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Entrepreneurial marketing in small welsh technology firms: an empirical study

Jones, Rosalind

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Entrepreneurial Marketing in small Welsh technology firms: an empirical study

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Rosalind Jones

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Abstract of Thesis

This study investigates the marketing of software products and services in micro and small firms. The nature of the software product means that it is that it is an 'intangible' product. Firms in this study offer both a product and a service software solution which often incorporates project management, consultation and after sales support. The nature of the research problem therefore requires a review of a number of disciplines including Entrepreneurial Marketing (EM) and SME marketing. These concepts are especially pertinent to small firms operating in highly competitive and innovative markets as they attempt to build market share by delivering a high quality service with innovative solutions.

The research approach employs an integrative multiple mix of qualitative methodologies. This method includes an extended case study of a micro sized software technology firm and a survey of the UK educational software sector in which it operates. The study also includes exploration of owner-manager networks and the customer's view of the IT purchase decision. An empirically and theoretically developed 'EMICO' framework which lies at the heart of this thesis and is used for investigation of EM activities and behaviours in small software technology firms. This model is tested and consolidated using a purposive sample of six micro and small software technology firms based in North Wales.

The findings reveal that these firms are highly customer and innovation oriented in nature. Key issues for small firms in this sector include: the importance of project planning, the use of IT knowledge infrastructures, building long term customer relationships, managing customer expectations and, use of networks. Owner-managers made use of a range of networks whilst firms used word of mouth (WOM) recommendation, tending to be risk averse and low in competitor awareness but using web based technology networks to glean information about new innovations and changes in the marketplace.

This thesis makes a significant contribution to the EM literature in first developing and then refining the 'EMICO' framework, a new qualitative research framework with which to investigate entrepreneurial marketing activities and behaviours in SMEs. Up until now there has been very little research focussed on the software technology sector with specific reference to SMEs, and so this thesis also extends knowledge and contributes to the literature in the area.

The thesis makes significant contribution to the EM literature in developing and refining the 'EMICO' framework, a new qualitative research framework with which to investigate entrepreneurial marketing activities and behaviours in SMEs. The thesis also further extends kowledge in respect of the SME marketing literature where there is a paucity of research in respect of SME marketing in the software technology sector.

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I dedicate this work to my beloved late sister Sian Pearce who reminds me every day to live it like your last.

1.0 INTRODUCTION

This thesis is entitled 'Entrepreneurial Marketing in small Welsh technology firms: an empirical study.' The research project began in October 2005 and was funded by the European Social Fund (ESF) Objective One Program and involved a partnership between the researcher from Bangor University and a micro Welsh software technology company, referred to in this thesis as Company A, which is the subject of an extended case study in this thesis. ESF Objective One funding was provided as this small to medium enterprise (SME) is based in a designated area of deprivation which has been identified as an area for regeneration. The main aim of this ESF PhD project is to provide expertise to businesses in the North Wales area and increase the research capacity of SMEs; whilst providing the PhD student with the opportunity to complete research within the local community. This project offered an opportunity for extended research with Company A which is ethnographic in nature. The owner-managers and employees have been closely involved throughout the research process, with the piloting and refining of research approaches and theory building. They therefore played a pivotal role in the research project, particularly in informing the early exploratory phases of the research and in the development and construction of a qualitative research model for exploring entrepreneurial marketing (EM) in technology firms which lies at the heart of this research project.

The first chapter introduces the research project and provides an overview of the thesis.

- Section 1.1 outlines the aims of the research project.
- Section 1.2 describes the objectives of the research.
- Section 1.3 presents the research rationale.
- Section 1.4 describes the background to the research.
- Section 1.5 summarises the methodological approaches.
- Section 1.6 presents the sequential logic of the thesis.
- Section 1.7 provides proposals for the thesis contributions.

1.1 Aim of the Research

The aim of this research is two fold:

- To contribute to the literature on EM and SME marketing in respect of small software technology firms.
- To make a contribution to our understanding of how small software technology firms market; their activities, behaviours and key issues for small firms in this sector.

The research of micro and small technology firms was carried out in the area of North Wales as this geographic area falls within the ESF Objective One program area. All the firms are based in technology business parks in different locations across the region. The parks have been established in the area to incubate new ventures and encourage business growth and innovation in the region. Such business development of SMEs is seen by the Welsh Assembly Government (WAG) as vital for the region in terms of developing business capabilities, raising employment levels and instrumental for regional development in Wales. Innovation for firms in this context refers to firms who develop innovative technology products or services and, in the case of this research micro and small firms who develop and sell bespoke software technology products and services.

Although the business environment in North Wales is a geographically remote location, technology firms may be more suited to this location than other new ventures and SME firms in other sectors because they do not suffer logistical constraints of product delivery; having the advantage that the nature of the product allows them opportunities to sell their products and services to much wider markets, across the UK and even globally. This is because the logistical requirements for the software product are relatively low and therefore software technology firms are less affected by remote geographical location than other business sectors in North Wales.

Research of SME s illustrates that firms often suffer inherent business constraints that may limit their capability to compete in the marketplace. Small firms are unlikely to have a designated marketing resource (Carson et al., 1995) whilst the marketing of the software product offers challenges of its own. In the case of new product developments (NPDs) the preparation of the market to create demand for the product is a costly and time consuming exercise. As the purchase of software product and support services can be a high involvement decision, particularly in business-to-business markets (B2B) where the performance of the product affects the performance of the business, the decision to purchase requires confidence on the part of the purchaser in the technology firm. For small firms without a recognised brand they need to use other methods to promote and sell their software. The marketing role in the small firm tends to rests solely with the owner-manager who is the salesman and 'face of the firm,' therefore the firms ability to market relies on the entrepreneurs personality and his or her approaches to marketing.

Software technology firms operate in market environments which have a fast pace and where there are demands for frequent NPDs and innovative incremental improvements to software. The speed of change in technology markets also offers challenges to software firms who need to keep ahead of the market or lag behind and risk losing business opportunities. Firms managed by entrepreneurs are more likely to respond to changes in the market and to look for opportunities in the market (Morris et al., 2002) therefore entrepreneurial technology firms are more likely to succeed in the marketplace. Firms which operate in this sector experience the effects of speed of change and innovativeness in the software sector which creates a tendency for ad hoc marketing of new or improved products when launching and marketing innovative technological solutions (Barry and Lang, 2001).

Given the issues outlined, the difficulties of marketing within the small business context and the challenge of marketing software products, the key research questions posed by this investigation are: how do micro and small software firms market in this industry sector; what activities and behaviours do they exhibit and, what are the key issues for

these firms? The software industry was chosen for the focus of this research and the extended case study of Company A allows for holistic exploration of the concept of EM and SME marketing within this context. Research emanating from this study together with the extant literature on EM provides a useful platform for this research as it identifies the interface between marketing, entrepreneurship and innovation, seemingly important elements in the marketing of software technology products.

The study was widened to include the research of other micro and small software technology firms in the North Wales area using a qualitative research model developed from the early part of the research study. The 'EMICO' framework has been constructed using a comprehensive review of the wider literature and forms the major contribution to this thesis. The framework was constructed because the findings from the extended case and the EM and SME literature suggested that small technology firms market differently from larger firms in the sector.

Currently the mainstream marketing literature does little to recognise the complexities that surround marketing in small technology firms, and there also a paucity of research of the marketing of software technologies particularly in the SME marketing domain. It is proposed that firms like these face additional challenges and have different demands made of them than for example, manufacturing SMEs where the external environment is likely to offer much greater stability in the marketplace and where the demand for innovative practice is relatively low. Mainstream marketing researchers have tried to measure a firms market orientation (MO), but despite the plethora of MO scales presented in the literature (Kohli and Jaworski, 1990; Narver and Slater, 1990) none of these frameworks or scales of measurement address the need for entrepreneurial activity or innovative techniques required for the software technology market and, although there have been some MO scales developed specifically for smaller firms, these fail to take into account the specific competencies and behaviours that exist in technology firms. This may be partly explained because such scales were developed in the early 1990s when few could imagine that so many firms would now operate in these markets, and also because the literature on innovation, marketing and entrepreneurship that is encapsulated under the concept of EM is still very much a developing paradigm.

This research is therefore important because it addresses a gap in the EM and SME marketing literature in relation to small firms and the marketing of software products. The aims of this exploratory research have been undertaken using an integrative multiple mix of methodologies whereby different aspects of the research problem are considered (Carson et al., 2005).

1.2 Research Objectives

The research aims are underpinned by a set of specific objectives which were aligned to the study. The specific research objectives were as follows:

- To explore the business and marketing activities of software technology firms.
- To carry out an extended case study of a software technology firm using participant-observation and investigating owner-manager networks.
- To gauge the perceptions of a software firms key customers and to investigate the software service support relationship from a dyadic point of view (supplier to customer).
- To survey the UK educational software sector and compare the marketing activities of both large and small firms in terms of perception of market challenges, attitudes and approaches to marketing.
- To develop an empirically and theoretically based qualitative research framework that will capture the EM activities and behaviours existing in small software technology firms.
- To test and refine the framework using a purposive sample of software technology firms to produce a valid instrument for exploring EM in technology sectors.
- To discover the EM attitudes and behaviours exhibited in small software technology firms in Wales and the key issues for these firms.

1.3 Rationale for the Research

The rational for this research is twofold: firstly there are several gaps in the existing literature. There is a lack of research in the following areas; SME research and the marketing of software technology products and services. EM and a lack of suitable marketing and entrepreneurial marketing orientation frameworks with which to investigate EM in small firms.

The second rationale for this research is that these insights will identify the key issues in respect of business and marketing for small firms in the technology sector.

