, but a collaborative relationship could. Collaborative research between communities, and specifically that relating to NPD, has suggested close links between value-based collaboration and innovative commitment (Holland *et al.*, 2000). This is explored in the next section and an initial grounding is provided for the importance of a collaborative relationship to the overall process of innovation management.

Research (Martin, 1995; Lewis *et al.*, 1997; Jehn and Mannix, 2001) into conflicts arising from different interpretations of organisational goals, ascribes the problem to one where the communities' functional goals conflict, or they conflict with organisational goals, as discussed in section 2.3.1. The communities' differentiated interpretation of these organisational goals can result in both cognitive and affective conflicts, both of which are discussed further in section 2.5.2.

Research into NPD direction primarily focuses on leadership. In section 2.5.3 the appropriate research literature is discussed to provide some insight into those issues most likely to influence communities' commitment to an innovative initiative.

For the purposes of this study, the author focuses on three principal internal processes: collaboration, cognitive and affective conflict, and innovative leadership.

2.5.1 Inter-community Collaboration

Knight's study (2000) on collaborative relationships reported that over 50% of the teams interviewed identified problems associated with interaction in cross function teams. Other cross-functional research (Craig and Hart, 1992; Corso and Pavesi, 2000) has studied the mechanisms promoting organisational and departmental collaboration obstacles, physically placing communities closer, reducing environmental uncertainty, the role of information, and the importance of management. But, increasingly, relationship researchers such as Holland *et al.* (2000) are studying community attributes, their values, beliefs and norms, associated with these collaborative relationships, as the key to successful inter-community interaction. The benefits of collaboration between communities, functions and individuals, have been proven to help organisations focus on their given core competencies (Prahalad and Hamel, 1990), improve internal communications and therefore accelerate processes (Gold, 1987), help share customer knowledge to improve product offerings (Devinney, 1995), or just generally enhance the acquisition and dissemination of market knowledge (Nonaka, 1991). Collaborative research, associated with cross-functional teams, supports a positive relationship between collaboration and new product success (Craig and Hart, 1992; Rochford and Rudelius, 1992; Jassawalla and Sashittal, 1998).

Other collaborative research (Rappa, 2000) has established practices helpful to organisations in facilitating improved collaboration between functional communities. One of these is the use of teams, a community of individuals pulled from different disciplines and working together on a common task (Hamel and Prahalad, 1994). The use of these multi-functional teams has been repeatedly identified (Page, 1993; Doherty *et al.*, 1996; Barczak and Sultan, 2001) to facilitate best practice in NPD, and has been closely associated with improved product and service success. The use of these teams helps cut through functional boundaries (Sethi and Nicholson, 2001), resulting in flexible and rapid product development, and the longer-term development of new kinds of learning and thinking processes (Larson and Gobeli, 1988). These cross-functional teams result in a reduction, or quicker resolution, of conflicts among the functional communities, and have often resulted in the unleashing of new energy and effort towards the associated innovation process (Jones, 1998). Business management has also seen benefits in inter-functional collaboration and the ability of these teams to cut across traditional vertical lines of authority. There is no better example of the importance of inter-community collaboration than the acquisition and dissemination of market information, associated with customer, competitor and general industry attributes.

Collaborative research acknowledges the important link between customer orientation, an organisation-wide activity requiring the evaluation and addressing of customer needs and wants (Appiah-Adu and Singh, 1998), and the acquisition and dissemination of market information (Narver and Slater, 1990). In the research literature on information exchange (Craig and Hart, 1992; Gordon *et al.*, 1997), the terms 'information' and 'knowledge' are used interchangeably. Specific information research (Diamantopoulos and Hart, 1993; Adams *et al.*, 1998; Ashill and Jobber, 2001) focusing on the topic of market information acquisition and dissemination associated with NPD, could not provide a positive link between customer-oriented strategies and commercial success. Yet in section 2.3.3, a relationship was advanced between commercial success and

customer orientation (Kohli and Jaworski, 1990). It was implied that customer needs could be met by the acquisition and dissemination of relevant market information. Why does research find it difficult to link information acquisition and dissemination with commercial success? Ruekert (1992) and Slater (1997) suggest that research has yet to study the influences that communities' differentiated customer orientations can have on overall business performance and particularly on collective actions. This study explores the factors influencing collaborative relationships, and particularly their relationship to community interpretative systems.

2.5.2 Cognitive and Affective Conflict

The collaboration between communities associated with NPD activities is founded on their acknowledgement of a degree of value consensus (Cole, 1985). This value consensus is used by the communities to make sense of and guide their activities, and is most likely based on a combination of the organisational superordinate goals associated with the NPD and their superordinate goals (discussed in section 2.4.1). These organisational superordinate goals support value-based interactions between the communities, and help facilitate communication and conflict resolution (Barker, 1993). Conflict is inevitable when community activities reflect short- and long-term objectives, especially when the objectives are influenced by each community's value orientations. These community value orientations represent a degree of value consensus between their own superordinate goals and those organisational superordinate goals (Barker, 1993). Effective communication and conflict resolution is essential between these communities if they are to build a collaborative relationship, one that fosters trust, responsibility and supports the organisational superordinate goals (Sethi and Nicholson, 2001).

Research (Amason *et al.*, 1995) has broadly defined two specific types of conflict: cognitive and affective. The first is issue related and identifies decision solutions, and is sometimes referred to as 'task conflict'; the second is driven by dissatisfaction, leading to ill feeling and non-cooperation, and is sometimes referred to as 'relationship conflict'. Cognitive conflict resolution encourages an openly confrontational climate and this in turn stimulates innovativeness and community cohesiveness, whereas the absence of such a climate negatively impacts on innovativeness and community cohesiveness (Angle, 2000). This suggests that if issues within the environment are not confronted and resolved then, irrespective of the level of community cohesiveness, innovative collective actions decline. Innovative collective actions (Angle, 2000) are a consistent expected outcome measure of all communities. Any barrier that is likely to affect this expected behavioural outcome will significantly influence the outcome of the innovation process.

Cognitive conflict results from a misunderstanding by the communities of these value-based interactions (Lewis *et al.*, 1997). This misunderstanding may arise from disagreements over appropriate value orientations, expectations or collective actions (Martin, 1995). All three of these themes have been discussed in this chapter, but conflict can also arise from an emotional perspective. Research, such as by Lewis *et al.* (1997), on the effects of affective conflict has rarely concluded any positive outcomes from it. In fact Slobodnik and Slobodnik (1996) suggest that affective conflict can be both overt and covert; and covert affective conflict is particularly toxic to inter-community harmony because it breeds both distrust and secrecy. Other research (Jehn and Mannix, 2001) hints at interpersonal incompatibilities such as frustration, annoyance and irritation, and further suggests that this may be affected by the degree of tension and friction existing between the parties. Roseman *et al.* (1994) has confirmed a link between affective conflict and cognitive functioning, where communities become distracted from their tasks and produce sub-optimal performances (Wilson *et al.*, 1986).

This relationship between affective conflict and community performance will be discussed later, in Chapter 6.

2.5.3 The Innovative Leadership

Whilst discussing product success in NPD in section 2.2.2, four of the six factors (company synergy, activity execution, programme support and external alliances) identified leadership as an important factor. The research on organisational climate and culture (Gopalakrishnan and Damanpour, 1992; Conrad and Poole, 1998; Michela and Burke, 2000) and its impact on innovation, has proposed that a clear direction and prioritisation on change is called for, and that this should be provided by persistent and consistent leadership, to both make it happen in the first place, and then to sustain it. But as well as providing direction, leadership must encourage communities to learn (Maira and Scott-Morgan, 1995) and so remove the barriers to knowledge transfer (Anderson and Tushman, 1991) – knowledge being the retrieval and storage of selective information (Appelbaum and Goransson, 1997). If the market information acquisition and dissemination processes are important both in building customer value consensus and integrating sub-cultural collective actions, as discussed in section 2.3.3, then leadership is important in providing the strategic direction for the underlying sub-cultural interactions (Michela and Burke, 2000). Lawrence and Lorsch's (1967) studies on high-performing organisations similarly support the need to integrate these different sub-cultures. Hence, the reason for Schein (1992) suggesting that leadership can fulfil the role of integrating both functional and dysfunctional elements, referring to the previous section's focus on cognitive and affective conflict (Amason, 1996), whilst still encouraging differentiated perspectives on the creation, development and delivery of superior customer value. As mentioned in section 2.2.1, the bringing together of these cross-functional elements is acknowledged to increase NPD process success (Kahn, 1996; Rafiq and Saxon, 2000; Kahn, 2001).

It is continually stressed in NPD research (Thamhain, 2003) that management must comprehend the factors that drive innovative performance, and create an environment conducive to it. This suggests that innovative leaders should inspire their people, providing clarity of purpose and, importantly, aligning community and organisational goals. The innovative commitment to NPD performance, however the organisation measures it, is the recognition and visibility of innovation's contribution to customer and organisational values, and as such needs very careful management. Innovative leaders have a crucial role in balancing the needs of the customer with those of the business, a business environment that is uncertain, ambiguous and most definitely complex.

Throughout this chapter, important themes have emerged associated with the NPD process: the balancing of short- and long-term objectives to meet expressed or latent customer needs (section 2.2.2); the importance of knowledge transfer and the link to collective action (section 2.3.3); the importance of external networking for the acquisition of new technologies and ideas (section 2.2.1); and finally, innovative leadership's support in the recognition and encouragement of community learning, the interpretation and sense-making of the importance of creating, developing and delivering superior customer value (section 2.5). There is a common theme to all of these interrelated factors of innovation management, and that is the important implicit and explicit roles of innovative leadership, and this is explored further in Chapter 6.

2.6 Community Social Learning Processes

Brown and Duguid (1991) suggested that working, learning and innovating are closely related activities at the organisational, group and individuals levels. Differences between these communities espoused and actual practices shows the blindness these different community members have regarding what, and who, it takes to achieve any

given task. It was Lave and Wenger's (1991) research into practice-based theories of learning that connected actual practice with 'learning in working'. This same study acknowledged that these communities of practice could be defined as a:

> 'system of relationships between people, activities and the world, developing with time, and in relation to other tangential and overlapping communities of practice' [Lave and Wenger, 1991: 98]'

These overlapping communities are something the author will return to because of its significance to community members' engagement with both formal, and informal, communities.

Brown and Duguid (1991) suggested that learning is the bridge between working (actual practice) and innovating, where innovation is the change in a community's ''way of seeing'' or their interpretative view. Hence in studying innovation management it is necessary to study the communities in which it takes place, as they represent environments constantly adapting to changing membership and circumstances.

2.6.1 Social Constructs surrounding a Social Theory of Learning

In studying innovation management associated with working practices surrounding innovation processes (Brown and Duguid, 1991) espoused the importance of social construction, of building an understanding of the participants' view of the social world, and helping to construct and develop these communities (Sales, Marketing, R&D and senior management) in which they work. Wenger (1999) identifies three dimensions associated with the coherence of community members: their roles, norms and values formed by their interactions with one another; the understanding surrounding their

superordinate goals; and their shared experience of their social world, which results in artefacts and symbols conveying additional meaning associated with the joint enterprise.

Wenger's (*ibid.*) 'Communities of Practice' (CoP) proposes that these organisational members may form informal and formal communities focused on a particular joint enterprise. The joint enterprise could be an organisation-wide innovative initiative, one that requires formal and informal communities to share expertise and swap knowledge. Wenger (*ibid.*) suggests that the members' participation in these formal and informal communities necessitates social participation, and from this learning results.

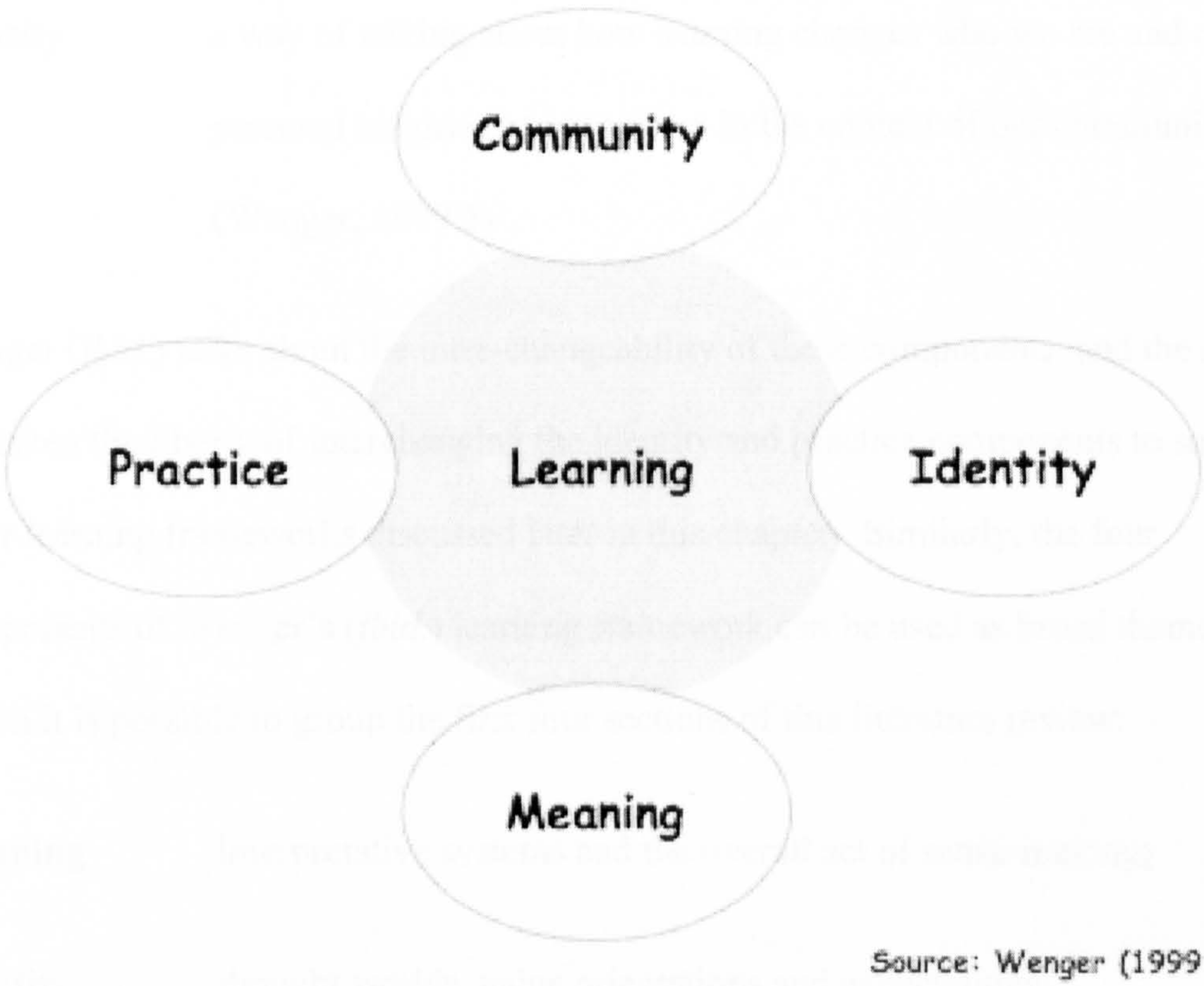


Figure 2.1. Wenger's (1999) Social Theory of Learning Framework

This social theory of learning framework, see Figure 2.1, integrates four components necessary to characterise social participation as both, a process of learning, and of knowing:

Meaning a way of talking about ability, individual and collectively, to experience their life and the world as meaningful;

Practice a way of talking about the shared historical and social resources, frameworks and perspectives that can sustain mutual engagement in action;

Community a way of talking about the social configurations in which our enterprises are defined as worth pursuing and our participation is recognisable as competence;

Identity a way of talking about how learning changes who we are and creates personal histories of becoming, in the context of our communities. (Wenger, 1999:5)

Wenger (*ibid.*) talks about the inter-changeability of these components, and the author has taken the liberty of interchanging the identity and practice components to support other learning frameworks discussed later in this chapter. Similarly, the four components of Wenger's (*ibid.*) learning framework can be used as broad themes under which it is possible to group the first four sections of this literature review:

Meaning interpretative systems and the overall act of sense-making;

Identity thought worlds, value orientations and expectations;

Community organisational barriers influencing the communities' social participation, collaboration, conflicts and leadership;

Practice collective actions of the communities towards a joint enterprise and their expectations associated with it.

The social processes mapped in the above learning framework help to explain the process of sense-making that communities undertake when relating their, and other communities', identities to practice. Wenger (1999, 2000) suggested that the social participation of these community members could be explained by three modes of belonging:

Engagement doing things together; the ways in which the members engage with each other and with the world, they learn what they can do and how the world responds to their actions;

Imagination constructing an image of ourselves and an interpretation of our participation in the social world;

Alignment mutual process of coordinating perspectives, interpretations and actions to realise higher goals.

These modes of belonging, a rationale for membership of the community, help define the competence (knowledge and ability) requirements in any given context. Wenger (*ibid.*) defined these competence requirements as:

— members who are bound together by their collectively developed understanding of what their community is about and hold each other accountable to this sense of joint enterprise (their sense-making (Weick, 2000) surrounding their objectives);

— members building their community through mutual engagement, they interact with one another, establishing norms and relationships of mutuality (perceived and desired roles) that reflect these interactions;

— 'Communities of Practice' (CoP) that produce a shared repertoire of communal resources – routines, tools, stories, artefacts and symbols. To be competent is to have access to this repertoire and be able to use it appropriately (Wenger, 1999: 229).

Wenger (2000) suggests that if organisations are to use these informal social learning processes to gain efficiency and effectiveness in future value creation, and meet the challenges of increased internal and external uncertainty, and ambiguity, then they must understand the problems and issues associated with the communities' of practice sense-making of their social world.

2.6.2 Uncertainties and Ambiguities of Communities' Engagement

Roberts (2006) suggested that the power dynamics associated with communities' practice provides an important understanding of the means by which knowledge is created and disseminated. Robert's (2006) defines this power as:

> 'the ability or capacity to achieve something, whether by influence, force or control' (Roberts, 2006:626)

This suggests that power may be a substantial reason for employees' participation in these communities, their acknowledgement of the link between this and the means of achieving their superordinate goals. These superordinate goals, associated with both formal and informal communities, are often the means by which their performance is assessed by their line managers and the business overall.

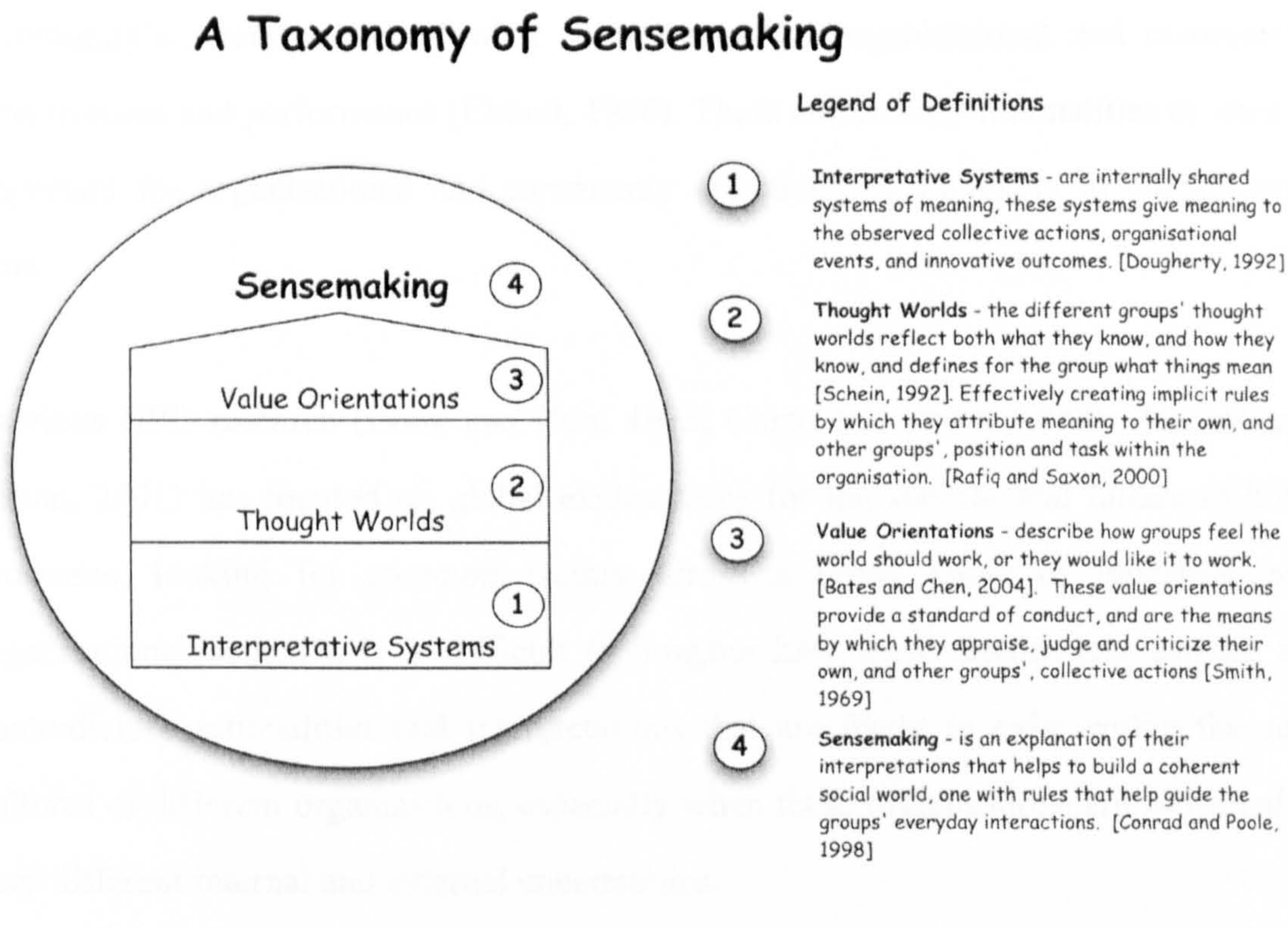
As mentioned previously in the community literature, some functional communities create interpretative systems and thought worlds that support their values, and

ultimately influence their expectations and innovative goals. Power is linked very closely to knowledge (Yanow, 2004), the development of this knowledge is based on learned experiences and acquisition of information. This power within, or surrounding the functional communities and the focus on specific goals and values may well create barriers for the creation and development of informal communities (Roberts, 2006). These same power struggles that exist between functional and informal communities may create additional barriers in the extension of these informal communities to the external environment (Roberts, 2006), particularly when related to the acquisition and dissemination of radical and technological innovation. This can be a particularly difficult problem for functional communities like R&D and marketing who rely on these extended informal communities for their future ideas and concepts. Hence the need for further research on the interaction and sense-making of the interrelationships between these informal and formal communities associated with innovative initiatives (Roberts, 2006), and the influence of changes in community members' thought worlds and values on their engagement with these communities.

2.7 Meaning and Identity in Innovation Management

In the last four sections, a relationship has been established between NPD process success and cross-functional collaboration. The communities' collective actions towards the NPD process, and other communities, is highly subjective and based on their community thought worlds, which in turn are based on their interpretative systems; the systems that attribute meaning to their own and other communities' observed collective actions, organisational events and innovative outcomes. If these CoPs have different goals and thought worlds, then they are unlikely to have the same interpretative systems and assumptions as other communities (Bolon and Bolon, 1994). It is through the community's sense-making of other communities' values and beliefs and their

interpretative systems, that they can comprehend the interrelationship between their and other communities' collective actions (Ring *et al.*, 2000). Communities socially construct a perspective of their position and task within the organisation (Schein, 1992; Weick, 1995), and reinforce and modify this social reality, by seeking confirmation from other communities and their environment. These community thought worlds are important in both justifying their reason for existence and the important role they play in the organisation (Ring *et al.*, 2000).



Source: Author's original.

Figure 2.2: A Taxonomy of Sense-making

Sense-making is an everyday occurrence, both on the conscious and sub-conscious level, and results in a community's rationalised collective actions (Salancik and Pfeffer, 1978). The taxonomy of sense-making, see Figure 2.2, presents a summary of the interrelationship of interpretative systems, thought worlds, value orientations and sense-making. Communities' sense-making assumes that they agree on some desired

outcome, then upon the specific means to attain this outcome and on the way to activate these means, and finally on when the desired outcome is reached (Weick, 1979b). It is highly likely that, because of the different community interpretative systems and the resultant thought worlds, they will develop different and contradictory rationalities of this reality (Van de Ven *et al.*, 1999). This supports the relationship established between collective actions and community expectations (discussed in section 2.4.1), i.e. that a community's collective actions towards any innovation is likely to be influenced by their expectations of that innovation, and that these are based, in part, on the community's interpretation of what is important for organisational and community effectiveness and performance (Elmuti, 1996). These community rationalities of what is important for organisational and community effectiveness are likely to change over time.

Previous NPD research (Craig and Hart, 1992; Corso and Pavesi, 2000; Barczak and Sultan, 2001) has focused on global explanations for the success and failure of NPD processes, looking for common factors across a broad range of industries and organisational contexts. It is difficult to imagine how these studies can capture the contradictory rationalities and interpretations that are likely to exist within the sub-cultures of different organisations, especially when these organisations are subjected to very different internal and external uncertainties.

A small number of research studies (Jones, 1998; McQuater *et al.*, 1998) have acknowledged the particular nature of NPD processes and organisational context, but unfortunately have not taken large enough samples nor over a long enough period of time, to fully explore and capture the contextual and subjective nature of the different communities' activities and the influence these can have on the studied NPD process. NPD research has identified organisation and management factors likely to affect product development (Craig and Hart, 1992; McQuater *et al.*, 1998), but these

generalised lists of 'critical success factors' have often been criticised by academics (Hart, 1996; Ernst, 2002) as being too distant and abstract in relation to the challenges facing organisations today. Craig and Hart (1992) suggest that the best way forward is to reappraise the approaches and knowledge of the past, and push for a research agenda that acknowledges the complexity of NPD, within the situationally unique environment of the organisation, moving away from the quest for a single simple answer as to how organisations can successfully manage the NPD process. Hence the research aims and questions proposed in Chapter 1, and the research design discussed in Chapter 3, suggests the integration of past knowledge, concerning important factors influencing NPD success, with new knowledge emerging from this research study. The complexity and uniqueness of managing innovation within one organisational context is examined through the process of studying the interrelationship between community value orientations, expectations, internal processes and the communities' overall sense-making associated with an innovative initiative.

2.8 Developing the Initial Community Learning Process Model

Organisational learning researchers (Argyris and Schon, 1996; Sinkula *et al.*, 1997; Halliday and Cawley, 2000) have sought to explain the interrelatedness between individuals, communities and the organisation's understanding of how and why things work, and their practices. These same researchers have established links between this understanding and the organisation's members' perceptions of their role and task within communities. These perceived roles influence their values and expectations concerning their engagement with communities and commitment to any joint enterprise.

Organisational learning researchers have reflected on these general relationships and created frameworks to explain the complexity of these links. Sinkula *et al.*'s (1997) organisational learning framework provides a relatively simple link between an

organisation's actions, the interpretation of the outcomes, the market-information processing practices, and the subsequent reinforcement or modification of the organisational values, see Figure 2.3.

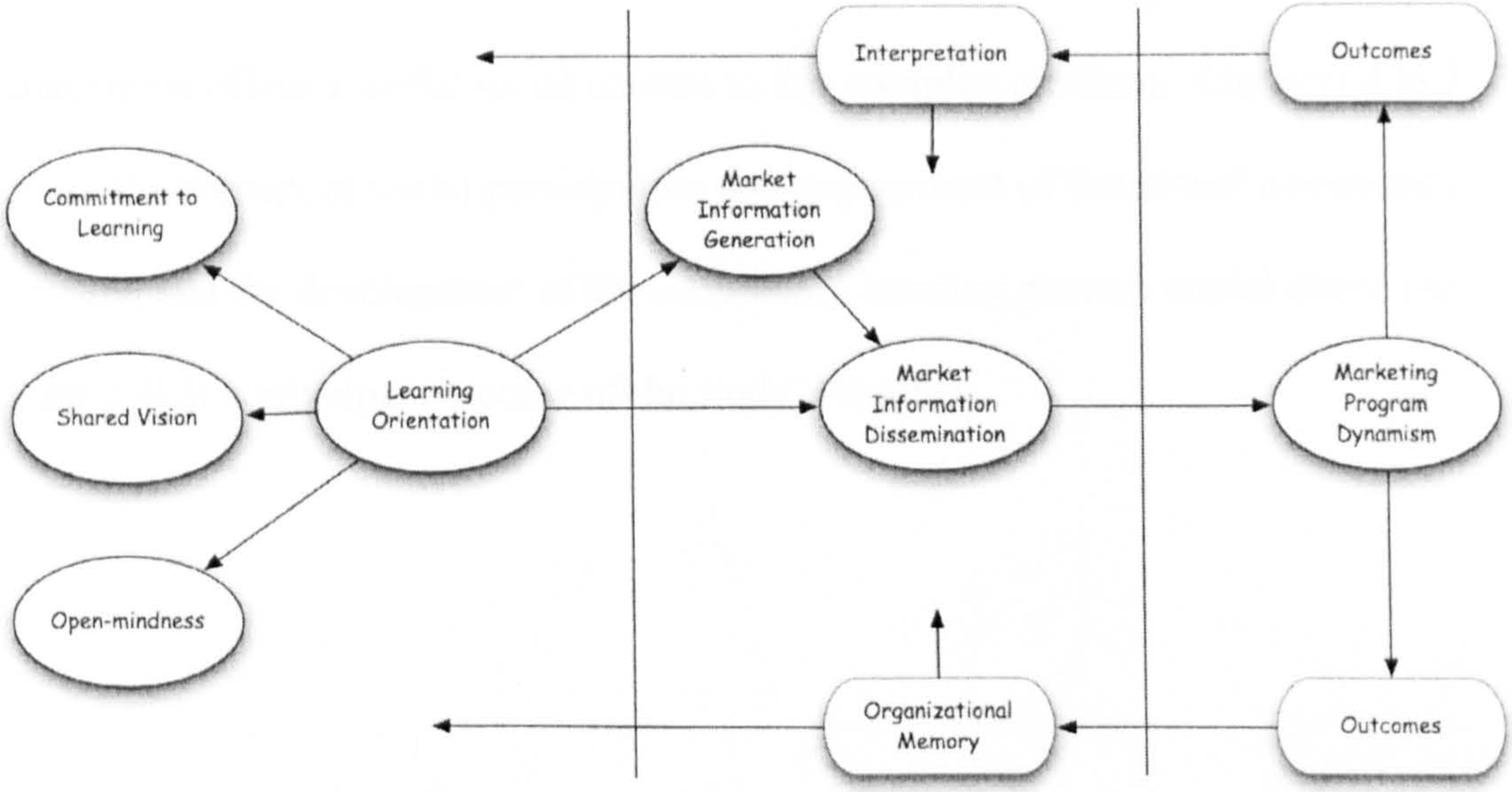


Figure 2.3. Organisational Learning Framework: Market Information Practices

This knowledge transfer focused organisational learning framework can be mapped against Wenger's (1999) social theory of learning framework, see Figure 2.1. The author has developed an initial community learning process model from combining these two frameworks with the initial research findings from early focus group sessions. The focus of the model is on exploring the interrelationships between formal and informal communities, instead of the broader organisational context found in other organisational learning frameworks(Garvin 1993; Crossan 1999; Halliday and Cawley 2000). The initial literature themes: sub-cultural values, innovation goals and organisational barriers; are early themes resulting from the focus group analysis. Collective actions, outcomes and interpretation themes are the result of additional reading and the author's own analysis.

The model above is reinforced and modified as a consequence of the subsequent chapters' analysis of the research findings and the presentation of these themes and interrelationships, and discussion with the different community members over the course of the study. Utilising the 'Communities of Practice' approach to study the interrelationships between formal and informal communities engaged in innovation management offers a useful social context to this complex problem. Chapters 4 to 7 explore the context of social participation and engagement of functional community members, and the development of the community learning process model above (see Figure 2.4) is a principal outcome of the study's strategy.

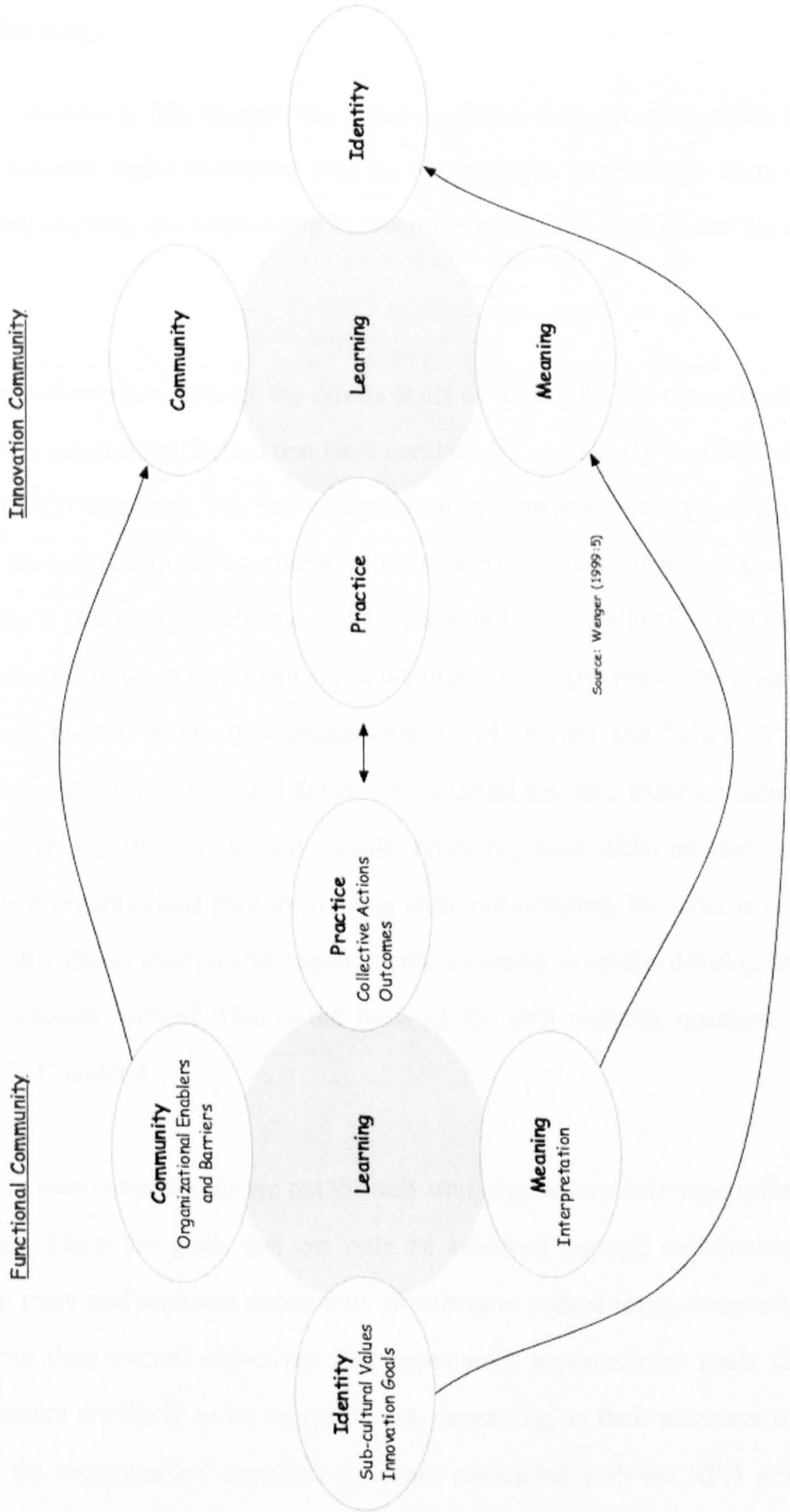


Figure 2.4 Initial Community Learning Process Model (1)

2.9 Summary

In the introduction to this chapter, the author qualified the narrowing of this literature review to selected topics associated with the four research questions. A short summary is presented, showing the relationship between the research questions and the reviewed literature.

Innovation research has, through the careful study of successful and unsuccessful NPDs, presented six generalised factors that have consistently and clearly contributed towards successful NPD outcomes. The first of these factors, 'company synergy', suggested that matching the organisation's capability with the NPD task was of key importance. An organisation's culture is a reflection of that capability, its collective knowledge and experiences. But in some conditions the sub-cultures that exist below the organisational culture hold greater power than organisational-wide values and beliefs. These sub-cultures are often formed around functional orientations, and these communities are likely to develop different thought worlds, reflecting their differentiated values and beliefs. Most organisations purport to being customer-oriented, but what is it, and how do these sub-cultures interpret the requirements necessary to create, develop and deliver superior customer values? This is the basis of the first research question, which is discussed in Chapter 4.

Community value orientations are not the only unifying factor; their superordinate goals are another. These are goals that can only be achieved through collaboration. These goals help unite and motivate community members to reduce inter-community tension and achieve their overall objectives. But community superordinate goals concerning NPD processes are likely to be very different, depending on their measures of success. What are the communities' expected outcomes associated with the NPD process, and what relationship does this have on collective actions? This is the basis of the second research question, which is discussed in Chapter 5.