1.4 Background to the Research.

Researchers at the EM interface observe that the key for business survival in a global economy is constant change and innovation which has become a necessity for firms in a new era of competitiveness (Bjerke and Hultman, 2002). This research project focuses on software technology firms that operate in high speed, competitive markets and need to compete by delivering high quality innovative solutions. These aspects make particular demands on smaller firms in the market who are required to deliver innovative products and services with limited budgets and resources. Small firms are noted in the literature for suffering from inherent lack of resources such as business and financial constraints together with a lack of specialist marketing expertise (Carson et al., 1995; Gilmore et al., 2001; Sui and Kirby, 1998) whilst technology firms in the software sector face the additional challenges of operating in competitive, volatile and high speed environments.

MO research investigates a firm's orientation towards a range of different marketing activities. The research of MO in respect of hi-tech and technology firms has tended to focus on the interrelationships of MO and innovativeness (Romijn and Albaladejo, 2002; Verhees and Meulenberg, 2004) and MO and entrepreneurial orientation (EO) (Renko, 2006). Although technology firms have been noted for their technological

entrepreneurship activity (Shane and Venkataraman, 2003), there has been little research from the EM standpoint, where technology firms and the concepts of marketing, entrepreneurship and innovation are recognised as working together under the paradigm of EM (Hills et al., 2008) and may offer some solutions to the difficulties in leveraging products and innovations in the marketplace (Hausman, 2005).

SME literature acknowledges the limitations that SME businesses face yet there is very little comparative research as to the differences between large and small firms and their approaches to marketing. This is surprising given the fact that researchers describe small firms as marketing in a totally different way from large firms and therefore should be treated differently (Hill, 2001). Research of the educational software sector provides an opportunity to investigate those differences in attitudes and activities. It also offers an opportunity to identify the perceived positive and negative aspects of being a small firm.

Currently MO scales preclude certain aspects of SME activity. They particularly ignore the intrinsic value of networks for small firm marketing. EM researchers have identified a need for a new approach to MO that takes into the account the use of networks in the market orientation of small knowledge intensive, entrepreneurial firms (Renko, 2003). The use of networks is well established in the SME marketing literature (Carson et al., 1995; Gilmore et al., 2001) whilst the use of networks that enable access to external resources and gain competitive advantage are described as being the essence of entrepreneurship and a distinguishing factor between fast and slow growth firms (Jarillo, 1989). Development of relationships and networks provide valuable resources for firms (Hills and Hultman, 2006) and create extra business, marketing and innovation competencies for small firms (Jarillo, 1989; Stevenson et al., 1994; Timmons, 1994).

Technology firms need to ensure a comprehensive approach to marketing that maximises opportunities in the marketplace, facilitates innovative practice and recognises threats from competitors and other issues in the marketplace. It is also important that such marketing approaches include a customer orientated approach which will retain existing customers as well as attracting new customers through developing

long term relationships (Gronroos, 1997). This is particularly important for technology firms supplying valuable software services and forms a fundamental part of their innovation strategy as customers are increasingly willing to assist with the development effort (Prahalad and Ramaswamy, 2000) by participating in co-creation of new products and incremental software product innovations.

Frequently small firms adapt to their business constraints by adopting less traditional marketing approaches than are observed in the main stream marketing literature. How small firms manage to meet the significant challenges of the software technology sector has so far remained relatively unexplored. Therefore this research proposes the 'EMICO' framework a qualitative research framework with which to study EM in small technology firms which will identify the sorts of EM attitudes and behaviours exhibited in small software firms and allow identification of key issues for firms in this sector.

1.5 Summary of the Methodology.

This research uses an integrative multiple mix of methodologies, based on a qualitative research design (Carson et al., 2005) which has been employed throughout this research study. An extended case study of Company A formed part of the exploratory stage of the research. The researcher took a holistic approach to the research which included participant-observer research. This research involved attendance at meetings, formal and informal interviews with the owner-managers and employees at different stages of the study and attendance with the firm in its marketing activities at exhibitions and conferences. As networking activity was observed in the firm the operational owner-manager was also interviewed about his use of networks in relation to capacity building for the firm. The researcher also carried out interviews with eleven of Company A's key customers. This provided useful insights into customer perceptions, attitudes towards using a small firm and the issues associated with the software purchase.

The researcher spent time with the firm, attending meetings and interviewing the owner-managers and employees. The researcher also observed the firm while it was marketing

at exhibitions and conferences. During this period the researcher carried out a survey in the educational software sector which included an analysis of competitors and semi structured in-depth interviews with respondents in sixteen large and small companies who operated in the educational software sector. These interviews provided valuable insights into challenges for firms in this sector and identified differences in marketing attitudes and activities between small and large firms. Findings from this research indicated that small software technology firms differ from larger firms in how they market, particularly in the case of Company A who used entrepreneurial networks to build capacity in business, innovation and marketing and appeared particularly innovative and customer centric in their approach. These were areas that merited further investigation.

A tool for qualitative research investigation was sought by the researcher. Despite widespread acceptance that small firms market differently and the popularity of MO measurement scales, investigation of the MO literature confirmed that there had been very little adaptation of mainstream MO scales for use in small firms and even fewer qualitative research investigations. As the MO literature could not offer any suitable qualitative frameworks with which to investigate the unique activities and behaviours associated with Company A, the literature on EO, innovation orientation (IO), customer orientation (CO) and sales orientation (SO) was investigated. These literatures were investigated as they contained elements of the literature which appeared to reflect some of the marketing approaches used by Company A. As there were no suitable scales or frameworks within these literatures and as the EM literature is still a developing paradigm with no specific scale or framework, it highlighted the need for development of a new model which would enable in-depth investigation of marketing activities and behaviours in small software technology firms.

A framework was developed which would investigate not only the firm's business and marketing activities but also an understanding of what lies behind the rationale for these practices (Blankson et al., 2006). The 'EMICO' framework was built from existing scales of measurement and the EM literature. Fifteen framework dimensions with

underpinning descriptors (descriptive statements or phrases) were constructed from the literature. These were tested and consolidated using purposive sampling procedures (Shaw, 1999). Twenty one respondents, both owner-managers and employees from six software technology firms were used in the sample, including respondents from Company A. The interview approach included a 'card game' methodology (Müthel and Högl, 2007) and prioritisation of the dimension cards by respondents. This process was pilot tested with Company A.

Using respondent statements the 'EMICO' framework dimensions were validated and confirmed. The underpinning descriptors were then refined. Dimensions were then prioritised under 'en vivo' codes; 'critical,' 'very important,' 'important,' 'need to do more of this,' 'not sure,' 'less important,' 'not important' and placed on coding matrices (Miles and Huberman, 1994). The research findings were recoded by another researcher and findings confirmed.

1.6 Structure of the Thesis

Chapter Two provides a review of the literature which underpins this thesis. Therefore literature in the following areas is discussed; EM, SME marketing, B2B marketing, Services Marketing, Relationship Marketing (RM), the marketing of hi-tech products and more specifically, the marketing of software products and services.

Chapter Three explains why there is a need to develop a new model for exploring EM. This chapter describes the development and construction of the 'EMICO' framework and explains how this model will enable research investigation of EM activities and behaviours in small software technology firms. The existing literature on EM orientation is discussed and the literature used in construction of the model is presented. This literature review includes the EO, MO, IO, CO and SO literature. This chapter then describes the process of framework construction and presents the framework.

Chapter Four describes the methodology used to explore the marketing activities and behaviours that exist in a sample study of micro and small technology software firms. The chapter introduces the research philosophy used in this research project and explains the use of an integrative multiple mix of qualitative methodologies. This chapter also describes the methodological approaches used in the extended case study of Company A and the survey that was carried out in the educational software sector which focused on marketing issues and comparison of small and large firm marketing activities. Finally, the chapter explains the application of the 'EMICO' framework and card game methodology which consolidates the framework dimensions and allows for research exploration of EM in a sample of small technology firms.

Chapter Five then describes the qualitative research findings from the extended case study, Company A. These include data extracted from owner-manager and employee interviews, customer interviews and data from participant-observation during the case study. The chapter also presents the findings from a survey of the UK educational software industry which includes interviews with large and small companies in the sector. The findings from both aspects of this research confirm that small software technology firms market differently to large firms and this is therefore identified as an area that requires further research investigation.

Chapter 6 presents the findings from the application of the proposed 'EMICO' framework with the sample study of six software technology firms. Firstly the firm data and respondent data is presented, then the dimension validation process and the priorisation of the framework dimensions is explained. Then, respondent descriptions of each dimension and important issues affecting each of the dimensions are discussed. The underpinning descriptors are identified and refined through this process. In the section summary the most important dimensions for these firms are discussed. The most important dimension was 'understanding and delivering customer value' and all firms were focused on building long term customer relationships and aspects relating to innovation. Finally, the predominant outcome of this chapter is the presentation of an empirically tested and refined 'EMICO framework which has been developed from the

research and can be adopted by researchers for investigation of EM in SME technology firms (Chapter 6, Figure 6.0).

Chapter 7 presents the key issues identified from the research findings from the sample of software technology firms. Five key issues are identified for these firms. These are 'IT knowledge infrastructures,' 'project planning,' 'customer relationships,' 'managing customer expectations' and 'networks and relationships.' These key issues impact on one or more of the dimension descriptors.
In the final part of the chapter contributions to the research are proposed and discussed.

Chapter 8 revisits earlier chapters in order to draw conclusions from the research project. Overall conclusions are drawn, recognising the original contributions that this research and the 'EMICO' model has made to new knowledge in the areas of technology SME s, SME marketing and EM. Managerial implications of this research are discussed, along with recommendations for future academic research. Figure 1.0 explains the synchronization of the chapters and the content of each chapter.

1. 7 Thesis Contributions.