When exploring NPD research relating to the organisational enablers and barriers contributing to success or failure of NPDs, collaboration, conflict and leadership have emerged as consistent factors. Initial research into successful organisations identified the importance and value of differentiation, but this research has also identified the importance of integration. Integration of these differentiated communities, where the outcome is cross-functional collaboration encouraging innovative activities, has been proven to help create superior customer values and, importantly, sustained competitive advantages. But this collaboration requires leadership to overcome the natural conflicts that exist between differentiated communities. The interrelationship of these internal processes and the influence they have on collective action is the basis of the third research question, which is discussed in Chapter 6.

Finally, the community social learning process literature highlights the importance of identity, community, practice and meaning on community members' engagement in these 'communities of practice'. However, the research also highlights the considerable uncertainties and ambiguities surrounding these members' interpretations and sense-making of communities' behaviour, innovative outcomes and organisational events, and its potential impact on meaning. This is the basis of the fourth and last research question, which is discussed in chapter 7.

A community learning process model is initially constructed from the combined analysis of organisational learning, 'communities of practice' and cultural dynamic frameworks, and the analysis of early focus groups sessions from the case organisation.

The next challenge for this research study was the investigation and choice of an appropriate research strategy and valid research methodology, that could accomplish the research aim and answer the research questions posed in section 1.4.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

The research aim and questions, and expected contributions from this study, described in Chapter 1, suggested an interpretative ethnographic approach. This chapter considers the ontological and epistemological issues that frame this type of qualitative research, and explores the underpinning research methods chosen. Participatory action research, grounded theory and the single case study approach were used to underpin the interpretative nature of this research. These three concepts were examined to explore the validity and reliability of the research findings, the engagement and experiential learning outcomes, the suppositions developed from these and, ultimately, the overall benefits and costs. Adopting the above research methods presented issues concerning the choice of organisation, the research setting and, most importantly, the primary data collection and analytical tools used.

3.2 Research Methodology

Using an interpretative ethnographic approach to describe the sub-cultural practices of the communities provides valuable insights and assists in the development of grounded theory, values and collective actions. The first stage was the collection of ethnographic data associated with the communities' management of the innovative initiative. The second stage consisted of an interpretative analysis exploring the communities' sense-making of the innovative initiative, and their observation and comprehension of other communities' collective actions. These two inter-connected approaches were then discussed along with the supporting research methods that facilitated them, and the relevance and validity with regard to the four research questions originally posed in Chapter 1.

3.2.1 Ethnographic Studies

The use of ethnographic research methods to study or analyse cultural perspectives in organisations is common (Hatch, 1997; Van Maanen, 1979). There is no better approach to studying real-world problem-solving and planning collective actions than by using situated practices. This requires research methods that can reflect the subjective nature of interpretation and linked enactment (Lave, 1988; Suchman, 1987). Ethnographic studies have some unique characteristics that make them ideally suited to this type of in-depth analysis. A recent critical review of the various ethnographic texts (Ball and Ormerod, 2000) suggested ten commonly agreed beneficial characteristics:

Situatedness	that data is collected by a participant observer who is located within the everyday context of the research subject;
Richness	the observer gathers the data from a wide range of sources including interviews, team discussions, incidental conversations, documents and non-verbal interactions;
Participant autonomy	the participants are not required to comply to any rigid arrangements;
Openness	the observer remains open to the discovery of novel or unexpected issues that may come to light as the study progresses;
Personalisation	the observer makes notes of their own feelings in relation to the situations encountered, during data collection and analysis;
Reflexivity	the observer adopts a reflective and empathetic stance in striving towards an understanding of the participants' points of view;
Self-reflection	the observer acknowledges that any interpretative act is influenced by their tradition;

Intensity	observations are intensive and long-term so as to enable the observer to become immersed in the ongoing culture of the participants' environment;
Independence	the observer aims to be unconstrained by any pre-determined goal-set, mind-set or theory;
Historicism	the observer aims to connect observations to a backdrop of historical and cultural contingencies.

Some of the characteristics are not strictly adhered to in all ethnographic studies, due to various reasons such as intensity, costs, access, independence, the need to hypothesis-test, personalisation or because of organisational restrictions. But one aspect that is strongly agreed on by most ethnographic researchers (Ball and Ormerod, 2000) is that no specific allegiance is given to any one epistemological framework, for either the interpretation, or the resulting sense-making of human behaviour.

An interpretative ethnographic research method is one grounded in the social practices of organisational participants (Schultze and Leidner, 2002). Adopting an interpretative approach to the investigation of innovation management problems offers a framework for analysis that assists in the sense-making of communities' collective actions. The suitability of an interpretative approach is supported by Symons who argued that:

> 'Interpretive methodologies of evaluation actively analyse the experience of organisational reality, focusing on stakeholder interests and perspectives' (Symons, 1993:74).

The interpretive approach will, it is hoped, create a coherent, consensual and unified cognitive framework on to which the communities' socially constructed realities can be mapped, with all their complexities and contradictions. Hence, its suitability, and the

reason why the author chose it as the principal overlying research methodology for this particular study.

3.2.2 Link to Grounded Theory Method

The aim of ethnographic research is to observe the world through the eyes of the participants and to document their social collaborations (Arnould and Wallendorf, 1994). In this study, four functional communities within the organisation were observed: Sales, marketing, R&D and senior management.

interpretative ethnography is an inductive approach, generating data from natural settings. Like Arnould and Wallendorf's (1994) study on consumer behaviour, this research uses participant observations, over long periods of time, to generate interpretations using multiple data sources that are considered credible by the community participants, and this ultimately builds an insight into the communities' dynamic social world. The text outputs, when evaluated against the organisational contexts, give insights into the communities' interpretation and sense-making of the collective actions and innovative outcomes associated with the innovative initiative.

The next stage of the research was to construct an community learning process model, see Figure 2.4, one that could then be used to help analyse and interpret the causal relationships between the different research themes and their influence on the collective actions associated with the initiative. Grounded theory is such a research method, taking the data, collected and analysed, to develop a theory. This study used the literature review process to explore the existing knowledge surrounding the research aim and the four research questions, and in combination with initial findings from the focus community sessions helped in the initial creation of the community learning process model (see Figure 2.4). In the case of this study, the causal relationships developed

between the emerging social constructs were continuously being challenged by the action research approach of presenting findings back to the participants, and the resultant discussions challenging their own, and the author's, interpretation and sense-making of collective actions, organisational events and the resulting innovative initiatives. Through this constant generative learning cycle, both the researcher and the participants increased their understanding of the pivotal role that the communities' interpretive systems played in the communities' management of their innovative activities, and ultimately the interrelationships between them.

The grounded theory method was initially developed as a response to the perceived lack of new theories being generated in sociology (Locke, 1996). In the 1960s, Glaser and Strauss (1987) redressed the emphasis on verification of existing theories by developing a research method that could guide qualitative researchers through the theory development process. An important element of grounded theory is the constant comparison and theoretical sampling commitment (Carvalho *et al.*, 2005), and this made it ideally suited to this study's research aim, whose primary goal was the investigation of community interpretative systems. This supported the premise posed by Weick (1995) that communities act first, then observe their own and others' actions, construct explanations for these, and thus through this process create sense-making and learning.

In the following chapters, previous theory was compared to the research findings and, in some instances, a new perspective associated with the communities' interpretative systems was suggested and then analysed by further action workshops. This demonstrates adherence to the general process of grounded theory, creating an iterative process of literature review, data collection and analysis (Locke, 1996), then using this to challenge the current research perspectives on innovation management and its interrelationship with organisational and community context. Change is often a secondary outcome, providing the communities with a degree of control they did not

previously possess (Hammersley, 1989). This links to another research method used in this research study, that of PAR, of which more is presented in the next section.

Data collection is an important part of the grounded theory approach, but before discussing this it is important to examine the problems and issues associated with using single case studies.

3.2.3 Case Study

Previously, there have been questions raised over the findings and conclusions originating from case studies (Yin, 1994), suggesting that without significant sample size any theory emerging from this approach would lack both rigour and validity. As a consequence of this and other concerns surrounding the use of case studies, researchers have developed frameworks, or 'roadmaps', from established qualitative methods, that define processes for building theory from case study research (Harris and Sutton, 1986; Eisenhardt, 1989). Through these processes, researchers have sought to develop arguments for rigour and validity in taking a case study approach, particularly with regard to the generation of novel theory (Eisenhardt, 1989). This generation of new theory often results from the juxtaposition of contradictory evidence, especially when it comes from just one organisation. A case study can be defined as:

> '. . . an empirical enquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident and it relies on multiple sources of evidence' (Yin, 1994:13).

The general focus of case study research is on the in-depth exploration of a phenomenon and its context (Cavaye, 1996). It is increasingly popular with single case studies to adopt a multiple level analytical approach, one that studies personnel at all levels of the

hierarchy; this is called an embedded design (Yin, 1994). To provide a rigorous and valid output, Eisenhardt (1989) proposed, in her roadmap for theory development from case study research, a synthesis of grounded theory building with other qualitative data collection and analytical techniques. The roadmap is built around an iterative concept involving the collection of data and its subsequent analysis, with the help of the participants, leading to a convergence on specific construct definitions and measures, and then finally the development of a research framework. The overall strength of this process is that the early research questions, as well as any initial theoretical relationships between themes, normally emergent from the literature review process, are only tentative. Successive iterative cycles (data collection – analysis – testing) test the emergent constructs on the participants by the use of action workshops, providing confirmation, or disconfirmation of the themes and the relationships, by using replication logic (Yin, 1994).

In common with other researchers (Ball and Ormerod, 2000) studying social interpretive issues, this study takes an interpretive approach, where the assumption is that 'reality is subjective' and that a community's socially constructed world is a function of their interpretation and of others' collective actions, organisational events and innovative outcomes, based on their own interpretative systems (Orlikowski and Baroudi, 1991). There are critics of this interpretive approach, objecting to the researcher's subjectivity in the observations and their analysis of the observed processes. But the justification for this approach is in the feedback and understanding that originates via the participants (Walsham, 1995).

Single cases allow the researcher to investigate the phenomena at a greater depth, resulting in richer descriptions and understandings of the studied phenomenon (Walsham, 1995). There were two principal reasons for adopting the single case study approach in this study, over a multiple case study approach, and they were:

Ethnographic focus	in studying innovation management and the relationship between communities' collective actions and their psychosocial traits, every aspect of organisational life must be examined. This requires day-to-day observation and documentation. Using a single case study approach, as in this research, satisfies two very important requirements of ethnographic studies – those of richness and intensity. It would be difficult to achieve this using the multiple case study approach, without significant additional resources;
Resource limitations	amplifying the last point, the level of intensity and richness of data requires full-time engagement with the organisation, hence issues about researching more than one organisation.

Because this study follows on from the author's earlier research (Brown, 1997), the commitment and engagement of the organisational members to this study was given wholeheartedly. The support from both senior management and other communities was critical to the iterative process of building theory, as the action workshops sessions required their involvement and commitment to the development of community interpretations and the building of the research framework.

3.2.4 Participatory Action Research

The underlying principle of action research involves the solving of organisational problems through some form of intervention (Eden and Huxham, 1996). In exploring the literature on the broad concept of action research, three principal types of intervention are commonly documented (Argyris and Schön, 1989; Ellis and Kierly, 2000): action research, action science and PAR. An important characteristic of action research is its ability to suggest action and generate knowledge (Davison *et al.*, 2004). Action research achieves this through an iterative cycle of developing theory, action, reflection and then further development of theory (Eden and Huxham, 1996). Action research has the ability to both contribute to the understanding and addressing of

organisational problematic situations, and provide insights for social researchers and participants alike, within a mutually acceptable framework (Rapoport, 1970). This provides evidence to support the relevance and validity of this research method. It is the involvement of the researchers in the action process (Schmolze, 1999) that distinguishes it from other applied research methods. A point that was picked up by one of the founders of this research method, when justifying its legitimacy in social research:

> 'there is no research without action, and no action without research' (Lewin, 1947:37).

Over the last fifty years, action research has become a popular research method but there are issues concerning its use, namely that of access and the need to open up the research strategy to input from the participants (Frisby *et al.*, 1997). But that perceived disadvantage is one of the justifications for the use of this research method in this study. The underlying iterative process of building theory, as represented by the development and construction of the research framework, required an 'open' approach to the identification and testing of the research constructs. The action researcher has a close relationship with those researched, more so than any other type of applied ethnographic methodology (Frisby *et al.*, 1997). The relationship with the participants was the one factor that was important to this research study and helped simplify the choice of one of the three principal branches of action research, as described below.

Action Research is a method that is empirical and interpretative, being based on observation, but also encouraging intervention. It positively encourages the participants to take part in the study and in the definition of the research strategy (Baskerville and Wood-Harper, 1996). But the researcher maintains control and defines the research framework within which the participants operate.

Action Science attempts to address the issues of generalisability of the collected research data by gaining more control of the research process and overall study (Denzin and Lincoln, 1994). It is assumed that if the researcher or team are in control of the research strategy and the definition of the research questions, then the data collected is controlled (Beer, 2001). Predefined propositions are utilised and data collected against the original research questions. The subsequent data analysis would then reveal the correlation of the participants' responses to those of the original propositions. But with the researcher controlling the intervention and the predefined propositions, there is a danger that the research may not reveal other important factors influencing the research problem.

PAR places the researcher in the organisation as an explorer, to motivate and facilitate the exploration of the research problem (David, 2002). The participatory nature of this method has four principal attributes:

- PAR postulates shared ownership of the research strategy between the researcher and those who are the focus of the research study. PAR is a partnership, with the decision-making and control of the research process shared between the participants and the researcher, all of whom have a stake in the research outcomes (Blackie, 1984).

- The involvement and utilisation of the participants as co-researchers for the research design, solution development and implementation is a common theme (Whyte, 1991). Part of the richness of data originating from PAR is related to the contribution the participating communities make to the critical analysis of the research problem, and the sense-making and comprehension associated with their interpretative systems (Korten, 1983).

- PAR encourages the researcher to use their insights from this process to reformulate the research questions and facilitate a deeper interpretation of the research data (Frisby *et al.*, 1997).

- PAR stimulates organisational-wide action, facilitating change and providing more opportunity to re-qualify the subsequent communities' sense-making and interpretation of this (Marshall and Rollinson, 2004). PAR has validity, rigour and appropriateness, because of the above arguments, and therefore is easy to defend against the most ardent of critics.

The PAR approach has the following benefits: it engages the organisational members in the research problem and its subsequent study; their contributions result in a richness of data; it encourages repetitive feedback and action learning cycles; and it contributes to both the researcher's and participants' interpretation of the social world under study. As a consequence of this, the research findings and conclusions are more likely to be both relevant and rigorous.

3.3 Research Conduct

In section 3.2, discussion on the four principal research methods underpinning this research study (interpetative ethnography, grounded theory, single case and PAR approaches) has attested, in each case, to the reasons and relevance of using these in this research study. These research methods thus combine into one overall research methodology, one in which a choice of data collection instruments was used. These included focus groups, interviews, observation, company document reviews and action workshops. This section describes the way in which the research was conducted and other organisational context issues that impacted on the implementation of the research strategy.

3.3.1 Research Setting

The fieldwork took place at a manufacturing organisation, for anonymity called 'XYZ Limited', in the south-east of England. The organisation had been in operation for over fifty years, though its structure and extent of products had varied considerably over that period. More recently, the organisation had experienced a management buy-out and, shortly afterwards, was sold on to a larger holding community, listed on the London Stock Exchange and therefore having shareholders.

The fieldwork data collection process was a mixture of observations at project/ strategy/group meetings, informal discussions with community members in canteens/offices/halls, interviews with small communities, action workshops and a detailed study of inter- and intra-community documentation (memos, e-mails, reports and other written material).

3.3.2 Choice of Organisation

The selection of the research setting arose as a consequence of the decision, by senior management and the author, to engage in a follow-on study capitalising on original groundwork undertaken as part of earlier research for an MA thesis (Brown, 1997). The level of access available, and the author's role within the organisation, helped in the selection process. At the time of conducting the study, the author was performing the Marketing Manager function for the organisation, not part of the senior management community, but sufficiently divorced from the day-to-day project activities to be a relatively independent observer and, therefore, maintain an element of impartiality and objectivity during the research study.

3.3.3 Research Design

Reviewing the overall research aim, the literature and chosen research methods suggested that a set of research design guidelines (Bryman, 1988) to provide some structure to the research study process would be useful.

Taking the subjects' perspective – this expresses the primary research aim of this study; to explore the communities' sense-making and interpretation associated with the task of innovation management, and to elicit the meaning that they ascribe to their own, and others', collective actions associated with the innovative initiative. This provided a useful starting point for the study and helped to identify the communities' sense-making and interpretation associated with collective actions on the initiative. Research (Van Maanen, 1979) has already indicated that interpretation of collective actions and organisational events is problematic, especially when reliance is placed on participants' accounts. But analysis of this research relied not only on the first order member accounts, but also on the second order constructs (Emerson, 1983) originating from the co-researchers and the author before and after the action workshop sessions. The texts resulting from these action workshop sessions were used to construct cognitive models of the communities' interpretation and sense-making (motives, feelings, values) of their own and others' collective actions associated with the innovative initiative.

Describe the everyday settings – this was an important element in presenting the context of the data collected, which provided details about the internal environment. These details helped in relating community collective actions to internal organisational factors, as specifically detailed in Chapter 6.

Interpretation of collective actions and their meaning, within their social context – to present a social contextual approach detailing information about the communities'

relationships, activities and perspectives associated with the different innovation processes.

Emphasising time and process – the longitudinal approach adopted for this research study allowed the careful study of the innovation processes over a period of time commensurate with the duration of the projects. Taking a day-to-day detailed approach to the data collection, attending project meetings, departmental meetings and other forums, allowed the mapping of community interpetative systems associated with their collective actions, organisational events and the resulting innovative outcomes. This necessitated the author's continued presence at the organisation.

Flexible research design – the open-ended research strategy allowed for community participation and was supported by action workshops, where the interim research findings were fed back, providing additional opportunities to explore their interpretative systems and the author's constructs associated with the research framework, and then also capture further primary data. These forums also provided an opportunity for the author to review and modify the research strategies.

Inductive – the research study focused on an inductive approach to theory development, by building up constructs which were then tested, providing confirmation or disconfirmation, of the themes and relationships shown in the research framework. The research framework was then reviewed at the end of each chapter to reflect insights into the communities' interpretative systems and subsequent influences on other research themes.

The overall research design was flexible. In the early stages, documentation was examined and either the co-researchers, or the author, attended all project meetings associated with the innovation processes, periodically conducted focus group sessions

and explored, with all communities, any innovation management issues arising from previous meetings or from the initial analysis of the findings. Adopting an emergent approach to the initial study of the research aims of this study ensured that those themes emerging from the initial analysis of the findings were more likely to reflect actual problems encountered by the communities, and not ones forced on them by the author.

The community learning process model, see Figure 2.4, was used in further action workshop sessions to probe their interpretation of the action-outcome relationships associated with the innovative initiative. Attending the project and strategy meetings provided more data on the communities' interpretative systems and the causal relationships between these and the other research themes. A continual process of data collection, analysis, feedback and evaluation of associated literature contributed to the theory development surrounding themes and causal relationships, and this was then reflected in the research framework. An equally important outcome from this 'generative learning' process was the sense-making and changes in their interpretative systems, observed within the communities, and the subsequent impact this had on their future collective actions.

3.3.4 Research Process

The research process shown in Figure 3.1 describes the operation of the research design, detailed in the previous sections. This process pathway has two principal streams, the research process and the community learning process model.

The research process details the origination of the initial themes from both literature review and initial focus group analysis: sub-cultures, innovation goals, organisational enablers and barriers and formal communities' behaviour.

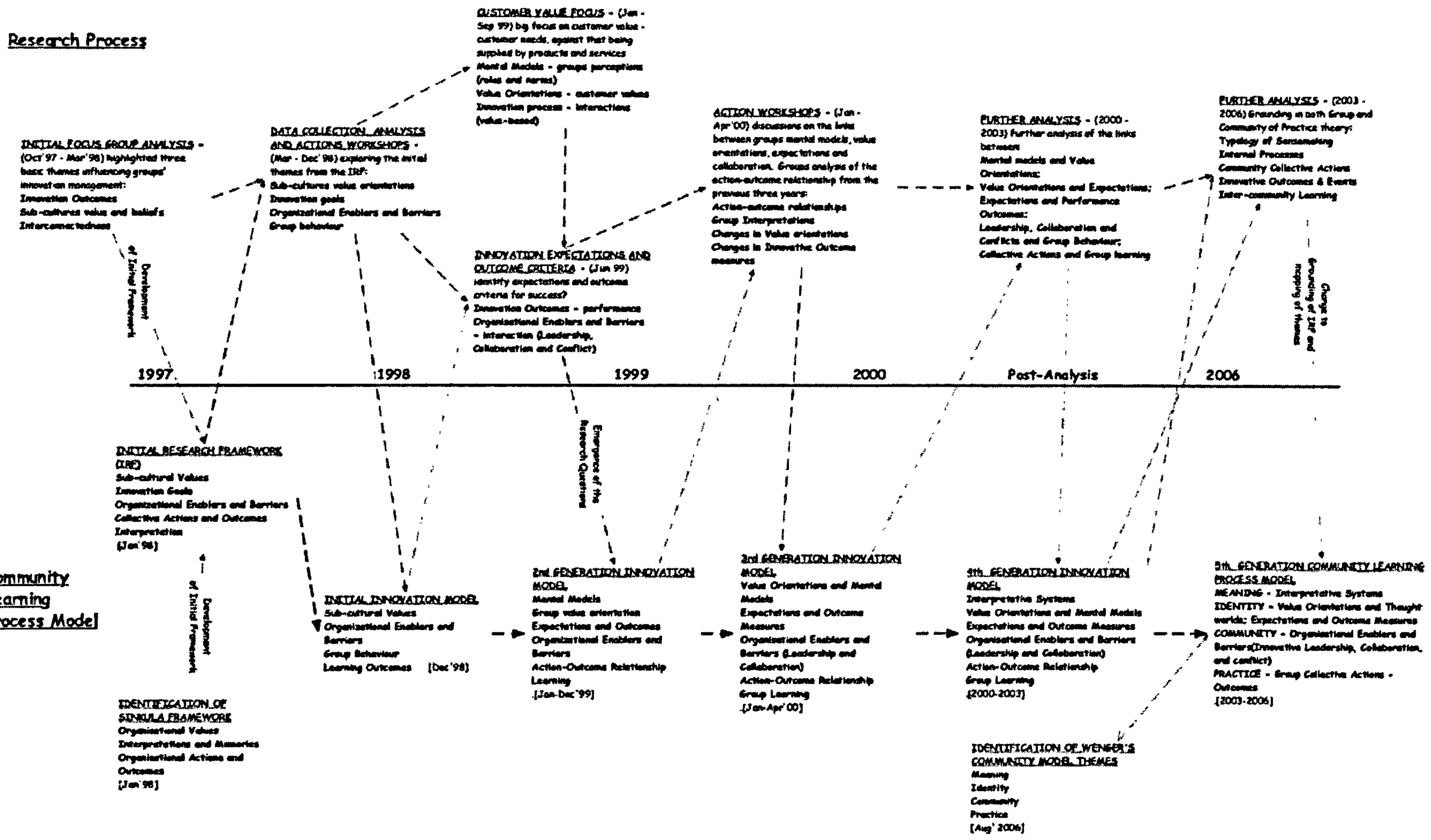


Figure 3.1. Research Progress Pathway

Through the process of continual data collection, analysis, presentations and further discussion these themes developed until at the end of the data collection phase they focused around: action relationships, group interpretation, value orientation and innovative outcome measures. Further analysis of the interactions and relationship between the formal and informal communities and their affects on the innovative initiatives resulted in further changes to these themes and their relationships: mental models and value orientations; value orientations and expectations; expectations and performance outcome measures; leadership, collaboration and conflicts and group behaviour; collective actions and group learning. Finally, after further analysis and comparison with research conducted on 'communities of practice', the author further developed these themes to reveal strong relationship between community members: typology of sense-making, organisational enablers and barriers, collective actions, innovative outcomes and their inter-community learning.

The community learning process model's early themes: sub-cultural values, organisational enablers and barriers, group behaviour and learning outcomes were modified to include changes in the author's and the participants' perceptions. At the end of the data collection phase of this study, the model had developed into: value orientations and mental models; expectation and outcome measures; organisational enablers and barriers (leadership and collaboration); action and outcome relationships, and community learning. After further analysis and reading of the 'communities of practice' literature it was possible to link the author's findings with those of other researchers. The resulting community learning process model provided interesting and valuable insights into the social processes linking formal and informal communities.

The reinforcement and modification of the community learning process model, the emergence of the social constructs and causal relationships, has been a generative learning process for the participants and researcher, but to reflect this in the text would be both lengthy and repetitive. The remaining chapters are structured according to the final iteration of the community learning process model, see Figure 2.4, and its principal themes.

3.3.5 Co-researchers and Objectivity

The research design and process describes the author's approach to achieving the original research aim of this study, and with it the general goals of objectivity and reliability. Rowley (2004), in describing 'essential criteria for good research', discussed three important safeguards for working towards objectivity in data gathering and analysis:

1 An awareness of the potential for subjectivity at any stage of the research process, acknowledging the researcher's own values, beliefs and goals. To this end the author used co-researchers to help collect data from formal and informal meetings, to recount 'hall-talk' and to actively participate in the action workshops. The involvement of the co-researchers in the data collection activities increased the scope of observation and recording of events, discussions and informal conversations. This presented more opportunities for objective recording of community members' perceptions, values and beliefs and their prejudices, preconceptions and feelings of others;

2 An awareness of the potential impact of research design on the outcome of the study. In Chapter 1, the author discussed the fundamental inductive approach to

this research, the importance of using the initial research findings from the focus group sessions to guide the literature review, and the initial development of the community learning process model. The research progress pathway section above describes the iterative nature of data collection, analysis, presentation at the action workshops, and then further data collection. This approach sought to engage the co-researchers, and all other participants, in the interpretative process of developing clearer understandings of the themes and links between communities' identities, community, practices and meaning. Participatory action research is designed to engage the observers and involve them in the analysis of the data, and then stimulate action to change. This change was an anticipated and desired outcome of this research, and one that would lead to a better understanding of the community's learning processes;

3 Evidence of triangulation, using different research methods to qualify the values, beliefs and goals of any particular community. Using co-researchers from all four communities ensured the objectivity of data collection, and their involvement in the action workshops ensured their input to the analysis of the initial findings. The different forums observed and recorded had a general mix of functional community members, thus providing objectivity in the data collected, and supporting multiple perspectives of the different functional community prejudices, preconceptions and feelings towards others.

The three specific criteria chosen above, and the safeguards in place to provide general objectivity in the data collection, analysis and feedback to the different communities, suggests a practical approach to the potential problem of researcher subjectivity.

3.3.6 Sampling Issues

When reviewing the NPD literature, it was suggested that the nature of innovation and NPD (when, why and how it occurs) is particular to the people, the organisational life cycle and the industry (discussed in section 2.2.2). This case organisation is not representative of other manufacturing organisations, but most of the processes associated with NPD and its management are very similar to the broad practices seen in this and other industries. The organisational setting may be different to other organisations, but the focus of this study is on how the communities interpret their own and other communities' collective actions, and the sense-making emerging from this process. As such, the insight afforded by this research does provide wider relevance to the general processes of innovation management outside of this particular setting.

Out of an organisation consisting of 150 employees, over seventy people participated in this research, some on a full-time basis. All four functional communities (Sales, Marketing, R&D and senior management) were well represented.

3.3.7 Data Collection Methods

Three primary methods were used for data collection: observations, focus communities and workshops, and document collection.

Observation – this was one of the most frequent methods used, with the author remaining in the background, either taking notes or tape recording. Some of the innovation process meetings occurred every week, while other meetings (like the strategy review meetings) were every three to six months. Attendance at the departmental meetings proved useful, because the individual community members were less guarded and therefore openly talked about issues associated with the other communities, or the organisation as a whole. These meetings also provided an

opportunity to test the consensus of community interpretation and sense-making associated with the innovative initiative. Aside from these formal occasions, additional meetings were held with community members in places like tea areas, canteens or project offices. These opportunities provoked more spontaneous discussions on current events or post-mortems from project or strategy meetings.

Focus groups and action workshops – the workshop sessions were an opportunity to feed back the interim research findings, therefore checking the author's and communities' sense-making and interpretation of the different issues associated with innovation management. These action workshops were extremely useful in stimulating further discussion on emergent issues and, as a consequence, most often resulted in agreed actions for change. Sometimes the focus group sessions, involving smaller communities of people to discuss specific areas of the study, were used to explore themes relating to specific social issues (Lamertz *et al.*, 2003), perhaps issues that had emerged from a previous project meeting; for example, the effect of new senior management appointments on their objectives.

The early focus groups, used to refine the research themes associated with the overall research aim, explored the different communities' interpretation of the value of innovation within the NPD environment and those internal organisational factors that most influenced it. Further focus groups were conducted, within both functional and innovation communities, to explore each of the research themes. For example, focus groups were conducted on value orientation and the influence this had on communities' collective actions towards the innovative initiative. Other focus groups were held on the research themes of collaborative relationships, leadership and outcome measures. Action workshops were conducted when significant organisational events occurred, or as a consequence of the author's desire to feed back research findings, and then further examine the communities' interpretation of these findings on the overall issues of

innovation management. An example of this was the action workshop conducted after the restructuring in April 1999. Workshops were conducted to explore the potential changes that might take place in communities' value orientations and the collaborative relationships associated with the innovative initiative.

Whether they were from focus group sessions, project meetings, action workshops or departmental meetings, the discussions heard and recorded (by tape or handwritten notes) provided invaluable insights into the communities' thought worlds, and also into the interpretative systems used by them to attribute meaning to organisational events, theirs and others' collective actions and innovative outcomes.

Document research – project and strategy documents, along with relevant e-mails, were collected and analysed. The e-mails were invaluable for discerning community members' values and beliefs. There are many things that community members will not say 'face-to-face', but happily commit to writing within their e-mails to others. All documentation was classified with the key contextual settings: time, date, topic referred to, any link to previous communication, along with any other important background information.

3.3.8 Managing the Data

Data recording was conducted using two principal methods – handwritten notes (most of which were later typed up) and tape recordings (of the focus group, action workshops and some project meeting sessions), which were later transcribed.

At the various meetings, permission was always sought for the taping of discussions and, fortunately, this was never denied. These taped sessions were then transcribed by the author and used in the research analysis and evaluation of the communities'

interpretation and sense-making of the different research themes and their interconnectedness. This made it easier to interpret all the conversations, especially when the recording or position of the microphone resulted in poor recordings. The transcripts provided clear annotation of the speaker's name, context details, place held and any additional relevant documentation.

Observational data and informal conversations were written up by hand, either based on notes taken at the time, or from memory directly afterwards. In meetings, fuller notes were possible, though again these were often re-written afterwards to reflect additional contextual details. It was important, at all times, to be careful that the observer's note taking did not distract the community's discussions. Sometimes, people may notice rapid note taking after their speech, which could result in them being more guarded in the future. These notes were then typed up and more contextual information added, including those present along with any additional supporting documentation. The co-researchers helped by either augmenting the author's notes or, when he was absent, making their own. Like the transcripts, a list of the attending community members was made along with any meeting agenda.

Important elements of this research were to ensure consistency of observation and data recording, maintain an open mind to the dynamics of the research, and carefully note everything to do with the unfolding innovation processes.

3.3.9 Data Analysis

The typed and transcribed data from all observations and interviews were subsequently reviewed, sentence by sentence, for evidence of influences, relationships and events (Parker and Roffey, 1997). Any item or relationship was coded (open-coding) and collected together under initial themes, like 'process activity' or 'community goal'.

After this process, the codes were further analysed for similarities or relationships, which were then collected together under specific core codes (axial-coding), 'community expectations' or 'community values' (Parker and Roffey, 1997). These core codes became the central themes around which the other codes would be related (sub-themes). The output of this coding process led to the development of further relationships between the research themes and the continuing development of the community learning process model.

The use of software data analysis tools was a significant help in the earlier stages of this process, establishing the first tentative relationships between themes and sub-themes. The 'Nvivo' package was initially utilised on a laptop computer, generating lists showing the themes and sub-themes, as well as all the associated texts from the transcripts and typed logs. Mind-mapping techniques were adopted in the later stages of analysis, which proved invaluable. These provided a pictorial perspective of the relationships, proving to be most useful when attempting to link this research into the existing body of academic research or when communicating the findings to the communities at the action workshop sessions.

3.4 Summary

In this chapter, the social ethnographic, grounded theory, case study and PAR methods adopted to explore the research aim and questions of this study have been discussed. The benefits of integrating these to create a versatile strategy, using multiple data collection instruments, and their ability to capture multiple community views, were also considered.

The research process was a longitudinal study of three innovation processes, capturing the context of the communities' interpretation and learning processes. Underpinning the research strategy, and reflected in the data collection instruments and proposed data

analysis, was the reality that the communities' world was socially constructed, and that their knowledge was based on their interpretative systems. The fieldwork and theory development was centred on an iterative process involving the collection of data, followed by the analysis and development of themes and relationships that were then tested. The confirmation and disconfirmation of these themes and relationships helped in the ongoing development of the community learning process model, providing further evidence of its relevance, validity and rigour.

The next chapter explores the four community value orientations and, importantly, the underlying thought worlds supporting their perspective of the innovation community, and the underlying innovative initiative.

CHAPTER 4: SUB-CULTURAL VALUES

4.1 Introduction

This chapter explores the four functional communities' value orientations; those values that unite the formal and informal communities' collective actions; and provides an insight into their thought worlds. The existing research literature pertaining to the relationship between community value orientations and their thought worlds was reviewed, to help provide important grounding to the research analysis and findings. The research analysis explores two important facets of value orientation, perceived and desired, and the relationship to the formal communities' thought worlds and their perspective on the creation, development and delivery of customer value. By studying their thought worlds and value orientations, the author identities what both differentiates and integrates their position and task within the informal innovation community. In the light of these research findings, the community learning process model was reviewed and modified.

4.2 Thought Worlds and Value Orientations

This section provides an overview of the relationship between the communities' value orientations and their thought worlds and possible influence over future collective actions associated with their engagement with the innovation community.

Dougherty (1992) suggested that a community of persons engaged in an activity, like product innovation, could develop shared understanding of that activity, and these insights would create distinct thought worlds. Collaboration within and between these communities is likely to be influenced by this shared understanding of their social reality (Schein, 1992). The communities' thought worlds are the implicit rules by which they attribute meaning to their position and task within the organisation (Rafiq and Saxon, 2000), and the means by which they judge, appraise and criticise their own, and

others', collective actions. These thought worlds are going to differ for the various communities, and are significantly influenced by the different schooling and training these members originally had, and their experiences since working (Dougherty, 1990). These community thought worlds determine the way in which they organise their attitudes and feelings (Schein, 1992), and their subsequent collective actions concerning the innovative activities. It is because of the differences in the communities' thought worlds that barriers are created, which in turn may inhibit collaboration between them (Dougherty, 1992).

The value orientations associated with the communities' thought worlds can reflect an organisational-wide value orientation (Beatty, 1988) and/or be influenced by other factors or professional biases: financial, customer, competitor, employee, entrepreneurial and product (Alvesson, 2002; Beatty, 1988; Bilitski, 1995; Martin, 1992). Organisations may influence these community value orientations by their declared strategies and superordinate goals, goals normally beyond the reach of individuals' experience and efforts (Kwantes and Boglarsky, 2004; Sherif and Sherif, 1979; Siguaw *et al.*, 1994), or by senior management in the form of specific objectives or goals (Flaherty *et al.*, 1999). But these community value orientations will also be determined by their own perception of role appropriateness, and this is linked to their thought worlds (Flaherty *et al.*, 1999). Research has identified two specific types of value orientations: perceived and desired. The perceived value orientations of a community are a combination of those values that they interpret from the organisational goals and their perceived role, and those from observing their collective actions (Flaherty *et al.*, 1999). The desired value orientations represent a community's aspirations and are those values that they desire to have based on their interpretation of future needs, those of the organisation, the community's and customers.

In the next section, further supporting research literature is explored to provide evidence for the relationship between the communities' value orientations and their thought worlds concerning the means of creating, developing and delivering superior customer value.

4.2.1 Customer Orientation

Within the literature review (section 2.3.3), it was stated that material on customer orientation had two principal research themes: customer orientation and business performance (Kohli and Jaworski, 1990); and customer orientation and cultural values (Narver and Slater, 1990). Subsequent research (Connor, 1999; Slater and Narver, 1998) has proposed that customer orientation is perceived differently by organisational members, depending on whether those members are addressing the customers' expressed wants, or the customers' expressed or latent needs. Those sales communities focused on the short-term selling of products or services to the customer will, undoubtedly, focus on meeting the customers' expressed wants. This customer-led approach is a low-risk route to generating short-term revenue (Slater and Narver, 1999). Those sales communities focused on long-term strategies were more likely to show an interest in the customers' expressed and latent needs. Slater and Narver (1999) proposed that market-oriented businesses seek to develop superior customer values to meet both the expressed and latent needs, because this will help them create sustainable competitive advantages (Hamel and Prahalad, 1994). Sustainable competitive advantages can help an organisation create longer-term differentiation and, through this, enhance revenue growth and profitability, but it does have higher levels of risk.