Specifically this research makes contributions in the following five areas:

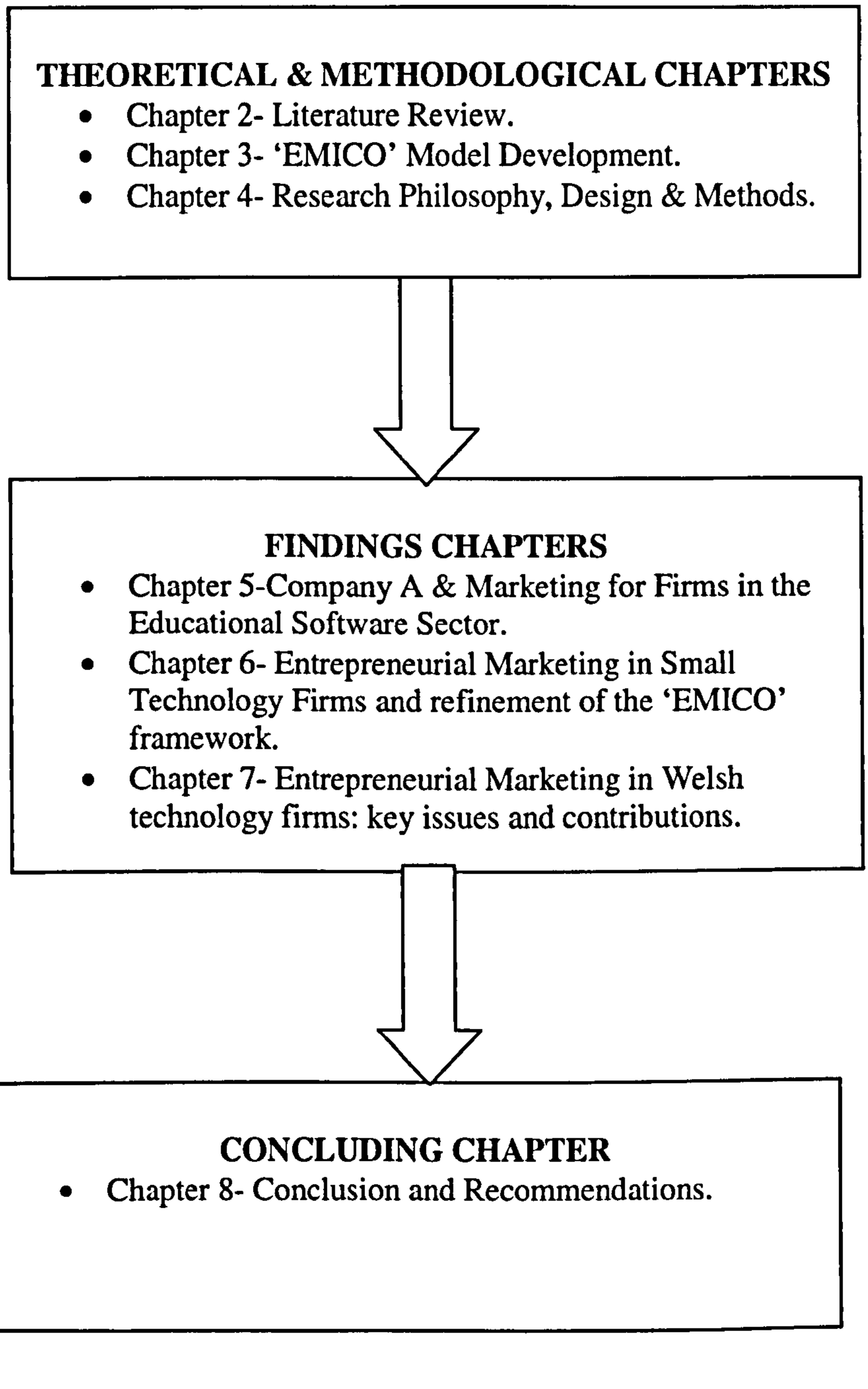
1. This research makes a contribution to the understanding of EM and SME marketing in small software technology firms.
2. It makes a contribution to the understanding of small and large firm marketing activities in a particular sector of the software industry.
3. Using ethnographic holistic research the research develops an understanding of business and marketing in a specific software firm; owner-manager networks and capacity building; customer perceptions of using a small firm and the software purchase decision in a specific context.

4. The 'EMICO' framework can be used to measure EM in small firms in technology sectors; and may be developed for research in other sectors and in larger firms.
5. This research makes a methodological contribution in using the card game methodology with the 'EMICO' framework.
6. This research informs the research of Relationship Marketing (RM) and Services Marketing as firms in this sector use RM strategies and supply software service support that is integral to their product offering.

1.8 Summary Conclusion

The purpose of the Introduction is to provide the reader with all the important aspects of the thesis, before embarking on the main body of the text. This chapter has detailed the thesis title, aims and objectives, rationale and background and summarised the methodology deployed to achieve the aims and objectives of the thesis.

Figure 1.0: Synchronization of Chapters in the Thesis.



2.0 LITERATURE REVIEW

2. 1 Introduction

This chapter describes the literature used to investigate EM in small technology software firms. The nature of the software product means that it is that it is an 'intangible' product. Firms in this study offer both a product and a service software solution which often incorporates project management, consultation and after sales support. The nature of the research problem therefore requires a review of a number of disciplines including EM and SME marketing along with theories pertinent to this research context. EM theory is especially relevant in this research context as small software technology firms operate in highly competitive and innovative markets.

EM theory is placed before SME theory as the main contribution of the thesis is to extend the knowledge and understanding of EM from the small firm perspective. This then provides an opportunity to discuss SME theory and it's contribution to the knowledge of EM. Both these concepts form the basis for the major theoretical underpinnings of this thesis. The literature relating specifically to the construction of the 'EMICO' framework is discussed in Chapter 3. The following sections discuss the relevant literature used in the thesis:

- Section 2.2 begins with a review of the EM literature mainly from the SME perspective.
- Section 2.3 discusses the literature relating to the SME and SME marketing literature.
- Section 2.4 then describes the contextual theories relating to this research. These includes B2B marketing, Services Marketing, RM and hi-tech and software marketing.

An overview of the literature is provided overleaf at figure 2.0:

Figure 2.0: Overview of the Literature

2.2 Theoretical foundations of Entrepreneurial Marketing
2.2.1 The roots of EM
2.2.2 Defining EM
2.2.3 EM theory and SMEs
2.2.4 EM behaviour and decision making
2.2.5 The marketing and entrepreneurship interface

2.3 SME research theory
2.3.1 Small firm characteristics and entrepreneurial influences
2.3.2 Business and marketing constraints for SMEs
2.3.3 Entrepreneurial marketing in SMEs
2.3.4 SME marketing and business performance
2.3.5 SME and entrepreneurial networks

2.4 Contextual theories
2.4.1 Business-to-Business marketing
2.4.2 Services Marketing
2.4.3 Relationship Marketing
2.4.4 Marketing of hi-tech and software products

2. 2 Theoretical foundations of Entrepreneurial Marketing

This section describes the foundations of the EM concept, developments in the EM literature and the relationship between EM and SME marketing theories.

2.2.1 The roots of EM

The disciplines of marketing and entrepreneurship are traditionally viewed as two separate academic disciplines. The development of the notion of EM began in 1982 at a research meeting with the American Academy of Marketing (AMA) and the International Council for Small Business instigated by Gerry Hills, Professor of

Entrepreneurship, University of Illinois, Chicago. In 1986 a second symposium was held and was legitimised by marketing researchers. Since then there has been continued research at the interface between entrepreneurship and marketing with annual symposiums of the American Marketing Association Special Interest Group (AMA SIG) and in 1995 when the first Academy of Marketing (AM) conference was instigated in the UK. In 1999 the Journal of Research in Marketing and Entrepreneurship (JRME) an academic journal dedicated to EM was set up and this, together with the 'blue books', annual publications from the AMA SIG conferences have provided a historical perspective on the development of research at the marketing and entrepreneurship interface. Both publications have proven to be a valuable source of information in the development of this EM research enquiry.

2.2.2 Defining EM

EM is viewed both as an essential part of the emerging entrepreneurship discipline and also as a new school of marketing thought within the marketing discipline. EM has obtained significant academic legitimacy in the past decade, partly because empirical research has documented important differences between entrepreneurial marketing and traditional marketing practices (Hills and Hultman, 1999; Hills et al., 2008). Two definitions of the EM concept are drawn from well known researchers in this field:

> ''Entrepreneurial marketing is a spirit, an orientation as well as a process of passionately pursuing opportunities and launching and growing ventures that create perceived customer value through relationships by employing innovativeness, creativity, selling, market immersion, networks and flexibility.'' (Hills and Hultman, 2008, p.3).

> ''The proactive identification and exploitation of opportunities for acquiring and retaining profitable customers through innovative approaches to risk management, resource leveraging and value creation''
> (Morris et al., 2002, p. 5).

Hills and Hultman (2006, p.230) suggest a structure of EM research using three comparative groups of existing thoughts, empirical observations and emerging theories. These are:

- Marketing in SMEs and in the early stages of an organisation's development.

- As an umbrella for a number of existing marketing techniques and methods.
- As a strategic contribution for gaining competitive advantage in firms.