This difference between customers' expressed wants and the customers' latent needs has led to an important perceived division in the customer orientation literature (Slater and Narver, 1998). Slater and Narver (1998) suggest that an organisation's sales and

marketing strategies can easily be divided into these two different strategies: one that adopts a 'customer-led' approach, addressing customers' expressed wants; and another adopting a 'market-oriented' approach, addressing the customers' expressed and latent needs. Organisations can, of course, have a combination of these two strategies, and research (Darling and Walker, 2001) on business performance hints at the importance of being adaptive to market changes. These two strategies define two ends of a continuum in the customer orientation literature, representing a short-term and long-term perspective. The customer-led strategy is compelling for senior management in that it is a world that is readily assessed through their current customers, and leads to short-term customer satisfaction and revenue. But this customer-led focus leads to adaptive learning, which is very reactive, and does not provide long-term sustainable competitive advantages (Hamel and Prahalad, 1994). The market-oriented strategy addresses the customers' expressed and latent needs, and represents a longer-term focus. This longer-term focus, for an organisation, has been linked to its ability to continuously create superior customer value, by the effective sharing of customer knowledge and acting on it in a co-ordinated and focused manner (Slater and Narver, 1995). The evaluative process by which communities judge the appropriateness of either of these two strategies will be influenced by their thought worlds (Bates and Chen, 2004). These thought worlds support two value orientations, the perceived values they should have, and the desired values they want, but like the two strategies they are potentially at two ends of the same continuum. There is too little research exploring the relationship between these value orientation discrepancies and communities' interpretation of the means by which they can or should create, develop and deliver superior customer value.

The next two sections of this chapter explore the perceived and desired value orientations of the four formal communities to interpret the reasons and influence of value orientation discrepancies on other research themes.

4.2.2 Perceived Value Orientations in Practice

The perceived value orientations attributed to a community are based on others' interpretation of their collective actions, their perception of a community's role within the organisation (Beatty, 1988) and the understanding of their own role based on the organisation's goals. An example of this would be the Sales' function: they are expected to have a financial orientation reflecting the association of Sales' function in generating revenue and profit for the organisation, and a sales orientation reflecting their own interpretation of their role and contribution to the organisational goals. This provides a link between a community's perceived value orientation and the perceived role they have in achieving organisational goals that represent the shared values of the organisation. This also hints at discrepancies that might exist between each communities' understanding of the appropriateness of others' perceived value orientations (Flaherty *et al.*, 1999).

Discrepancies in value orientations among the communities may ultimately affect organisational performance, effectiveness and success (Alvesson, 2002; Beatty, 1988). Research into Sales' communities (Flaherty *et al.*, 1999) suggested that discrepancies between Sales' customer value orientations and those exhibited by the rest of the organisation had a positive relationship to role ambiguity, and consequently a negative relationship with selling behaviour. Role theory (Kahn *et al.*, 1964) suggests that communities may experience pressures from others associated with expectations concerning the roles they fulfil within the organisation. These pressures then become role forces that influence the collective actions of the communities, but these actions may be either consistent or inconsistent with the expectations of others. As a result of this process, the community may experience role ambiguity and role conflict. Role conflict is a theme discussed in Chapter 6 and therefore will not be expanded on here. Role ambiguity is the perceived disparity between communities' observed roles and

those which are expected of them, either by other communities or when assessing themselves (Siguaw *et al.*, 1994).

Flaherty *et al.*'s (1999) research is limited to a focus on the sales community, but does positively link perceived value orientations with customer-oriented collective actions, and specifically with increased role ambiguity and conflict. The researchers acknowledged the need to extend their research to include other communities, and to study the interrelationships between perceived value orientations and customer-oriented actions. The author's study explores the relationship between perceived value orientations and role ambiguity in this chapter, but leaves the discussion on its effect on communities' collective actions, and specifically that concerning their engagement with the innovation community, to Chapter 8.

Observing each community's perceived value orientations, associated with the innovative initiative, was one means by which the co-researchers, participants and the author could interpret their origin and influence.

4.2.2.1 Sales

Over the last ten years of the case study organisation's growth, during which the growth in revenue was between 15–20% per annum, Sales had a very strong leadership role in presenting and disseminating both the customers' expressed wants and needs. R&D and senior management were dependent on Sales to provide this customer perspective, and as a consequence the customer information they disseminated was both trusted and valued. At the same time, Sales were keen to espouse a sales orientation that mirrored other communities' perception of their primary function within the organisation. During the duration of the study these two, initially complementary, value orientations for Sales became increasingly difficult to undertake with equal priority.

At the beginning of the study, Sales espoused a proactive customer orientation focused on providing important information concerning customers' expressed wants and needs. To achieve this, Sales' members spent time with different customers exploring their wants and needs, and through probing questions about their current and future process applications. As a consequence, numerous requests were posted to R&D for new product innovations, mostly incremental changes associated with increasing the temperature or pressure range, or providing the enclosures in different materials. But after the last restructure in 1998, Sales found it increasingly difficult to provide this type of customer information, as more and more of their time was spent 'jumping' between customers in order to chase product sales, and progressing these to the point of a confirmed customer sales order:

> [Sales] *'We fire-fight to provide the bare minimum support for the business and for our customers. We see decreasing levels of support from other functional groups, and little in the way of concern about the level of service we deliver to the customer. We are the group that have to pick-up the shortfall, and as a consequence this puts more pressure on us to do other groups' work on top of our own.'* [August 1998].

This acknowledged the difficulties that Sales had with balancing customer and sales orientation perspectives. Increasingly, as other communities experienced difficulties with delivering superior customer value because of the shortfall in customer information, their attributed perceived value orientations of Sales changed and they wanted them to focus on sales orientation. The reason for these changes in attributed perceived value orientation for Sales are discussed in each of the other community sections below. Sales increasingly acknowledged themselves to be the 'lone' voice on concerns over customer satisfaction or, more commonly, dissatisfaction. Their effectiveness at being customer-oriented was coming under pressure:

> [Sales] *'We have a reasonable understanding of customer needs, we* [the organisation] *are just not good at doing something about it. As a consequence, we are receiving increasing customer complaints about product deliveries, poor product support and inadequate knowledge of application installation.'* [January 1999].

With this increasing customer dissatisfaction came a decrease in sales revenue and profits, which again reflected badly on Sales. An important perspective, not previously given, is that of the customer. Interestingly, a number of customers who over the years had bought large quantities of the products and become active advocates of the product in the industry, had noticed a change in the perceived value orientations of Sales:

> [Customer] *'Each year we buy between 15–35 units from the organisation. For the most part we have a good understanding of the product and can easily deal with the different demands of the projects. But this year we have had two projects which have required something different. The organisation's product literature says the products do it, but trying to get the information out of Sales has been especially hard. Firstly, we have noticed the decreasing level of product support available, and the changed attitude of the sales group. It's much more focused on selling the product than it is on listening to our real needs.'* [October 1999].

Gradually, as Sales observed other communities' perceived value orientations shift away from supporting a customer orientation, they increasingly altered their perceived value orientation to one focused on sales orientation. The focus of the innovative initiative for the marketing and R&D communities was on long-term, higher-risk technological and radical innovations, certainly not something that would appease their customers' needs in the short-term. Senior management, driven largely by the new MD, were short-term focused and had set very specific financial targets on Sales; targets that required the community to sell only the products they had:

> [Sales] *'The strategy and vision is short-term focused – we just have to milk our existing products to death.'* [July 2000].

By the end of the study, the organisational goals were focused on short-term revenue and profit generation, and senior management's objectives for Sales were also focused on this. Sale's own perception of their position and task within the organisation was at odds with the perceived role they originally had concerning the innovative initiative, that of being the major provider of customer and competitive information. This observed change in Sales' perceived value orientation, from one so strongly supporting customer value orientation and the importance of the innovative initiative, to one focused on maximising sales, was as a consequence of the perceived changes in the other communities' value orientations. Sales were made up of experienced sales managers who had worked for a large number of other organisations, all of whom had been through similar changes in sales strategy. Flaherty *et al.*'s (1999) research suggests that the selling behaviour of Sales is not adversely affected by the perceived value orientations of other functional communities. Their research focuses on two value orientations: financial, and customer value orientation. But their research does hint at a relationship between increased customer value orientation discrepancy and role ambiguity. In the author's research analysis, increases in the role ambiguity of Sales were observed when the community perceived that others' customer value orientations differed from theirs. The discrepancy lay in the means by which the communities would create, develop and deliver superior customer value. The above example is the new organisational strategy of focusing on maximising revenues from existing products and not continuing to invest in new products with longer-term deliverables. Sales' level of role ambiguity showed in the level of support given to the customer and the interest in acquiring customer information concerning current and future needs.

4.2.2.2 Marketing

In the early focus group sessions, held in the first few months of this research study, it was generally accepted by the other communities that Marketing's role was to provide input on expressed and latent customer needs, competitive analysis and, most importantly, facilitated inter-functional communication. These characteristics equate to being market-oriented (Slater, 1997), and suggest that Marketing exhibited the qualities of being generative learners, which, as Senge (1990) notes, is important in an organisation which hopes to facilitate innovative collective actions.

When Marketing was asked to present their own perspective of their role within the innovation process teams, they suggested:

> [Marketing] *'We are the link between the customers' needs* [expressed and latent] *and the sales and R&D functions. We are the counterpoint to their functional group values. We present long-term perspectives on marketplace issues and customer trends.'* [November 1997].

Marketing's perceived value orientation remained constant throughout 1998 and most of 1999, until various organisational events brought into question the validity of their perceived value orientation, expressed in terms of what they should be doing:

> [Marketing] *'We need to know what value our work has to the different groups and for the business as a whole. We acknowledge a pull in two directions, being the provider of marketing information and direction on the innovative initiative, and providing support to the sales group in achieving the business' financial objectives. But we have had no clear direction from senior management of the priority we should give to these tasks, and as such we are attempting to do both. The quality of the information we can provide to R&D to help define the requirements of the new products is suffering, along with that information we provide to senior management to help them to make decisions concerning the*

progress of these projects. We have over the last nine months been collating information on Project Y, and have interestingly had significant support from the sales group. This is pleasing, and shows the support they have for this project, if not for any of the others.' [December 1999].

Both Sales and senior management questioned the ability of Marketing to provide objective and valid marketplace information. Increasingly, senior management utilised their own information to draw up strategy option plans and justify decision-making on specific innovation processes. As a consequence, Marketing adopted a customer-oriented strategy, picking up from Sales those expressed customer wants and needs, and driving R&D towards selecting shorter-term product incremental innovations. Marketing had acknowledged from a very early stage in these studies that specific organisational values, directly supporting a market-oriented perspective, were absent:

[Marketing] *'Without a shared vision, we can't direct our activities, or know what skills we should value and what knowledge we need. There is no common agreement over the means by which the organisation will achieve its competitive advantage, what customers we should be addressing, and what commitment there is for the long-term in attaining the organisation's objectives. We have seen this in the past. Words are cheap, action in the long-term needs an organisational goal, with real support and commitment.'* [August 1998].

Research (Schneider *et al.*, 1980) has suggested that a lack of shared vision leads to lower employee perception, lower ability to interpret the social reality and decreasing role performance. This lack of shared vision contributed to the differentiated thought worlds and the creation of differentiated perceived value orientations, both of their own and other communities. The increasingly perceived value orientation discrepancy between Marketing and R&D (R&D being focused on long-term innovation orientation,

whilst Marketing was being increasingly pulled by senior management into short-term sales-led tasks), resulted in further role ambiguity:

> [Marketing] *'R&D is being guided by their manager in one direction, and we are being guided by the business in another. The marketing group are keen to support the technological and radical innovation push* [acquiring innovative ideas to bring in new technology] *but we have seen the way that senior management is going and though we may not agree with the senior management's strategy it's the way the business is headed, and Marketing need to support this to get some consensus on future actions. We will carry on supporting the R&D group in their efforts on Projects X and Z, but our priority will now be on supporting Sales and senior management in their sales-oriented strategy, to do what we can to help revenue and profit generation.'* [August 1999].

By the end of the study, Marketing were attempting to support two perceived value orientations; supporting R&D in their continuance of the underlying market orientation and the belief that the business would be best served by addressing the long-term latent customer needs. But at the same time, Marketing acknowledged the need to support the sales orientation, because of the expectations from Sales and senior management concerning the support of Sales' activities. Marketing attempted to address both of these expectations and, as a consequence, failed to address either sufficiently well. The resulting role ambiguity was caused not just from being unable to meet other communities' expectations, but also from the discrepancy between their perceived value orientation and their other roles (Beatty, 1988), principally concerning the role they had concerning their responsibilities to the innovative initiative. The research findings suggest an interesting relationship between discrepancies in communities' expectations associated with others' perceived value orientations, and those held by themselves. Role ambiguity was more significant when communities' perceived discrepancies in what

they should do and those expected by others, rather than a discrepancy between other communities' expected perceived value orientations.

4.2.2.3 R&D

Moenaert and Souder (1990) proposed that the true benefits of an organisation having a multidisciplinary integration of functions, is the strategic linking of these specialised communities whilst still preserving their individual orientations. In the subject organisation, the R&D function was to think and act like an R&D function, to provide a product orientation, creating and developing products. In 1997, senior management set key objectives for R&D to acquire and disseminate new technological competencies and develop a highly differentiated product range in order to deliver superior customer values. Over a period of eighteen months, the community focused on building up its skills base and networking with external research institutions, in order to assist in the identification and development of innovative product ideas.

> [R&D] *'We seem to get stuck with a certain product mindset, unable or unwilling to see outside our existing market applications'* [December 1997]. [A comment referring to the R&D plans being full of product enhancements over the last five years. For R&D, this confirmed their opinion of biased customer information coming from both the Sales and Marketing groups.]

This innovative initiative was strongly supported by Marketing and senior management, but the community had their critics in Sales.

> [R&D] *'There seemed to be a bit of a 'them and us' attitude between R&D and Sales. I think it was down to two basic issues. That Sales were jealous of our work and our laid back attitude.'* [March 1999].

This was from an interview conducted with two R&D engineers shortly after they had left the organisation. By 1999, R&D were actively involved in three major innovation processes, along with all the other mini-innovations. They relied heavily on Sales and Marketing to provide customer information, upon which they based their own customer orientation and their perception of how to create superior customer value. They were highly critical of the knowledge being disseminated from Sales:

> [R&D] *'If the only contact with the distributor and customer is through the sales group, then things get lost in translation.'* [August 1998]. [The R&D group were beginning to question the credibility of the customer information being disseminated. This inevitably influenced R&D's willingness to take risks on product developments with unquantifiable returns.]

R&D were increasingly becoming customer-oriented, looking for senior management to provide that important organisational vision:

> [R&D] *'Whoever makes the vision has got to come out with something that surprises us all . . . if we carry on the way we have, we will just be doing what we have done in the past, and that's just incrementalism.'* [February 1999].

After eighteen months of effort, two of the innovation processes were lacking any strong commercial support, with insufficient marketing information to suggest strong sales potential and sustainable competitive advantage without significant risk. With increasing comments from both Sales and senior management concerning the ability of R&D to provide technological leadership, R&D wanted stronger market leadership:

> [R&D] *'We are unable to go out on a limb – we now want everything laid out in a plan, with firm and committed sales forecasts, signed and sealed. Things are too risky now to rely on trust alone.'* [July 1999].

Underlying this new perspective of customer orientation by R&D was a fear, a desire, to survive. With the cutback in resources and budgets to visit customers and network with the external research institutes, R&D became totally reliant on Sales and Marketing for their perspective of the marketplace reality. A consequence of this was an increasing isolation of their perceived value orientations from any of the other communities.

By the end of the study, R&D were keen to maintain their support of the innovative initiative, trying to maintain the push on the acquisition of technological ideas and new radical product ideas, but the organisational value orientation had moved away from organic product development towards acquisition of products. Both Sales and senior management expected new products from R&D and, as a consequence of their expectations, the community became increasingly focused on short-term product developments. Marketing's earlier support for R&D's innovative orientation was perceived to have changed, primarily as a consequence of the pressure on them to deliver short-term sales support. R&D's perceived value orientation became increasingly isolated from the other communities' perceived value orientations, and ultimately resulted in their abandonment of the innovative initiative and adoption of a development plan dominated by small incremental projects. R&D perceived a role ambiguity, primarily as a consequence of the discrepancy between what they assumed they should do and what other communities expected of them.

4.2.2.4 Senior management

The key to market orientation (Slater and Narver, 1995) is the development of knowledge pertaining to the customer, competitors and overall marketplace dynamics. But it is important for senior managers to know how to balance these functional value orientations to achieve good results (Harmsen *et al.*, 2000). At the commencement of the study the senior managers responsible for sales, marketing and R&D openly came

out and supported a market orientation, an attempt to take a long-term perspective on the existing product markets. To achieve this they instigated the innovative initiative, an initiative focused on technologically radical product innovation. During 1997–1998, senior management showed their support for this initiative by committing:

- additional resources to Marketing to provide further support to R&D and the acquisition of new product ideas and technologies (discussed further in Chapter 6); and

- to the recruitment of two post-doctorate engineers, highly skilled in sensor technology, to strengthen the radical and technological product development teams.

However, at the beginning of 1999, with the change in MD, a perceived change was noted in the level of support given to the ongoing innovation processes and communities' objectives on supporting long-term activities. The first change noted in senior management's perceived value orientations came from a meeting with the new MD, attended by key personnel from all four functional communities:

> [Senior management – MD] *'The organisational culture says they are customer oriented, but in reality the organisation is semi-detached from the customer. On this perspective, we confuse effort with success. Those of you actively involved in the innovative initiative need to reassess the value of your activities and the performance outcomes of the three projects. Over the next three months I will be re-looking at all functional group activities for the contribution they can make to the short and long-term organisational strategy. There are lots of unanswered questions and before I feel comfortable to stand up and give you the new organisation's strategy, I want time to explore these and look for satisfactory solutions.'* [March 1999].

At the end of March 1999, another round of redundancies further cut back the number of sales and marketing personnel, and merged the four business units into two new entities. In the next six months, considerable emphasis was placed on providing community support to sales, focused on meeting expressed customer wants and achieving the financial goals. But this perceived value orientation around customer value was progressively changing to one more directly focused on achieving financial targets:

> [Senior management] *'We must prioritise our efforts. We can't afford to do what we would like to do. We must consider the business first and customer second.'* [September 1999]. [From an initial position of openly encouraging customer orientation, senior management now considered them of secondary importance, as every effort should be focused on doing what is best for the business.]

By October, an address by the MD emphasised the key importance of identifying a market that valued the product and would accommodate strong prices, resulting in increased profitability for the organisation:

> [Senior management] *'We want to be in the markets where we can add value, add application experience on top of good product technologies. That will sustain good prices and good margins and most importantly give us the level of profitability we require.'* [October 1999].

Over the remaining nine months until the research study concluded, the MD instigated a further round of redundancies, bought and merged the organisation with another instrumentation company, and relocated the premises.

By the end of the study, the perceived value orientation supporting the innovative initiative had changed to one supporting short-term revenue generation. Part of the

change was down to a fundamental shift in the organisational goals, from long-term support for market orientation, searching for technological and radical product ideas that would meet the latent customer needs, to one focused on financial goals, meeting each month's revenue and profit goals. Senior management's perceived role ambiguity rested on the discrepancy between their value orientations and those of the new MD. When these became significant, the MD changed the senior management community. Role ambiguity was easily observed in their inability to take decisions during project meetings, along with the mixed messages that originated from the community concerning the level of support for the initiative.

4.2.3 Desired Value Orientations in Practice

Previously, in section 4.2, an important relationship was established between the communities' desired value orientations and their underlying sub-cultural thought worlds. A community's desired value orientation represents their aspirations of what they would like to see in the organisation (Flaherty *et al.*, 1999), and is associated with the innovative initiative. These desired value orientations were their understanding of the means of achieving both the organisation's and the community's superordinate goals. But their underlying community thought worlds were coloured by the different understanding they put on the same organisational events, collective actions and innovative outcomes.

As stated earlier (section 4.2), these differentiated thought worlds are influenced by their training and experiential backgrounds before they came to the organisation (Dougherty, 1990). This training, associated with their professional scientific background, pure and applied, provides a certain world perspective, which is likely to be further reinforced by the sub-culture experiences within the organisation (Dougherty, 1990; Dougherty, 1992). Training and on-site experience development only reinforces

the sub-cultural differences between them (Lawrence and Lorsch, 1967). As a consequence of these differentiated thought worlds, communities often experience difficulties in understanding other communities' collective actions and goals (Griffin and Hauser, 1996). Communities' thought worlds are often below the level of awareness (Senge, 1990), but crucially they are the mental processes by which the communities sense-make their social world (Werhane, 1998), and therefore they are a major element in the community learning process.

In the previous section, the author explored the interrelationship between the perceived value orientations of the communities; their role perception, and understanding of others' collective actions. But a community's desired value orientations, those values that they sense-make, are needed to address their future requirements and those of the organisation's. In the case of this research, the author studied each functional community's value orientations for their appropriateness in creating, developing and delivering superior customer value. The communities exhibited different value orientations, but underlying all of these was a common thread: customer value.

The original research questions posed in section 1.4 sought an explanation of the potential relationship between communities' value orientations and their understanding of the innovative initiative. Communities' desired value orientations are a powerful motivational force in this quest for collective action, and was one of the key outcomes of Dougherty's (1992) research. Dougherty (1992) suggested that future research must explore communities' insights into the reasons behind the changes in their thought worlds, and specifically understand the relationship between their knowledge development and collective actions. The author explores the communities' desired value orientations, looking at the underlying thought worlds, seeking out the reasoning behind the changes. The discussion on the desired value orientations affect on communities'

collective actions, and specifically their engagement with the innovation community, is left to Chapter 8.

As noted in section 4.2.2 on perceived value orientations, a combination of observations, interviews, workshops and documentation were used to explore the interpretation and understanding behind the observed changes in communities' desired value orientations.

4.2.3.1 Sales

At the beginning of the study Sales had a very strong customer value orientation, focused on delivering products and services to meet the customers' expressed wants and needs. According to all communities, this customer value orientation had been a long-standing position taken by Sales, and one in which they had consistently gained reward from senior management in the form of bonuses and trust, and from others in the form of approval:

> [Sales] *'Sales have been very good at identifying customer needs, and then coming back to the organisation and motivating other functions to come up with the products and services to meet these opportunities. We have openly encouraged our customers to talk to R&D and marketing to help get the product right, and more closely match their needs. This has been the strength of the organisation, and one in which we compete very well with other leading competitors.'* [August 1998].

Customer value orientation, as practised by Sales and described above, was a key element of Sales' role within the organisation. There was very little role ambiguity. At the latter end of 1998, Sales was under increasing pressure to meet revenue and profit targets, and this was observed to force them to alter their assessment of the appropriateness of a customer value orientation:

[Sales] *'We are increasingly finding differences between other groups' perception of the customers' needs and our own. An example is the recent Irish dairy trial. We had sold this product based on delivering a simple solution to a problem of the customers. But when we got marketing involved, they tried to implement an overly complicated solution, one that would address needs the customers had not declared. We wanted to make a quick sale, but marketing wanted to search for other latent needs. These are our customers, and the danger is that marketing will piss them off and they will go to our competitors instead. We appreciate the reasons for marketing's stance, but it is not appropriate.'* [December, 1998].

With the deteriorating sales and profit results, an increasing spotlight fell on Sales' performance, in both their effectiveness and efficiency regarding product sales. With little idea about the reasons for the downturn in sales, and failing trust and approval from the other communities, Sales changed their desired value orientation to one focusing entirely on the act of selling, a sales orientation:

[Sales] *'We look at the efforts of R&D and marketing over the last two years, and can see no actual outcome. We are not even close to developing a new technological or radical product. We acknowledge the real need to come up with new products, otherwise we just won't be here in two to three years' time, but I cannot see it coming from the efforts of R&D or marketing. We have some good ideas for new instruments in our existing markets and will be putting these forward in the future. Until then we will carry on supporting Project Y.'* [July 1999].

This change in desired value orientation from customer value to sales orientation can be explained by the community's perception of the shift in the organisational value orientation from addressing the customers' latent needs to that of their expressed needs. To Sales, they were still addressing customer needs, and as such creating, developing and delivering superior customer value. However, they were more focused on making

the sale and not on what was in the best interests of the customer. Sales' collective actions associated with the innovative initiative had shifted; they no longer supported Projects X & Z. Sales maintained marketing information acquisition and dissemination on Project Y, collecting customer information on requirements and competitive information on pricing and comparative specifications, because of its potential to deliver short-term products.

At the end of the study, Sales' assessment of the appropriateness of their desired value orientation as a means of creating, developing and delivering superior customer value was influenced by their interpretation of the needs of the organisation. It was also detected that the perceived value orientation which Sales should have, and their own role perception, influenced the change. A new organisational strategy was prevalent, one that focused entirely on short-term financial targets and, as a consequence, prioritised organisational needs over those of the customer.

5.2.3.2 Marketing

Marketing, because of its position, role and responsibilities towards providing a marketplace perspective, had always looked further ahead than any other community (perhaps with the exception of senior management), considering the customers, competitors and internal communication dynamics, and were therefore market-oriented. By the end of 1997, the marketing personnel had completed an exhaustive market research study and initial pre-product launch evaluation in the US, for one of its long-established European product lines. Several opportunities had been identified and initial proposals made to system integrators in the US to switch products. Marketing came back jubilant and, in discussions with senior management, R&D and Sales were confident of full support for the rapid product amendments necessary to capitalise on

this opportunity. Six months downstream, very little, or no, progress had been made and the opportunity was all but lost:

> [Marketing] *'We can't believe it! The failure of the business as a whole to prioritise and value strategically important projects like this one . . . it is as though the left hand does not know what the right hand does or care about what it does! It is getting very difficult to get these types of collective projects going. This project ticked all the relevant boxes, it was a new market, a brand new customer and one which required very little risk."* [June 1999].

Reviewed repeatedly in the monthly Sales, Marketing and R&D progress meetings, the project slipped further. It took a further six months to finish, but by this time the customer had resorted to his previous supplier and the opportunity was lost. Marketing suspected that senior management's perspective on the long-term survival of the business was not based on any guaranteed outcome from the innovative initiative. Three months into Project Z, a £10,000 purchase of a competitor's product, invaluable for assessing alternative product ideas, was blocked:

> [Marketing] *'The blocking of* [names product] *is a typical sign of the non-commitment that senior management have to this project and to its probable success. It also effectively seals the fate of this project, and that of Project X. It is difficult to see how R&D and ourselves can continue without the active commitment of senior management.'* [May 1999].

It was at about this point in the study that the author, and the co-researchers, detected a significant change in the marketing community's desired value orientation. They, like senior management, started to look at opportunities outside the innovative initiative. The reasoning for this change was easy enough to observe in the increasing discrepancies observed in senior management's previously espoused desired value

orientation. Back in 1998, they suggested that the innovative initiative was the principal organisational strategy for the long-term growth and perceived value orientation:

> [Marketing] *'We are looking at the market again, taking onboard senior management's focus of moving into high volume markets and doing so in a cost-effective manner. Unfortunately, there is no money to do outside market research even in areas we know we have practically no experience. This is going to significantly limit the time-scale for doing this, but it is clear to see in senior management's actions that the innovative initiative is effectively dead, and we as a group need to play our part in contributing to future market strategy.'* [September 1999].

> [Marketing] *'Increasingly our resources are being cut, and this is making it difficult to talk to customers and opinion leaders to help identify new market strategies for the business. We are not allowed to attend conferences or exhibitions in our main marketplace, or where our competitors are exhibiting. If we are to continue to play an important position in the organisation we must contribute to this, and help identify the areas were we can create customer value through utilising our skills and competencies.'* [October 1999].

There was another reason for the change in Marketing's desired value orientation, and that was linked to survival. Earlier, Marketing had enjoyed much support and approval from the other functional communities, but with the increasing discrepancy between Sales' and Marketing's desired value orientations (especially concerning the means by which to create, develop and deliver superior customer value, as evidenced by the dairy trial problems), they began to feel quite vulnerable. Downsizing of Sales and Marketing had created opportunities for some, but job losses for others. Marketing acknowledged that the change in organisational value orientation, from one that previously supported market orientation to one that was financially oriented, seemingly focused on short-term revenue and profit targets. As a consequence, marketing felt forced to change their

perspective of what they needed to do for the future, if for no other reason than for the sake of survival.

By the end of the study, Marketing no longer existed, the three remaining members took up a product support role, and their desired value orientation reflected this new role. Marketing's strategic function, defining the market opportunities and evaluating these, was taken over by the new senior management.

4.2.3.3 R&D

Behind the drive of R&D to search out and acquire new innovations which would provide differentiated products, was a deeper need for them to comprehend their customers' latent needs. Most of the R&D engineers had been around for more than ten years, representing in most cases two product lifecycles. This gave these engineers a significant insight into both the expressed and latent needs of the customers. It also suggested detailed application knowledge concerning the use of these products within different client industries. However, the resulting restructuring and staff turnover during the three-year period of this study had dissipated this experience. Many of the earlier product champions had left and been replaced with inexperienced graduates:

> [R&D] *'The group culture no longer reflects product ownership – members say they love the products, but don't know how to care for them. Importantly, they don't know how the product is used by the customer, or what benefits they get from it. Our product strengths of the past were based on the ability of the engineers to put real-value into the applications, and by this differentiate our products from the competition's, and importantly it made it easier for Sales to sell the products. Without these experienced engineers' knowledge, increasingly more information needs to be obtained from the customer on the functioning and "look and feel" of the product. This is almost impossible to do, because of the resource requirements and the priority*

put on this type of activity. It also reflects on our ability to get more out of our existing technology. This has forced us into acquiring new technologies. But the downside of this is that our experience of these, and our application of these to the customers' current needs, is going to take a long time.' [October 1998].

The result was an increasing reliance on both Sales and Marketing to provide these product market insights and customer information. R&D were struggling to identify technologies that could provide new product solutions. They lacked both the application experience and skills to comprehend the customers' latent needs. A new generation of R&D engineers needed training and skills building to develop the know-how that would allow them to develop future product solutions. However, the other communities were more heavily focused on short-term tasks and were not in a position to help R&D. Over the eighteen-month period since the innovative initiative was started, R&D had acquired two potential product ideas, neither of which really matched the long-term strategic goals of senior management. Senior management and Sales were putting increased pressure on R&D to focus on product support activities:

[R&D] *'We acknowledge the current financial problems of the business and want to help, but if we spend too much time helping on product support issues we will never be able to develop those longer-term product ideas. Those product ideas are the future of the business, they are the way in which we can create the competitive advantages, and take a market leader position. But, there is a culture forming in other groups which is "why are R&D not fire-fighting 100% of the time?". We are seeing less and less open support from Sales and senior management for the innovative initiative.'* [April 1999].

R&D persisted with their innovative orientation, proposing that their contribution was to longer-term product ideas that would create, develop and deliver superior customer values. Over the next six months, R&D suffered a number of setbacks to their project developments and the community struggled to interpret the reasoning behind these:

[R&D] '. . . *failure of the sales channels to provide adequate marketing information on competitor products, pricing and general application knowledge ultimately led to the failure of Project Z to get past its commercial milestone. We have proven the technology and the ability to create a product within the specification and to the target price, and it ultimately fails because of the lack of supporting information from Sales and Marketing. It is not because the product would fail in the marketplace, it is because the other groups lost trust in us, and that is both upsetting and worrying. We no longer seem to have other groups' support in any of these higher risk projects.'* [July 1999].

[R&D] *'It was never part of senior management's strategy to get into these product markets, it was just an exercise to keep the engineers happy and committed.'* [September 1999]. [Tacit support at the beginning of all of the innovation processes from senior management created problems for R&D in resource allocation, budgeting for materials and 'ring-fencing'. The regular conflict of objectives regarding the priority of short- to long-term innovation processes just convinced R&D that there was never a commitment to it. It was seen as an exercise to placate the engineers, to keep them happy and around.]

As a consequence of the other communities' perceptions of the role of R&D, and more importantly the level of trust in their abilities to carry out higher risk product development, the group was eventually forced to change their desired value orientation to one supporting incremental product innovation; they became product-oriented. R&D had assessed the appropriateness of their previous desired value orientation to the organisation's new value orientation, and in order to achieve value consensus and gain acceptance by the other communities had changed their desired value orientation.

By the end of the study, R&D had significantly depleted resources. Most of the engineers who held the remaining product and application knowledge had left in the past year, with the community losing over 30% of the original R&D headcount it had at

the beginning of 1999. R&D were without the skills or competencies to support any other desired value orientation except a product support orientation.

4.2.3.4 Senior management

The start of the study coincided with the start of a new senior management member, the BM, who had specifically been recruited to spearhead new product and market developments. As a consequence, senior management espoused new commitment and engagement to market-oriented activities. These focused largely on an innovative initiative and further efforts on customer orientation, providing better short-term product and service delivery to both current and future customers. A major factor contributing to the motivation behind this desired value orientation was a deep-seated concern about long-term revenue and profitability of the organisation:

> [BM] *'I have been brought into the company to revitalise our products. In the company I came from we attempted to achieve 33% of our profits coming from product five years old or less, and got pretty close. I understand the difficulties this new innovative initiative will have on groups. Some will have to take on additional tasks, and prioritise those they already have. But I have a commitment from the MD and all other senior managers on the importance of this initiative, and I am here to make it happen.'* [September 1997]. [This was a reference to a lack of new product launches for over five years, and that most of the product lines were over ten years old. In 3M for example, they have a target for NPD which is that over 35% of their product lines must be less than five years old (Lilien *et al.*, 2002:1042).]

> [Senior management] *'As you know from the previous strategy review last year, we have to identify new markets and new product sectors to be able to meet our long-term organisational goals associated with increasing revenue and profits. As such, we are keen to support new product ideas associated with these bigger markets.'* [January 1998].

[This reference was to a change in company strategy away from niche to more mainstream markets. It was also a reflection on the amount of product support these niche markets demanded, and therefore the cost/sales revenue ratio.]

Particular support was given to Marketing and R&D, providing more resources and prioritisation of innovation acquisition activities. But nearly a year later, no technology had been identified and the product development schedule based on product updates was still largely consisting of incremental activities:

[Senior management] *'Our R&D plans are all incremental. Where is the marketing effort to push us into bigger markets and have at least 33% of our product no older than five years?'* [October 1998]. [This was a yearly objective for Marketing and R&D, but without serious commitment of resources and budgets this could not happen.]

[Senior management] *'We do need to get this fire-fighting finished, clean the sheet and start the new year afresh.'* [October 1998]. [This referred to a management belief that the short-term problems needed a quick injection of resources to fix them.]

Increasingly, the revenue forecasts were dominated by product lines that had been on the market for over ten years and needed replacing with newer, more advanced, alternatives. The competition was constantly cutting prices and improving their product offerings and, as a consequence, taking market share. Senior management were aware of the need to create, develop and deliver superior customer value by launching new products. But they too were presented with the conflicts between supporting existing, and creating new, products. At the beginning of 1999, a new MD brought dramatic changes to the organisation and its focus:

[Senior management] *'Marketing need to concentrate on improving the application notes. They are too generic and lack detail . . . they don't support the sales team.'* [February 1999].

[Senior management] *'R&D, with Marketing's help, must re-look at some of these mini-innovations and determine if they are potential revenue earners for this year or next. We need to stretch the product where we can.'* [April 1999].

The emphasis on desired value orientation changed to one supporting customer orientation, evaluating the products and service delivery to determine new ways of increasing customer satisfaction and lowering costs, and hopefully keeping customers loyal and committed to buying more products. The emphasis was on supporting Sales and meeting performance targets. With the deteriorating revenue and profit figures came an ever-increasing focus on the organisation's finances:

> [Senior management] *'We have to make our monthly revenue figures, and that's the bottom line.'* [April 1999]. [All front-line groups (Sales, Marketing and Applications) were to focus on short-term revenue.]

The first insight for the organisation into the vision of the new MD came via a vision workshop, where the MD spelt out his prospective strategy for the future:

> [Senior management] *'We need to focus on the markets we want to do business in, rather than those markets which we are already in.'* [August 1999].

Other senior management members were unaware of the details of the proposed long-term plan, and focused instead on short-term finance-oriented activities. With the new acquisition came a new senior management group. They too were unaware of the details

of the new strategic plan, and so persisted with the focus on short-term finance-oriented activities:

> [Senior management] *'Market growth into other industries with other product lines would be via acquisition . . . hence, the purchase of a process instrumentation company addressing bigger markets, at low cost.'* [purchase in December 1999].

> [Senior management] *'Existing personnel would be used to support current sales of existing product lines from the old organisation . . . resources cut by over 50%, and those resources* [remaining] *merged into the existing* [purchased] *organisation.'* [March 2000].

> [Senior management] *'New product development would be carried out by other R&D teams . . . current R&D team working on product support and mini-innovation projects.'* [April 2000].

By the end of the study, the MD had replaced the entire senior management with members of the recently acquired organisation's management. This new senior management supported a financial orientation, where the principal focus was on achieving the short-term revenue and profit targets. All decision-making regarding market and product strategies was focused around the financial impact on the organisation, and not on the appropriateness of creating, developing and achieving superior customer value.