2.2.3 Entrepreneurial Marketing theory and SMEs

The contribution of SME theory to EM is described by Hills and Hultman as follows (2008, p. 6):

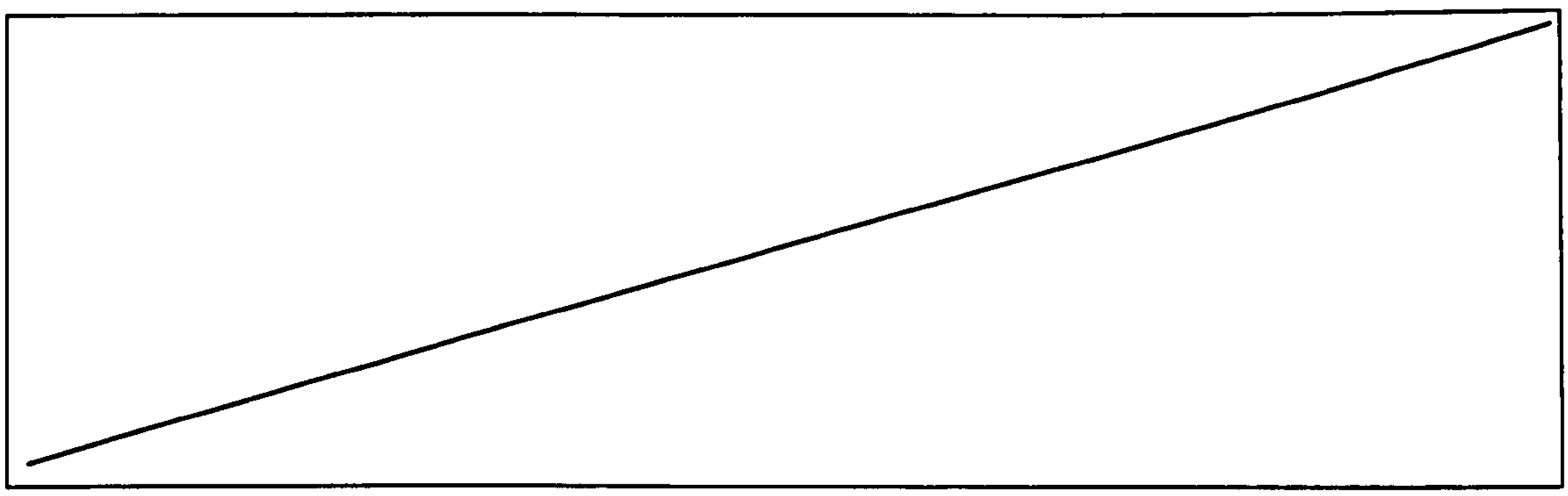
> "to identify how small businesses behave in the marketplace and generate normative principles for SME owner-managers. This type of marketing is not necessarily growth orientated. Instead marketing is regarded as much determined by the personalities, goals and preferences of the small enterprise owner-manager. Decisions are made with the limited information available and marketing is implemented with limited resources."

Carson (2005) defines EM research as being on a continuum (figure 2.1). At one end of the continuum the research can be regarded as an area where traditional marketing theories can be applied to SMEs (the left hand side). Researchers at this end of the continuum advocate that entrepreneurial firms utilise the same marketing thinking, which means that research is in the same paradigm but applied differently when compared to large firms. This is described as not a different theory but a different application of the theory (Carson, 2005; Hills and Hultman, 2006). At the other end of the continuum, research has its focus on EM and its unique aspects. At this end of the continuum research is based on entrepreneurial behaviour and fast growing companies.

EM viewed from this perspective is described as being completely different from marketing management in that it is not based on planning, linearity and rationality (Hills and Hultman, 2006). Hills and Hultman (2006, p. 221) assert:

> "Entrepreneurial marketing behaviour can therefore be explained using traditional marketing concepts ands words, but can never be understood without including aspects of entrepreneurship theory."

Figure 2.1: Entrepreneurial marketing research continuum.



No paradigm A continuum Strong paradigm

Figure 2.1: Extracted from Hills and Hultman, 2006, p. 221, adapted from Carson, 2005.

The relationship between EM and SME marketing is described in greater depth from the SME perspective in Section 2.3.3.

2.2.4 EM behaviour and decision making

Researchers identify entrepreneurial behaviour as a broad term that refers to entrepreneurship, intrapreneurship and entrepreneurial organisations (Gardner, 1994). The observation of entrepreneurial software firms indicates that successful firms often act differently and do not undertake traditional marketing approaches. Such EM behavioural characteristics are identified by Hills and Hultman (2005, cited in Hills and Hultman (2006, p. 222):

- Marketing permeates all levels and functional areas of the firm.
- Marketing decisions are linked to personal goals and long-term performance.
- Flexible, customisation approach to market.
- Speedy reaction to shifts in customer preference.
- Exploit smaller market niches.
- Customer knowledge based on market immersion/interaction.
- Marketing tactics are often two-way with customers.
- Planning, or lack of, occurs in short incremental steps.
- Vision and strategy are driven by tactical successes.

- Founder and other personalities are central to marketing.
- Marketing decisions based on daily contacts and networks.
- Formal market research is rare.
- Focused on proactively creating and exploiting markets.
- Inherent focus on recognition of opportunities.
- Calculated risk taking in new ventures.
- Reliance on intuition and experience.
- Product/venture development is interactive, incremental, informal and with little research analysis.
- A role for passion, zeal and commitment.
- Strives to lead customers.
- Value creation through relationships and alliances.
- Marketing based on personal reputation, trust and credibility.
- Innovation in products/services and strategies.
- Heavy focus on selling and promotion.

Some of these behavioural characteristics identified as EM also relate to characteristics identified in other disciplines, particularly network theory and RM theory. There is a consensus in the entrepreneurial literature as to an entrepreneur's main personality traits. They are viewed as innovative, calculated risk takers, proactive and opportunity driven (Covin and Slevin, 1994; Kirzner, 1973; Miller and Friesen, 1983). Figure 2.2 overleaf, illustrates how EM behaviour is influenced by the entrepreneurial thinking and decision making characteristics of the entrepreneur (Hills and Hultman, 2006). Arguably the elements in the right hand box would apply in general to most firms whether they are entrepreneurial or not. However, the box on the left of the model illustrates Hills and Hultman's assertion that where decisions in an entrepreneurial firm differ is in the entrepreneurial thinking and decision making of the entrepreneur as oppose to a management decision made by a non entrepreneur.

Figure 2.2: Entrepreneurial decision making effect on EM behaviour.

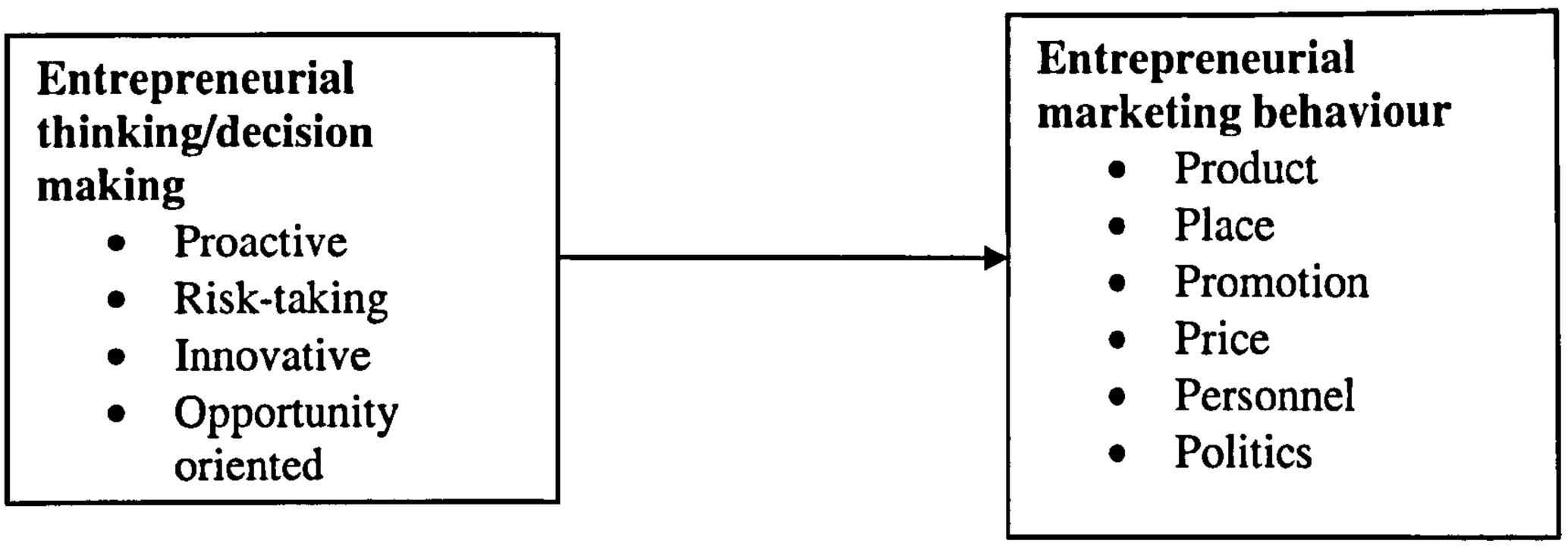


Figure 2.2: extracted from Hills and Hultman, 2006, p. 224.

2.2.5 The marketing/entrepreneurship interface

Research at the marketing and entrepreneurship interface has identified overlaps between the two concepts (Collinson, 2002; Omura et al., 1994). Both dimensions are change-focused, opportunistic and innovative in their management approaches. Many entrepreneurial actions closely relate to marketing theory; the identification of new opportunities; applying innovative techniques to bring the product/service to the marketplace and; successfully meeting the needs of a chosen target market. Innovation is also identified as an important element of the EM concept, as a process for commercializing inventions. Gardner (1994, p. 37) observed:

> "the interface of entrepreneurial behaviour and marketing is that where innovation is brought to market. Marketing's role in innovation, then, is to provide the concepts, tools, and infrastructure to close the gap between innovation and market positioning to achieve sustainable competitive advantage."

Hills and Hultman (2006) propose that innovation can also be used as a tool that provokes change in the market, providing it results in better value than existing solutions. They assert that there are many examples of entrepreneurial firms that grow through the intentional use of innovations. The theoretical interface between marketing, innovation and entrepreneurship and their overlap, is presented below in Hills and Hultman's model (figure 2.3).

Figure 2.3: The theoretical model of the research field for EM.