4.2.4 Understanding Value Orientations and the Innovation Community

The original research question proposed to help explore the context of communities' value orientation was: 'What is the relationship between the communities' value orientations, concerning the creation, development and delivery of superior customer

values, and their thought worlds concerning the innovation community?'. This chapter has explored how thought worlds have an important influence over communities' value orientations, and largely determines their position and task activities associated with the innovation community. The discrepancies in thought worlds concerning the means of achieving customer value provide an important insight into the difficulties of building any innovation community value consensus.

The discrepancies resulting from changes in the communities' values orientations, originating from either external or internal influences, have been observed to affect organisational performance, effectiveness and success (Beatty, 1988). More recent research on Sales' performance (Flaherty *et al.*, 1999) suggests one impact of the community's value discrepancies between their desired and perceived value orientations is the degree of engagement that Sales shows towards customer-oriented collective actions, specifically their commitment to customer satisfaction. Over the last fifteen years, the importance of customer orientation to business performance has been regularly researched (Kohli and Jaworski, 1990; Narver and Slater, 1990; Ruekert, 1992; Jaworski and Kohli, 1993; Slater and Narver, 1995; Kahn, 2001), and this research has identified a strong correlation between these two variables. Most organisations embrace the importance of Total Quality Management (TQM) for business success and at the heart of this is a strong customer orientation (Piercy, 1995). Customer-oriented collective actions most often associated with TQM are the organisation's ability to provide customer satisfaction and a quality service. But discrepancies may exist between community value orientations, or more specifically their customer-oriented values, because of their interpretation of the means of creating, developing and delivering superior customer value (discussed in section 5.2.1). These value discrepancies, or lack of shared values, between communities has been linked to role perception, and particularly role anxiety and conflict (Kahn *et al.*, 1964; Teas, 1983; Posner *et al.*, 1985). More recent research (Flaherty *et al.*, 1999; Kwantes and

Boglarsky, 2004) has started to explore the effect these value discrepancies can have on community collective actions. Flaherty *et al.* (1999) implied a strong negative relationship between customer-oriented selling collective actions and role stress (role conflict and ambiguity).

Both perceived and desired value orientations of the communities have been observed and analysed (sections 4.2.2 and 4.2.3). In analysing the discrepancies between the communities' value orientations, the two types of value orientation (perceived and desired) and the relationships between the communities' value orientations and their thought worlds, two significant causal relationships have emerged:

1. **Relationship Between Perceived Value Orientation and Role Ambiguity**

   Customer-oriented research (Kohli and Jaworski, 1990) has focused on the important relationship between customer orientation and business performance (see also section 4.2.1), while further research at the community level (Flaherty *et al.*, 1999) has confirmed the relationship between their customer value orientation and performance. In Flaherty *et al.*'s (1999) study, the customer-oriented collective actions identified factors related to Sales' commitment to: caring for the customer, growth in sales, giving good value to the customer, providing quality services and dealing fairly with the customer. Much of their research focused on the relationship between the communities' value orientations and their customer-oriented selling performance. Their research findings are relevant to this study because of the explicit relationship between functional community value orientations and role ambiguity, and its potential influence over their future collective actions. Communities' value orientations are a reflection of their thought worlds, these are the means by which they perceive how to achieve their position and tasks within the organisation (Schein, 1992), and specifically in this study their role in the innovation community.

The communities' thought worlds influence their adoption of appropriate value orientations, both the perceived value orientations they should have and the desired value orientations they want. These value orientations match the communities' perception of how to create, develop and deliver superior customer value and address the organisation's espoused value orientation, captured in the form of organisational goals. Customer orientation (discussed in section 4.2.1) is a strong congruent force within organisations, and was a strong underlying orientation pervading all four functional communities' value orientations, perceived and desired.

The author's research findings highlighted the changing perceived value orientations of the communities over the duration of the study. These changes were as a consequence of three competing forces: the organisational value orientations; their own perceived value orientations; and those expected by the other communities. The research findings attested to a positive relationship between the increasing discrepancy in the communities' perceived value orientations, based on their understanding of the organisational value orientations, and the perceived role each should assume and role ambiguity. Role ambiguity was observed in the communities' uncertainty over the prioritisation of tasks, between short- and long-term project tasks, their specific tasks and the tasks normally associated with their role.

Flaherty *et al.*'s (1999) research findings suggested a similar relationship between discrepancies in the perceived customer value orientation of Sales and the rest of the organisation, and role ambiguity. Research by Posner *et al.* (1985) equally suggested a relationship between value consensus and role ambiguity. But this research stopped short of identifying the underlying reasons behind the changes, neither providing organisational context nor community dynamic

details. In studying the reasoning behind the changes in communities' perceived value orientations, and the changes in their understanding behind this, an additional relationship was identified. The research findings attest to a further positive relationship between other communities' expectations of their perceived value orientations and those perceived value orientations adopted by themselves, and role ambiguity; suggesting that some communities had attributed a new meaning to their position and task within the organisation, and that associated with the innovation community. This equally increased the role ambiguity within the observing functional community. Role ambiguity concerning the discrepancy in expected and perceived role, and also an increasing concern over their role perception (should they be changing their perceived value orientation to reflect a new interpretation of social reality?) effectively modifying their thought worlds. These two interrelated relationships are discussed further in Chapters 7 and 8, where the author explores other influences on both the formal and informal communities' understanding, and links these to other themes within the community learning process model.

2. **Potential Relationship Between Customer Value Consensus and Collective Action**

The principal difference between communities' perceived and desired value orientations was that the former reflected their own and others' understanding of their perceived role, and the latter was their aspiration concerning their position and task within the organisation. Already, in the preceding section, the author has highlighted the negative relationship between role ambiguity and perceived value orientations. This is when the communities attempt to sense-make discrepancies between their perceived value orientations, those interpreted by the others based on the organisation's value orientation, and therefore the perceived role each should assume.

At the beginning of this research, the communities exhibited different value orientations, R&D following an innovation orientation pushing for the acquisition of new technologies, Marketing and senior management taking a market orientation, and Sales taking a customer orientation. A common thread was evident throughout all these communities' desired value orientations, which was their understanding of the means to create, develop and deliver superior customer value, and the strong link between this and business performance. All communities shared and valued the importance of achieving superior customer value, but they had slightly different perceptions of how to achieve it. Equally, they acknowledged the importance of the communities' collective actions associated with the innovative initiative, and its contribution towards meeting certain organisational goals. But, when this value consensus over the means to create, develop and deliver superior customer value broke down, then a decrease in the communities' collective actions towards the innovation community was recorded.

Dougherty's (1992) research on understanding in successful product innovation identified the important influence communities' thought worlds could have on their collective actions. But this research stopped short of being able to identify specific community contexts that both influence their thought worlds and the causal relationship between these and their collective actions.

Flaherty *et al.* (1999) establishes a strong relationship between the organisation's perceived customer-oriented and Sales' customer-oriented collective actions, but their research limits itself to studying one community and finds no link between desired customer value orientation and their collective actions. Existing research studies provide insufficient relationships between functional communities' thought worlds, their value orientations, and the potential causal relationships

between these and their collective actions. The author's research findings attest to a negative relationship between customer value orientation consensus and communities' collective actions towards the innovative initiative, and their engagement with the informal innovation community. These initial causal relationships need further examination in the light of innovation goals, organisational barriers and community learning, and this is the focus of the next three chapters.

The two emerging relationships briefly described above provide further evidence of the interrelationship between the four research themes initially discussed in Chapter 2, and linked in the community learning process model (see Figure 2.4).

4.3 Modification of the Community Learning Process Model

As a consequence of the research findings from section 4.2.3, the community learning process model was modified and relationships drawn between the research themes and sub-themes (see Figure 4.1).

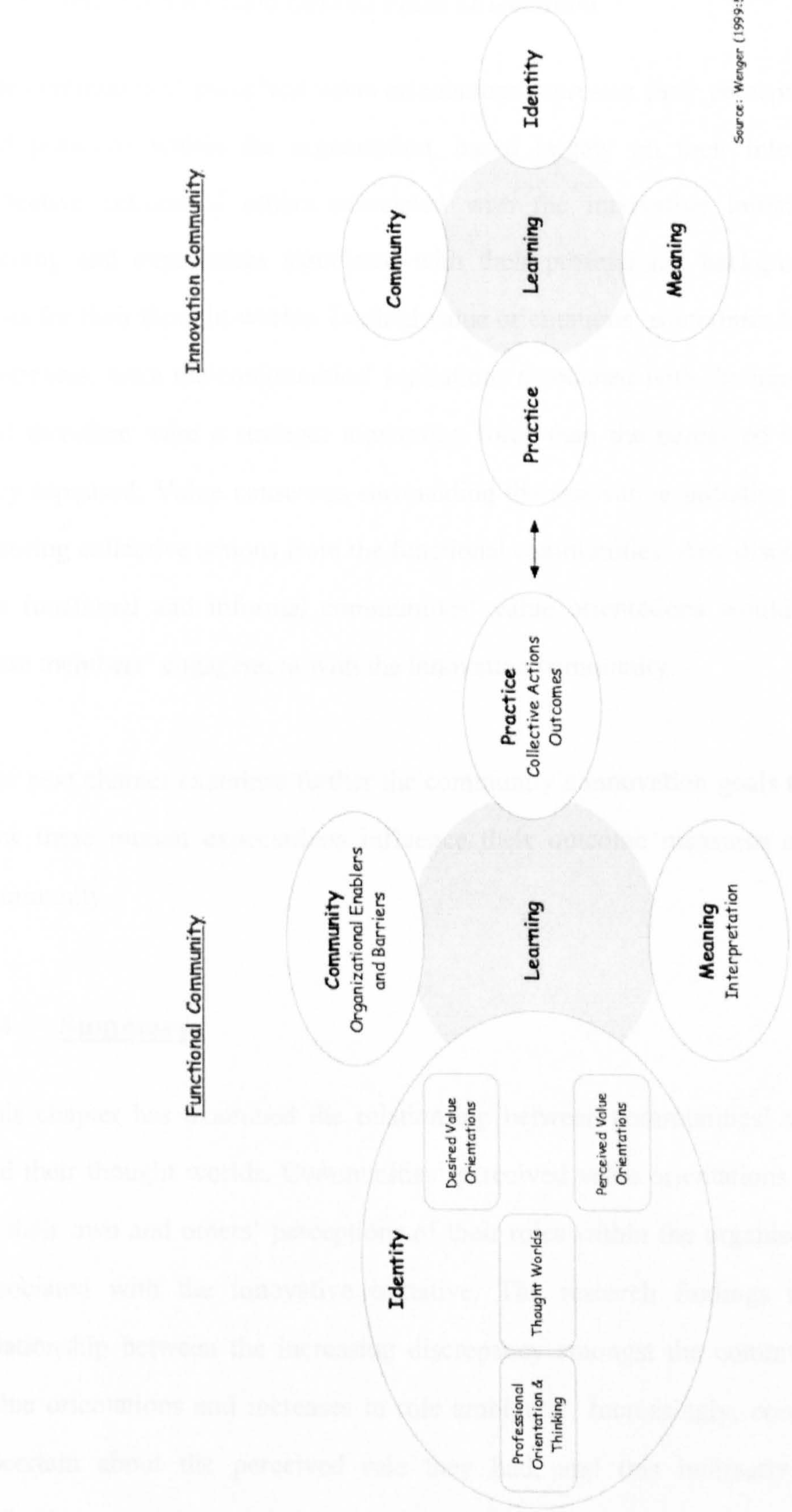


Figure 4.1: The Community Learning Process Model (2)

Community Perceived and Desired Value Orientations

The communities' perceived value orientations represent their perception of their roles and positions within the organisation, based largely on their interpretation of the collective actions of others associated with the innovative initiative. Community training and experiences associated with their professional backgrounds provided a basis for their thought worlds. Desired value orientations, sometimes below the level of awareness, were the communities' aspirations associated with the innovative initiative, and therefore were a stronger motivating force than the perceived value orientations they espoused. Value consensus surrounding the innovative initiative was important in securing collective actions from the functional communities. Any discrepancies between the functional and informal communities' value orientations would likely influence these members' engagement with the innovation community.

The next chapter examines further the community's innovation goals theme, examining how these mutual expectations influence their outcome measures of the innovation community.

4.4 Summary

This chapter has examined the relationship between communities' value orientations and their thought worlds. Communities' perceived value orientations were a reflection of their own and others' perceptions of their roles within the organisation, specifically associated with the innovative initiative. The research findings identify a strong relationship between the increasing discrepancy amongst the communities' perceived value orientations and increases in role ambiguity. Increasingly, communities became uncertain about the perceived role they had, and this indirectly influenced their collective actions associated with the innovative initiative. The discrepancies in communities' desired value orientations concerning the means by which to create,

develop and deliver superior customer value decreased collective actions towards the innovative initiative. Both of these relationships have significant influence over, and were influenced by, other research themes within the research framework, and will therefore be evaluated and discussed in the later chapters.

CHAPTER 5: INNOVATION GOALS

5.1 Introduction

This chapter explores the four functional communities' expectations and outcome measures associated with the innovative initiative. The existing research literature, relating to the relationship between these communities' expected outcomes and their superordinate goals, was reviewed to ground the research analysis and findings. These expectations, and outcome measures, were their strong beliefs about the way something, in the case of this study the innovative initiative, should happen. Here, the focus is on the expected outcomes that the communities have, the superordinate goals that bind them together and the implicit psychological contracts that were created between them, associated with the innovative initiative and their engagement with the innovation community. With insight from these findings, the community learning process model was revisited and modified.

5.2 Expectations and Social Participation in Innovation Communities

Research on implicit mutual expectations of communities having the ability to influence the relationships between these communities (Levinson *et al.*, 1962), has a relevance to a community's expectations of the outcomes associated with an innovative activity. Other research on innovation management by Ring *et al.* (2000) implies that these mutual expectations between communities are in fact implicit psychological contracts that govern their relationships with one another and their likely collective action on any organisation-wide initiative. Like other researchers (Argyris, 1960; Kotter, 1973; Schein, 1980) studying community psychological contracts, Levinson *et al.* (1962) suggest that implicit mutual expectations are more powerful in shaping communities' collective actions than more formal agreements. Angle's (2000) research on implicit mutual expectations suggests that if communities expect innovative collective actions to be part of these psychological contracts, and other communities agree, then innovative

collective actions should result. It is expressed in this study that these mutual expectations can apply to outcome measures other than behavioural, when associated with the innovative initiative.

These mutual expectations surrounding the innovative initiative suggest that communities need to become engaged, to make their situations rationally accountable to themselves and other communities (Weick, 2001). This requires the communities to commit to the initiative and enable each community's needs to psychologically attach themselves to this process (Angle, 2000). This attachment to the process is unlikely to be strong without each community forming expectations of the possible outcomes from this commitment (Morrow, 1983). In this study, commitment is used as a descriptor to explain the psychological attachment a community has for any given innovation process, or for the overall innovative initiative. It is initially advanced that each community's commitment to the innovative initiative is related to their expectations and anticipated outcomes.

It is useful at this stage to investigate the initial links between each community's expectations and their superordinate goals. In section 2.4.1, it was suggested that each community's superordinate goals (Cartwright and Zander, 1968), those that encouraged community members to work together, could also have provided the motivation and commitment to unite these communities. In Chapter 4 it was suggested that communities' value orientations reflected their thought worlds, their understanding of the social world, and the means by which each community could create, develop and deliver superior customer value. These community value orientations reflected the shared values of the community and, importantly, the superordinate goals they held. These superordinate goals are both a distillation of the organisational superordinate goals and those associated with the communities' desired value orientations – their aspirational goals. Communities' expectations are closely related to their superordinate

goals, where these expectations are a combination of the expected outcomes associated with any collective actions and the mutual expectations between the communities.

Cohen and Bailey's (1997) research study, which critically reviewed over fifty published studies on community dynamics associated with performing any given task, focused on the factors affecting community effectiveness. This effectiveness was measured using three principal criteria: performance, attitudinal and behavioural outcome measures. Previously, in section 2.4.1, the author discussed the different measures that academics and practitioners can use to assess success. All five of the measures mentioned in Griffin and Page's (1996) research could be mapped into the three outcome measures discussed above. Both mutual and performance expectations have emerged from the literature review, by the author and by the participants, as appropriate measures to assess NPD success. The mutual expectations between the communities suggest all three outcome measures; their performance, attitude and behaviour towards any initiative. It is for this reason that the author adopted these outcomes measures to analyse the research data from this study. It is useful at this point to discuss initial definitions of all three outcomes measures.

Assessing innovation process performance was highly subjective within this case study and principally revolved around the ability of the process to create, develop and deliver a superior customer-valued product. The discrepancies between communities' performance outcomes came as a consequence of the means by which this superior customer-valued product could be achieved. Dornblaser *et al.* (2000) suggest that contradictory assessments of the performance of innovation could result from the multitude of ways an innovation process could contribute to long-term organisational goals, profits or business growth. In this study, the participants and the author agreed on performance outcomes that met each community's criteria of a successful outcome to the innovative initiative, which ultimately revolved around their interpretation of what

constituted a superior customer-valued product – effectively a reflection of their perceived and desired value orientations (previously discussed in section 4.2.3).

Suliman and Iles (2000) consider the attitudinal approach as one of the most important approaches to conceptualising and exploring organisational commitment. Porter *et al.* define organisational commitment as:

> '. . . the relative strength of an individual's identification with and involvement in a particular organisation' (Porter *et al.*, 1974:27).

In this study, the author particularly focused on the level of community commitment to the innovative initiative. Angle's (2000) research on commitment associated with communities working on cross-functional NPD activities has suggested that community commitment to these collective actions may vary depending on the congruence between the expected outcome of these activities and their own value orientations. This same research suggests that because of the inherent discontinuity of the innovation process, the current order and the different communities' thought worlds, clashes will result over commitment to the process, the community and the organisation. However, this research was unable to establish any causal relationship between the community commitment, other outcome measures or value orientations. Hence, studying the attitudinal outcome measures for each community should provide insight into the reasoning behind their commitment to one type of innovation process rather than another, and the relationship to their value orientations.

Finally, behavioural outcomes are the expectations that communities have of themselves and others. Interestingly, research by Katz (1994) on organisations' expectations of individuals' collective actions suggested that one of the most common desired outcomes was:

> '. . . to perform such spontaneous, innovative behaviours as are necessary to fill in the gaps between what the organisation can anticipate and what it cannot' (in Angle, 2000:136).

These innovative collective actions demonstrate the communities' commitment to the innovative initiative. It is advocated that each community has expectations of others, and they likewise expect others to have them about them – that these mutual expectations would also include expected collective actions associated with the innovative initiative. It was the communities' expected collective actions, associated with the innovative initiative, that the author studied and which have been analysed in this chapter.

The mutual expectations of the communities can create implicit psychological contracts (Levinson *et al.*, 1962) that define expected performance, attitudinal and behavioural outcomes, associated with the innovative initiative. If these outcomes fall short of each community's expectations (Angle, 2000), then they could re-evaluate their superordinate goals and, as a consequence, change their outcome measures associated with the innovative initiative. The impact of these changes, in terms of the interpretation that other communities make of them, could in turn result in them changing their own superordinate goals and by inference the outcome measures associated with the innovative initiative. Studying each community's outcome measures, associated with the innovative initiative, should provide a valuable insight into the relationship between expected outcomes and their superordinate goals, and any related implicit psychological contracts between them. The next section explores each community's outcome measures and identifies any relationships between these and their superordinate goals, value orientations and implicit psychological contracts, along with those for the others.

5.3 Analysis of Community Expectations and Outcomes Measures

In the following research analysis, exemplars were used to explore the three different performance, attitudinal and behavioural outcome measures, and how these related to their mutual expectations.

5.3.1 Sales

Three exemplars are presented below concerning performance, attitudinal and behavioural outcome measures, and reflect the changing expectations of the community and the level of commitment they had for the innovative initiative. The first exemplar is concerned with the community's performance outcome measures and reflects on their concerns about the innovation process's ability to deliver products to the market, an important expected outcome of their focus on customer orientation.

5.3.1.1 Performance outcome: new product delivery

In section 5.2.1, it was suggested that customer orientation could be further split into two quite different orientations, 'customer-led' and 'market-oriented' (Slater and Narver, 1998). The 'customer-led' philosophy is one that is most often associated with the sales function (Beatty, 1988), where the focus is on addressing customers' expressed wants. Sales in this study were no different:

[Sales] *'Our understanding of any situation has always been based on the customers' perspective. We have customers who take our standard product, and have relatively easy applications, and then the others who have quite difficult applications. Often these customers have been referred on to us by the competition, and these customers need a lot more support. We take all our cues from the customer and like to be very helpful. Hence the reason why we constantly come back to R&D*

with requests for new materials, or adaptations for different process configurations.' [May 1999].

Sales applied this 'customer-led' philosophy to the outcome measures for the different innovation processes, along with a community-wide goal to improve Sales' efficiency by supporting any innovation that helped simplify the task of selling and increase the potential number of customers:

[Sales] *'We want more customers from new products, and less sales effort to sell them. We want to spend more time talking to the customer about his future needs, and so the easier it is to sell our existing products, then the more time we have to talk about his future needs.'* [January 1998].

There was also an acknowledgement that long-term survival of the business would be based on the ability of the organisation to generate new products:

[Sales] *'We won't be here in two to three years' time if we don't come up with some new products and ideas. I have already seen in my region the increased activity from global players, trying to muscle in to our applications. It's particularly a problem on those easy applications. It's here where the competition can beat us on price. We desperately need products that will allow us to increase the application we can use the product, and provide some unique selling points to beat these global competitors.'* [July 1998].

There was another driver acting on Sales: the various distributors around the world, all demanding new products that would deliver unique selling benefits over the existing competition. But these distributors were drawn between products that could be delivered in the short-term, and therefore provide revenue that year, with more technological and radical products that would deliver revenue in the longer-term. This conflict of product deliverables was reflected in Sales' demands on both Marketing and R&D:

> [Sales] '. . . *we want new products, both incremental products, to help us satisfy our customers' direct needs, and we want new technological based products, that will differentiate us from our competitors. This helps us to sell to our distributors and keeps them loyal.'* [August 1998].

Within three months of the new MD arriving at the organisation, Sales acknowledged a significant change in priority and strategy on the innovative initiative, an underlying interpretation of how the organisation would, in the future, meet their growth plans. Sales changed their outcome measures associated with the innovative initiative:

> [Sales] *'We now acknowledge that the new MD wants Marketing and R&D to focus their efforts on providing materials and support to launch the simplest of product enhancements. As much as we would like to have those market leading technological and radical product ideas, we have to meet the MD's new financial targets, and we are not going to do that by investing in the "pie in the sky" developments. We are putting our money and effort behind the straightforward product innovations.'* [March 1999].

Sales withdrew their support for both the technological and radical innovation processes, and instead switched their support to Project Y, the product innovation process.

There were two principal explanations for the change in Sales' engagement with the innovation community: first was that they believed that the outcomes of this community were unlikely to deliver new products; the second was their changed attitude. Their thoughts and feelings towards supporting high-risk innovation processes had changed. The next section discusses the second exemplar for Sales, exploring their attitudinal outcome measures concerning changing organisational superordinate goals.

5.3.1.2 Attitudinal outcome: innovative commitment

At the beginning of this study, senior management embarked on a series of strategic reviews to re-assess the requirements of the business. Out of this came the original 'innovative initiative' first mentioned in Chapter 1. This resulted in a multi-functional set of goals associated with the creation, development and delivery of superior customer value through the process of acquiring and disseminating new innovative ideas. Sales' function in this initiative was to provide the valuable market intelligence associated with these customers' expressed and latent needs. Marketing and R&D would use this information to generate product ideas and acquire or create the technology to implement these concepts. Senior management would provide the resources and sponsorship for this initiative. These were the 'broad' implicit psychological contracts that existed between these communities at the beginning of this study.

As mentioned in section 5.3.1.1 above, Sales desired new products that could be easily differentiated from the competition, either technologically or radically, but they had not lost sight of the primary expected outcome of this innovative initiative, the delivery of new products. However, with senior management behind this initiative it would be difficult not to cooperate. But there was a hint of caution in Sales' commitment to this initiative, as Sales could only see limited opportunities based on the current R&D product development plan:

> [Sales] *'We acknowledge the vision of senior management to be in bigger markets which should result in higher volume product sales, but our take on the current product paths is that only incremental opportunities have been presented. This is not likely to satisfy senior management's long-term plans, or our customers' needs.'* [August 1998].

But the New Year brought fresh challenges for Sales, with falling revenues and customers becoming increasingly vocal about the company not providing the right product. Senior management, now directed by a new MD, put increasing pressure on Sales to sell more products. The failure of either the technological or radical innovation processes to provide medium-term product deliverables was causing Sales to re-assess its support for either of these projects. Increasingly, Sales put forward examples of where they lost revenue (product sales) by not having a product in the right material. One example was a product innovation that had been scheduled for delivery by the end of 1998, but had not been delivered due to the amount of time and effort that R&D and Marketing were now spending on the technological and radical innovation processes:

> [Sales] *'We have just lost an order for thirty instruments because we did not have it in titanium. In my area I have probably lost ten orders of that sort. We are being seriously let down by both Marketing and R&D. As far as I can see there are no new products on the horizon, and the simpler product enhancements, like the titanium modification, are now so far on the back-burner, they must be as cold as a fridge. In Sales I have started a log of all orders lost, and attributed them to one or other of the product enhancements we have on the R&D backlog of projects. We don't want to be petty, but it's making it harder for us, in an environment which is already bloody difficult.'* [June 1999].

Sales perceived senior management's focus on short-term revenue generation as a sign that they were no longer sponsoring either the technological or radical innovation processes. Sales observed these changes in senior management's value orientation, and interpreted this as a new set of organisational values that did not include the capturing of marketing intelligence. Hence, the reason for Sales' support of the marketing initiative to acquire the needed marketing information from external sources:

> [Sales] *'Using an external agent to get valuable marketing information on Project Z is a potential cost effective solution. I know Marketing*

have been using us as an excuse for the hold-ups on getting this project through the next milestone, but it is pretty low on our priority. If they want that to change, then senior management need to let up on the pressure we are under to meet the monthly financial targets. It's obvious that this short-term revenue and profit slip is causing senior management some embarrassment with their corporate owners, and it is likely we will see some more right-sizing [a reference to the down-sizing activities of past, the last one in April 1999] *if this goes on.'* [October 1999].

But more importantly for Sales, it was a way of side stepping their previous responsibility, an implicit psychological contract between them and Marketing, to provide this information. As discussed above, Sales were of the general opinion that the technological and radical innovation processes were no longer worth the investment of resources. At the next month's project review of the radical innovation process they more openly expressed their reservations on this project, suggesting that the underlying market justification for this project was at fault:

> [Sales] *'We all have big doubts about this product idea, we are probably too late . . . the market is moving over to a different technology now. More importantly, if it was a no-go six years ago, why should it be successful now?'* [November 1999].

Sales were quick to transfer their support from this technological innovation to the product innovation (Project Y), being one that could deliver a product in the short-term:

> [Sales] *'We have the support of senior management on this project and have Marketing working at full-speed to define the full specification, and are happy that it is being considered as a fast-track project. Finally, our badgering of senior management and battling with Marketing has resulted in effort on the part of R&D.'* [October 1999].

As mentioned at the beginning of this section, dramatic changes internally and externally could cause changes in the communities' attitudes. In this organisation, two particular factors became influential: falling sales revenue and a new MD. Both of these factors were seen to affect senior management's attitudes concerning the means of creating, developing and delivering superior customer value, and the relative value of both its formal and informal communities. A community whose performance was measured by its results (i.e. products sold) and therefore one in which any threat to its results could threaten its very survival. This threat existed – the community had already been downsized in the restructuring of April 1999, and they reacted to the threat by changing their superordinate goals. They became very prominent sponsors of short-term revenue generating activities like Project Y.

Sales' initial customer-oriented superordinate goals supported their pre-occupation with studying how they and other communities delivered superior customer value, and this is the subject of the third exemplar, discussed next.

5.3.1.3 Behavioural outcome: ability to deliver superior customer value

As mentioned at the beginning of section 5.3.1, Sales had a specific focus on customer orientation, and not surprisingly they judged their and other communities' collective actions against the ability to contribute towards creating, developing and delivering superior customer value. Their commitment to the innovative initiative was weighted by three principal factors: the level of support this initiative had from senior management; the ability of each innovation process to deliver products; and the match between the performance outcomes of the innovation process and those expressed by their customers:

> [Sales] *'We are unwilling to support any innovation process unless we have sales intelligence to support it, and that we approve of. When we*

are out with the customer we have a responsibility with him to provide products of value, and we don't want to waste our time going around them trying to flog them products they have no real need for.' [July 1998].

The innovative initiative, discussed in section 5.3.1.2, provided Sales with some motivation to re-evaluate their actions, and those of the other communities:

[Sales] *'We know we need new products and new customers to turn around our business, but we don't have any new products and we have no direction for who are new customers should be. That's not a particular criticism of Marketing, just a general criticism of a lack of clear direction for the company. Sales will be the first to put their hands up and admit we don't know where to go with new products or markets. But it's about time someone started directing us. As far as we can see Marketing and R&D are going round in circles, neither having a clue as to what to do, other than put themselves about. I am just as firm a believer in serendipity as the next man, but we cannot totally rely on that.'* [July 1998].

Sales were looking for leadership from senior management and Marketing to help define desired markets and therefore what customers they should address, and to R&D to provide new products with which to capture business from these new customers. Over the next fifteen months, Sales maintained their focus on trying to achieve sales revenue against a climate where the products were losing out to the competition, both on price and functionality, and Sales' costs were being cut. This action hurt Sales because it started to limit their customer contact time, and therefore the amount of information they were able to acquire. It was important to Sales to be able to talk authoritatively about customer needs and trends, and a very valued service to senior management and Marketing. The strategy review sessions, towards the end of 1999, held very little in the way of 'real' leadership from senior management:

[Sales] *'The organisational vision, explicitly voiced by senior management, is dominated by short-term objectives, which are to make the revenue figures from one day to the next. To be honest I don't think they have any clue as to what's going on, it's a one man band these days* [a reference to the dominating role the new MD had over decision-making and strategy within the organisation].' [December 1999].

By the end of the study, Sales' expected behavioural outcomes from the innovative initiative were not met, R&D failed to develop any new products, Marketing to identify any new markets, or senior management to provide any long-term vision for the company's market or product strategy.

5.3.2 Marketing

Three exemplars are presented below concerning performance, attitudinal and behavioural outcome measures, which reflect the changing expectations of the community and the level of commitment they had for the innovative initiative. Exemplars of three of these outcome measures are presented below. The first exemplar explores the relationship between the community's expectations of the innovative initiative and their superordinate goals.

5.3.2.1 Performance outcome: acquire innovative product ideas

In section 4.2.3, both R&D and Marketing were shown to be fully engaged in the innovative initiative, immediately undertaking a programme of visits to research institutions and key opinion leaders in the different industries addressed by the current product lines:

[Marketing] *'We are 100% behind the senior management focus on generating innovative market ideas. We acknowledge our role in this, in*

terms of helping direct R&D, with identifying the technological research on-going in research institutes around the UK. We also understand the importance of Marketing gathering customer and competitor information as a back-up to Sales' efforts.

Working with the BM on the ideas business model is going to help process the ideas we are getting from Sales and the customer. Hopefully, it will also show that Marketing are being proactive on assessing these and progressing the interesting ones through to the next stage of evaluation.' [July 1998].

Strong support from senior management and R&D was encouraging, and Marketing were heartened by the initial influx of ideas and commitment from these communities. However, early into the New Year doubts were starting to appear in Marketing about their and R&D's ability to generate or acquire enough of these important ideas:

[Marketing] *'With just two innovative ideas passing the first stage filtering, our chances of developing a product are slim. So far we have identified just one technological idea, and that was by luck. My real concerns are that the business is struggling to maintain a stable financial platform, and without this the investment they are making in R&D and marketing must seem like a big sponge on their available resources.'* [February 1999].

This is a reference to the business model created and developed by Marketing and the BM to evaluate product ideas and fast track those with the greatest potential. Without a sufficient quantity of ideas, the chances of success would be minimal. Marketing highlighted the main problem:

[Marketing] *'The main difficulty is capturing these ideas from all the different places and then evaluating them. The organisation commits neither the time nor the resources to this task.'* [July 1999].

With few ideas making it past the first stage filter, which was a rough technical and commercial evaluation of the product idea in terms of technical feasibility and sufficiently profitable, then the next stage was likely to see more attrition. By the autumn of that year, Marketing's worst fears materialised – the first of the three innovation processes was shelved:

> [Marketing] *'Shelving of Project X has been attributed to a new sales orientation. Marketing are to support Sales in short-term sales revenue generation. But where is senior management's commitment to the acquisition of product ideas?'* [September 1999].

Without new product ideas to feed into the product development pipeline, the original longer-term objectives of both Sales and senior management could not be met:

> [Marketing] *'Focusing on product innovation does not marry up with either of the Sales or senior management's longer-term objectives.'* [March 2000].

By the end of the study, Marketing understood some of the problems with this outcome measure, and particularly the perception from the other communities:

> [Marketing] *'Both Marketing and R&D have cycled around this old chestnut associated with identifying new market and product ideas. The problem is with trying to look outside the box. It is difficult to do without help, and help was not available. We tried all the prescriptive processes, networked with as many agencies outside the organisation, exposed ourselves to as many influences as possible. We tried to access any latent needs in the customer, analyse the competitors' strategies looking for ideas. In the end, all these measures failed to identify sufficient ideas, allowing for normal attrition doing* [during] *the NPD process, to deliver new products. Neither senior management, Marketing nor R&D had a real handle on how to create the right*

innovative environment, or manage what was there, to facilitate NPDs.' [June 2000].

Marketing started with a goal of acquiring innovative product ideas, but increasingly another more important outcome measure started to dominate their thoughts, which was how to maintain support for the innovation community, and therefore the innovative initiative.

5.3.2.2 Attitudinal outcome: interpreting innovation commitment

Section 5.2 described the attitudinal outcome measures used in this study to conceptualise and explore the functional communities' level of engagement. In section 5.3.1.2, it was also suggested that each community had a perceived role to play in meeting the goals of the innovative initiative. For Marketing, that rested on facilitating the innovation process, by encouraging the collection and dissemination of customer information from Sales to R&D, and encouraging R&D to acquire technological and radical ideas that, when combined with these customers' needs, could germinate new product ideas. This was the implicit psychological contract Marketing had with the other communities, and was observable in nearly all their interactions with the others:

[Marketing] *'Having spent a lot of time setting up the meeting between R&D, and both Shell and DERA to talk about innovation, R&D are now backing out of taking any further interest. Is there any wonder at the lack of R&D to come up with any technological ideas?'* [March 1999].

Marketing were surprised at the lack of general interest and enthusiasm within R&D to engage in these processes. But increasingly, *m*arketing suspected that the problem may be with other communities, particularly the lack of sponsorship from both senior management and *Sales*:

[Marketing] *'There is a culture developing in this organisation, outside of R&D and Marketing, that wants innovation but not at any extra costs, with no risk, and delivered to their doorstep like pints of milk, regularly and at the appointed time. We get comments from R&D that Sales make off-hand remarks about engineers spending all their time in front of their monitors looking at internet sites.'* [February 1999].

It was this lack of a cohesive culture, one that supported the innovative initiative, which first indicated to Marketing that they should take a more proactive role in leading a cultural change, by adopting a technological lead role in suggesting product ideas based around existing application solutions:

> [Marketing] *'In Marketing, we are all engineers who have experience of technological and radical development. I think it is time for us to take an active role and show some leadership on this matter. We can start by looking at technologies associated with existing areas of expertise.'* [May 1999].

This was challenging other communities' thought worlds associated with the innovative initiative, by arranging more workshops and informal meetings to discuss ideas:

> [Marketing] *'Innovation adjusts the way we should do things. Like this innovative initiative from senior management, we have to change things for the better, communicate with each other, talk more earnestly with our customers, and this affects not just the marketing group but everyone else.'* [July 1999].

It was at this point that Marketing started to evaluate other communities' true commitment to the innovative initiative, and more generally to innovation:

> [Marketing] *'In Marketing we are totally involved and committed to innovation, but getting the other groups fired up is a big problem,*

> *especially when senior management are not helping. By re-prioritising some groups' efforts onto fire-fighting activities, we just want some broad support for the work we are doing, and commitment to innovation.'* [July 1999].

Successively, through resources being diverted to sales support activities and new strategic directions being issued by the MD, Marketing foresaw changes to its role:

> [Marketing] *'In the past, marketing were the purveyors of innovation, stimulating an innovative culture to encourage engagement in the philosophy and practice of innovation. In the last two years it has been successively squeezed out of us by senior management changing our core objectives, and focusing us instead on sales support activities.'* [March 2000].

At the end of the study, Marketing recognised a change in the fundamental business philosophy and, as a consequence of this, a change at the organisational level of the expected outcomes from the innovative initiative:

> [Marketing] *'In the end it's a fundamental change in business philosophy. It is easier to grow the business through acquisitions than it is to engender an innovative culture, and sit back and hope that products will result. You can't blame management for that. They have pressure on them to perform, to achieve the revenue and profit figures, and most importantly meet the shareholders' expectations.'* [July 2000].