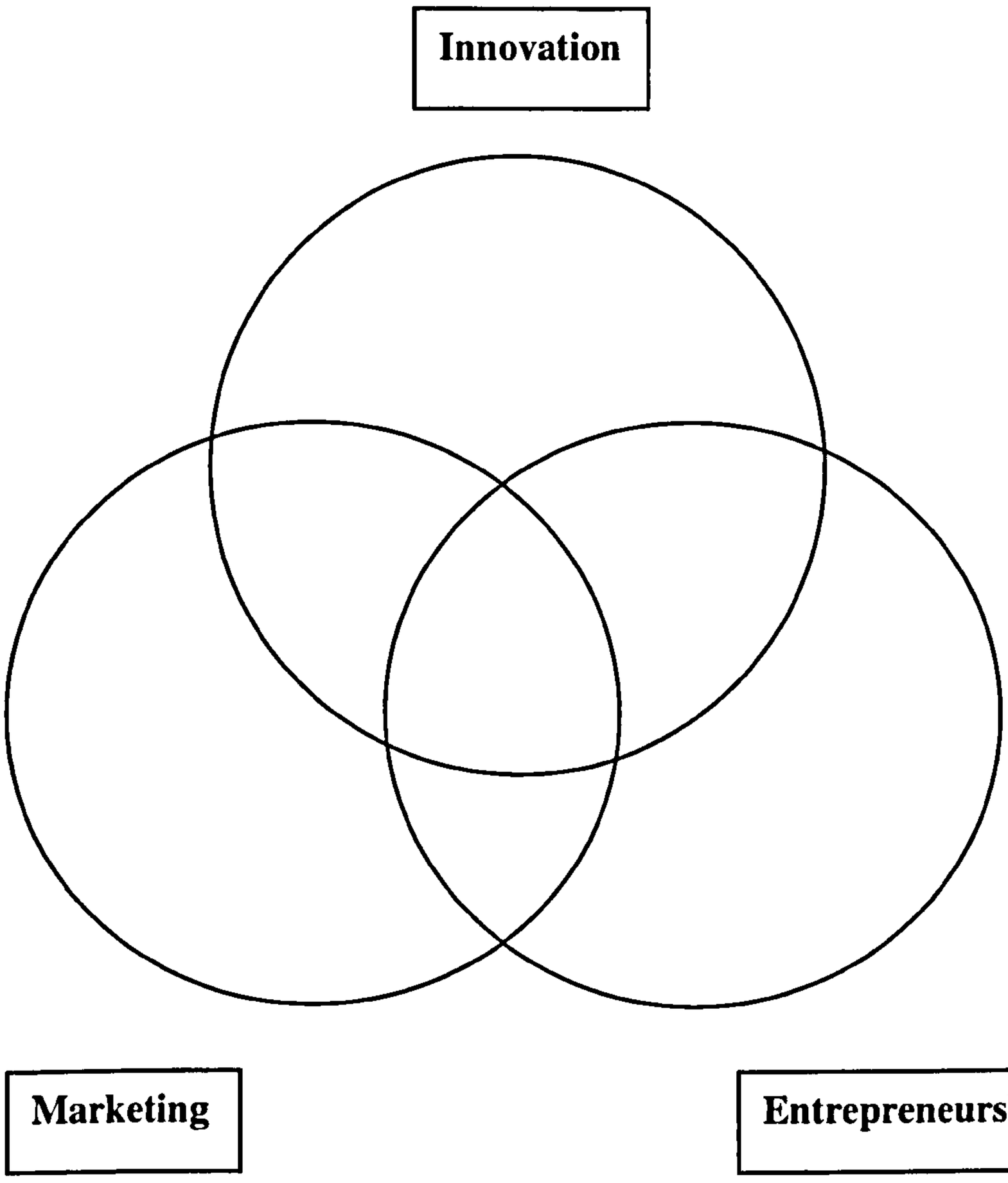


Figure 2.3: extracted from Hills and Hultman, 2006, p.227.

2.2.6 EM and the customer value concept

The EM concept is also described as being founded on the concept of customer value and is a value creation process. The creation of customer value is also a fundamental concept of both marketing and entrepreneurship theories. Customer value is not produced solely by the seller or the buyer but emerges when the customer uses what is required, as part of a co-creation process. The buyer must be active to exploit the potential customer value that is embedded in each offering of product, services or combinations of these. In stable markets, perceived customer value will become established over time and is known as the 'value logic' but a growing entrepreneurial firm must engage in other methods such as customer knowledge based on immersion

in the market and value creation through relationships and alliances (Hills and Hultman, 2005).

This research project specifically focuses on the theoretical developments of EM in the SME context, a specific research domain of EM identified by Hills and Hultman (2006). This study does not focus on the early phases of new venture creation but on the specific marketing characteristics exhibited by established technology firms. Although small firms are not always entrepreneurial, SME research is regarded as influential in the developing an understanding of EM.

2. 3 SME Research Theory

There has been increasing interest in the research of SMEs over the last two decades (Blankson and Omar, 2002; Blankson and Stokes, 2002; Brooksbank,1991; Brooksbank et al., 1999, 2004; Carson, 1990; Carson et al., 1995; Carson and Cromie 1989; Gilmore et al., 2001; Hill, 2001; Stokes, 1998). This section discusses selected SME literature chosen for it's relevance to this research context.

2.3.1 SME characteristics and entrepreneurial influences

Due to their size, SME firms exhibit certain characteristics when compared to larger firms. Size definitions vary in the literature. Nooteboom (1994) describes small firms as having from between five and fifty employees while Verhees and Meulenberg (2004) define a small firm as being run and controlled under direct supervision of the owner, proposing that very small firms such as these can almost be treated as a subset of SMEs. McCartan-Quinn and Carson (2003) define a small firm as one that is independently owner-managed, of limited significance within the industry, employing less than one hundred employees, where the owner-manager's omnipresence creates a highly personalised management style. Eyre and Smallman, cited in McCartan-Quinn and Carson (2003) refer to SMEsize definitions that are based on guidance from the Commission of European Communities and the European Network for SME Research:

- Micro: nought to nine employees

- Small: ten to ninety nine employees
- Medium: one hundred to four hundred and ninety nine employees
- Large: five hundred or more employees.

It is necessary to distinguish firms who are SMEs as their characteristics often vary from those of large firms, as Hill (2001, p.1) observed:

> "SMEs are not firms of miniature size but, rather, they have their own specific characteristics, which has a direct impact on the way they are operated and managed."

Carson et al. (1995) describe SMEs marketing planning and decision making as intuitive and not conforming to the more traditional planning models. Small firms are described as non-bureaucratic and more flexible when compared to larger firms (Carson et al., 1995; Nooteboom,1994) where private motives, business motives and goals are more likely to be closely intertwined (Carland et al., 1984) and there is little room for functional specialists (Carson et al., 1995). Researchers Schollhammer and Kuriloff (1979 p. 179) define the characteristics of SMEs by:

- *Scope of operations*. Small firms serve predominantly a local or regional market rather than a national or international market.
- *Scale of operations*. Small firms tend to have a very limited share of a given market; they are relatively small in a given industry.
- *Ownership*. The equity of small firms is generally owned by one person, or at most a very few people. Small firms tend to be managed by their owner or owners.
- *Independence*. Small firms are independent in the sense that they are not part of a complex enterprise system such as a small division of a small enterprise. Independence also means that the firm's owner-managers have ultimate authority and effective control over the business, even though their freedom may be constrained by obligations to financial institutions.
- *Management style*. Small firms are generally managed in a personalised fashion. Managers of small firms tend to know all their employees personally, they participate in all aspects of managing the business, and there is no general sharing of the decision making process.

Bird and Jelineck (1988) describe SME entrepreneurs as having certain characteristics, abilities and perceptions, who carry out business activities in a context that is conducive to venturing. Entrepreneurs are viewed as being in possession of certain distinguishable attitudes such as a stronger sense of personal worth and a stronger tendency to disregard many constricting social norms than people in general. Abdner (1988) define EO as being created by an entrepreneurial spirit which captures the spirit of adventure and creativity while Carson et al., (1995 p.58) describe entrepreneurship as:

> "a process, an action oriented way of thinking and behaving, the focus of which is innovation and change."

When exploring the differences between entrepreneurs and non-entrepreneurs researchers have found that there were no significant differentiating features between entrepreneurs and small business owner-managers (Brockhaus and Horwitz, 1986). However, differences have been noted between small firms in hostile or benign environments. Those in benign environments tend to be conservative in their approach, whilst successful firms in hostile environments exhibit EO and organic structure, with marketing characteristics that consist of a competitive profile and a concern for predicting industry trends (Covin and Slevin, 1988;1989).

Covin and Slevin's research suggests that a strong market and entrepreneurial orientation occurs when other elements in the organisational system provide a supportive context. The empirical results of Morris and Paul (1987) lends support to this view, indicating that companies that score highest in terms of EO also tend to be more market orientated, whilst at the same time suggesting that the marketing activities of small firms tend to be related to their organisational culture that is, as research suggests, defined by the entrepreneur. Overall, the body of evidence arising from research of entrepreneurs and SMEs indicates that it is important to understand the individual personality of the entrepreneur and the unique circumstances of that enterprise (Bygrave, 1989; Chell and Haworth, 1992; Hill and McGowan, 1999; Hofer and Bygrave, 1992).

2.3.2 Business and marketing constraints for SMEs.

The small size of the firm also has an impact on SME business and marketing performance. Carson (1985) identified three broad marketing constraints:

- *Limited resources.* Financial, marketing knowledge and time, may all contribute to limited marketing activity in comparison with large companies and large competitors.
- *Specialist expertise.* This may be a constraint because managers and entrepreneurs in SMEs tend to be generalists rather than specialists. Traditionally the owner-manager is a technical expert; he is unlikely to be trained in any of the major business disciplines to be acquired by an expanding SME; that is, finance and production experts usually precede the acquisition of a marketing counterpart.
- *Limited impact in the marketplace.* This may be a constraint because SMEs have fewer orders and fewer employees than larger companies. Consequently the impact of the SMEs presence in an industry, geographical area etc. is likely to be limited as a result of its size alone. Similarly, because of limited resources and lack of marketing expertise, the impact on the media through advertising and publicity will often be negligible in relation to larger company activities.