It was this fundamental shift, by senior management and Sales, away from an organic solution for innovation acquisition to the external acquisition of product lines, that convinced Marketing that these communities were no longer fully engaged with the innovation community. Associated with Marketing's comprehension of other communities, and their commitment to innovation, came new expectations concerning

appropriate behavioural outcomes. This is explored further in the next section, and is the last exemplar of outcome measures for this community.

5.3.2.3 Behavioural outcome: challenging the communities' processes of innovation

In the previous section, it was suggested that commitment to the innovative initiative was a primary concern of Marketing. If the other communities were uncommitted, then they were also less likely to exhibit appropriate collective actions associated with the important processes of innovation. For Marketing, this was no more evident than in their interest in championing product issues, especially concerning the future development of these product lines:

> [Marketing] *'There has, over the past five years, been a lack of commitment to the product, with any true product champions or facilitators who can take a lead and push for change. There is a committee mentality to decision-making, where R&D depend on Marketing, and then we are dependent on senior management, and the senior management on the MD.'* [July 1998].

The other communities' reluctance to help facilitate changes put increasing pressure on Marketing to take more of a leadership role in driving the innovative initiative. Marketing balanced this leadership role for the innovative initiative against their expectations of the other communities and perceived it as a trade-off, one favour for another. Marketing provided leadership on potential areas of technological development, by instigating a research study that identified research establishments and technological areas. Marketing worked with senior management on questioning the value of some of Sales' activities concerning customer relationship management, resulting in external courses for both communities. Finally, Marketing worked with senior management on developing a business model for evaluating any innovative ideas that the other communities generated. Most of these activities were focused around the

assessment of these communities' abilities to create, develop and deliver superior customer value. For Marketing, this became the definitive measure for evaluating all other communities' collective actions, but other factors were having an additional influence on their actions:

> [Marketing] *'We see this restructure as a sign from senior management that the focus of the business processes is on customer value delivery, but there is a new worry that this downsizing activity has again encouraged a retrenchment of those survivors, making it harder to get groups to open up.'* [March 1999].

Increasingly, Marketing became concerned with senior management's commitment to the innovative initiative, especially when they perceived their value orientations were changing from a customer orientation towards a financial orientation:

> [Marketing] *'We are worried about the commitment level from senior management to the innovative initiative when they so readily discard a customer care initiative that was so central to their customer-oriented strategy. It suggests that financial concerns are now dominating their strategic decisions, and what does this say about the future of the three innovation processes?'* [April 1999].

Marketing took these changes in the communities' collective actions as a barometer of future actions, suggesting that there would be less support in the future and that collective actions on the innovative initiative would rely solely on R&D and Marketing:

> [Marketing] *'. . . the recent changes to the organisation have created a disturbing culture of unrest, where individuals are increasingly falling back to their group cultures, and this is crippling cross-functional collaboration. In the past, this entrenchment severely limited the dissemination of information between the groups, and resulted in bitter fights between the groups. I'd hoped we had moved away from this, but*

> *it's increasingly looking as though it's coming back. The worst of it is the selfishness of the groups, looking after their own concerns, and playing no collective part in any of the organisational-wide goals, especially the innovative initiative.'* [July 1999].

These changes in behavioural outcome were as a consequence of changes in the communities' superordinate goals. Those goals were increasingly focused on community-level objectives. For example, senior management prioritising on financial issues such as meeting short-term revenue and product objectives, or Sales on meeting their financial objectives. Whilst senior management maintained some support for the innovative initiative, Marketing still maintained full commitment to it. However, eventual changes made this position untenable:

> [Marketing] *'Marketing, like all other groups, has had to realign its behaviour to keep in step with that of the MD's, but not without some sacrifices. We have had to shed our beliefs concerning what delivers superior customer value, and instead adopt these new organisational values which are impossible for us to commit to.'* [March 2000].

By the end of the study, Marketing like Sales had witnessed a dramatic change in their own and the other communities' expected behavioural outcomes. But unlike Sales, Marketing perceived that these changes in expected behavioural outcomes from the other communities were instrumental in the collapse of the innovation community, and the failure of the innovative initiative.

5.3.3 R&D

Three exemplars are presented below concerning the community's performance, attitudinal and behavioural outcome measures, and reflect the changing expectations of the community and the level of commitment they had for the innovative initiative. The

first exemplar concerns the community's performance outcome measure, and reflects their expectations concerning the acquisition of product ideas and likely success.

5.3.3.1 Performance outcome: acquisition of product ideas

At the start of the study in 1997, R&D perceived the importance of the innovative initiative as a means to initiate change and innovation into the company's product lines. R&D were aware of the changes happening in the company's marketing strategy:

> [R&D] *'We can see senior management's take on new products in new markets. They want bigger volumes of sales and corresponding larger markets to operate in, an appreciable move away from the company's previous niche marketing strategy. We have been very concerned about the dominance in our product line development plans of incremental developments. We want a change as much as any other group within the company.'* [September 1997].

However, like the other communities within the company, this community had lost important personnel previously active in providing leadership on technological and product issues for the different product lines. Marketing's initial delivery of a market research report detailing activities in institutions around the UK was useful, but not specific enough to help R&D:

> [R&D] *'If we wait until Marketing provides us with useful leadership on specific technologies and product ideas, then we are going to have to wait a long time. Look at last year's R&D plans, all driven by marketing and all incremental stuff. We are going to have to provide the technological and radical ideas ourselves, but at the moment I don't know where that's going to come from, as we don't have enough experience within the group on going out and acquiring these ideas. But we are definitely motivated to do this, as long as we can get support from others.'* [July 1998].

In 1998 R&D regularly arranged visits to the customers, through Sales and Marketing, and attended conferences, exhibitions, seminars and workshops. It was on one of these visits that two of the company's R&D engineers bumped into [each other] and discussed a technological concept that could have had an application within one of the company's market areas:

> [R&D] *'At last we identified a technology, Project Z, and have support from our R&D senior manager, but not from any of the other senior management group. Similarly, we don't have enough marketing information to get this project past the first stage of our procedures. That is a worry. We need real market information and Marketing are our only route for this now, as we can see that the sales group's focus is only on short-term sales activities.'* [March 1999].

R&D expected that having identified this new technological innovation idea, communities would show support and interest in developing this further. Instead, R&D observed conflicts that endangered any positive outcome for this project:

> [R&D] *'We are now seeing task conflicts in other groups, between their commitment to these longer-term projects, and the shorter-term tasks associated with sales support, and this confusion is originating from senior management. Even the simplest of product enhancements now requires us to provide extra support; where's the ring-fencing of the resources?'* [February 1999].

R&D were concerned about the impact that these task conflicts were having on their productivity regarding both the technological and radical innovation processes. When R&D were asked to present their plans to a forum of sales distributors, they felt uncomfortable. The supposed implicit psychological contracts they believed they had with other communities, concerning their support on these developments, no longer seemed to be in operation:

[R&D] *'When we are put in front of the sales distributors, we have to try and give them assurances that we are actively developing new technological and radical products. But we just cannot do that without the collaboration from other groups. We can't do these longer-term developments if every other group is focused on shorter-term revenue based tasks. Why can't the senior management see this?'* [May 1999].

During the summer, R&D continued with both projects (X and Z), but after the MD's presentation of the company's vision for its markets and products, the company's objectives and, therefore, organisational superordinate goals, had changed. But that did not reduce the level of ambiguity associated with product or market strategy. The MD talked about market leadership, but not about how it would be realised:

> [R&D] *'How can we be a market leader in the application of our technologies and products when there are no specific objectives concerning how this will be achieved. We cannot see any real commitment to the innovative initiative. We have had our resources cut and can see the emphasis move towards short-term sales support.'* [October 1999].

By the end of the study, R&D's expected outcomes for both projects X and Z were that they would be terminated or shelved, but that senior management would continue support for product innovations, as that had considerably less risk and could deliver products in the short-term. The next section discusses the second exemplar for R&D, which explores their attitudes towards the process of innovation, and discusses the community's interpretation and commitment to the potential conflicts between organisational and their superordinate goals.

5.3.3.2 Attitudinal outcome: innovation process effectiveness

As discussed in section 5.3.1.2, R&D fully understood their role within the organisation. They associated with the innovative initiative. For R&D, there was more than a simple compliance commitment to this initiative; the values and attitudes alluded to by this initiative matched up with the community's value orientation of innovation orientation. R&D exhibited affective commitment. Iversen (1996) suggested that communities that had this internalised commitment were more likely to generate services that would be successful at creating value for the parties involved (in this study, the customers and other functional communities). The importance of the innovative initiative to R&D evoked a highly critical appraisal of the other communities' commitment to it:

> [R&D] *'A year has passed since senior management and Marketing kicked off this innovative initiative. There is still relatively little commitment to this process by groups other than R&D and Marketing. This is becoming an increasing worry for us, and potentially the success of this initiative. Without input on customer ideas we have no real lead for our efforts. What technologies do we investigate? Senior management have no concrete strategy for what markets or product lines they want to focus on, so as engineers we just have to go out and rely on serendipity to present the right goods.'* [July 1998].

A year into the process, R&D were already questioning the affective commitment these communities had towards the longer-term processes. Though they still showed some signs of compliance commitment to the three different innovation processes, their activities suggested less of a commitment:

> [R&D] *'We are noticing a distinct change in senior management's attitude towards innovation. They are far more responsive to the product innovation process than the other two processes. We assume it is the risk element associated with both the technological and radical*

innovation processes, and the longer potential product delivery.' [December 1997].

In Sales, the longer potential delivery cycle of these high risk processes were explicitly communicated to R&D after the sales distributors' workshop:

> [R&D] *'We can already see an attitude within the sales group that any innovation process delivering long term products will not get their support. Sales suggest that have been too many slip-ups in the past, and they are not willing to invest in anything that is more likely to make their lives harder, and not easier, which is what they are looking for.'* [July 1999].

This was the first time that R&D reflected on a growing concern they had that Sales and senior management had lost trust in them, specifically that technical findings originating from this community would no longer be trusted at 'face value'. This element of trust and assurance in the capabilities of these communities directly affected the level and style of commitment both Sales and senior management had for the innovative initiative:

> [R&D] *'R&D can see that Sales and senior management don't trust either us or Marketing. They don't believe our technical or market evaluations, and this is supposedly because of our mistakes of the past. There is already a culture developing that a sales orientation is the only orientation that can deliver results in the short-term and with low risk.'* [October 1999].

This was a massive blow for both Marketing and R&D, and one that they had little in the way of rebuttal:

> [R&D] *'We have nothing exciting to offer Sales or senior management in terms of radical or technological innovations that have acceptable*

> *risk. It is not that we have not identified all technical issues and potential solutions, and Marketing the commercial issues, it's that Sales and senior management have lost any commitment to the innovative initiative, and with it went our motivation."* [January 2000].

With the final realisation that both of these communities had lost any commitment to the innovative initiative, R&D abandoned its commitment to the technological and radical innovation processes. There was an acceptance that the customers and company would be best served by R&D adopting a customer-oriented approach to innovation, putting all efforts and expectations behind the product innovation process:

> [R&D] *'The innovation process broke down because there was no longer the collaboration between R&D, Marketing and Sales. This was damaged by the attitudes of senior management when they focused these groups on short-term activities, and through this denied R&D valuable input and ultimately resources to complete any of the innovation processes.'* [November 1999].

R&D could never succeed with the innovative initiative without the resources to acquire innovative ideas, and R&D needed this commitment from the other communities. When affective commitment by both senior management and Sales turned to compliance commitment, and then to no commitment at all, R&D lost motivation and commitment in the process, and engagement in the innovation community. R&D's original perception of the purpose of the innovative initiative was to encourage innovative collective actions in all communities towards the formation of the innovation community, and its continued support. This is the subject of the third exemplar, followed by a discussion.

5.3.3.3 Behavioural outcome: innovative collective actions

R&D's value orientation focused on innovation (section 5.3.3). This innovation orientation supported R&D's engagement with the innovation community and the underlying innovative initiative, and their superordinate goals associated with radical and technological innovation acquisition, as evidenced in sections 5.3.3.1 and 5.3.3.2. But to achieve these superordinate goals, R&D had mutual expectations of other communities within the organisation; expectations that were part of their implicit psychological contract with these communities, as discussed in section 5.2.

At the beginning of the study, R&D observed the support by other communities as an indicator of their intended innovative collective actions:

> [R&D] *'R&D see the strengthening of the marketing team, with an additional Product Manager, as a means to support our efforts. This addition will off-load some of the technical product support and free up resources for meeting the new challenges of this innovative initiative.'* [July 1998].

But even at this stage of the study, R&D perceived a difference between the Sales and Marketing thought worlds concerning the means of delivering superior customer value:

> [R&D] *'It is an increasing worry for us that Marketing and Sales perceive the delivery of customer value so differently. Marketing are taking the high ground in developing a generic product idea applicable for selling across the industry, whereas Sales are looking to sell to the customer an exact fit to their wants. This conflict between these two perspectives is likely to cause us problems in the future.'* [July 1998].

R&D perceived two fundamental differences between these perspectives, the degree of risk acceptance, and the timescale for delivery (as discussed in sections 5.3.1 and 5.3.2).

But while senior management carried on supporting the innovative initiative, and particularly the acquisition of technological and radical ideas, then the perceived differences in the other communities' thought worlds were not that important. When the new MD arrived at the organisation and his perceived value orientation was different from that previously emergent from senior management, then R&D, like Marketing suspected that senior management had a new desired value orientation, a customer orientation purporting to deliver superior customer values to those so far achieved:

> [R&D] '*Like Marketing, we see the new MD and the reasons for change as representing a fundamental shift in how the company should deliver superior customer value. We have our opinions about what that means, and it provides an additional incentive for us to come up with some organic developments.*' [January 1999].

Without specific new organisational superordinate goals associated with the innovative initiative, R&D redoubled their efforts on the task of radical and technological innovative acquisition. But the changing expectations from the new MD (discussed in section 5.3.4) were directly influencing the other communities' innovative collective actions, particularly those activities associated with supporting R&D's evaluation of the new product ideas:

> [R&D] *'With all marketing resource being pulled towards helping sales, we are going to struggle with getting the right information to support the commercial evaluation, which in turn is likely to impact on Projects X and Z being able to move to the next development stage.'* [March 1999].

R&D was reliant on both Sales and Marketing to provide the commercial information. Support was still provided by Marketing. There was a feeling within R&D that the organisation lacked full commitment to the innovative initiative. There was direct

evidence that this lack of commitment by the other communities was directly influencing the increasing turnover of R&D engineers:

> [R&D] *'More of our R&D engineers, and specifically those with the ability to drive technological innovation, are leaving the organisation. The reason they give is the perceived lack of support from other groups, specifically senior management and Sales.'* [September 1999].

At the end of the year, the only project left from the innovative initiative was the product innovation process, which did have sponsorship from one member of senior management. This project was in jeopardy because of increasing task conflicts:

> [R&D] *'Both Marketing and ourselves are bearing the brunt of the dumbing down of Sales* [a reference to the increasing turnover of sales managers, and loss of key application and product skills]. *We are picking up ever increasing product support issues. Senior management do not seem to be worried about us doing this work instead of working on the product innovation process.'* [January 2000].

With the loss of the senior management sponsor for Project Y came a realisation that the evolving organisational superordinate goals no longer supported the innovative initiative. With this understanding came a new interpretation of the social world, one that would need a new set of community superordinate goals:

> [R&D] *'As R&D, we service the company's needs and eventually we have to put personal preferences aside and address these new needs. They are telling us that the need is for short-term product support and that's what we must deliver. But the company must accept that we cannot do this and still support the original innovative initiative. If we use 100% of our resource on these product enhancement tasks, then we have none left for developing technological or radical innovative ideas.'* [March 2000].

By the end of the study, R&D had generated a new implicit psychological contract defining its behavioural expectations of other communities and what they could expect from them.

5.3.4 Senior Management

Three exemplars are presented to explore senior management's performance, attitudinal and behavioural outcome measures associated with the innovative initiative. The first exemplar on the performance outcome measure reflected senior management's expectations that the innovative initiative should result in new products for new markets.

5.3.4.1 Performance outcome: new products, bigger markets

At the beginning of this study, the recently arrived BM (there were four of these BMs, each responsible for one quarter of the business and reporting directly to the MD), reiterated the importance of acquiring new technological competencies, developing new products for new markets, and updating the existing product range to match current benchmarks in the industry, all resulting from a strategic review:

> [Senior management] *'Having reviewed both product and marketing strategies for all our business, senior management have agreed to three key strategic initiatives: a need to bring in new technological competencies; a need to move into higher volume markets with new highly differentiated products; update our current products to be competitive. With this in mind we have sanctioned an innovative initiative, one that will address all three of the strategic initiatives above. I want all groups to collaborate on this and treat it as the highest priority.'* [September 1997].

Nearly one year on, senior management showed outward signs of frustration with Marketing and R&D concerning the expected outcomes, along with the acquisition of technological and radical ideas from the innovative initiative. Comments from senior management during the strategy review process indicated their feelings:

> [Senior management] *'At this year's product and market strategy review I have still seen no evidence of any new innovative ideas. Our product development plans are still full of incremental opportunities. These will not meet our long-term organisational goals.'* [July 1998].

At the end of the year, with a change in MD came an increasing concern for short-term financial performance. Statements by senior management were challenging other communities' priorities:

> [Senior management] *'We are never going to make the new revenue and profit figures for this year if we don't all push in the same direction, and importantly re-evaluate our priorities.'* [March 1999].

With an increasing realisation that short-term revenue issues could not be solved by focusing on longer-term projects, senior management increasingly wanted short-term solutions and suggested that communities should focus on these:

> [Senior management] *'We have to acknowledge that shortfalls in revenue and profits require us to all focus in the short-term on sales.'* [April 1999].

This focus on sales represented a confirmation of the community's change to customer orientation. Senior management increasingly evaluated other communities' collective actions against its ability to deliver customer value:

[Senior management] *'The MD is assessing performance of the different groups* [the innovative initiative is part of this] *and has observed that groups are increasingly semi-detached from the customer and they are confusing activity with success. Groups must evaluate their activities and assess what it does in terms of creating, developing and delivering superior customer value.'* [October 1999].

Senior management's expectations of community activities were focused on short-term deliverables, activities that could quickly result in increasing both revenue and profit. Included in these expectations was the innovative initiative. Reviews for both Projects X and Y reflected a new change in senior management value orientation, a change to a financial orientation and a newly espoused set of organisational goals:

> [Senior management] *'Project X's commercial evaluation has failed to get our approval because of the associated risk, risk that we could and did accept twelve months previous, but which now is unacceptable. This project is now shelved.'* [March 2000].

> [Senior management] *'Project Y was originally acknowledged as a 'catch up' project, one to bring the product in line with its competitors. But we cannot accept this premise any more. We cannot invest in something that does not create some true differentiators. Marketing and R&D need to go back to the drawing board.'* [March 2000].

These two projects were the last innovation processes associated with the original innovative initiative, and both failed to progress. Senior management's performance outcomes for the innovative initiative were very much tied to the delivery of new products. These expected outcomes changed over the period of this study because of two key factors: the changing acceptance of risk and the changing perception of the means of creating, developing and delivering superior customer value. The next section discusses the second exemplar for senior management, exploring the concept of

attitudinal outcome and its relationship to building innovative capability within the communities.

5.3.4.2 Attitudinal outcome: building innovative capability

As mentioned in section 5.3.4.1, senior management had made a commitment to the innovative initiative, one that implied an implicit psychological contract between them and the other communities. This implicit psychological contract included a commitment to innovation, one that secured resources and priority for the task of technological and radical idea acquisition. For their part, senior management focused on the importance of understanding the concept of customer value and its role in encouraging the development of a market-oriented organisation. Senior management conducted regular workshops on customers, focusing in particular on the changing nature of their needs:

> [Senior management] *'By focusing on the customer we are trying to help all groups understand and acknowledge both the expressed and latent needs, and this will help the groups understand the importance of creating, developing and delivering superior customer value.'* [July 1998].

Senior management still left the individual communities to define their own understanding of what delivered superior customer value. This lack of specific leadership surrounding the innovative initiative was a consequence of three factors: lack of any detailed organisational strategy for growth; the inability of senior management to interpret the needs associated with innovation management; and the lack of skills in managing cross-functional activities that required a strong element of leadership. The first factor above was addressed when the new MD took over:

> [Senior management] *'We now know the reasons for the change in MD. It was to radically change the organisation's culture, to change their*

> *attitudes towards the process of innovation, to challenge the different groups' values and to examine our processes and re-evaluate our deliverables.'* [January 1999].

By re-evaluating the different communities' value orientations, senior management hoped to generate an understanding between the communities, which was expected to facilitate better collaboration, deliver superior customer value and improve organisational performance:

> [Senior management] *'We are putting pressure on all groups to analyse the value of what they are doing. Existing product idea trials with the customer, with the potential to open new markets to us, are being very poorly managed. This is having an* adverse *effect on collaboration in other innovative processes, particularly between Sales and Marketing.'* [March 1999].

Senior management could perceive the problem of facilitating these innovative activities but, like the other communities, were unsure on how to proceed. Senior management decided to run some customer relationship workshops to promote a forum where communities could share their interpretation of what the customers' latent and expressed needs were and their expectations on how to deliver these:

> [Senior management] *'Running these workshops on evaluating the approach to delivering superior customer value has, we believe, revealed the issues resulting from this natural multi-functional approach to delivery. We, like other groups, barely understand the complex relationship involved in this process, but it does present us with a learning opportunity and one that requires commitment from all groups.'* [March 1999].

The issues discussed above by senior management concerned the conflict over task priorities, as perceived by R&D and Marketing, concerning the short- and long-term

objectives of the organisation. For senior management there was no conflict; they needed and wanted both, but the short-term fire-fighting activities still were being given the higher priority:

> [Senior management] *'Product strategy review meetings are being run in the next couple of months to focus on short-term activities that can contribute to the revenue and profit for this year.'* [May 1999].

A customer workshop, run for the benefit of the sales distributor network, was being used by senior management as another opportunity for communities to share their perceptions on how to deliver superior customer value:

> [Senior management] *'This customer workshop is a great opportunity for groups to challenge other groups' perceptions on the innovative initiative, and their expectations concerning interaction between themselves. Unfortunately, I cannot give you any information on senior management's expectations or strategies until I hear from the new MD.'* [June 1999].

Below the MD level of senior management there was continued support for the innovative initiative, though, increasingly, community resources were being focused on short-term tasks. The next round of strategy reviews in August brought a dramatic change of attitude from senior management, especially towards the current innovative activities and concerning the organisation's future course:

> [Senior management] *'Having now reviewed all the different product and marketing strategies I* [MD] *have detected nothing that is likely to significantly contribute to the organisation's organic growth. It is therefore my conclusion that organisational growth must come via acquisition, but what this is at the moment I will not say.'* [August 1999].

This was the first communication from senior management that their expectations regarding the innovative initiative had changed. For senior management, there was a definite change in support, from the technological and radical innovations towards product innovations, particularly for those projects that could deliver products in the short-term:

> [Senior management] *'We want to finish off all the short-term NPDs by the end of the year, so that we can make a new start. Next year will both open up new opportunities and close off others.'* [October 1999].

By the end of the year a new senior management team had taken over. This team had a new attitude towards innovation, one that required a different mindset and resources:

> [Senior management] *'We are looking for a different attitude from the groups. We need to produce more products that are as good as or slightly better than the competition, but importantly have lower development and support costs.'* [March 2000].

At the end of the study, senior management's perspective on building innovative capability had changed. It had changed because the community membership had changed. But importantly, the community's expectations were different from those at the beginning of the study because of strong leadership from the managing director. Leadership that now provided detailed strategic objectives, and very clear perspectives on the future course of product development and the means of creating, developing and delivering superior customer value.

The third exemplar reflects on senior management's expectations associated with the behavioural outcomes from the innovative initiative, and particularly the contribution it could make to delivering superior customer value.

5.3.4.3 Behavioural outcome: customer-oriented collective actions

Customer-oriented collective actions have been an implied outcome measure from the two previous sections, but senior management at the start of the study had vague behavioural expectations for the different communities concerning the innovative initiative. In the case of Sales, where their focus was on customer contacts, senior management sought to focus the community's efforts on those customers who were most valuable to the organisation:

> [Senior management] *'We are trying to change basic habits here. We have asked Sales to prioritise the time spent on customers to those who contribute most to revenue. It's a mindset issue. We have limited sales resources and need to concentrate on those customers who actually contribute to revenue and profits.'* [July 1998].

The effectiveness of the communities' efforts, particularly in relation to the creation, development and delivery of superior customer value, became an increasing priority of senior management:

> [Senior management] *'We have got to evaluate efforts for their effectiveness to produce results. We are being asked to cut costs and achieve more. This requires radical change in our activities.'* [January 1999].

As the new MD exerted tighter control over senior management, evidenced in the previous exemplars by a shift towards focusing on shorter-term revenue and profit targets, so expected behavioural outcomes towards the innovative initiative changed. There was an increasing focus towards short-term deliverables:

> [Senior management] *'For both R&D and Marketing, we now require them to provide more support to Sales to support the new product launches.'* [March 1999].

This increase in work tasks for the communities above their existing commitments to the various activities associated with the innovative initiative, already commented on in sections 5.3.1 to 5.3.3, resulted in a general reluctance by the communities to commit to activities that fell outside the implicit psychological contracts they had constructed. This will be discussed in greater detail in section 6.4. Increasingly, problems arose related to those tasks that relied on collaboration between the communities:

> [Senior management] *'We are seeing problems associated with customer projects, like application trials, where no one group wants to take charge and coordinate activity. We can see two reasons for this. The groups don't want to take on any additional responsibilities because they don't have the resources, and that these tasks are perceived as being lower priority than other tasks they have. This results in serious delays in the customer projects.'* [March 1999].

These task priorities, noted by senior management, related directly to the communities' perception of the ability of the task to deliver superior customer value. As a consequence of this, senior management started to run additional sales and marketing workshops to facilitate the surfacing of these perceptions about customer value. A sales distributor workshop provided additional opportunities for the communities to interpret and integrate their perceptions on delivering superior customer value:

> [Senior management] *'We will use the sales distributor workshop as an opportunity to explore customer needs, and provide feedback to our primary customers about our development strategy, that it's based on leap-frogging the competition, not just playing catch-up.'* [May 1999].

As senior management became increasingly finance-oriented, so their expectations about activities associated with the innovative initiative changed. They increasingly favoured product innovations over the riskier radical and technological innovations, because product innovations would result in short-term revenue gains:

> [Senior management] *'The only focus we have now is month-on-month sales forecasts. We will force groups to focus on those activities that will produce revenue this month or the next.'* [October 1999].

There was no longer any pretence from senior management. At the end of the year the innovative initiative was stopped, the focus was on fire-fighting and planning for the merger of the new business with the existing one:

> [Senior management] *'We are a new senior management group who understand the problems of prioritisation. We have told all groups to hold off any new work. We are evaluating all existing product developments and will make decisions on whether they progress or not in the near future. Immediately, we have asked every group to carry on with its activities, but not to commit to anything new. Our medium-term strategy is to merge the businesses and then work on a longer term strategy for future product development.'* [February 2000].

By the end of the study the remaining projects (X and Y) were formally shelved. It was observed that senior management's value orientations changed twice, from customer to sales orientation, and then from sales- to finance-oriented. Because of this they expected the other communities' attitudes and collective actions to change. When this did not match their expectations, they took a more drastic action to change them. The new MD changed his senior management, appointing senior management from the newly acquired organisation, and through them set new organisational goals and new expectations.

In the next section, the outcome measures observed and recorded for each community have been re-examined to explore the relationship between these and their superordinate goals and implicit psychological contracts.

5.4 Understanding Mutual Expectations through Outcome Criteria

The original research question proposed to help explore the role of mutual expectations was: 'What is the relationship between the communities' expectations of the innovation community and their implicit psychological contracts with each other?' This chapter has explored how functional community superordinate goals are closely coupled to the communities' expectations of any innovative activities, and that the mutual expectations surrounding these directly influence their level of engagement with the innovation community. It has also been suggested that these mutual expectations operate at three levels: performance, attitudinal and behavioural.

In section 5.3 above, each of the four communities' expected outcomes were studied (performance, attitudinal and behavioural outcomes measures) to suggest some insight into the relationships between outcome measures and mutual expectations. It was noted that changes in the functional communities' expected outcomes measures were also related to observed changes to the implicit psychological contracts between these functional communities and the innovation community and the superordinate goals they held. All three factors (outcome measures, superordinate goals and implicit psychological contracts) were inter-related and, in turn, influenced by the community's perception of the innovative initiative's ability to create, develop and deliver superior customer value. This interrelationship between the communities' outcome measures, superordinate goals and mutual expectations was a dynamic relationship, altering as a consequence of changes in the internal environment. As suggested in the introduction to this chapter, studying the similarities and differences of communities' innovation goals should provide further insight into the reasons for the changes observed, and provide

further clarification of the interrelationship between each community's expectations, superordinate goals and implicit psychological contracts.

In section 5.2, it was suggested that each community's superordinate goals encouraged these members to work together, providing both motivation and commitment to their respective communities. These functional community superordinate goals can, in some circumstances, compete with informal community superodinate goals; those goals supported by the communities' mutual expectations associated with engaging with an innovation community and supporting the organisation-wide innovative initiative. The communities' expectations have already been explored (sections 5.3.1 to 5.3.4), using three specific outcome measures: performance, attitudinal and behavioural. What was evident from this initial analysis were the similarities and differences between the communities' expectations. The mutual expectations of these functional communities, communicated in the form of specific innovation community superordinate goals, concerning the expected outcome measures associated with the innovative initiative could strengthen the implicit psychological contracts between them and their engagement and belongingness to the innovation community. However, differences would endanger these contracts.

The next three sections explore the functional communities' understanding of these implicit psychological contracts, their expected outcome measures of the functional communities and of the innovation community. The performance outcome measure, and its underlying innovative initiative, is the first to be explored, as it was the most often referred to by the communities when assessing success associated with the innovation community.

5.4.1 Performance Outcomes

The communities' performance outcome measures are linked closely with their thought worlds – the implicit rules by which they attribute meaning to their position and task (Schein, 1992). Associated with these community perspectives of organisational priorities and means of delivering superior customer value, are the mutual expectations they have of other communities; these are the assumed shared beliefs they hold, the organisational superordinate goals. These community-mutual expectations define their interpretation of the organisational superordinate goals and, therefore, the implicit psychological contracts they hold with other communities and associated with the multi-functional activities, in this case the innovative initiative. To better comprehend the interrelationship between each community's expected performance outcome measures and the functional and innovation communities' superordinate goals, the findings from sections 5.3.1 to 5.3.4 have been compared with one another to highlight potential relationships.

5.4.1.1 Performance outcomes measures and functional and innovation community superordinate goals

The innovative initiative, and the informal innovation community, had overall general support from the four communities (Sales, Marketing, R&D and senior management), but these functional communities held slightly different performance outcome measures associated with it. These differences reflected the communities' perspectives on what should be the primary outcome of these different innovation processes.

For this study, we reflected on the progress of three innovation processes (technological, radical and product innovations): projects X, Z and Y. For senior management, Marketing and R&D, the focus was on the process while their performance outcome measures were associated with the initiative's ability to acquire technological and

radical ideas. However, for Sales, the primary performance outcome measure was the generation of new products. This raises the first issue associated with performance outcome measures. If each functional community holds potentially different perspectives of the expected outcome measures, then mutual expectations are likely to be affected. This therefore creates difficulties concerning the communities' implicit psychological contracts associated with their engagement in the innovation community, and their overall commitment to the underlying innovative initiative.

Cohen and Bailey (1997) stressed the importance of future research to focus on studying communities in their social context, recognising that these formal and informal communities are embedded in larger social systems that are likely to influence their behaviour and the way they perform. Van de Ven *et al.*'s (2000) research on the variability of performance outcome criteria for innovation processes, stressed that the specific product outcomes, new products or technologies for the organisation, may be only a by-product of some communities' outcome criteria. Their research did not explore further the reasoning behind these changes over time and any link there may be between this and the superordinate goals, both at the functional and innovation community level. The author's initial research suggests that the changes in outcome criteria are in part a consequence of a change in the functional communities' superordinate goals, and those towards the informal innovation community. These changes in superordinate goals are a consequence of:

- conflict between the innovation and functional superordinate goals, where the informal outcomes are endangering the functional community's ability to fulfil its internal superordinate goals and therefore its survival within the organisation;

- a reassessment of the risk and probability of achieving the original goals, and therefore changing them to easier goals;

This link between the performance outcome measures and superordinate goals initially had a positive relationship to functional communities' engagement with the innovation community. Largely supported by shared superordinate goals and a stable environment that encouraged participation and social interaction. The benefits of this social participation were information flow, open discussions and pooling of resources to actively acquire and disseminate product ideas.

5.4.2 Attitudinal Outcomes

Research so far has shown that communities' feelings and thinking surrounding an activity like NPD are linked to their psychosocial traits (Cohen and Bailey, 1997), the communities' dynamics (Appelbaum *et al.,* 1999; Holland *et al.*, 2000), the environment (Angle, 2000; Bennett and Durkin, 2000), the processes of interaction (Martin, 1995; Poole and Van de Ven, 2000), and learning (Schein, 1992). Wenger (1999) stressed the importance of learning in changing who we are and the individual's perspective on context associated with community life; with this identification comes expectations, specifically attitudinal expected outcomes, associated with the joint enterprise. Commitment to a community is a measure of its coherence, and the degree of identity it has with its underlying characteristics (values, beliefs and norms). McDonough III's (2000) meta-analysis of multi-functional teamworking has suggested that too little research has been conducted on the importance team behaviour (cooperation, commitment, ownership and trust) has on cross-functional success. The literature and research associated with NPD focuses too much on formal cross-functional teams and has little or no relevance to informal innovation communities, their creation, development and disbandment. The author explores further the relationship between

communities' commitment to the innovative initiative, their engagement with the innovation community, and their mutual expectations.

5.4.2.1 Attitudinal outcomes measures and mutual expectations

At the beginning of this study all four communities (Sales, Marketing, R&D and senior management) were initially committed to the innovative initiative. However, for different reasons, Sales and senior management focused on new product delivery, whilst R&D and Marketing focused more on the process and not the end result (discussed in section 5.4.1.1). With senior management and Sales having quite different performance outcome measures from Marketing and R&D, any change, or perceived change, in these communities' expected outcomes would have an effect on their affective commitment towards the innovative initiative.

With changes in senior management's superordinate goals, driven by the change in MD and his influence on organisational goals, the researchers and the author observed changes to Sales' attitude towards the innovative initiative. These changes were driven by a belief that both the technological and the radical innovation processes were unlikely to meet their expectations concerning delivering new products. Both Sales and senior management adopted a short-term perspective, the delivery of short-term superior customer value (incremental product developments and acquisition of new product lines).

Marketing and R&D, who sensed a change in the other communities' innovative commitment to the technological and radical innovation process, attempted to remain committed to the original goals of the innovative initiative, focusing on the acquisition and dissemination of innovative ideas. But with increasing resources being switched to

short-term measures, they re-evaluated the changed environment and eventually changed their community superordinate goals.

Communities' attitudinal outcomes associated with their engagement in the innovation community were directly related to its expected performance outcomes. The author has already discussed (section 5.4.2 above), that communities' expected outcome measures change over time and the original implicit psychological contracts built up between these functional and innovation communities break down. The consequence of these changed mutual expectations was a decreasing level of engagement in the innovation community and its superordinate goals and an increased commitment to the functional community superordinate goals. The initial contribution of these findings is a better understanding of the causal relationship between affective commitment and mutual expectations, suggested by these two relationships:

- affective commitment to informal communities of practice are directly related to the level of mutual expectations that the functional community members have towards the innovation community;

- these mutual expectations are often built around shared expected performance outcomes, but if these change because of changes in the organisational superordinate goals, or because of organisational uncertainty and ambiguity, then these implicit psychological contracts break down.

Affective commitment between the formal and informal communities is dependent on the shared expected performance outcomes associated with their implicit psychological contracts. The reasoning behind these changes is explored in Chapter 8 .

5.4.3 Behavioural Outcomes

In section 5.2 it was advanced that communities' expectations, regarding behavioural outcomes from the innovative initiative, were dependent on their perception of how this initiative could create, develop and deliver superior customer value. If, as Weick (2001) suggests, communities rationalise their own and other communities' collective actions based on these committed interpretations, then it is both important to comprehend their understanding of this and how this balances with their own expectations. For this reason it is useful to look at the rationalisation process from two perspectives: that of the community; and then how the community rationalises other communities' expected behavioural outcomes.

Each community's committed interpretation of the expected behavioural outcomes from the innovative initiative was likely to be driven by their perception and evaluation of how to create, develop and deliver superior customer value. In sections 2.4 and 5.1 it was suggested that individuals collaborate with one another, in communities and organisations, to achieve some superordinate goal or goals. It is reasonable to assume that each community's expected behavioural outcomes, associated with the innovative initiative and its informal community, would likely be influenced by their understanding of the community's and the organisation's superordinate goals. This understanding would most likely be reflected in the implicit psychological contracts the community held regarding appropriate innovative collective actions for themselves, and those expected of other communities.