The specific resources available and the capabilities of the firms can have effect on a small firm's MO as resources for market intelligence generation are scarce, with no resource available for a marketing specialist. Business and marketing operations are driven and influenced by the owner manager; with marketing activities being highly dependent on the marketing knowledge of the entrepreneur or owner-manager who tends to be a generalist (Hogarth-Scott et al., 1996). Watkins and Blackburn (1986) suggest that the craft-based skills of entrepreneurs, the subcontracting nature of small firms and small customer base have constraining effects on the range and scope of the marketing activities a small firm is able to undertake. After the start-up stage, owner-managers often see selling the enterprise's products and services as unproblematic. Advertising and marketing research are frequently rejected because owner-managers perceive them as expensive, difficult to quantify, and an indicator of

a poorly run business (Watkins and Blackburn, 1986). This may explain why many small firms appear not to have a strong market orientation and may be pulled into a 'look after itself' type of marketing by the external environment and the organisational structure of the business (Sui and Kirkby, 1998).

2.3.3 Entrepreneurial marketing in SMEs

Both SME and entrepreneurial marketing researchers have discovered that small business owners and entrepreneurs undertake marketing in ways that do not conform to standard textbook theory and practice (Stokes, 2000) with a general consensus in the literature (Carson 1990, Carson et al., 1995; Ford and Rowley, 1979; Gilmore et al. 2001) that the marketing behaviour of small firms is influenced by the personal characteristics of the owner-manager. SME business constraints identified by researchers offer some explanation as to why marketing differs in SMEs. Researchers have found that small firms have had difficulty in applying marketing concepts intended and developed for larger organisations (Freel; 2000). Carson et al. (1995) and Nooteboom (1994) suggest that there are advantages of being small; being flexible and able to respond quickly to changes and non-bureaucratic in their overall approach. SMEs also have the ability to quickly gather market intelligence and use this information as they are close to their markets. In this way employees and customers can create vital, timely and inexpensive market information (Zontanos and Anderson, 2004). This provides a critical advantage over large firms (Stokes et al., 1997).

Carson et al.(1995) describe EM in SMEs as a distinctive style characterized by a range of factors that include an inherently informal, simplistic and haphazard approach. This marketing approach is a result of various factors including: small size; business and marketing limitations; the influence of the entrepreneur; and, the lack of formal organisational structures or formal systems of communication, with sometimes no systems at all when it comes to marketing. Carson et al., (1995, p 155) characterise EM in SMEs as follows:

- *The stage of development of the firm.* This will have a significant bearing on the marketing activity. A young firm is likely to perform relatively simple

marketing, whereas a mature SME is likely to have refined marketing activities.

- *Restricted in scope and activity.* Because of their small size, the influence of the stage of development and their limited resources, SMEs are restricted in the amount and kind of marketing activity in which they engage.
- *Inherently informal.* SMEs do not have formal organisational structures or formal systems of communication. They may have no systems at all when it comes to taking decisions on marketing.
- *Simplistic and haphazard.* Because of their small size and marketing limitations etc., and because of the influence of the entrepreneur, marketing decisions are likely to be simple and ad-hoc in the context of marketing.
- *Responsive and reactive to competition.* Because the SME cannot make a large impact in its market place relative to it larger competitors, this competition tends to influence much of the market decision making of SMEs. Rather than reacting proactively, small firms tend to be reactive to the competitors marketing activity.
- *Opportunistic.* One of the inherent advantages of SMEs marketing is the ability to react quickly to seize new opportunities as they occur on the market.
- *Short term.* For all these reasons and because SMEs tend not to have long-term plans or horizons, most of their marketing decisions are short term.

The authors recommend that such characteristics of SME entrepreneurial marketing are fundamental and should be recognised and exploited so that effective marketing can be performed. Stokes (2000) explored the ways in which EM differs from traditional marketing theory and found that entrepreneurs were innovation oriented, being driven by new ideas and an intuitive market feel. Hill and McGowan (1999) considered that the concept of entrepreneurship was best understood as a process, the constituents of which are the entrepreneur, their persistent search for opportunities which are usually grounded in the marketplace, and the efforts to gather the resources needed to exploit these opportunities. They proposed that the main factors which marked out the entrepreneurial character of the SME are innovation and change; the risks people take; and the roles they play to bring change about.

These are similar to those EM factors identified by Hills and Hultman (2006). Hill and McGowan (1996) argue that without that entrepreneurial commitment, determination, vision, energy, tolerance of risk and ambition, the entrepreneurial process in the SME would not happen. In addition to these aspects, they also observed that the constant effort to obtain a fit between the elements of this dynamic entrepreneurial process means that the decisions on research and planning in SMEs will be characterised as largely confused, chaotic, unstructured, non-linear and time-compressed, a view also espoused by Carson et al. (1995).

2.3.4 SME marketing and business performance.

Early economic theory was concerned with the viability of small firms and firm growth. Stage growth models were proposed that initially failed to consider the relevance of marketing competencies or environmental factors in relation to business growth (Churchill and Lewis, 1983; Scott and Bruce, 1987) whilst authors such as Tyebjee et al., (1983) recognised the correlation between marketing strategy and small firm growth and therefore the importance for marketing in SMEs. They, like Kotler (2003), proposed different marketing approaches for each stage of growth, with the first stage described as EM where the founder relies on a network of personal relationships, with products specifically designed for these customers, and where management style is entrepreneurial and individualistic.

Carson's (1990) 'stages of marketing development' model describes the evolutionary changes in SME marketing. The model recognises that firms are most at risk in the early stages of 'reactive' and 'tinkering' with marketing. During this period entrepreneurs would realise that in order to develop the firm, certain marketing activities appropriate to the firm would need to be carried out. Marketing activities undertaken would be those which suited the entrepreneur owner-manager's capabilities, specific situation and how the external environment affected the business. This final stage identified in Carson's model is described as the 'entrepreneurial marketing' stage. However, it is interesting to note that Churchill and Lewis (1983) declared their stages growth model to be unsuitable for software

firms where the likelihood of early and significant financial investment meant that growth patterns for these types of firm may significantly differ.

Therefore from earlier growth-models which recognised the importance of entrepreneurial traits and innovation grew the notion that although marketing planning proved advantageous for small firms, they do not necessarily follow and progress through any stages of market development. This is because of the characteristics of small firms and the influence of the entrepreneur. Such variables as organisational structure and the owner-managers marketing decision process and behaviour cannot be ignored. Meanwhile the entrepreneur views the marketing environment in the broadest sense while implicitly taking into account opportunities and threats, competition, market segments and gleaning knowledge and information. Similarly the entrepreneur implicitly includes all aspects of marketing, but in a way that suits the firm, which in small businesses is often informal, unplanned and relies on the intuition of the owner-manager (Blankson and Omar, 2003; Carson et al., 1995).

2.3.5 SME and entrepreneurial networks

More recently there have been calls for a new approach to MO that considers the role of networks in the MO of small knowledge intensive, entrepreneurial firms (Renko, 2003). Use of networks that provide access to external resources and gain competitive advantage are described as the essence of entrepreneurship and a distinguishing factor between fast and slow growth firms (Jarillo, 1989). Morris et al.'s definition of EM (2002) included innovative approaches to marketing, leveraging of resources and creation of value for customers in development of the new EM paradigm. Arguably this requires considerable business acumen which makes demands on entrepreneurial business owners and their small firms who are likely to suffer from inherent limitations of business size, therefore the value of resource leveraging (Hills and Hultman, 2006) and the use of networks for creating extra business, marketing and innovation competencies for small firms cannot be underestimated and requires further investigation, a view upheld by several researchers (Jarillo, 1989; Stevenson, Roberts and Grousbeck, 1994; Timmons,

1994). Wilson and Appiah-Kubi (2002) investigated entrepreneurial firms and their networks and found that such firms would establish vertical or horizontal networks at, or near, the start-up of the venture in order to support more aggressive, growth-orientated strategies. These entrepreneurial firms that employed external resources were far more opportunity driven and motivated to access such resources to enhance their competitive positions. Wilson and Appiah-Kubi (2002) found that the age of the firm appeared to have little significance on the network choices that were made.

Networks in the technology sector are viewed slightly differently as a firm's focus on technology may influence the entrepreneurial focus on growth, facilitated by the entrepreneur's commercial experience (Churchill and Lewis, 1983). The use of networks for providing higher sales growth was confirmed by Freeser and Willard (1990), who found that horizontal networks created strong sales growth which was indicative of technical quality, market acceptance and the perception of differentiated advantages. A view confirmed by Dubini and Aldrich (1991) and Hamel and Pralahad (1994) who describe entrepreneurial behaviour in their network of contacts as 'resource leveraging'.

Ramachandran and Ramnarayan (1993) discovered that those entrepreneurs who were pioneering and innovative entrepreneurs were more likely to use networking behaviour than other entrepreneurs. Network exchange structures offered critical resource leveraging opportunities where resources and competitive advantage can be gained without incurring capital investment (Larson 1991, 1992). Advantages of using vertically integrated networks included information exchange, innovation and quality improvements, market and channel access, growth, cost savings, consistent quality, extended credit terms and reputation effects. Network researchers discovered that entrepreneurially managed professional firms were able to implement incremental improvements by using vertical networks. These networks also created organisationally embedded knowledge that was unique to the entrepreneur-supplier relationship when compared to the professional manager-supplier relationship (Lipparini and Sobrero, 1994). These factors resulted in the joint development of radical and architectural innovations (Wilson and Appiah-Kubi, 2002) and superior knowledge transference from 'downstream' technology firm channel partners to

'upstream' technology ventures (Hernandez-Espallardo and Arcas-Lario, 2003, cited in Renko, 2006).