In the next section the relationship between mutual expectations and expected behavioural outcomes is examined.

5.4.3.1 Behavioural outcomes measures and mutual expectations

Changes in expected behavioural outcomes for the other communities was a reflection of the justification for their own changed collective actions – a way of making such behaviour meaningful and explainable (Salancik and Pfeffer, 1978). Holland *et al.*'s (2000) research on collecting factors associated with success in cross-functional teamworking reflects the positivist approach to studying the dynamics of an innovative process, but there are problems in applying this to informal communities and environments that are susceptible to irrational behaviour. In particular, the impact expectations have on communities' rationalisation of their own and others' behaviour.

For Sales and senior management to understand their own behavioural changes and to achieve committed interpretation (Weick, 2001), they developed justifications for their collective actions and through so doing created expected behavioural outcomes for the other communities. Senior management had initiated the innovative initiative and had both formally and informally committed resources and support to it, acknowledging the importance of this for the organisation's long-term future. When they were forced to change their collective actions, to adopt short-term measures, they initially tried to support both the initiative and these short-term requirements. However, when this was no longer possible, they sought justification for the new expected behavioural outcomes for the other communities and their collective actions. Sales and Marketing experienced this pressure for change. Sales, because of its sales orientation, found it easier to justify its behavioural change, but harder to sense-make other communities' committed interpretations of the changed social world. Both Marketing and R&D viewed these behavioural outcome changes in Sales and senior management as a failure of these communities to honour their commitment to the innovative initiative – they had broken the implicit psychological contracts.

A community's behavioural outcome measures, associated with the innovative initiative, represented their committed interpretation of their collective actions and those of the other communities. When communities use different justifications for explaining their collective actions (other than those evident in their performance, attitudinal and outcome measures), then the other communities' commitment to the innovative initiative is re-examined, with the result that other communities change their expected collective actions. The contribution of the author's initial findings suggests two important causal relationships between mutual expectations and behavioural outcomes:

- that some functional communities (Sales and senior management) legitimised their withdrawal from engaging with the innovation community because of the failure of this community to meet the expected outcomes, expected outcome measures which these communities had changed;

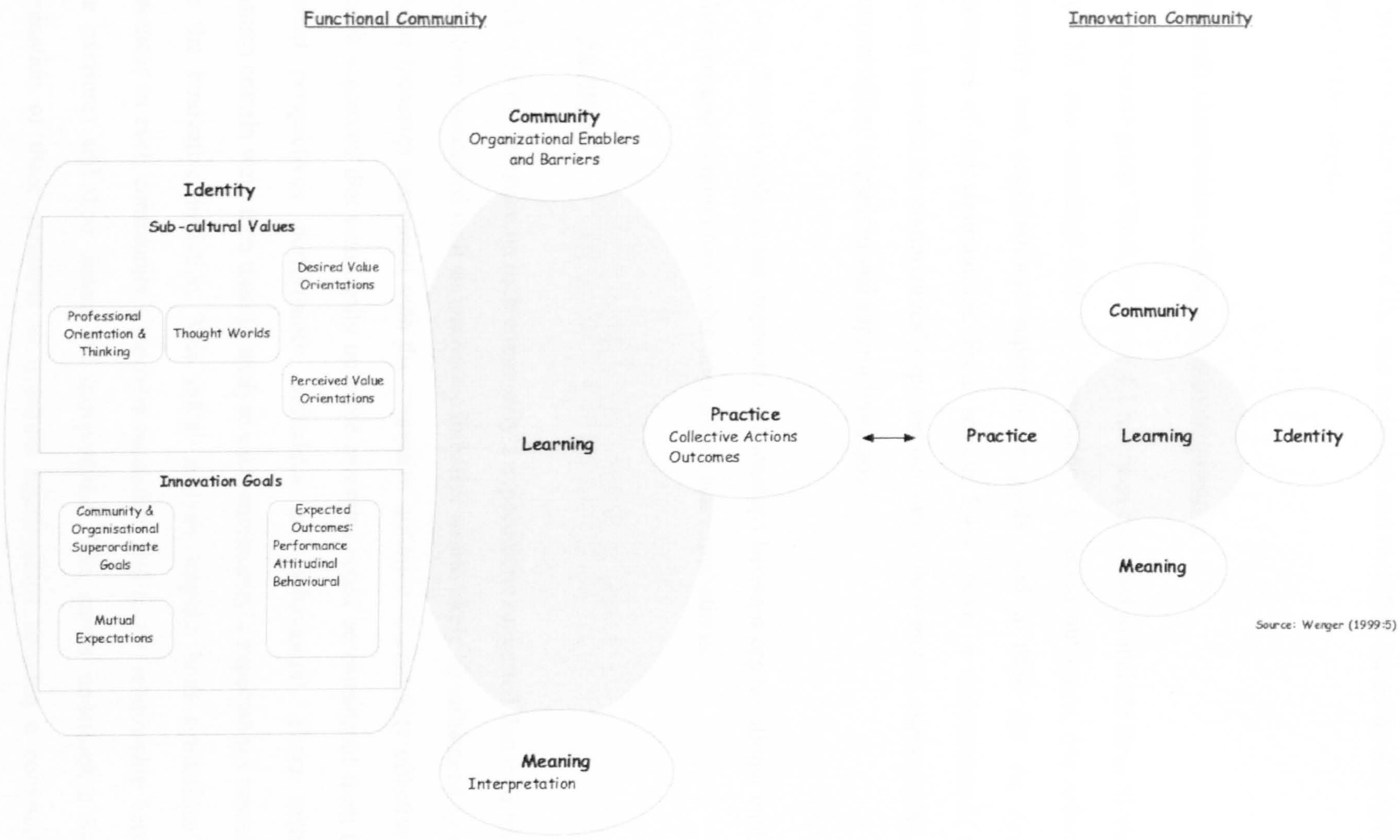
- that mutual expectations between members of the innovation community changed as a consequence of the growing uncertainty and ambiguity surrounding the legitimacy of the superordinate goals and the increased discrepancy between these and the changing organisation's goals espoused by senior management.

These three outcomes measures: performance, attitudinal and behavioural, directly and indirectly link the community members' mutual expectations, and their engagement with the innovation community, with their affective commitment to the underlying innovative initiative. In the next chapter, the author explores the impact of three specific organisational enablers and barriers to the social context of functional communities' engagement with the innovation community.

5.5 Modification of the Community Learning Process Model

As a consequence of these research findings and a further review of relevant literature concerning the relationship between each community's expectations of the innovative initiative, their superordinate goals and implicit psychological contracts, the community learning process model was modified (see Figure 5.1).

Figure 5.1: The Community Learning Process Model (3)



Source: Wenger (1999:5)

The previous model (Figure 4.1), was reviewed and modified based on the research findings of this chapter.

Community expectations – expected outcome measures

The 'innovation goals' block in Figure 4.1 has been extended to include three blocks in Figure 5.1: one associated with the communities' expected outcomes; one reflecting community and organisational superordinate goals; and a third for the mutual expectations of the communities. From section 5.4.4 above, a relationship is now advanced between the communities' expected outcomes, their mutual expectations, and the communities' organisational superordinate goals.

The next chapter explores the important relationships between organisational enablers and barriers and communities' value orientations and expectations.

5.6 Summary

A review of the literature on each community's expectations suggested that their mutual expectations associated with an innovative initiative would likely be influenced by their outcome measures associated with the innovative initiative. Community effectiveness research suggested that community outcome measures could be considered from three different perspectives: performance, attitudinal and behavioural. These outcome measures criteria were then used to analyse each community's expectations associated with the innovative initiative. This initial analysis implies both similarities and differences in each community's outcome measures, and to the relationship between these measures and their committed interpretation. The author undertook a further examination of these measures to construct relationships between a community's outcome measures and their mutual expectations and superordinate goals. These

relationships have been mapped on to the community learning process model and a link to the next chapter has been made.

CHAPTER 6: ORGANISATIONAL ENABLERS AND BARRIERS

6.1 Introduction

This chapter explores the influence of organisational enablers and barriers on community management of the innovative initiative. As a consequence of the literature review and early focus group sessions, three internal process factors were identified: collaboration, conflict and innovative leadership. Inter-community collaboration research and the research findings from this organisation were examined to identify the relationship between trust and the level of collaboration between the formal and informal communities. Conflict research (both cognitive and affective) and the research findings were examined to identify the relative importance of this to the communities' engagement with the innovation community and their commitment to the innovative initiative. Innovative leadership research and research findings were probed to understand the role and influence these have over the other two research themes in this chapter. Finally, the community learning process model has been reviewed and modified.

6.2 Importance of Organisational Enablers and Barriers

In both the introductory and literature review chapters, the author has stressed the situational uniqueness of internal organisational dynamics. No two organisations are likely to share the same organisational culture, experiences or internal processes. Certainly, the previous two chapters have provided examples of the differentiation between the communities' value orientations and their expectations. Research (Cooper, 1982; Samli and Weber, 2000; Bonner *et al.*, 2002) into NPD success and failure has identified six generalised factors (Jones, 1998) most often associated with NPD outcomes. The interlinking theme flowing through all six are the interconnectedness of the communities engaged in the NPD activity. Further research (Cole, 1985; Barker,

1993) into the interconnectedness of the functional communities within an organisation has attested to the importance of value-based interactions, values specifically pertaining to the customer. It is these values that help to unite each community and build a consensus around the means of creating, developing and delivering superior customer value (Barker, 1993). In section 4.2.1, customer orientation (the ability and success of creating, developing and delivering superior customer value) was linked to the sharing of customer knowledge throughout the organisation, then acting on it in a coordinated and focused manner (Slater and Narver, 1995). Hence the importance of studying interactions between the functional communities and the innovation community of an organisation, and specifically those relating to the dissemination of customer values associated with NPD. In section 2.5, three particular themes emerged as a consequence of the literature review and research outcomes from the author's earlier study (Brown, 1997) on this organisation. These three themes (inter-community collaboration, cognitive and affective conflict, and innovative leadership) are explored further in the next three sections.

6.2.1 Inter-community Collaboration

In section 2.5 it was advocated that in uncertain and ambiguous environments, particularly those experienced by organisations struggling to innovate, collaborative relationships offer the greatest opportunity for success (Badr Ul Haque, 1999). Lancaster's (1985) collaborative research identified six principal factors associated with collaboration between communities and organisations: contribution, communication, commitment, consensus, compatibility and credit. Collaboration between communities is most often driven by the desire to achieve some organisational goal (see also superordinate goals discussed in section 2.4). Underlying these organisational superordinate goals is a value consensus, an innate ability to deliver superior customer value. Communities will align their superordinate goals to be compatible with these

organisational goals, and this indicates a measure of their commitment to the larger community. This commitment is also closely linked to each community's committed interpretation of their own and others' collective actions and the level of collaborative relationship required.

These collaborative relationships (Fiol, 1995), associated with engagement to an innovation community, rely on trust, value consensus and mutual expectations. Two of these have already been discussed in Chapters 4 and 5, which leaves trust to be discussed and explored. Interestingly, a dictionary definition of trust suggests that it:

> '. . . is the firm belief in the reliability, truth, ability or strength of someone or something.' (Hornby, 2005).

But trust, when referring to communities' interactions, is perhaps more easily defined in terms of four key attributes: authenticity, history of fulfilment, the ability to fulfil, and commitment to the relationship (Solomon and Flores, 2002). Hattori and Lapidus (2004) suggest that without this element of trust the relationship would naturally deteriorate to one of cooperation, which, in turn, could have a dramatic effect on any innovative outcome. It is because of the importance of this element of trust in the whole collaborative relationship that it becomes the focus of the following research analysis and evaluation. At the time of collecting the research data, the author had not read about Solomon and Flores' (2002) four attributes of trust, but had instead defined three attributes of his own: that their espoused theories matched their theories-in-use (authenticity); they fulfilled their expected roles (reliability); and were committed to the task at hand (responsibility). Hattori and Lapidus (2004) interestingly linked previous research (Mason *et al.*, 2003; Solomon and Flores, 2002) findings on the importance of trust in consensus-building and knowledge-sharing activities, with behaviour, outcomes and levels of relationship. But there is little current research (McDonough III, 2000) on

how this trust changes over the duration of an innovative process and its influence over collaboration in informal communities, and this is the author's intended contribution.

The research analysis explores the communities' collaboration specifically associated with the innovative initiative over the duration of the study, drawing out those elements that map the progress of trust between the communities and the potential influence over their future relationship.

6.2.1.1 Research analysis of communities' collaborative relationships

At the beginning of this research study the new BM, having joined the organisation less than two months previously, conducted a strategy review process. The resulting innovative initiative had three proposed outcomes: to replace the aging technologies; to create and develop a radical product capable of taking the organisation into new markets; and to update the existing product lines to keep them competitive. All of these outcomes rested on a collaborative effort by all four functional communities to support a new informal innovation community, one focused on acquiring and disseminating market information and specifically customers' expressed and latent needs. The recruitment of a new Product Manager to strengthen marketing was taken by some as proof of senior management's engagement with the innovation community, and overall commitment to the innovative initiative:

> [Marketing] *'The fact that Marketing has been allowed to recruit an extra Product Manager is proof of senior management's commitment to the innovative initiative. It certainly strengthens our capability to be proactive in the acquisition and dissemination of market information. The bonus is that it will help Sales and Marketing to identify new market opportunities.'* [December 1997].

Both Sales and Marketing were very active in acquiring and disseminating market information to both R&D and senior management. At the beginning of 1998, the functional communities ran monthly meetings to which others were invited. Work had just started on Projects X and Z, but these were in the early stages of development, and motivation in R&D and Marketing was high. Hattori and Lapidus's (2004) research discusses the concept of a 'state of trust', and this is a useful perspective from which to view the functional community's level of trust. There was a highly invested 'state of trust' between the functional and informal innovation communities. They were, at this stage, authentic in their interactions with each other; each perceived and fulfilled their expected roles, they showed a degree of responsibility towards engagement with the innovation community and commitment to the underlying innovative initiative.

At the beginning of 1999, a number of internal events caused a change in the state of trust between the functional communities: the rapidly decreasing revenue and profit, and a new MD. There had already been a notable change in Sales' engagement with the acquisition and dissemination of pertinent customer information to both Marketing and R&D. Marketing reflected on the significance of this perceived role change:

> [Marketing] *'It is becoming apparent that Sales are focusing on short-term customer needs. We are receiving less and less information about longer-term latent customer needs or much information on competitor activity or product information. They still say they are fully supportive of the innovative initiative, but their actions just don't match.'* [July 1998].

Increasingly, Sales were being pressured by senior management to maintain revenue and profit targets. Senior management, in turn, were being pressured by the new MD to achieve the short-term organisational objectives and maintain revenue and profit targets. Senior management expressed some new expected roles for the communities:

[Senior management] *'We are more dependent than ever on good marketing information, that is why we are re-examining our customer relationships. We all know the value of understanding the customers' needs and wants, we just have to focus on those processes that can develop and deliver this. That is why we have Sales focusing on understanding and delivering the short-term customer needs, and Marketing understanding and delivering on their long-term wants. The right information acquired and disseminated is critical to this. We know that Marketing and R&D will rise to the challenge.'* [March 1999].

But these words did not accurately reflect R&D's perspective on either the responsibility, or authenticity, of senior management's actions:

> [R&D] *'In R&D we have been the recipients of poorer and poorer market information, information that inadequately informs us on customer needs or wants. We are also highly suspicious of senior management's real commitment to this innovative initiative, especially when we are now seeing cuts in our budgets.'* [April 1999].

The state of trust between the communities had significantly changed from the beginning of 1998. There was a perceived breakdown in the communities' expected roles; Sales were no longer performing the important role of key customer information gatherer and disseminator, and R&D had not delivered the promised new products. There was increasingly a question of engagement, by Sales and senior management, with the innovation community. Most importantly, questions were being asked about the communities' authenticity of interaction; and some communities' espoused theories no longer matched their theories-in-use. There was still evidence of an overall responsibility for the superordinate goals of the innovation community, but other functional communities had little trust in the outcomes of the innovation community, and largely withdrew their collaboration. Functional communities became increasingly focused on their own superordinate goals and less on the organisational superordinate goals associated with the innovation community.

By the middle of 2000, the internal environment of the organisation had significantly changed. New senior management had taken over, the original organisation was now merged with another, and significant downsizing had taken place. The result of this was increased uncertainty and ambiguity. Communities struggled to commit to anything that did not directly contribute to their own survival or to the direct objectives meted out by senior management. R&D had increasingly been critical of Sales and Marketing for their self-interest:

> [R&D] *'After the initial enthusiasm and commitment to the innovative initiative, the sales group soon lost interest in an initiative which was more long-term. But what was more annoying was that they came to the meetings and said they were committed to the process, but their actions just did not match this rhetoric. Marketing group were just being pushed from pillar to post, and had insufficient resources to provide the support we needed. In the end, the collaboration we got from these groups was the barest minimum.'* [June 2000].

Sales perceived the relationship between them and R&D from a slightly different perspective:

> [Sales] *'New product development in this organisation has very rarely been able to deliver on its longer-term promises. We have always been very satisfied with R&D's support and commitment to product enhancements, but radical and technological innovations have been unmitigated failures. As a consequence, their reputation has significantly suffered.'* [June 2000].

Marketing's role in all of this was to provide the right information:

> [Marketing] *'Marketing acknowledge their shortfall. We are not providing sufficient information to help R&D justify the commercial viability of their ideas, or Sales to help them differentiate the product in*

the market, and finally to senior management to give them confidence in our existing product and market strategies. But I don't think it is just us who are failing to meet people's expectation, all of our roles have changed. These role changes are not universally accepted or perceived.' [March 2000].

This last observation of the Marketing is significant, as it reflects the changes that other communities had either perceived, or guessed, based on observing their collective actions. It also reflects a significant change in the state of trust between the communities, associated with the innovative initiative. Two attributes of the state of trust, authenticity and reliability, were observed to have changed in the community's own analysis of the others. Sales and senior management had lost confidence in R&D and Marketing to deliver on their promises, or to fulfil their responsibilities and commitment to the innovative initiative. R&D and Marketing, for their part, acknowledged the non-authenticity of Sales' and senior management's interactions with them, and often observed these communities acting contrary to their espoused theories. The consequence of this was that trust between the communities was often reluctant and guarded, which directly affected the interactions between them.

6.2.1.2 Understanding Collaboration as both an Enabler and Barrier

The original research question proposed to help explore the influence of internal processes on communities' engagement with the innovation community was: 'What are the organisational enablers and barriers influencing the communities engagement with the innovation community?'. This section has explored how collaboration, specifically the 'state of trust' was a major factor in determining the level of engagement of functional communities with the innovation community.

Value consensus and mutual expectations are important in helping to bind functional and innovation communities around shared superordinate goals. Hattori and Lapidu's

(2004) research implied a relationship between the 'state of trust' and the relationship type of the expected outcomes of this collaboration, but this research failed to explain the reasons behind the observed changes and the increased complexity associated with the multiple community commitments of the innovation community members. In the context of this research, the author defines the 'state of trust' as being the particular level of trust existing between two communities, measured by their authenticity, fulfilment and commitment to the innovation community. The contribution of the author's research findings is in providing an explanation of the changes that took place associated with this 'state of trust', and its influence over the level of collaboration and engagement of the different innovation community members. The 'state of trust' existing between different members of the innovation community was of a temporary nature, as it was only the value consensus over the expected outcomes of the innovation community that engaged them with the process. When external factors, such as internal uncertainty and ambiguity and changes in organisational superordinate goals, challenged these innovation community superordinate goals, then the 'state of trust' between them was affected. Functional community members were increasingly being pushed to undertake activities that were contrary to the espoused theories of the innovation community; this damaged their authenticity, fulfilment and commitment. This change in the 'state of trust' between the different innovation community members directly influenced their collaborative relationships towards the innovative initiative; for some functional communities, like Sales, this became almost adversarial. Of course, this change in members' collaborative relationships directly impacted on their engagement with the innovation community. The impact of this relationship between the 'state of trust' and collaboration in formal and informal communities is discussed further in Chapter 8.

6.2.2 Cognitive and Affective Conflict

In the previous section on inter-community collaboration, one of the key factors influencing collaborative relationships within organisations was the customer value consensus (harmony of values). Customer value-based interactions help communities to interpret and sense-make other communities' values and, by so doing, reach a value consensus. In an open and confrontational culture, task resolution is both healthy and easy to achieve (Angle, 2000), but when a community's customer values differ significantly then conflict resolution becomes more difficult (Jones, 1998). In section 2.5 it was suggested that relationship conflict could be an unexpected outcome of uncertain and ambiguous organisational cultures (Craig and Hart, 1992).

General research on business performance within for-profit organisations (Guerra *et al.*, 2005) suggests that increases in both cognitive and affective conflicts lower a community's level of job satisfaction and overall commitment. Jehn and Mannix's (2001) research on conflicts within group projects suggested close correlations between cognitive and affective conflict and value consensus. But this research like others (Gobeli, *Koenig et al.*, 1998; Gerhardt, 1973) assumes that value consensus relates only to the community's goals, when community members are part-time only, then other values from the members' own functional community have some bearing on their behaviour and the level and type of conflict. The author's contribution to this area of research is the further study of the relationship between cognitive and affective conflict when faced with multiple value orientations that are both dynamic and often tacitly communicated.

6.2.2.1 Research analysis of communities' cognitive and affective conflicts

At the beginning of this study, a significant strategic review process was carried out with representatives from Sales, Marketing and R&D. The primary purpose of this

review was to evaluate, analyse and propose new marketing and product strategies for all current and future product lines. During the ensuing five-day workshop, a number of comments were made by the different communities concerning the potential problems they foresaw regarding implementation of this new innovative initiative:

> [Marketing] *'We have the same reservations that we have alwayshad. It is fine now when we have the resource and time to undertake this type of longer-term task, but what happens when the sales group insert pressure on you Tim* [BM] *to have more support on helping to launch a new product or support a particular application? If you can't ring-fence those marketing personnel engaged on long-term project work, then you will have conflicts on their time to satisfy those different parties. Don't get us wrong, we are happy to support these groups in their activities, but what happens is that we fall behind in our own objectives, and come the end of the year we get criticised for it. What are you going to do this time Tim?'* [September 1997].

> [Senior management] *'I* [BM] *don't know what happened previously, but we have consensus in the senior management group for a real focus on this innovative initiative. You all know how important this is for the long-term survival of the organisation, and I appreciate the conflicts that can arise over dealing with these fire-fighting type tasks, but I will do everything possible to resolve any conflicts and try* to *protect those personnel working on this initiative.'* [September 1997].

> [R&D] *'It's great to have such a focus on this task by all the organisational groups. We are looking forward to this new collaborative exercise.'* [September 1997].

> [Sales] *'We want this more than any other group. Our customers are crying out for new products. Products that can offer superior performance and provide cost-effective solutions to everyday industrial problems. We find it hard to see much beyond the next six months, but*

feel positive about this initiative and believe that R&D and Marketing will do their utmost to deliver.' [September 1997].

Over the next six months, the co-researchers and author observed many task conflicts over support issues between Marketing, Sales and R&D, but all of these task conflicts were easily resolved through discussion and prioritisation, both at the project level and occasionally at inter-community level. There were many different forums available to resolve problems. At the project level there were regular project meetings. For the 'innovative initiative' project, a community meeting was held once a month, chaired by the BM, with representatives from Marketing, Sales and R&D. There were also monthly community meetings and quarterly organisational meetings held to reflect different information dissemination requirements, company news about orders and structure changes. In the first eighteen months of the study, the co-researchers and the author observed no relationship conflicts that were not in some way linked to task conflicts. When the underlying task conflicts were resolved the relationship conflict simply disappeared.

At the beginning of 1999, two events occurred that would have a critical effect on the conflict between the communities associated with the innovative initiative: the arrival of a new MD, and a 20% drop-off in revenue and profits for the organisation's product lines. A good example of a task conflict that quickly blew up into a full-blown relationship conflict between Sales and Marketing was the Irish dairy trial provisionally run by Sales:

[Marketing] *'Initially this project was for straightforward application support to Irish Dairies, co-ordinated by the sales group. But we could see they weren't going in the right direction to satisfy the customer's needs. So we assumed control and took the project in a different direction, and have convinced the customer of the value of our solution. I suppose we should have sat down with Sales and agreed this, but they*

were always too busy to meet and didn't read our e-mails. So we just did it.' [December 1998].

[Sales] *'. . . what you did was to re-define the product deliverables. It has both undermined our sales team approach to this industry, and made us look foolish in front of the customer and the industry. This is plain unprofessional and the customer still does not have a fully working solution, either way.'* [December 1998].

What started off as a relatively simple conflict over the means of delivering customer value to the customer, deteriorated into a relationship conflict between personnel in Marketing and Sales. The inability of these two communities to resolve this task conflict was an indirect consequence of both of them having to take on more and more fire-fighting activities. Prioritisation of these fire-fighting activities was left to the communities themselves to resolve, often resulting in them taking guidance from their own superordinate goals as opposed to organisational superordinate goals. An example of this for Marketing was the prioritisation over the Irish dairy trial. They saw it as a longer-term opportunity and gave it a lower priority, whilst Sales were keen to get the order booked, the products shipped and installed, and walk on to the next sale.

By the end of the study, task conflicts were becoming almost impossible to resolve without the involvement of senior management. The explanation of this might be better aided by detailing two examples: the first covers an application trial led by Sales, but involving Marketing to technically support the implementation; and the second illustrates the relationship conflicts affecting a community's commitment to supporting others. Sales had identified a new market segment for an existing product, which could open a very lucrative sector, with the possibility of sales of over 100 units, representing many hundreds of thousands of pounds. Much of the task of identifying these applications had been devolved from the sales channels, mainly because of insufficient sales personnel:

[Sales] *'Our distributor has identified this application in one plant, that should it become successful can be mirrored in the other plants owned by this company. We asked Marketing to support the distributor with a simple visit and confirmation of the product's ability to deliver to the customer's satisfaction. This was fairly bread and butter stuff for us, and then all of a sudden world war three starts . . . !'* [November 1999].

[Marketing] *'I was quite willing and able to support this application trial, and prioritised it above something else I had been doing. I was unaware of the commitment that Tim* [BM] *had made to the customer and sales channel. It's getting silly now, if every time I want to rearrange my priorities I need to clear it with a member of senior management.'* [November 1999].

[Senior management] *'I made a personal commitment to the customer and, by your actions, I have been made to look a fool. In future I want all trial applications to go through my office.'* [November 1999].

Increasingly, senior management were micro-managing the communities they were responsible for, effectively taking away the authority that they previously had to manage and resolve any task conflicts. The consequences of this on relationship conflicts can be seen in the next example:

> [Senior management] *'The problem originally came through our USA sales office, and their sales support team have been trying to field all the questions and giving what support they can. But they don't have the skills or expertise to resolve the problem, and are asking support from Marketing and R&D. But over the last month they have been getting very little attention from either of these groups. I can appreciate that this problem has neither the visibility, nor importance of their own group tasks on the innovative initiative, but the USA sales group are now saying it will threaten future sales. So I want action.'* [January 2000].

[R&D] *'The only way we can really resolve this problem is to take resource off Project Y, and I am only going to do that as a last resort. I don't care about other groups' priorities, we have our own and only a direct intervention by senior management will make us re-prioritise.'* [January 2000].

[Marketing] *'We feel the same, sales group has been focusing selfishly on its own group's goals for over eighteen months. Where were they when we needed marketing information to help support Projects X and Z? It's only recently that both R&D and Marketing have re-focused on those goals which maintain some commitment to the original innovative initiative.'* [January 2000].

This last point from Marketing reflected an attitude observed in this community, and in R&D, that these two both felt they were the last to still have active engagement with the innovation community. This contributed to the relationship conflicts that increasingly happened between Sales, Marketing and R&D – the likes of which became impossible to resolve without intervention from senior management, and increasingly became impossible for them to resolve successfully.

6.2.2.1 Understanding Conflict as both an Enabler and Barrier

The original research question proposed to help explore the influence of internal processes on communities' engagement with the innovation community was: 'What are the organisational enablers and barriers influencing the communities engagement with the innovation community?'. This section has explored how cognitive and affective conflict are inter-linked, and that engagement in the innovation community is affected by the degree of affective conflict existing between the functional communities.

Cognitive and affective conflict in the innovation community was directly linked to the 'state of trust' and value consensus existing over the community's superordinate goals,

as predicted by Jehn and Mannix (2001). But unlike their findings, cognitive conflict was negatively related to open discussion, as facilitated in the action workshops and observed in project meetings. At the innovation community level, additional factors were influencing the significant build-up of affective conflict, and the decrease in cognitive conflict resolution, authenticity of community members' value orientations towards the innovative initiative, compared with those held at the functional community level, and the 'state of trust' existing between the innovation community members. The functional communities' engagement in the innovation community was directly related to their 'state of trust' in its ability to achieve the expected performance outcomes, and it was this factor that most significantly affected the level of affective conflict and the degree of cognitive conflict resolution.

Jehn and Manix (2001) suggested that diversity and value consensus within communities leads to productive and positive task and task conflict resolution. The author's research findings attest to the difficulty in achieving value consensus when functional community members' value orientations are both dynamic and non-explicit. This leads to differing states of trust between innovation community members and a direct increase in relationship conflict. The interrelationship between trust, conflict and affective commitment is discussed further in Chapter 8.

6.2.3 Innovative Leadership

At the conclusion of the brief review of the innovative leadership role literature presented in section 2.5.3, it was proposed that the implicit and explicit traits of innovative leadership could underpin all other themes so far discussed. There is a reason why this was not discussed previously in section 2.5.3, and that is that the reader now has the benefit of further insight into two significant factors influencing community interactions, value orientations and mutual expectations. Individuals and communities

use prior expectations and thought worlds to shape their perception of managerial behaviour (Lord and Maher, 1993; Weick, 1995). These perceived implicit leadership traits provide organisational members with a basis for interpreting and responding to managerial collective actions (Kenney *et al.*, 1996; Epitropaki and Martin, 2005), relating this to their identities and the espoused identities of the innovation community. Lord and Maher (1993) suggest that these prototypical implicit leadership traits can be categorised around very specific behavioural expectations and responsibilities. Initially, in the analysis of the implicit leadership traits for this study, the author considered the six principal factors identified by Offerman *et al.* (1994): sensitivity, intelligence, dedication, attractiveness, strength and charisma. These traits were used only in the research analysis to provide a common interpretation of the communities' own perceptions of senior management's implicit leadership traits. The definitions below are taken from Offerman *et al.*'s (1994) paper and amended to capture the participants' understanding of these:

Sensitivity	compassionate and sensitive to other communities' needs;
Intelligence	intelligent and clever in their evaluation of the problem;
Dedication	the leadership is dedicated and motivated towards the innovative process;
Attractiveness	well-dressed and articulate in their interaction with other communities;
Strength	strong and bold in their actions;
Charisma	charismatic and dynamic in their attitude and ideas associated with the innovative process.

In this research study, the communities' implicit leadership traits (those underlined in the list above), were mapped against senior managerial collective actions. As the

communities detected increasing divergence between these perceived implicit leadership traits and the inferred leadership traits from analysing managerial collective actions, they were confronted with the need to change these implicit leadership traits to reflect the observed changes. As Lord and Brown (2001) commented in their research on the link between values and identities associated with leaders and subordinates, there is a top-down and bottom-up perspective to this leadership-subordinate relationship. Hence the need for additional research on the inconsistencies of leaders' behaviour and the value orientations and expectations (identities) they are hoping to engender.

The next section explores the implicit leadership traits as perceived by the other functional communities and the senior management community.

6.2.3.1 Research analysis on innovative leadership

In the first year of this research study, the functional communities' perceptions of the innovative leadership from senior management was both consistent and highly complimentary of the level of support for the innovative initiative:

> [Marketing] *'The problem we now have in Marketing is that Sales, R&D and the customers are contributing ideas for new products, but we have up to now had no easy way of prioritising these. Thanks to Tim* [BM] *we have been working together to refine a new product ideas selection spreadsheet, one which will allow us to filter the ideas through a commercial and technical evaluative process.'* [January 1998].

> [Sales] *'Tim* [BM] *has spent a considerable amount of time working with Mercuri, an external training company specialising in sales management training, to come up with some useful training that could make us more effective at prioritising the time we spend with our different customers. The upshot has been that some of the group have*

take this onboard and are spending more time with our more profitable customers.' [July 1998].

[R&D] *'After the recent round of product and market strategic reviews, we at least have a clearer idea of what we will be doing in the new year. We just have to get to the end of the year. We are still focusing on incremental innovations, and don't as yet have any visibility of the broader vision and direction of the longer-term goals of the organisation. For that we need to hear from the MD, and soon.'* [July 1998].

Sales, Marketing and R&D shared similar implicit leadership traits concerning senior management and, specifically, those associated with the innovative initiative. The communities sought support from senior management in the form of specific leadership on the longer-term goals of the organisation. Three particular implicit leadership traits were more keenly appreciated: sensitivity, dedication and strength.

By the beginning of 1999 two organisational events, a new MD and a sudden decrease in revenue and profit figures, were to have a significant influence over senior management's collective actions. The first to notice this change and respond to changes in management's collective actions, was Sales, but they were quickly followed by R&D and Marketing:

[Sales] *'We have already lost two Sales Managers for two separate reasons, the first because of the inflexibility of senior management in allowing our northern UK Sales Manager to change his terms of employment. I had talked through with HRM about the means to transfer him from his existing employment contract to a new one allowing him to retire at 65. But from what I can gather, senior management used this as an opportunity to lose one person from the head count. It's going to be very difficult to make up for the loss of his expertise on the application side and his close links with a number of our key accounts. The other Sales Manager left because of the*

increasingly negative culture at this company to taking decisive action on simple customer application trials. Increasingly we are seeing the 'heavy-hand' of the new MD exerting its influence and control over the other senior management group.' [January 1999].

[Marketing] *'On the one hand Tim* [BM] *is pushing Marketing to get more information to help commercially evaluate these product ideas flooding in from customers and the other groups, and on the other he wants us to do everything possible to generate new sales tools for Sales to get more product sales. If this was not bad enough, we are also being asked to help Sales with more application support on new market areas.'* [February 1999].

[Senior management] *'You are already aware of our short-term focus on increasing product sales. Well, the MD and I want Marketing and R&D to review the incremental product ideas for any developments that could be quickly turned in products this year. We also want both Sales and Marketing to work together on some of the Mercuri training ideas associated with improving our delivery of customer value. Specifically, I want you to review the processes associated with improving customer response and quicker delivery on corrective actions.'* [February 1999].

[R&D] *'Finally, we have three projects on the go associated with the innovative initiative, and all of them are in jeopardy because Sales and Marketing have insufficient resources to provide adequate information to support the commercial evaluation of the projects. Without this we won't get past the next project review. It is also becoming apparent that senior management are backing off full sponsorship of two of our projects. Why?'* [February 1999].

By now, all functional communities had noticed a distinct change in senior management's collective actions towards the innovative initiative. Senior management showed increasing signs of insensitivity towards Sales over the loss of the two sales managers and, importantly, had re-focused their efforts on short-term revenue

generation. The previous independent nature of senior management members to act quickly and decisively on important issues associated with the innovation processes had visibly changed. Senior management increasingly sought approval from the new MD and were now unwilling to give explicit sponsorship for all three innovation processes.

By the end of the study the discrepancy between the implicit leadership traits inferred from other communities' observation of senior management's collective actions, and their earlier held implicit leadership traits, were influencing their collective actions:

> [Senior management] *'After the recent round of product and market strategy review I can see no low risk path for this company to achieve moderate organic growth, and therefore have asked Marketing to provide me* [MD] *with a list of possible company acquisitions of either synergistic product lines or entire companies that could happily sit alongside our current product lines. It is now in my hands to decide the fate of this company, I am just weighing up the alternatives.'* [August 1999].

> [R&D] *'I believe the current needs of the company are for R&D to support Marketing and Sales on current product lines. In R&D with our current skills and expertise, and the failure of the radical and technological projects to make it to the next development stage, the only low risk option we have is to focus on incremental product developments. We are never going to get the needed support from senior management to undertake high risk projects, they have lost confidence in us, and we in them.'* [September 1999].

> [Marketing] *'Everything we are now doing is short-term related, Tim* [new sales and marketing manager from April 1999] *cannot see past the end of the year. There is no commitment for projects in 2000, because there is no explicit vision or strategy for the company beyond year-end. The much heralded vision presentation by the MD was just telling us*

what we already knew about our existing markets and products, and left senior management's strategy for the future blank.' [October 1999].

The earlier implicit leadership traits supporting the innovation community were no longer congruent with senior management's collective actions. All communities observed this and had inferred a new set of implicit leadership traits (ILTs) associated with the initiative. The three previous traits of sensitivity, dedication and strength had effectively been stood on their head. All communities agreed there were no positive prototypical implicit leadership traits that supported the innovative initiative, nor the innovation community attempting to support this.

6.2.3.1 Understanding Innovative Leadership as both an Enabler and Barrier

The original research question proposed to help explore the influence of internal processes on communities' engagement with the innovation community was: 'What are the organisational enablers and barriers influencing the communities' engagement with the innovation community?'. This section has explored how the functional communities perceived implicit leadership traits of senior management impacting on their behaviour, and particularly in their engagement with innovation community activities.