Small firms in particular are found to exhibit inter-firm behaviours that rely on decision making that is non-bureaucratic, informed, flexible and organic. This in turn informs the learning culture and orientation of the firm (Carson et al., 1995; Cegara-Navarro and Rodrigo-Moya, 2007). The SME network literature discusses SME networks and alliances that enable a geographically based group of small firms to compete with larger business on a more equal footing (Schindehutte and Morris, 2001). Personal contact networks (PCNs), business networks, industry and marketing networks have been also identified by many authors (Aldrich et al., 1991; Aldrich and Zimmer, 1986; Birley and Cromie, 1988; Carson et al., 1995; Gilmore et al., 2001; Hill, 2001). The SME literature recognises that the building of effective networks (Carson et al., 1995; Lindman, 2004; Storey, 1994) are also a key feature of entrepreneurship (Collinson and Shaw, 2001), with the use of social networks as informal and social linkages which provide a higher and more stable flow of information and resources than formalised business network approaches (Premaratne, 2001). Rocks et al., (2005) observe that there are very few studies that indicate actual size of marketing networks. Their subsequent research found that SME owner-managers generally used business contacts rather than social contacts and these provided an effective way to market during dramatic industry change.

2.4. Contextual Theories

This section of the literature review describes the contextual theories that support the research of small software technology firms.

2.4.1 Business-to-business (B2B) marketing

The B2B literature provides a number of relevant concepts and models that support this research study of Semantise and the educational software industry, particularly in the areas of network relationships and supply chains, and the high specification product purchase. Most notably, this area of the B2B research offers some insights

into the marketing environment in which technology software firms operate and therefore provides a contextual backdrop for this research.

The literature discusses the inter-relationship between consumer relations (Gummesson, 1987) and network theory approaches in securing an effective supply chain strategy (Brennan et al., 2007). The intrinsic value of networks is firmly established within not only the SME and EM literature but also in the B2B literature. Customer relationships, supplier relationships and other agencies such as government agencies, universities, banks and other institutions are seen as influential to the firms activities, connecting to a wider network where the firm remains embedded (Cook and Emerson,1978; Granovetter, 1985). Large supplier firms often use intermediaries and multiple routes to market, or 'hybrid marketing systems', where the size of the firm negates the viability of direct customer contact:

> ''By using different types of intermediaries, a supplier's dealings are directed towards a reduced number of contacts, to their chosen third parties who then handle some or all their exchanges or transactions''
> (Brennan et al., 2007, p.292).

This is particularly prevalent in the IT industry where there is an increasingly diverse customer base (Cespedes and Corey, 1990; Gandolfo and Padelletti, 1999) and where specialist applications are beyond the expertise of some companies. Value Added Resellers (VARS) are now common in the IT industry where, for example, a software application may be added to existing equipment:

> ''The reseller adds value by integrating, customizing, consulting, training and installing products'' (Brennan, 2007, p. 293).

Risk is an inherent feature of exchange in business markets, where managers have to deal with uncertainty and possible negative consequences surrounding purchase and supply decisions (Mitchell, 1995). The marketing of technology installations and highly specialised business services such as the business software purchase can be described as specialty products as they require effort on the part of the consumer in not only acquiring the product, but also in the assessment and taking of high risk decisions (Murphy and Enis, 1986). For the marketing of such products and services firms are more likely to adopt a consultative sales approach (Marchetti, 2000); identifying the gate keepers in the buying organisation who are viewed as a key source of intelligence on requirements. The evaluation of business purchase proposals for business purchasers varies depending on the complexity of the

purchase and the perceived level of risk. Brennan et al., (2007, p. 35) illustrate how the evaluation relates to both the product and the potential supplier by the use of an adapted model based on that of Bevilacqua and Petroni (2007, p. 247, cited in Brennan, 2007).

Figure 2.4: Supplier selection and evaluation

Criteria	*Weighting*	*Supplier 1*	*Supplier 2*	*Supplier 3*
Financial stability				
Total cost				
Technological capabilities				
Geographic location (s)				
Cultural compatibility				
After-sales technical support				
Flexibility				
TQM				
JIT purchasing				

Source: Adapted from Bevilacqua and Petroni, 2002, p. 247, citied in Brennan et al., (2007).

Brennan's model uses a set of proposed evaluation criteria. These are, financial stability of the firm; total cost of the purchase; the technological capabilities of the product; the geographic location of the company; cultural compatibility between the organisations; after-sales technical support; flexibility of the firm; the supplier's ability to conform to TQM procedures and; JIT purchasing.

2.4.2 Services Marketing

The Services Marketing concept (Gronroos, 2007), consists of more or less intangible activities that sometimes, but not always, exist between the customer and service employees, the physical goods and/or service systems of the service provider which offer solutions to the customer's problems. The marketing of software technologies requires both elements of both product and Services Marketing approaches because the software product is 'intangible'. Extant research of entrepreneurs and SME owner-managers indicates that they tend to be adept at developing close relationships with their customers and this provides a unique selling proposition (USP) for small firms, particularly in the customisation of bespoke

software for business customers. In this way the customer relationships that develop are part of a co-creation process where the customer is involved as the co-creator in the value process (Prahalad and Ramaswamy, 2004).

Services in business markets are far less researched than those in consumer market places and such research there is focused on the buying process rather than the post-purchase outcome (Tyler et al., 2007). Hakansson and the Industrial Marketing and Purchasing (IMP) group (1982) made significant contributions to Services Marketing research from a business perspective. They viewed services in the business market context as service relationships and interactions with a systems view which encapsulated inter-dependent companies and was based on the buying and selling processes over time. Using this approach they explored the interactions, relationships and network theories in business (Axelsson and Easton, 1992; Hakansson and Snehota, 1995).

The increasing interest in the context of Industrial Services Marketing has led to increasing research of customer satisfaction within business services (Homburg and Rudolf, 2001). Researchers recognise the need for trust and loyalty for the business repurchase intention (Reicheld, 2003; Sharma and Patterson, 1999) while the importance of managing customer expectations is a key element of the customer valuation process when determining service quality (Groth and Dye, 1999).

The cultivation of trust is particularly important in service encounters because they carry a certain degree of risk due to the intangible nature of the service product. Researchers have often viewed the notion of trust in service relationships as 'personality related' (empathy, politeness and customer/service representative similarity) or 'performance related' (customisation, competence, reliability, and promptness). Coulter and Coulter (2003) propose that feelings of trust are more broadly moderated by the customer's knowledge and perceptions of the service industry in question. They argue that personality related characteristics are much more important in the development of trust, particularly where customers are unfamiliar with the service industry. The literature regarding the notion of trust is particularly significant in this research study as those purchasing in the educational

software sector are described as 'naïve' purchasers, having little knowledge or expertise in the purchase of software products and services.

2.4.3 Relationship Marketing

RM grew from a range of marketing disciplines and was heavily influenced by the Services Marketing literature and other areas of research, which has resulted in RM reflecting:

> ''a variety of themes and perspectives, some take a narrow, functional marketing perspective, others appear to view it as a broad and somewhat paradigmatic in approach and orientation.'' (Parvatiyar and Sheth, 2000, p. 4).

Particularly influential papers were those of Gronroos, (1994) who described the shift from the marketing mix to relationship building and management and Gummesson, (1994) who, from a Services Marketing perspective described movement from the 4Ps to the 30Rs. Egan, J (2008) describes Gronroos' (1994, p.9) definition of RM as encapsulating most of the concepts, ideas and developments of RM in the following statement:

> ''identify and establish, maintain and enhance and, when necessary, terminate relationships with customers and stakeholders, at a profit so that the objectives of all parties involved are met; and this is done by mutual exchange and fulfilment of promises.''

This view implies that customers are also creating and benefiting from the value created by the company. RM is perceived here as an ongoing process of identifying and creating new value with individual customers and then sharing the value benefits with them over the lifetime of the association (Gordon, 1998). Such a relationship was described by Buttle (1996, p.148) as the sum total of the 'meaning-filled episodes' where relational partners co-produce value. Authors such as Kotler, (1992) viewed RM as a method of increasing organisational performance as part of a wider concept that included relationships with all the significant stakeholders in a company's environment. This assumption was based upon the premise that without successful organisational relationships with internal and external stakeholders the organisation cannot serve their customers well, a customer centric approach used by Christopher et al. in their six markets stakeholder model (1991). Day et al., (1998)

researched RM using the transaction and relationship focus model (Christopher et al., 1991). Day et al. (1998) concluded that firms which were identified as entrepreneurial firms had a much greater relationship focus (figure 2.4). These firms had much greater growth, maintained continuous personal contact with customers, being able to communicate with them, determining customer needs and asking for referrals. They also retained more of their customers than their competitors. Stokes (2000) confirmed Day et al.'s findings by discovering that the building of fruitful customer relationships were key to an entrepreneur's success, in his research study of entrepreneurs. He found that entrepreneurs valued their customer relationships and invested considerable time with their customers and networks.

Figure 2.5: RM - entrepreneurial and non-entrepreneurial firms.

Questionnaire category	Entrepreneurial SMEs
General SME profile	Have almost twice as many full time employees
Schumpeterian behaviour	Have been more focused on Schumpterian innovative behaviour in the last year & appear to wish to continue for the future
Entrepreneurial orientation	Are significantly more innovative & adventurous
Growth	Experienced greater growth in the last 3 years Have a greater relationship marketing focus
Improvement from close relationships	Achieved improvements by developing other business opportunities
Importance of communicating with other customers	Communicate to determine customer needs Communicate to ask for referrals
Awareness of customer needs	Are more aware of customer needs Informing & training employees on customer requirements
Cost associated with acquiring a new customer	Do not use discount pricing as a promotional strategy to gain new customers
Loyal category	Reward their employees with both monetary schemes and non monetary schemes Promoting employees based on performance & experience
Defection analysis	Lose between 2-30% fewer customers from their customer base compared to their competitors

Figure 2.4 extracted from Day et al., (1998, p.11).