Oullette and Wood's (1998) research on past behaviour predicting future behaviour suggested that effective change in established behaviour could only be achieved by impeding this, whilst facilitating the new behaviours. Lord and Brown (2001) highlighted the need for additional research into the linkage between leaders' behaviour and the 'thoughtful process' of their subordinates. The contribution of this research study is to a better understanding of this causal relationship. Firstly, the inconsistencies in senior management's ILTs surrounding their support for the innovation community and the identity characteristics underpinning it had two effects: it resulted in the different communities formulating their own ILTs of senior management quite at odds

with those espoused by senior management; and this directly impacted on the 'state of trust' of senior management and their level of affective commitment to the innovation community. Secondly, the consistency of senior management's innovative leadership had two negative effects on other communities' behaviour: it failed to encourage longer-term engagement with the innovation community; and it freely allowed some communities to revert to their old behaviours, the behaviours that previously failed to identify and acquire new product ideas. Both of the above points are discussed further in Chapter 8, where the interrelationship between these themes is discussed.

6.3 Modification of the Research Framework

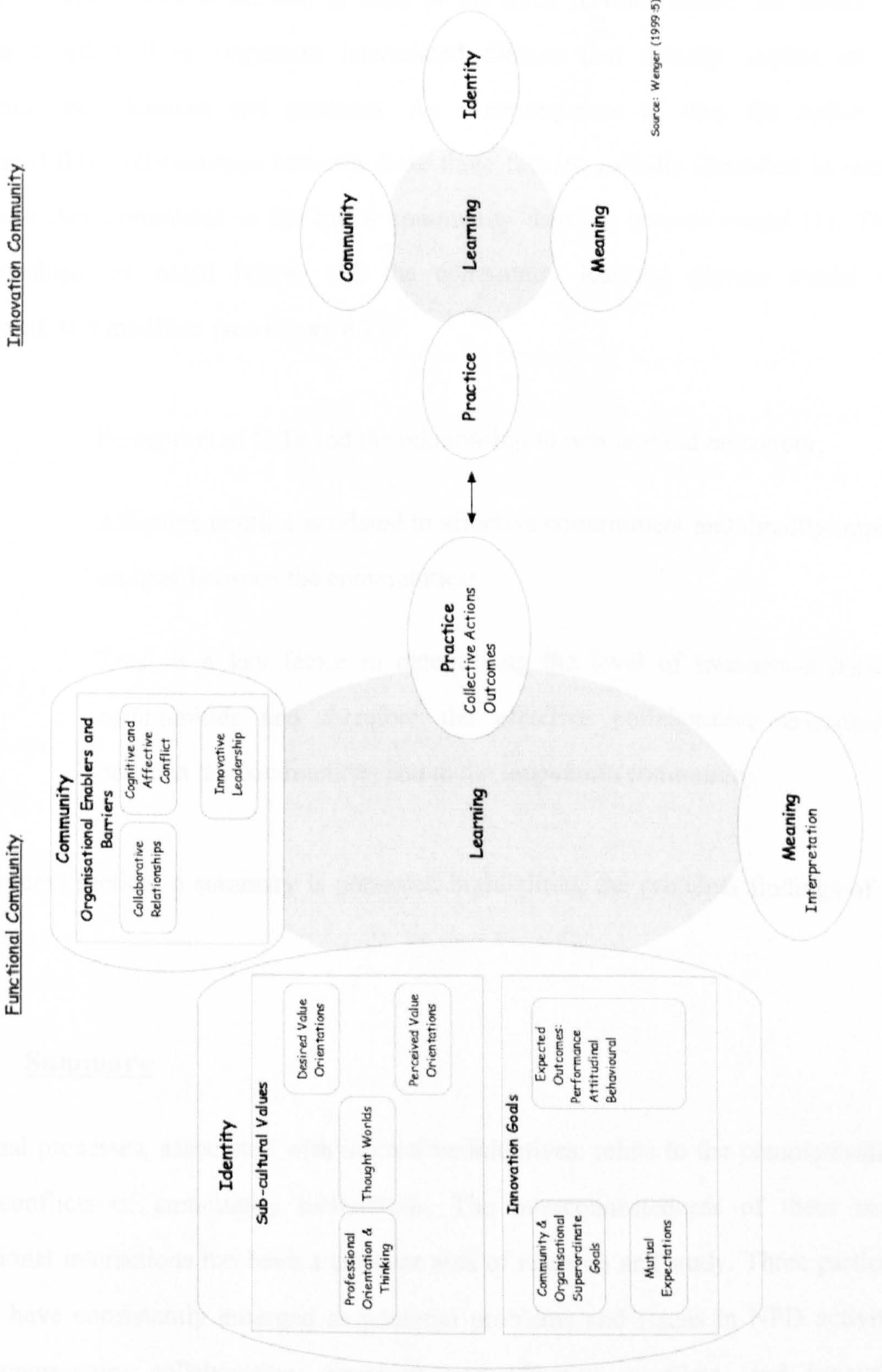


Figure 6.1: The Community Innovation Process Model (4)

Internal Processes

From the discussions at the end of each of the three sections above, the author has drawn together three important interrelated themes that directly impact on the communities' identities and practices. As a consequence of this, the author has advanced three relationships between these three factors, initially identified in section 2.5, and then committed to the initial community learning process model (1). These relationships are noted below, and the community learning process model was reviewed, and modified (see Figure 6.1):

I Perception of ILTs and the relationship to new and old behaviour;

II Affective conflict is related to affective commitment and directly impacts on trust between the communities;

III Trust is a key factor in determining the level of interaction between communities and therefore the effective collaborative relationships between the communities and to the innovation community.

In the next section, a summary is presented highlighting the principal findings of this chapter.

6.4 Summary

Internal processes, associated with innovative initiatives, relate to the communications and conflicts of community interactions. The interconnectedness of these multi-functional interactions has been a constant area of research and study. Three particular areas have consistently emerged as potential problems and issues in NPD activities: inter-community collaboration, cognitive and affective conflicts, and innovative leadership. This research study, and others, have established the importance of trust in

inter-community collaboration, and this study has advanced additional relationships between trust, value consensus and mutual expectations. The research analysis on affective conflict has attested to a positive causal relationship between this and affective commitment. Proposing that affective commitment to organisational-wide superordinate goals facilitates affective conflict resolution and positively influences cognitive conflict. Finally, innovative leadership literature has hinted at the importance of this in both collaborative relationships and conflict resolution associated with the innovative initiative. This study asserts that the growing discrepancy between communities' ILTs and those held by senior management directly influences the relationship between these two communities and, as a consequence, decreases the effective interactions and conflict resolution between these communities and their engagement with the innovation community.

In the next chapter, communities' learning outcomes associated with their interpretations and sense-making of their own, and others', collective actions and the growing disparity between the observed and expected outcomes from the innovative initiative, are explored.

CHAPTER 7: COMMUNITY LEARNING OUTCOMES

7.1 Introduction

This chapter examines the communities' interpretation and sense-making of the innovative initiative. By studying the four functional communities' interpretation and sense-making of the communities' collective actions, organisational events and the resulting innovative initiatives, the author explores the importance of their understanding in determining their past and future behaviour. The communities' interpretative systems are both reinforced and modified by the social processes underlying their practices surrounding the innovative initiative. Underlying this social process is the communities' symbolic interpretation of the innovative initiative. Finally, the community learning process model is reviewed and modified.

7.2 Community Learning and Changes to their Interpretative Systems

A body of research has grown up over the last twenty-five years based on the concept of organisational learning (Garvin, 1993; Day, 1994b; Moorman and Miner, 1997), which has endeavoured to link organisations that learn with improved business performance. Garvin (1993) defines a learning organisation as:

> '. . . an organisation skilled at creating, acquiring, and transferring knowledge, and at modifying its behaviour to reflect new knowledge and insights' (Garvin, 1993:80).

This definition is also apt for defining community learning, but one term would need changing, and that is 'insights'. Instead, the author suggests that 'sense-making' would be more appropriate, alluding to communities' ongoing accomplishment to try to create order and make sense of their experiences, based on their underlying interpretative systems (Weick, 2001). In section 2.6, it was proposed that this sense-making is an

everyday occurrence, both at a conscious and subconscious level, and results in rationalised collective actions (Salancik and Pfeffer, 1978). It was suggested that communities agree on some desired outcomes (expectations), then on the means to attain those outcomes (value orientations and internal processes). Community collective actions are therefore a rationalising process of undertaking appropriate activities to achieve the desired outcomes.

When studying action-outcome relationships, researchers are in fact studying a organisations', communities' or individual's ability to learn by trial and error, the ability to change their actions to achieve certain desired outcomes (Van de Ven *et al.*, 1999). The relationship between collective actions and outcomes, and the interpretation and sense-making by those who observe it, are the foundations of 'organisational learning' (Dornblaser *et al.*, 2000). Organisational learning research (Argyris and Schön, 1996; Appelbaum and Goransson, 1997; Montuori, 2000) has suggested that two types of learning are prevalent in ambiguous and uncertain times: adaptive and generative learning. There are other terms used to describe these types of learning: for adaptive learning, there are 'double-loop', 'trial and error', 'testing' and 'rational' learning; for generative learning there are 'triple-loop', 'superstitious' and 'discovery' learning. Dornblaser *et al.* propose that adaptive learning relates to the feedback between collective actions and outcomes, specifically:

> '. . . that outcomes are a function of actions that are believed to lead to those outcomes and are not a result of spurious unknown factors' (Dornblaser *et al.*, 2000:205).

This may be true of some action-outcome relationships, but others cannot be so simply resolved or understood. Levitt and March (1996) hinted at an illogical or invisible relationship between behaviours and outcomes that could then be explained by an additional learning type:

> 'Superstitious learning occurs when the subjective experience of learning is compelling but the connections between actions and outcomes are loose or mis-specified' (Levitt and March, 1996:1).

Their research, along with other researchers studying generative learning (Appelbaum and Goransson, 1997), implied a causal relationship between action and outcome, but not one previously experienced by the observed Unlike adaptive learning, where change is less perceptible, generative learning results in significant change, whereby change occurs through the process of social constructionism. The social construction of reality is built up by the definition, interaction and response of communities to their environment and the sense-making that underpins this activity (Weick, 1995; Ormrod, 2002). This social construction of reality by the communities implies a 'try it out and see' philosophy, one that encourages action and the observation of the resultant outcomes to make sense of these experiences. This sense-making of the important action-outcome relationship supports the process of social construction for communities' interpretative systems (Weick, 1979a).

In Schein's (1992) model of culture, artefacts are the visible, tangible and audible results of organisational, community and individual collective actions. Halliday and Cawley (2000) propose an important link between Hatch's (1993) cultural model, derived from Schein's (1992) cultural model and Sinkula *et al.*'s (1997) organisational learning model. Halliday and Cawley's (2000) principal drive was to link organisational members' values with actions and outcomes, and then with symbols, attempting to show the interrelationship between cultural dynamics and organisational learning.

In this research study, the focus was on community learning, but the combined 'cultural dynamics' and 'organisational learning' model is still relevant. This 'Cultural-Organisational Learning' model (Halliday and Cawley, 2000) suggests an intermediate process in the communities' retrospective sense-making of the observed outcomes,

looking back on outcomes and events for understanding: that of symbolisation. This suggests that communities confer a meaning to the outcomes, specifically in this study, to that associated with the innovative initiative. Hatch (1993) suggested that artefacts must be translated into symbols if they are to be comprehended as culturally significant events. In this research study the author is using symbolism to view symbols as carriers of information and meaning and as the medium through which individuals and communities create and interpret their social world (Das, 1988). Cohen and Bailey's (1997) definition of symbols implied an additional significance to the subjective meaning attributed by those who use them:

> '. . . more than merely stand for or represent something else... they also allow those who employ them to supply part of their meaning' (Cohen and Bailey, 1997:14).

With regard to the communities' symbolic interpretation of these symbols in the case of this research study, the innovative initiative reinforces or modifies, their interpretative systems. These interpretative systems are then used by the communities to retrospectively sense-make the observed collective actions and resulting innovative outcomes and then attribute meaning to these acts, which support their symbolic interpretation. But as well as these interpretation systems being used to apply retrospective sense-making to the innovative outcomes and their symbolisation, they are also subject to modification because of the communities' prospective symbolisation and interpretation of these same outcomes: their future expectations regarding the innovative initiative. The author suggests that communities may see their prospective symbolisation of the innovative outcomes as conferring new additional meaning to the innovative initiative (the symbol), this in turn is subject to prospective interpretation, which encourages these same communities to modify their interpretative systems (the way they perceive the world to work). This prospective and retrospective sense-making of community collective actions, and the resulting innovative outcomes, could have a

significant influence over the communities' thought worlds and all the other research themes of the community learning process model, see Figure 6.1.

Appelbaum (1997) warned researchers of the dangers of only focusing on the generalised formula or paradigm for a learning organisation, and suggested that more research be carried out on these and other facilitating factors, exploring the situational uniqueness of some, and the changes to these over time. Halliday and Cawley's (2000) research into the symbolic interpretation learning that accompanied activities associated with cross-cultural marketing supports the need for further research to understand its role in more traditional cognitively-based approaches. The author's contribution to this particular area of knowledge is to provide further evidence of the relationship between functional communities' retrospective and prospective symbolic interpretation associated with innovative activities and their overall sense-making associated with participation in an innovation community.

The next section explores the retrospective and prospective sense-making surrounding the functional community members' symbolic interpretation of the innovative initiative, and their engagement with the innovation community.

7.2.1 Symbolic Interpretivism

From previous chapters, the author has described the relationship between communities' practices, identity and the community itself, and the organisational enablers and barriers threatening their engagement. These links represent communities' perceptions of the relationship between their own and other communities' actions and the resulting innovative outcomes; but it does not reflect the symbolic interpretation that either supported or challenged the communities' sense-making of this relationship. Blumer (1969) suggested that all symbolic interactionist approaches have three basic premises:

> '. . . the first is that human beings act towards things on the basis of the meanings that the things have for them . . . the second is that the meaning of such things is derived from, or arises out of social interaction that one has with one's fellows . . . the third is that these meanings are handled in and modified through, an interpretive process used by the person in dealing with the things he encounters . . .' (Blumer, 1969:2).

Applying these approaches to the research analysis of the symbolisation and interpretation process associated with the innovative initiative, and engagement with the innovation community, suggested three distinct stages in the analysis of the communities' retrospective and prospective sense-making of others' collective actions, organisational events, and resulting innovative outcomes. Firstly, the analysis of communities' actions based on the imparted meaning of the innovative initiative. Secondly, the analysis of communities' prospective and retrospective sense-making of the innovative initiative for influence by other communities' actions. Lastly, the analysis of the communities' retrospective and prospective sense-making of the innovative initiative, with particular focus on the perceived link between the communities' actions and the resulting innovative outcomes, and its influence on the reinforcement or modification, of their interpretative systems. For each of the communities each stage is analysed and discussed below.

<u>Sales</u>

Though Sales' prospective sense-making of the innovative initiative was driven by their strong customer orientation, their retrospective sense-making of the innovation community's behaviour and resulting innovative outcomes was influenced by senior management's value orientations and behaviour. A consequence of their professional role to be sales oriented, where the driver was to deliver the revenue and profit streams expected by the organisation, against which their performance was being continuously assessed. It was senior management's commitment and push in the creation and

ongoing support of the informal innovation community which encouraged Sales to engage in it.

As senior management increased the pressure on Sales to maintain revenue and profit targets, so Sales' retrospective sense-making of the innovative initiative suggested that the expected performance outcomes (new products) were not being delivered. This had the effect of influencing the community's prospective sense-making of the innovative initiative, resulting in a re-focusing on short-term product deliverables, as discussed in section 7.2.1.1. Increasingly, as both Marketing's and R&D's actions and the expected performance outcomes associated with the innovative initiative, failed to deliver the new products expected by Sales, their prospective and retrospective sense-making associated with the initiative reflected a change.

Sales' interpretative system associated with innovative initiative was strongly supportive of any initiative that created, developed and delivered products, especially products with superior value to the customer. This same interpretative system stressed the importance of providing marketing information, the value of collaborative relationships between the sales, marketing and R&D communities, and to the support of the innovation community. This interpretative system was reinforced by the affective commitment of the marketing, R&D and senior management communities to the innovation community and the superordinate goals held by it. But when the affective commitment of senior management to the initiative was in doubt due to the retrospective sense-making of senior management's actions and organisational outcomes like prioritisation on short-term revenue generation and downsizing, then Sales modified its interpretative system. Their prospective sense-making of these new expected innovative outcomes and collective actions supported a new symbolisation of the innovative initiative, one that supported shorter-term product deliverables. The prospective interpretation of this suggested a modified interpretative system that still

supported new products, but products that could generate revenue and profits in the short-term and, therefore, potentially protect the community's survival in the future.

Marketing

In sections 4.2.2.2 and 4.2.3.2, the author explored the marketing community's market orientation, suggesting this supported both their long-term perspective on the innovative initiative and their own perception of their role within the organisation of presenting an alternative perspective to that of Sales on customers' latent and expressed needs. It was implied that Marketing, like R&D, were driven by a desire to force change and innovation and to encompass opportunities to help create market 'pull' and support technological 'push'. The innovative initiative was an opportunity to encourage attitudinal and behavioural outcomes to get commitment from all communities to the process of innovation (specifically technological and radical innovation), and to encourage actions that supported closer interactions between the functional communities and the development of shared innovation community goals.

At the commencement of the study, Marketing perceived the innovative initiative to be confirmation, from both Sales and senior management, of the importance of this to the long-term success of the business. This was further strengthened by the recruitment of an additional resource, the positive feedback from R&D and senior management, and their invaluable help in identifying external research institutions (as discussed previously in section 7.2.1.1). The importance of the innovative initiative was only confirmed by Marketing in the following year's strategic review processes, but they were also concerned that without any specific focus or vision it was impossible for them to refine their searches for new products and market concepts or help others to do so, a reference made by R&D. Marketing's retrospective sense-making of senior management's actions towards the initiative became harder to reconcile against their

espoused commitment. This affected the level of trust between Marketing and senior management, and specifically that of the MD. By the end of the study, a new organisational structure provided the first solid evidence of a new interpretation of the role of Marketing and, effectively, the end of the innovative initiative.

Marketing's interpretative system associated with the innovative initiative was strongly influenced by their own attributed meaning of their position and task within the organisation, and specifically that associated with the initiative (as discussed in section 4.2). This role perception, discussed in section 6.2.1, assumed that Marketing would facilitate information acquisition and dissemination (collaborative relationships), help resolve cognitive and affective conflicts over prioritisation of tasks within the initiative, and actively assist R&D in their acquisition of technological and radical innovative ideas.

Marketing's retrospective sense-making of their own and other communities' actions and resulting innovative outcomes, continually referenced this basic interpretation of their role in facilitating the creation, development and delivery of superior customer-valued products. When at first Sales and then senior management's affective commitment to the innovative initiative was in doubt, Sales stopped supplying any market information and senior management increased the priority on short-term revenue support. Marketing maintained its commitment to the innovative initiative, supporting and prioritising their supporting task on all three projects (X, Y and Z). By the end of the study, all three projects had been scrapped or shelved, and Marketing proposed a new prospective sense-making of other communities' commitment to the innovative initiative – there wasn't one.

R&D

In sections 4.2.2.3 and 4.2.3.3, the author discussed R&D's very strong innovation orientation, their focus on the acquisition of technological and radical ideas, and the development of these into superior customer-valued products. For R&D, the innovative initiative was the first organisation-wide initiative that focused specifically on the long-term acquisition of new product ideas. The initiative represented an opportunity to create and develop new skills and competencies associated with the acquisition of technological and radical ideas. This development issue was an important part of the expected behavioural outcomes for this community (discussed in section 5.3.3.3). R&D focused less on the emphasis of new products and more on the process by which that could be achieved.

The R&D community had little in the way of contact with existing or prospective customers and, as such, relied on Sales and Marketing to provide marketing information. The sales community provided important information about the organisation's existing customers' expressed and latent needs and important actual information about competitor strategies. The marketing community provided invaluable information about generalised customer needs, further information on competitor and industry trends, and generally longer-term information about marketplace trends.

For R&D, the importance of the innovative initiative was its focus on the longer-term. Their retrospective sense-making of all the communities' actions was that this was an acknowledged and supported fact. R&D also assumed that the other communities accepted the uncertainty of innovation processes, and that there could be no guaranteed performance outcomes. For R&D, the attitudinal and behavioural outcomes of the process acknowledged the need to invest in technical skills-building and acquiring application knowledge. The overall innovative commitment of the other communities

was much more important than the potential performance outcomes of the initiative. Eventually, when R&D perceived the dramatic changes in Sales' and senior management's commitment and collective actions towards the initiative, they too had to accept changes to their interpretative systems.

R&D had historically developed market-leading products that had delivered increased revenues and profits. R&D had always enjoyed strong support from senior management, Marketing and, at times, the sales community. Experience had taught them the uncertainty of innovation and the difficulty of predicting product success. At the beginning of the study, this experience suggested the need for a new innovative initiative focusing on longer-term deliverables. Finally, with the successful launch of a new innovative initiative came the acknowledgement of the importance of the initial phase of innovative idea acquisition and dissemination. Two important factors were identified and focused on by the multi-functional team working on this initiative: the acquisition of relevant market information, and commitment to the acquisition and development of skills to manage the process. When community collective actions by Sales and senior management directly affected these activities, R&D worked closely with Marketing to provide 'work-arounds' to the shortfall in information, and recruited new personnel to address the skills shortage. However, continual resource cutbacks and the increasing failure of the projects to get through their milestone reviews, eventually suggested that their existing experiences associated with managing these innovation processes would not be sufficient. R&D were late in perceiving the changes in the other communities' commitment to the initiative and to apply prospective sense-making to modify their interpretative systems, thus accepting a new social reality. Senior management were now committed to product development by acquisition of product lines, not by acquisition of product ideas.

Senior Management

In sections 4.2.2.4 and 4.2.3.4, the author described the initial market orientation adopted by the new BM, and the importance placed on the innovative initiative to deliver long-term financial security to the organisation by the creation, development and delivery of superior customer-valued products. As key members of senior management changed (with a new MD and the redundancy of three out of the four BMs), so their value orientation changed to one supporting customer orientation. This was reflected in senior management's interpretation of the innovative initiative as presenting an opportunity to focus on those marketplaces that delivered improved revenues and profitability. Finally, towards the end of the study, senior management's focus on a finance orientation hinted at a new interpretation of the innovative initiative and its capability to deliver new products in the short-term.

At the commencement of the study, senior management's retrospective sense-making of the communities' actions and the resulting innovative outcomes, was significantly influenced by the performance outcomes seen over the previous five years. Although the organisation had repeatedly delivered new products to the marketplace, these products had failed to meet their anticipated revenue and profit projections, and had contributed to the increased costs of product and sales support. The principal reason given by Marketing and R&D for this 'lack of performance' was the continued reliance on existing technologies. It was the product strategy review of 1997 that suggested that a future initiative was needed to acquire new technologies – ones that presented opportunities to enter bigger marketplaces. Importantly, both Marketing and R&D had extolled the urgency of adopting this new innovative initiative. When senior management adopted and supported the initiative this was confirmation to both R&D and Marketing of their commitment to this fundamental approach of NPD strategy. This implied an important link between the NPD strategy and the ongoing organisational

strategy associated with meeting the corporate office's objectives on revenue and profitability. It was only nine months into the new MD's role in the organisation when senior management formally acknowledged a new organisational strategy; a strategy that espoused a new NPD strategy: moving away from organic product development towards the acquisition of existing product lines from other organisations, products addressing larger markets with lower support costs and shorter development cycles.

The senior management's interpretative system can be separated into three clear phases: the first supporting the R&D and Marketing perspectives of encouraging innovative commitment and collective actions; the second encouraging the delivery of short- as well as long-term product deliverables; and lastly, that NPDs would be acquired and not organically sourced.

7.2.2 Understanding Community Interpretative Systems

The original research question proposed to help explore the community interpretative systems was: 'What were the communities' interpretation and sense-making of their own and others' collective actions and the resulting innovative outcomes, associated with the innovation community?'. This chapter has explored how symbolic interpretation helps in the process of retrospective and prospective sense-making.

Dougherty (1992) suggests three important findings associated with product innovation; firstly, that commercial success depends on meeting customer needs; secondly, collaboration between the functional communities is linked to success; and thirdly, neither of the first two happen. It is suggested that the principal reason for product innovation failure is that interpretative barriers exist between functional communities and their engagement in informal innovation communities. Lamertz *et al.* (2003) suggested that:

> '. . . . a sense-making crisis emerges when the social actors in an established institutional order – an enacted structure – fail to account for the causes and consequences of events that disrupt their patterned resources exchanges. This failure when combined with a significant level of public attention and significant threats to the identities of key social actors, acts as a catalyst for the actors to formulate multiple, competing problem definitions.' [Lamertz, *et al.*, 2003]

This research provides a useful initial approach to the social issue evolution on a broad institutional basis, but as Lamertz *et al.* (2003) suggest in their future research section, this needs applying to other social predicaments.

Following Lamertz *et al.*'s (2003) interactionist model of issue evolution to explore the symbolic interpretation of our functional community members' engagement in the innovation community and the changes over time, the author notes:

- the initial recognition of a social issue concerning functional communities' membership of the innovation community. When both Sales' and senior management's retrospective sense-making of the innovative outcomes of the innovation community no longer were aligned with their changed expectations, their interpretative systems changed. Correspondingly, this affected their identity traits and community interactions and resulted in reduced engagement with the innovation community. For the remaining functional community members in the innovation community this created a social issue over how to continue the activities and achieve the communities' superordinate goals;

- the increasing institutional redesign and changes in functional community membership. As a consequence of increasing disparity between expected outcomes and outcomes associated with the

innovation community, decrease in functional communities' engagement with the innovation community, prospective sense-making by the different functional communities turned to alternative solutions for embracing product innovation. Sales to focus on pushing for incremental innovations, senior management to the acquisition of product lines. Only Marketing and R&D remained engaged with the innovation community and its initial superordinate goals;

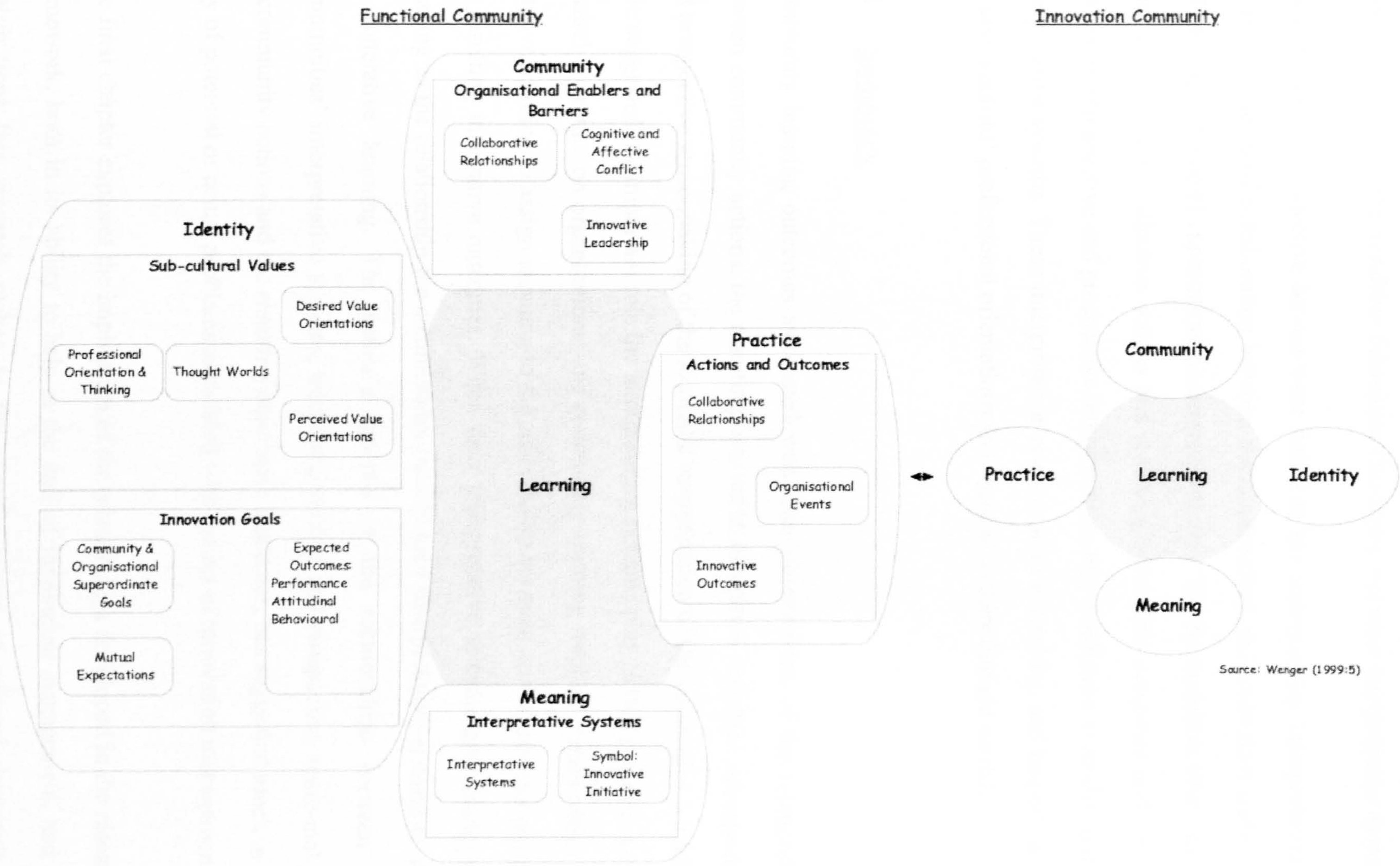
- a final solution to the acquisition and dissemination of product ideas was reached by senior management. The organisation purchased a new range of products and effective markets, resulting in a major institutional redesign. The innovation community was disbanded and the focus of all functional communities was on the new product groupings, which effectively ended the original issue over engagement with an innovation community committed to acquiring new technological and radical product innovations.

The contributions of the author's research into interpretative systems reveals the dramatic changes in some functional communities' retrospective and prospective sense-making of the relationship between actions and outcomes, the changes in their symbolic interpretation of the innovation communities' superordinate goals, and how these related to their own. This research suggests that engagement of these functional community members in an informal innovation community is entirely dependent on this sense-making, and that these interpretative systems are highly susceptible to dramatic changes based on the ongoing nature of the communities identities and community interrelationships; this is discussed further in Chapter 8.

7.3 Modification to the Community Learning Process Model

The final part of the community learning process model has now been concluded, showing the relationship between community actions, the resulting innovative outcomes and the communities' interpretative systems. This now completes the research framework and section 7.4, below, summarises the links between the research themes of the community learning process model.

Figure 7.1: The Community Learning Process Model (5)



Community Actions, the Resulting Innovative Outcomes and their Interpretative Systems

The communities' collective actions were linked to the communities' interpretation of the required level of collaboration between the communities, the innovative leadership and the implicit mutual expectations associated with this. The communities observed the other communities' collective actions and resulting innovative outcomes and, by the process of retrospective and prospective interpretation, they reinforced or modified their interpretative systems. These interpretative systems were shaped by, and helped shape, the communities' professional orientations and changes to their thought worlds.

7.4 Summary

Community learning outcomes associated with their observations of the relationship between community actions, the resulting innovative outcomes, and their retrospective and prospective sense-making of the symbolic interpretation of the innovative initiative, have suggested the important role the interpretative systems play in this process. As the research literature on organisational and community learning implies, communities use adaptive learning to assign meaning to the relationship between community actions and the resulting innovative outcomes. When their interpretative systems give inadequate meaning to the relationship the communities modify their interpretative systems to suit, by generative learning. The author's analysis of the relationships between the communities' interpretative systems, their retrospective and prospective sense-making of community actions and the resulting innovative outcomes, has suggested much in the way of potential or actual problems associated with the act of innovation management.

The final chapter explores the implication of the relationships developed in the research framework, both in its ability to help in the task of innovation management, and the contributions this research makes to the specific issues of cultural dynamics in innovation management research.

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CHAPTER 8: CONCLUSION

8.1 Introduction

This final chapter performs three tasks: a reflective analysis of the preceding four chapters' research findings and the contribution these findings have made to both academic and practitioner knowledge; a reflection on the interpretative ethnographic approach and the value of PAR in single case studies; and to suggest further research directions in exploring the issue of innovation management in small- and medium-sized enterprises (SMEs).

8.2 A Reflection on the Research Findings

In the first chapter of this research thesis (section 1.2), the author attested to the increasing importance of innovation management research in providing insights into the social processes underlying functional communities' engagement in innovative initiatives and the creation and development of informal innovation 'Communities of Practice' (CoP). In Chapter 2, the author attested to the importance of organisations accessing new product ideas and leveraging formal and informal communities (Roberts, 2006) to develop new assets, both explicit product developments and tacit knowledge. The success or failure of these informal innovation communities and subsequent product developments are difficult to explain by external factors alone (Cobb *et al.*, 1998). NPD research (Craig and Hart, 1992) has finally acknowledged the situational uniqueness of organisations, their structures, cultures and internal processes, and the influence these can have on organisation-wide activities, like an NPD innovative initiative.

In the past, industry-specific research (Jones, 1998; Hattori and Lapidus, 2004) has attempted to propose critical external and internal factors that, directly or indirectly, influence innovation within organisations operating in uncertain and ambiguous

marketplaces. These factors were too often identified within the research studies (Lee-Mortimer, 1995; Harris, 1996; Appelbaum *et al.*, 1998) as being either barriers or 'must haves' for being excellent or achieving excellence, yet are often transitory as these same organisations often slip from being excellent companies (Pascale, 1990). Why? Because the factors often being measured are only the symbols of success – they are not the reasons for it. The important question being asked by industry is not, 'What do they need to adopt in order to be successful?' (Appelbaum and Goransson, 1997), but 'How should they deal with the uncertainty and ambiguity that exists inside and outside their organisations?'. The uncertain and ambiguous economic marketplace has forced organisations to address rapidly changing NPD requirements; but at the same time meet increasingly stringent financial requirements set by their more demanding stakeholders (Schein, 1992), shareholders and corporate owners, to reduce costs and increase efficiency (Conrad and Poole, 1998). Over the last ten to fifteen years organisations have downsized to achieve this, but as the research discussed in section 1.3.3 suggests, with mixed results (Conrad and Poole, 1998).

The issue for organisations in these uncertain and ambiguous environments (Craig and Hart, 1992), where downsizing is becoming the regular 'medicine', is how to embrace the need for change. Innovative initiatives are needed to change the product and service offerings to both, match the opportunities and threats of this dynamic environment, and more importantly engage those functional communities upon which the organisation depends to aid creativity and innovation. These innovative initiatives present the organisation with the opportunity to create, develop and deliver superior customer-valued products, but they also present bigger challenges to senior managers in how to manage them (Angle and Van de Ven, 2000).

Earlier in this section, the author suggested that innovation success or failure was more likely influenced by the internal dynamics of the organisation rather than any external

factors. Research into the communities within organisations (Wenger, 1999; Wenger and Syndyer, 2000) has suggested that these communities affect the behaviour, norms and expectations of organisational members. Further research on the specific variance of occupational cultures (Kwantes and Boglarsky, 2004), attitudes and expectations associated with shared work, points to the need to research these cultural differences and the impact they have on any joint enterprises. The author's earlier research (Brown, 1997) has already attested to issues associated with sub-cultural values, collaboration and innovation goals of the communities within this particular case organisation. Hence, the focus of this study was on the exploration of four functional communities' interpretations and sense-making of their own and others' identities and practices associated with the management of an innovative initiative, and the innovation community created with the express purpose to support this. Then to better understand the level of engagement of these formal functional community members with this informal innovation community, and any other organisational enablers and barriers to this at the sub-cultural and organisational level. This research aim was then re-written in the form of four specific research questions: 'What is the relationship between the communities' value orientations concerning the creation, development and delivery of superior customer values, and their thought worlds concerning the innovation community?'; 'What is the relationship between the communities' expectations of the innovation community and their implicit psychological contracts with other?'; 'What are the organisational enablers and barriers influencing communities' engagement with the innovation community?'; and 'What are the communities' interpretations and sense-making of their own and other communities' collective actions, and the resulting innovative outcomes associated with the innovation community?' These research questions provided an overall inductive framework within which the author and his co-researchers collected, analysed and presented data through various action workshops, to build up a cognitive and affective map of the four functional communities' retrospective, and prospective, sense-making of, and commitment to, the innovative

initiative; and therefore their engagement with the innovation community. The next section discusses the five principal contributions of this research study in line with those anticipated in section 1.5.

8.2.1 Principal Contributions to Academic Knowledge

In Chapter 1, the author identified the need to explore the social participation of functional community members in informal communities focused on innovative initiatives. The identified research from Chapters 2, 4 and 7 further suggested the need to understand the values, attitudes, expectations and behaviours of these community members and their engagement with this innovation community. In section 1.5 the author proposed five expected contributions from this research study: a community learning process model; insights into the functional communities' meaning associated with membership of innovation communities; the impact of these on their value orientations and expectations; organisational enablers and barriers to the formation of innovation communities; and their level of engagement with the innovation community.

8.2.1.1 Community Learning Process Model

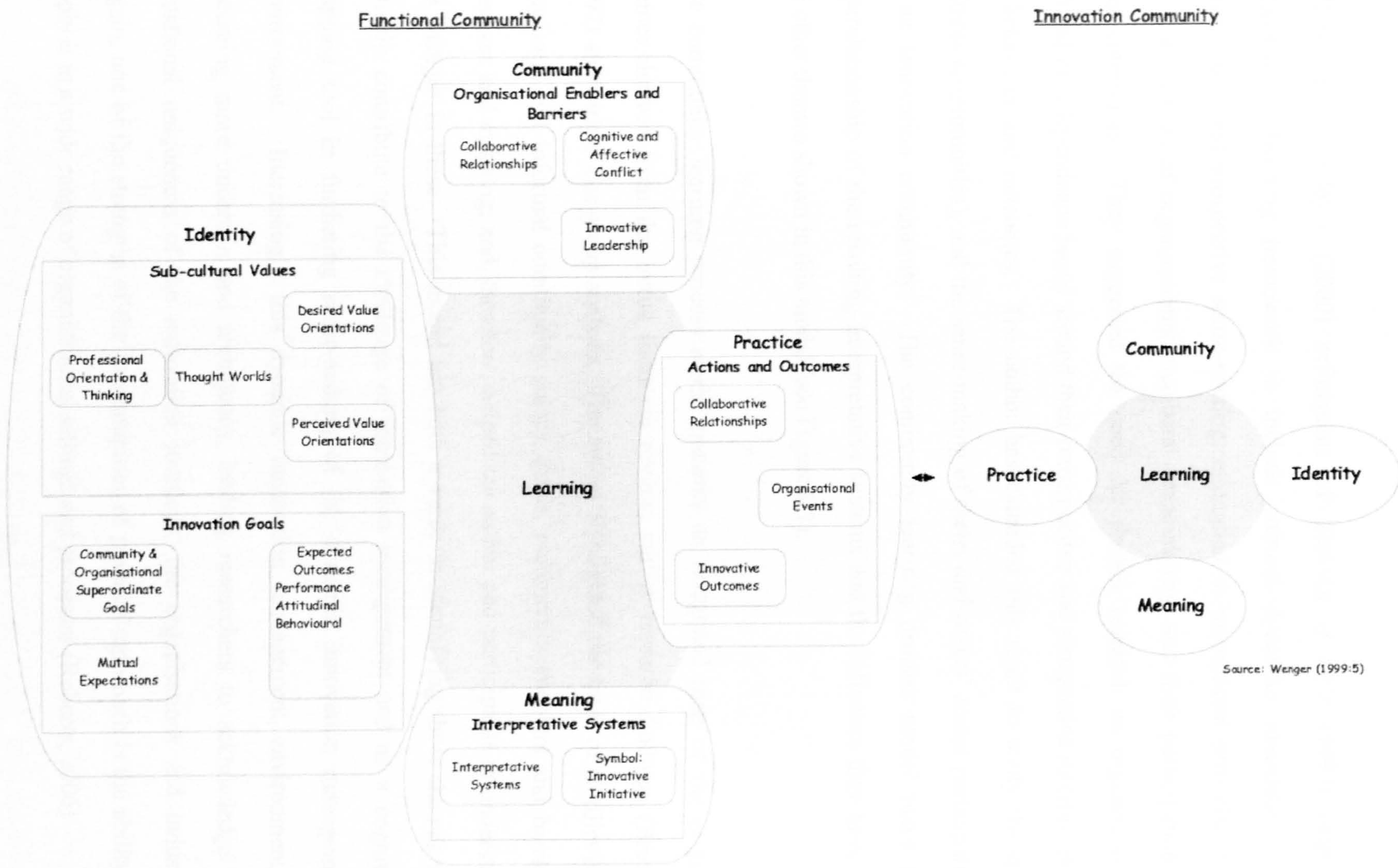
The principal contribution of this research study has been the development of a community learning process model, see Figure 8.1. This model maps the identity, community, practice, meaning themes and sub-themes, and through the process of its original construction and development over the last four chapters, highlights the situational uniqueness of innovation management and the challenges associated with formal community members' engagement with an informal innovation community.

In Chapter 2, the author described the role of organisational learning frameworks (Halliday and Cawley, 2000; Sinkula *et al.*, 1997) in developing understandings of the

relationships between organisational outcomes, interpretations, learning orientations and organisational member behaviours. Other organisational learning frameworks (Halliday and Cawley, 2000; Hatch, 1993) have further extended these understandings to include the cultural dynamics of symbolism and, thus, suggest further complications to the interpretation–behaviour relationship. It was the combination of these knowledge transfer and socio-cultural perspectives with Wenger's (1998) original framework on 'Communities of Practice' (CoP) that acted as the initial model around which further exploration of the interrelationship of communities' values, goals, behaviour and interpretative systems with their engagement with an informal innovation community, could be studied. The creation and development of this community learning process model, see Figure 8.1, has contributed to academic knowledge on communities' social participation in organisation-wide initiatives and specifically in informal innovation communities, on three counts.

Roberts (2006) in her critique of 'communities of practice' suggested that communities do not operate in a vacuum, and that one of the important issues in understanding their success is to understand the interrelationship between these formal and informal communities. This model identifies areas of conflict and support associated with these relationships and the analysis conducted during this research study links specific themes to functional community members' ability and willingness to engage with the innovation community. Roberts (2006) additionally noted the need to understand the interaction between the formal organisation and these extra-organisational 'communities of practice', to both understand the boundary issues and the community members' 'legitimacy of contribution'. This 'legitimacy of contribution' for community members rested on their perspectives of customer value orientation, and the important relationship with the innovation goals of the innovation community.

Figure 8.1: The Community Learning Process Model (6)



Halliday and Cawley's (2000) refinement of Sinkula *et al.*'s (1997) original organisational learning framework to include cultural dynamics associated with retrospective and prospective sense-making, attempted to incorporate self-reflexivity into the analysis of organisational members' sense-making and their participation in joint enterprises. They suggested the need for further research on organisational cultural interdependence based around their retrospective and prospective interpretation of behaviour and outcomes. The author has extended this remit to study the sub-cultures (communities), and the sense-making of theirs and others' social participation in an innovation community. The community learning process model maps the interrelationship of the resulting interpretative systems and the influence they have on the other themes shown in this model (see Figure 8.1).

The community learning process model presents an integrated map of the original themes derived from the initial literature review, earlier research findings (Brown, 1997) and early focus group analysis. The model highlighted the areas of conflict over functional and informal community values, goals, community enablers and barriers, practices and meaning; and, therefore, helped the author and participants to understand the changes in these. This model has both a value in identifying those themes that actively contribute to the challenge of innovation management and as a cognitive mapping tool in furthering sense-making of the dynamic innovation management environment. Increasingly this dynamic innovation management environment is becoming more uncertain and ambiguous, leading researchers to acknowledge the situational uniqueness of the innovation journeys, the organisations and industry. Again, one of the strengths of the 'communities of practice' approach is the ability to apply it to a wide range of organisational settings and processes (Roberts, 2006).

The previous four chapters have explored each of the themes from the original community learning process model and discussed briefly the principal contributions from the analysis of the research findings. This has largely been in isolation from the other research themes and it is only right that these initial research contributions are integrated and additional contributions are sought, from studying these as one integrated social process.

8.2.1.2 Functional Communities' Meaning of the Innovation Community

The author's contribution to interrelationship between the social issue of innovation management and the communities' engagement in an innovation community, is that social participation is linked to their symbolic interpretation of the joint enterprise. Communities' retrospective sense-making supported the initial recognition of the social issue concerning engagement with the innovation community. Some communities' prospective sense-making of the disparity of expected outcomes with actual outcomes resulted in a commitment to alternative goals, and this later supported the drive for organisational redesign and disengagement from the innovation community.

In Chapter 7 the author asserted that the symbolic interpretation of the different functional communities contributed to significantly different retrospective and prospective sense-making. Using Lamertz *et al.*'s (2003) interactionist model and applying this to the study of functional communities (which Kwantes and Boglarsky (2004) suggest are subject to increasing variance associated with their values, attitudes and behaviours), the author attested to three important consequences of this divergence in sense-making between functional members and that shared within the innovation community. Firstly, that these differences in their retrospective and prospective sense-making resulted, for some, in the early recognition of an underlying social issue concerning continued engagement in the innovation community. Secondly, that some

functional communities utilised the dysfunctional interactions and contested meanings associated with this social issue, to facilitate a change in the superodinate goals of the innovation community. Lastly, that one or more functional communities utilised the social issue to justify future organisational redesign.

This social issue mentioned above relates to the combined goals of senior management in encouraging social participation in the informal innovation community, through which new product idea acquisitions would result, and discussed in Chapter 1. It is important to note that these two interrelated goals concerning the innovation community are at the hub of the functional communities' engagement. Lamertz *et al.* (2003) suggested that a sense-making crisis emerges when community members fail to account for the causes and consequences of innovative outcomes and associated organisational events. The social issue that helped to formulate the original problem definition and solution, and hence create and evolve the innovation community, focused on the innovative initiative, had overall buy-in from all the functional communities. This is evidenced in Chapter 5 with the general value orientation consensus and in the original superordinate goals for the innovation community focusing on technological, radical and product innovation. However, a sense-making crisis is likely to develop in the different innovation community members when their symbolic interpretations of the expected innovative outcomes increasingly diverge from that of other members, principally because of their perception of its business performance delivery abilities (Russell, 1999). It was the perception of the innovation community's ability to deliver this business performance, creation and development of new products, that was initially identified in this research study to be directly related to senior management's changed symbolic interpretation of the innovative initiative. It was effectively this point of departure that started a domino effect in theirs and others' retrospective and prospective sense-making of the activities of the innovation community. This perception of the

innovation community's ability to deliver on the two important goals is linked to other themes within the community learning process model.

The social issue evolution, the ability of functions to engage in and acquire new product ideas, is negatively linked to the disparity in their symbolic interpretation of the goals of the innovation community. The author asserts that retrospective and prospective sense-making of the relationship between members' behaviour and any innovative outcome is dependent on the symbolic interpretation of the shared innovation goals of the innovation community.

8.2.1.3 Perception of Community's Value Orientations and Goals

The author's research findings attest to the changes in value orientation of the different functional communities and the increasing discrepancy between these and those purportedly shared value orientations of the innovation community. It is these subtle changes in customer value orientation, driven by the communities' prospective sense-making of the expected innovative outcomes of the innovation community, that exerted a change in their perceived and expected roles for themselves and others. It was the interpretation of the innovative outcomes, specifically the ability to deliver superior customer valued products, which changed their perceived value orientations and therefore their perceived role towards the innovation community. Their professional values drove the communities' desired value orientation and these initially influenced their normative behaviour towards the innovation community, but these changed as they slowly acknowledged the discrepancy between expected and actual innovative outcomes. These functional communities changed their collective behaviour towards the innovative community, reflecting instead their perceived value orientations and roles.

Previous research on organisational culture (Alvesson, 2002; Martin, 1992) has acknowledged that individuals can belong to multiple sub-cultures and that they can transit from one set of values, goals, attitudes and behaviour to another, and that these sub-cultures carry with them multiple meanings of the social world in which they work. These multiple meanings associated with the sub-cultures have suggested that ambiguity is a characteristic of organisational life (Alvesson, 2002). But recent research (Flaherty *et al.*, 1999; Kwantes and Boglarsky, 2004) on occupational cultures has shown the dominance of these functional sub-cultural values, goals and attitudes on individual members' preferences and behaviour. The normative beliefs held by these occupational sub-cultures regarding their own expectations and those of other sub-cultures, are associated with their thought worlds (Dougherty, 1992), value orientations (Beatty, 1988; Bilitski, 1995, Flaherty *et al.*, 1999) and their interpretative systems. Kwantes and Boglarsky's (2004) research suggested that occupational sub-cultures hold perceptions of what constitutes an ideal organisational culture and that this explains the level of differentiation and integration between these sub-cultures, and the level of value consensus. The author attests that this can be applied equally to these functional community members' engagement and preferences towards an innovation community, like an organisational culture. In section 4.2.4, the author suggested a strong relationship between perceived value orientations and role ambiguity, and value consensus and innovation community collective actions. But research (Beatty, 1988; Flaherty *et al.*, 1999) into functional communities' value orientations and the link with role ambiguity, has inadequately explained these changes in expected and perceived roles. This research has suggested that discrepancies in functional communities' value orientations explain the increase in role ambiguity, but the author's research findings on symbolic interpretation attest that it was the functional communities' normative beliefs concerning the expected innovative outcomes that drive these changes in value orientations. It was the functional communities' symbolic interpretation of the innovative initiative and their retrospective and prospective sense-making of others'

collective actions towards it that forced a change in their thought worlds. These thought world changes modified their customer value orientation, the value orientations associated with creating, developing and delivering superior customer value, and, as a consequence, changed their perceived roles and the expected roles of other functional communities. An example of this was Sales and senior management's perceived change in value orientation away from market-orientation towards sales-orientation, the rationale for which was the increasing unlikelihood of new products originating from the innovation community in the short-term. The outcome of this change in 'customer value orientation' for Sales and senior management, were new innovation goals towards the innovation community, increasing the value discrepancy between them and Marketing and R&D. It also resulted in increased role ambiguity between those perceived roles interpreted from the various functional communities' collective actions and those expected roles assumed by the functional communities, because of their value orientations, and their new understanding of the social world. The author's research findings generally support Flaherty *et al.*'s (1999) inverse relationship between customer value orientation and role ambiguity, and the positive relationship to attitudes and behaviour; however, customer value orientation is more diverse than their findings suggest and value orientations are themselves positively related to expected innovative outcomes and their symbolic interpretation. This again links with the previous sections' attested relationship between functional communities' engagement with the innovation community being linked to the attainment of the two innovation goals.

The contribution of this research is to the important change in functional communities' behaviour towards the innovation community being linked to the change in customer value orientation – from the desired to the perceived value orientations and the direct link with a change in their perceived role. Functional communities' desired value orientations are driven by their professional values and beliefs, but their perceived value orientations are driven by their retrospective and prospective sense-making of the

innovative outcomes of any joint enterprise. The discrepancy between these are accounted for in the communities' symbolic interpretation of the goals attributed to the innovation community and the changes that result as a consequence of the innovative outcomes; both of these value orientations influence behaviour towards the innovation community. Perceived value orientations are the 'true' reflection of the changed symbolic interpretation of the innovative outcomes of the functional community members; desired value orientations reflect the professional values of the members, but to which they can no longer commit themselves. However, these functional community members will often still espouse these value orientations.

One more theme, yet to be discussed, had a significant impact on the innovation community and influenced their behaviour and the innovative outcomes that resulted: organisational enablers and barriers.

8.2.1.4 Influence of Organisational Enablers and Barriers

Organisations encouraging innovation processes and changing to new behaviours, need to acknowledge the interrelationship of implicit leadership traits, conflict resolution and the different 'states of trust' of these innovation community members. The author's contribution to knowledge of this integrating process directly links innovation community cognitive and affective conflict with members' 'state of trust' of each other and their perceived – versus senior management's espoused – implicit leadership traits.

In Chapter 2, the author discussed the research (Craig and Hart, 1992) that supported the importance of NPD to ensuring organisational survival, but suggested that this is increasingly being balanced against stakeholder value creation (Ernst and Teichart, 1998). The interpretation of this shareholder value creation is often left to the different functional communities and their perceptions of the relative values of delivering short-

term revenue and profits, against the longer-term investment in resources and NPD. This uncertainty and ambiguity over stakeholder value creation, specifically that associated with the interpretation of customer value orientations (Adams *et al.*, 1998), has an overarching influence over the value-based interactions between the formal and informal communities. Crossan's (1999) research suggested that ideas, product ideas and new innovative processes, depend on an integrating process between the different participants and that it is this social process and the dynamics of these communities that both enable and create barriers to this. In section 6.2.1.1, the author discussed the importance of the 'state of trust' between the communities and its influence on changing their levels of collaboration. Hattori and Lapidu's (2004) research volunteered no reasons for the change in these 'states of trust', but Lord and Brown (2001) suggested a possible link between leaders' behaviours and the 'thoughtful process' of their subordinates, and that this could explain these changes in communities' 'states of trust'.

In the author's research findings of Chapter 6, the discrepancies in the leadership traits espoused by senior management and those perceived by the other functional communities, precipitated a decrease in the 'state of trust', deteriorating the level of collaboration and directly increasing the level of affective conflict. This undermined the new behaviours expected of the innovation community members, both of senior management who had initially supported the initiative and of the other functional communities. As a consequence of these leadership trait changes functional communities' thought worlds changed and this encouraged a return to their old behaviours, for example, Sales focusing on shorter-term incremental product opportunities. Eventually, both R&D and Marketing reverted to their short-term 'fire-fighting' activities, largely because of lack of support to engage with the innovation community. Additionally, this decrease in the 'state of trust' between functional communities increased the level of affective conflict, which further damaged the level

of collaboration between them and the innovation community, and decreased the level of cognitive conflict resolution.

The interrelationship between functional communities' 'state of trust' of each other and the discrepancy in perceived versus espoused senior management leadership traits, directly impacted on the affective conflicts between members of the innovation community. The effect was to discourage engagement in the innovation community, the new behaviour expected by senior management, and, instead, to encourage these members to 'take up' their old behaviours and the related value orientations and goals. The innovative outcomes of the innovation community were directly affected by this, long before any direct actions associated with senior management's withdrawal of resources and explicit support, could have any effect.

8.2.1.5 Functional Communities' Engagement with the Informal Innovation Community

The original research aim was focused on understanding functional community members' engagement with the informal innovation community and the enablers and barriers to this at the sub-cultural and organisational level. Too little research (Swan *et al.*, 2002) on CoP has studied the special challenges of radical and technological innovation associated with NPD and the indirect and direct management of the innovation process. Using the CoP (Wenger, 1999), organisational learning (Sinkula *et al.*, 1997) and cultural dynamic (Halliday and Cawley, 2000) frameworks as an initial research structure for the community learning process model (see Figure 2.4), the author has utilised the cognitive mapping process (Chapters 4 to 7), to highlight the inconsistencies and ambiguities in the identities, communities' practices and meanings of the communities. In this final section, the author explores the level of engagement of

community members with the innovation community by studying their interactions, legitimacy of contributions to the enterprise, the negotiation of meaning, and the development of shared practices (Wenger, 1998).

Research (Thamhain, 2003) into managing innovation within organisations, with particular focus on NPD, acknowledges the effectiveness of action-oriented, fully resourced and directed help, in identifying and creating a sense of community across any joint enterprise. In section 4.2.4 the author attested to the strong relationship between value consensus and communities' collective actions and the important link with expected innovative outcomes. Specific sub-cultural research (Lok *et al.*, 2005) on the link between subcultures' orientations and commitment suggested an interesting speculative link between supportive and innovative sub-cultures and commitment. Applying this comparison to the author's findings actually provides an interesting perspective on the practices of two principal groupings within this organisation, Sales and senior management, and R&D and Marketing. Both Sales and senior management initially supported a customer value orientation focused on new products from radical and technological acquisitions, a generally supportive sub-culture providing an amiable environment for the innovation community. R&D and Marketing supported a customer value orientation focused more on the innovative behaviour behind the acquisition and dissemination of technological and radical product ideas, supporting a highly creative, innovative and longer-term innovation community. This subtle difference between the functional communities' value orientations and their longer-term engagement with the innovation community, would explain their changing behaviours and discrepancies in shared practices. The author attests that customer value orientations purportedly supporting a joint enterprise, like the innovative initiative, may have different assumed levels of support for an innovation community and that these indicate more closely the

true nature of these sub-cultures' engagement in any shared practices and innovative goals. The functional communities' value orientations were driven by a strong sense of self, both of their perceived role and that demanded of themselves, and this in turn fostered a creative tension between their perceived and desired value orientations. Senior managers' withdrawal of support undermined their 'legitimacy of contribution' to the joint enterprise in both their perceived role, represented by their perceived value orientations, and in their aspirational role, represented by their desired value orientations. In any joint enterprise depending on innovative behaviour and requiring total engagement, these managerial behaviours effectively undermined the value consensus between innovation community members and indirectly weakened their commitment to the innovation community goals. The author's findings illustrate the complex relationships between value orientations, expected outcomes and the members' 'legitimacy of contributions', with their engagement with the innovation community and its direct and indirect influence over the innovative outcomes.

In section 8.2.1.4 above, the author attested to the interrelationship between functional communities' 'state of trust', discrepancies between senior management's perceived and espoused implicit leadership traits (ILTs) and increased levels of affective conflict. The combination of these three interrelated themes had a direct and indirect impact on functional community members' engagement with the innovation community. Directly, some functional communities were allowed to re-adopt their old behaviours, such as Sales focusing on only short-term objectives and being more concerned with incremental product developments. They withdrew their support of the technological radical product developments and curtailed most of their market information gathering activities. Indirectly, the 'state of trust' associated with authenticity and fulfilment

between the different members of the innovation community decreased and this impacted on their level of engagement and commitment to the innovative initiative.

Critical to the future success of business enterprises is the managers' ability to make sense of the ambiguous conditions surrounding organisations' innovative activities (Ashmos and Nathan, 2002). Part of the challenge is to create sense-making models that may be used to negotiate meaning within these informal communities, to help functional community members resolve inconsistencies in leadership behaviours (Lord and Brown, 2001) and other functional communities' collective actions. Affective commitment of senior management to the innovation community was withdrawn when their symbolic interpretation of the superordinate goals changed, primarily because of a change in the 'state of trust' of achieving the expected outcomes. This change in the 'state of trust' may be a result of habit, rather than explicit reasoning – Ouellette and Wood (1998) noted a similar reason to explain links between values and behaviour. This withdrawal of affective commitment from senior management directly impacted on Sales' and, less immediately, on Marketing's engagement with the innovation community. This suggests a negative relationship between the symbolic-level processing of senior managers and the symbolic interpretation of other functional communities towards the innovation community goals. Lord and Brown (2001) suggested that taking a simple perspective of the value – behaviour relationship may be an inappropriate means of illustrating the underlying relationships between identities, communities and practice. The author notes from his research that some functional communities' value orientations are moderated by habits, old behaviours and assumptions, that directly undermine the original goals of these functions, and that these are in turn supported by the 'state of trust' between those looking for change and those who have to implement

it. This not only affects the level of engagement of these functional communities, but indirectly impacts on the remaining innovation community members.

The contributions discussed in the five previous sub-sections all attest to the subjective nature of social participation in informal innovation communities. This affirms other research (Roberts, 2006; Handley *et al.*, 2006) suggesting a link between the boundaries of these formal and informal communities and socio-cultural factors, but which no research regarding SMEs and NPD has so far explored. These community members are drawn by the persuasive arguments of engaging with one another to achieve superordinate goals, innovative goals that meet the innovation communities' needs, and their own functional needs. But this engagement with the innovation community is continually tested by the changing values, attitudes and behaviours of its members, as they react to retrospective and prospective sense-making of the original customer values underlying the innovative initiative. The value of this research is in the understanding it draws from those community members actively exploring the rationale behind the value–behaviour relationship and how this acts as both an enabler and barrier to future innovation community engagement. The business practice contributions of this research are discussed further in the next section.

8.2.2 Principal Contributions to Business Practice

In the 'Introducing the Topic' section of the first chapter of this thesis (section 1.2), the author suggested that all organisations are thought to be in search of excellence. For the perception is that excellence brings success, measured in terms of performance, attitudinal and behavioural outcomes. When determining success in terms of product innovation, organisations and the functional communities within them attribute a

number of criteria to the three broad metrics above. In the case of the organisation being studied the principal performance outcome was new product delivery.

However, in innovation processes, where delivery of these new products may be three or four years hence, how do communities actively involved in multi-functional activities measure product innovation success in the short-term? The problem facing industry and organisations is the increasing short-termism of many of the stakeholders in their businesses; shareholders look for short-term financial performance and customers want cheaper and better products. The marketplaces in which these organisations operate are becoming increasingly uncertain and ambiguous; uncertain because of fast-moving competition, and ambiguous because of the increasing uncertainty of customer needs and the long-term nature of these. All of this makes for an uncertain and ambiguous environment within which the senior management of an organisation must take decisions.

In the case of the organisation under study in this research they were very keen to comprehend the issues influencing community social participation in innovative activities and, specifically, that associated with product innovation. Hence, the financial and moral support afforded to the author for the duration of the study. The research aims and the four subsequent research questions focused on the social processes underlying functional communities' engagement in an innovation community and on which value orientations and goal consensus had been initially reached. During the timeframe of the study many organisational events, changes in community identities, practices and meanings are mapped. The academic contributions discussed above equally have a contribution to business practice, and these are discussed next.

Building the community learning process model, see Figure 8.1, resulted in direct benefits for the participants of the study – by feeding back the research finding and

analysis, and stimulating discussions in the action workshops regarding their own interpretations – and future changes in their identities and practices. Mapping the relationships between the different themes increased the functional communities' understanding of the importance of value orientations and innovative goals in understanding theirs and others' collective actions and engagement with the innovation community. This directly increased the open discussion and identification of discrepancies in communities' engagement with the innovation community and consequently speeded up the decision processes surrounding project activities.

The original goals of the innovation community and its underlying innovative initiative, of encouraging social participation and the future development of new products, resulted in full engagement of all functional communities. But, increasingly, as communities' symbolic interpretation of others' values, attitudes and behaviours suggested a decreased level of engagement with the innovation community, a social issue emerged. This social issue – engagement with the innovation community and a 'state of trust' in its members to eventually deliver on its shared goals – undermined the collaboration between functional communities and inevitably led to increased affective conflicts. The issue of evolution and management in innovation processes is a key area affecting innovation communities' ability to manage members' engagement and their affective commitment to the necessary collective actions needed to achieve the expected outcomes.

The research findings on the causal relationship between functional communities' symbolic interpretation of the original innovative initiative and their retrospective and prospective sense-making of the collective actions of other innovation community members, stimulated changes in their customer-value orientations. These subtle changes in customer-value orientations resulted in significant changes in the functional communities' engagement with the innovation community and their original

commitment to the innovative initiative. Businesses do need to undertake the mapping of these interpretations and links to functional communities' customer-value orientations, openly discuss the reasoning behind any changes and the impact these will have on their practices towards the innovation community.

The 'state of trust' between functional communities had a significant impact on their engagement with the innovation community. Senior managers committed to changing functional communities' behaviour, promoting innovative activities and supporting innovation communities, need to understand the importance of consistent implicit leadership traits. It is the positive relationship between the inconsistency of their espoused and perceived leadership traits and the 'state of trust' between them and other functional communities that eroded the support for new behaviours and engagement in the innovation community. Increasingly these functional communities sought comfort from their previous old behaviours, disengaged from the innovation community, and were uncommitted to the underlying innovative initiatives. Businesses espousing a commitment to innovative strategies should acknowledge the commitment they must make to it and the importance of consistent leadership traits.

8.3 Methodological Strengths and Limitations

In the past sections of this chapter the author has discussed the significant research outcomes of this three-year longitudinal study. Key to this has been the sense-making associated with community interpretative systems. In section 3.2.1, arguments were presented to qualify the suitability of interpretative ethnographic studies to both reflect the subjective nature of community interpretations and the important cultural dynamics. There are four specific issues associated with the supporting research methods that warrant additional comment: the use of PAR, the use of co-researchers, sampling issues and generalisability of the findings.

8.3.1 Participatory Action Research

In the introductory text to this topic (section 1.2), the author stressed the situational uniqueness of innovation management, particularly regarding the internal dynamics of an organisation. Adopting an interpretative ethnographic research methodology provided a logical umbrella under which to conduct the research and describe how choosing PAR was not a whim of the author, but a deliberate strategy to exact ownership of the research problem analysis with all participants. The close collaboration between researcher and participants hints at both the strengths and limitations associated with its use.

As mentioned in section 3.3.5, data collection was a combination of observation, focus communities, interviews, documentary research and, most importantly, action research workshops. Every three months workshops were conducted by the author with the different communities, sometimes singularly or at other times with representatives from all four functional communities. These provided an opportunity for the author to feed back the initial research analysis of the communities' actions and the initial interpretation of these. The participants at these workshops were then invited to discuss any, or all, issues suggested by this initial interpretation. What transpired was that the functional communities conducted their own retrospective sense-making of the communities' collective actions, and the resulting innovative outcomes, associated with the innovative initiative. At all times the innovative initiative and membership of the informal innovation community was the central theme by which the communities symbolically interpreted the observed collective actions, organisational events and the resulting innovative outcomes. Most often, the communities would propose actions associated with their new sense-making and understanding, and on occasions new innovation community superordinate goals resulted. These would be taken back to their own functional communities and compared with their functional superordinate goals.

There was one significant limitation to the use of PAR, and that was the active involvement of the author in facilitating these workshops. This presented two key issues: the first was the opportunity for the author to steer the discussion in a particular direction and, by so doing, bias the discussion and potentially create barriers to other, just as important, issues to surface; secondly, by feeding back the author's own interpretation of the link between the communities' interpretative systems and their collective actions and the resulting innovative outcomes, this could change the natural process of community learning, either artificially speeding it up or slowing it down. To both of these limitations the author attaches a potential positive outcome, that by becoming actively involved in the different communities' sense-making of the problems and issues associated with innovation management, the author was fulfilling one of the requirements suggested by the organisation and often commented on by the communities themselves:

> [R&D] *'We need more meetings like this. We can have a good discussion about what is happening between departments, and more importantly we can discuss the issues that are holding us up on elements of the innovative initiative. Nearly every other meeting we go to has no real actions, things get discussed at a superficial level, and then nothing changes . . . but these meeting are really useful.'* [November 1999].

PAR is not suitable for all interpretative ethnographic studies, but it was for this organisation and research study. To explore the communities' retrospective and prospective sense-making of their symbolic interpretation of the innovative initiative required a mechanism to force this into the open and, by so doing, encourage the communities to learn and take collective action to remedy the problems.

8.3.2 Co-researchers

To explore the retrospective and prospective sense-making of their symbolic interpretation of the innovative initiative it was essential to observe and interact with the organisation over a sufficient period of time to capture all the communities' collective actions, organisational events and the resulting innovative outcomes. Conducting the research over a three-year period provided an opportunity to interact with the participants at all levels of their daily life: project meetings, community meetings, informal 'hall' talks, strategic and organisational gatherings, action workshops and document-based research. Through these, the author was able to capture the communities' collective actions associated with the innovative initiative. The longitudinal design revealed insights into the issues of the communities' interpretative systems, observation of the discrepancies between communities' perceived and desired value orientations and how these influenced the internal processes and community collective actions. The use of co-researchers to gather additional data meant that few meetings were unobserved and the co-researchers provided an additional source of interpretation and sense-making of the collected empirical data.

8.3.3 Sampling

As mentioned above, the sampling was real-time, as nearly 80% of all project meetings were observed and documented. Interviews and action workshops presented a subjective view of how things were perceived by the different communities. Because the observations, workshops and meetings were conducted within the community environment, the accounts given were indicative of the underlying interpretative systems, their thought worlds, value orientations and expectations. The author was careful to select those individual accounts that represented community-wide opinions or beliefs. The selection of data to include in this thesis was mainly determined by its comprehensibility. The data presented represents a consensus of the interpretation,

sense-making and commitment these communities held towards the innovative initiative at the indicated points of time. These research findings were further evaluated and substantiated through the feedback and action workshops.

It is impossible at this juncture not to discuss the author's role as a researcher. As mentioned in Chapters 1 and 3, at the time of the research study the author was employed by the organisation. The position within the organisation occupied by the author gave a unique opportunity to access meetings and project-related communications (memos, e-mails, and both formal and informal discussions). To try to maintain an independent observer status in all meetings and workshops, the author observed, but never chaired these. The interviews, workshops, observed meetings and archival data were used to triangulate the findings where possible and thus rule out researcher subjectivity. Like any researcher, independent outsider or insider, a question arises concerning how much data is needed to successfully capture community collective actions. The answer is that you collect sufficient data to explain the phenomena being observed and describe, or account for, the different communities' collective actions. Although this research, like any other, is prone to subjectivity, so too is the general topic of innovation management in active organisations.

8.3.4 Generalisability of the Findings

Finally, the generalisability of this research is an important topic to discuss. Another researcher observing the same phenomenon at the same time, with the same internal and external environmental criteria, may have a different perspective and different interpretation. The communities' collective actions and the resulting innovative outcomes observed and analysed, are not in doubt. However, the communities' interpretation, sense-making and commitment associated with these collective actions, are. The research findings presented in this thesis are unique to the organisation studied,

in terms of the community dynamics, internal processes and overall sense-making associated with the symbolic interpretation of the innovative initiative. But the process used to study this interpretation, sense-making and commitment towards an innovative initiative is easily adapted to other organisational situations. The generalisability of the research findings is associated with the process and not the specific importance of any one research theme. The community learning process model, see Figure 8.1, offers a useful starting point for other organisations or researchers to sense-make organisational-wide innovation management problems or issues.

8.4 Future Research Directions

Reflecting on the process of this research study, on the original research aim, the subsequent primary data collection and analysis, the focus community and action workshops used to explore the four functional communities' interpretation and sense-making of their social world, and particularly those factors influencing the outcomes of the innovative initiative, the author can see a number of interesting directions for future research.

The community learning process model and, more importantly, the process of its emergence and development, proved beneficial for the different communities' interpretation and sense-making of the emerging discrepancy between expected and resulting, outcomes from the innovative outcome. Further research using this research model on other SME organisations to explore the level of interpretation and sense-making associated with innovative initiatives, could provide significant insights into the value of this model and the degree of insight it affords the researcher and practitioner of the issues of managing both formal and informal communities' expectations, regarding performance, attitudinal and behavioural outcomes.

The process of interpretation and sense-making, using the initial creation and development of the community learning process model, was initially a difficult concept for senior management and other organisational members to comprehend. This research framework could be built into organisations' business processes as a tool to explore the need and value of undertaking innovation and learning. Therefore, further research could be conducted on the application of this community learning process model and, importantly, the process underlying its emergence and development, and utilisation within the organisation's working practices. In most excellence models of business processes, leadership is the driving force behind business processes. However, the author's research findings on implicit leadership traits suggested marked disparities between the communities. Further research could provide additional insights into the relationship between these trait changes and the communities' value orientations.

In exploring the organisational enablers and barriers associated with innovation management, collaboration, conflict and innovative leadership were identified as significant barriers to the effective acquisition and dissemination of ideas in NPD. However, the research study did not, at the time, explore other organisational factors that may have more indirect effects on the process. At the beginning of the thesis, the author suggested that the maturity of the products of the organisation were a factor driving the urgency of the innovative initiative. Further research could be carried out in organisations of varying ages to investigate the significance of this factor in determining the level of problems and issues concerning innovation management, with a particular focus on the evaluation of past experiences of NPD and the degree to which these contribute towards future ideas acquisition and dissemination.

Symbolic interpretation of collective actions of the innovation community explains the potential discrepancies in the communities' value orientations and their mutual expectations, and therefore was directly linked to their engagement with the community

and their underlying commitment to the innovative initiative. But further research is needed to explore the additional factors that influence the different communities' symbolisation of an innovative initiative and the relative importance of these meanings to their future collective actions.

In conclusion, the insights arrived at during the evaluative analysis of this research study have added additional weight to the growing literature stressing the importance of interpretative dynamics in innovation management (Dougherty, 1992), especially where the organisational context suggests increasing issues of uncertainty and ambiguity associated with innovative leadership roles (in particular, concerning where this should originate). Continued research into interpretative dynamics of innovation management and the growing acceptance of organisational uncertainty and ambiguity, should advance both academics' and practitioners' understanding of this increasingly complex problem.

Finally, Appendix A contains references to three research papers resulting from this study.

8.5 Summary

In this concluding chapter, three topics were discussed: the contribution of the author's research findings to innovation management research; a clarification of the methodological strengths and limitations of the study; and suggested future research topics.

The principal contribution of this research study to both the academic and practitioner worlds has been the insights associated with communities' retrospective and prospective interpretation, and the associated sense-making, of communities' symbolisation of the innovative initiative. The additional meanings attached by each community to the

innovative initiative fostered different interpretative systems. Communities' subsequent sense-making directly influenced their thought worlds (the socially constructed understanding of their social reality), which in turn directly affected their commitment to the initiative, as evidenced by the changes in the internal processes and subsequent community collective actions. Importantly, the management of innovation, the direction and resolution of task and affective conflict, have all been laid at the doors of management, but with the increasing downsizing of organisations and the reduction of management resources this is no longer viable. This research suggests that new innovative management practices need to be established that accommodate this retrospective and prospective interpretation, sense-making and commitment associated with communities' symbolisation of innovative initiatives.

Part of the solution to the problem of innovation management, in organisational contexts that have significant uncertainty and ambiguity associated with innovative initiatives, is to implement interpretative ethnographic workshops that embrace action research as a philosophy of community development and learning.

The community learning process associated with the construction of the research model, identifying the research themes and sub-themes associated with the barriers to successful interpretation of the innovation management issues of this organisation, is a starting point for other researchers to expand upon.

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APPENDIX A

The following references are to research papers published, or in the process of being published, as a consequence of this research study.

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