Development of a customer's trust in the organisation means that customers are more willing to recommend a service, but this is dependent on how well they are treated by employees in the organisation (Eisingerich and Bell, 2007). This is reiterated in the EM literature. For example Stokes (2000) found that entrepreneurs generated more customers through personal recommendation and a word-of-mouth (WOM) strategy which consisted of a 'bottom-up' approach. In this way WOM was used to target customers and other influence groups, a niche marketing approach described by Dalgic and Leeuw (1994) as attracting a customer group and looking for more of the same.

2.4.4 Marketing of technology and software products.

The importance of technology industries to knowledge-based economies has led to a growth of research in these areas that embraces the following topics:

- Policy for promoting technology firms (Dodgson. 1988; Rothwell and Rodgson, 1990;1992)
- The role of small technology firms in regional development (Harris, 1988; Keeble, 1994).
- Marketing and new product development (Avlonitis et al, 1994; Hart et al., 1999).
- Technology strategy and entrepreneurship (Bernasconi et al., 2006: Berry, 1996).
- Industrial co-operation (Dodgson, 1993; Hakansson, 1987).

Research of marketing in technology firms tends to focus on innovation, new product development and business performance (Helander and Ulkuniemi, 2006; Im and Workman, 2004; Narver et al., 2004; Salavou and Lioukas, 2003; Verhees and Meulenberg, 2004). There is a need to develop the research base in this area as the technology marketplace is characterised by unusually high levels of market and technological uncertainties (Moriarty and Kosnik, 1989). These are defined by Mohr (2001, cited in Mohr and Shooshtari, p.1):

- A high level of market uncertainty, marked by customer anxiety about how to use the product and what needs it needs to fill. This in turn affects new technology adoption and uncertainty in sales forecasting.
- A high degree of technological uncertainty, marked by ambiguity over whether the product will function as promised, whether it will be delivered on time, and potential unintended/unforeseen consequences.
- A high degree of competitive rivalry, in which new technological breakthroughs are frequently introduced by industry outsiders, whose innovations and business strategies change the 'rules of the game'.
- High R&D expenditures, which complicate pricing decisions and profitability forecasts, particularly when combined with uncertain sales.

Marketing is made more complicated because of frequent changes in technology and the demands of customers (Rao, 2005). Software customers are not sure of their expectations due to the technical superiority of the software product and the business purchaser's lack of clarity about their end-user's software requirements. Accordingly, it is the responsibility of the software company to understand the needs of both clients and end users. Sureshchandar and Leisten (2005, p. 17) propose four key performance indicators (KPI s) for the measurement of customer satisfaction:

- The core service (software product features).
- The human element of the service delivery.
- The systemisation/standardisation of the service delivery process (non-human element).
- The 'softwarescapes' (infrastructures, facilities etc).

Appropriability is difficult in different business contexts, so successful market implementation strategies need to have a sense of the market and customer-linking capability (Rao, 2005). Market sensing allows for identification of the changes in requirements of customers early on, ensuring a continuous stream of innovative products and services. Customer-links refer to a set of interlinked skills that include abilities, processes and procedures needed to respond to customer needs quickly with minimum overhead and transaction costs, with investments in technology projects critical to developing market-sensing and customer-linking capabilities. The role of

networks are seen as invaluable for increasing marketing resources (Kulmana and Uusi-Rauva, 2005) while role of customers in the creation process is espoused by several researchers in the software technology field:

> ''the role of customer involvement in the product feature as they play a decisive role in determining the quality (or lack of it). Typically in the software industry, most softwares are customized to meet the requirements of one customer and if their needs are not addressed effectively, the system is bound to be a failure regardless of its technical capabilities'' (Caroll, p.16, 1995).

Other challenges for small software firms include having a large enough customer base as production costs are high (Brereton and Budgen, 2000). There also needs to be a guarantee of enough new sales volume to cover development and production costs (Guntersdorfer and Kay, 2002). Alajoutsijarvi et al., (1999) recommend the use of customer relationship management (CRM) skills that are characteristic of service oriented project marketing (Helander et al., 2002). Such CRM skills are highly appropriate in this context due to the nature of the software product. Alajoutsijarvi et al., (2000) researched the challenges of marketing for small software firms and assessed the value of customer relationships for software marketing. Alajoutsijarvi et al., (2000) describe such firms as perceiving marketing mix management as 'true' marketing, whilst not considering long term relationships with their customers as marketing.

Yet other researchers such as Boussouara and Deakins (1999) found that small hi-tech businesses associated marketing primarily with dealing with customers, developing products and developing new markets. Boussouara and Deakins concluded that traditional marketing tools were inappropriate for small hi-tech businesses. However, the social networks of entrepreneurs and strategic alliances were wholly appropriate to this business context.

Berry (1996), describes small hi-tech firms as needing to undertake corporate transformation from a technology driven approach to a market oriented philosophy. Berry argues that unless strategic approaches to managing business and technology are adopted then transformation within the firm will not occur. He describes SMEs that fail to evolve towards a market-led organisation are those dominated by

managers who are technologists. Therefore it is the strategic awareness of the technology entrepreneur which is critical in the firm's viability in the long term.

Akgun et al. (2004, p.43-45) found that successful projects in hi-tech SMEs had:

- A clearer more stable and supported project vision with a clear understanding of customer needs and wants.
- A clear plan with measureable milestones
- Senior management support and a project champion.
- High teamwork atmosphere, sharing knowledge and information
- Wealth of tacit knowledge from earlier projects
- A balance of informal/formal communications (too much formal communication had a negative effect).
- Process proficiency

The field of software development lacks reliable models to estimate the project's cost and time with precision however factors of cost, time, functionality and quality remain the important criteria for assessing performance of software projects (Agarwal and Rathod, 2006). Hall et al. (2007) explored the role of software developers in project outcomes. Those with technical competence, interpersonal skills and adherence to good practice had the biggest impact on software project success. Ineffective communications with customers were frequently a factor of software project failure.

2.5 Conclusion

This chapter has provided an overview of the literature used in the exploratory stages of the research project. Section 2.2 and 2.3 explored fundamental aspects of EM and SME theory. Section 2.4 discussed contextual theories that included research of software technology firms and the marketing of software technologies for these firms. The next chapter, Chapter 3 describes a further literature review that is used for specific development of a model, the 'EMICO' framework.

3.0 'EMICO' MODEL DEVELOPMENT

3.1 Introduction

This chapter describes development and construction of the 'EMICO' framework to enable research investigation of EM activities and behaviours in small software technology firms.

- Section 3.2 explains why there is a need to develop a new model for exploring EM.
- Section 3.3 presents the literature used to develop the 'EMICO' framework.
- Section 3.4 describes the process of the framework construction and presents the framework.

The methodology relating to the application of the framework, confirmation of the framework dimensions and the model's use in the research of a sample of technology firms is explained in Chapter 4, the research philosophy, design and methods chapter.

3.2 Development of the Model.

3.2.1 An overview

The ethnographic research of Company A allowed for close study of the research phenomenon. Research observations showed that the case study company marketed themselves differently from larger firms in the same sector (Jones and Rowley, 2009a). The researcher wished to find a suitable model which would enable in-depth research of EM activities and behaviours within a homogenous sample of software technology firms. The researcher carried out a second literature review starting from the marketing standpoint by researching the SME and MO literature. It was found that extant MO scales were unsuitable for this research for a number of reasons:

- Research in SMEs tends to be sector specific.
- The terminology used in the scale items reflects the type of responses expected from professional marketers, not those of owner-managers.
- The models used tend to be quantitative scales which would limit our understanding of the way in which small firms market.

The mainstream MO literature was found to use popular MO scales which are quantitative measurement tools that have been developed for the research of large companies in mass market environments (Ottesen and Grønhaug, 2002). Researchers of MO in small firms have often used mainstream MO scales with very little adaptation, with only a few notable exceptions (Pelham, 2000; Pelham and Wilson, 1996).

The researcher then examined the EO and entrepreneurship literature for a suitable qualitative research model. Although the EO literature offers some useful dimensions, the EO scales were found to preclude important aspects that were needed for this research. The literature review was thus extended to include research of the EM literature. As the EM literature explores the theoretical concepts of entrepreneurship, marketing and innovation this literature was considered most appropriate for the research of small technology firms and their particular marketing behaviours and activities. The concept of innovation was a key aspect of EM, therefore innovation theory and IO was investigated. It was found that the IO literature was less developed and yet it still offered some useful dimensions that would be useful for in the new research framework.

The case study research had also highlighted the importance of customers to the small business. Although the literature on EM alludes to the close relationships that the entrepreneur has with his customers (Stokes, 2000) the literature on MO and EM precludes CO as a distinct orientation and few scales have been developed specifically to examine this aspect, an issue challenged in Jones and Rowley (2007b). Following further research of the CO literature it was found that CO was explored in two contexts;

sales orientation (SO) literature and MO literature. The SO literature was then investigated. Some aspects of CO have been incorporated into some of the MO scales but, as the role of the customer seems central to EM activity in small technology firms, this dimension has been specifically identified as a separate orientation so that it may be more closely examined.

It is important to note that this research does not seek to challenge popular scales for their reliability or validity as this has been well documented in the literature, but it takes issue with their inherent unsuitability for the research of small firms in technology sectors.

3.2.2 Existing work on EM orientation

This section summarises the existing work and the links that researchers have made on aspects of entrepreneurship, marketing and innovation as a platform for the further development of an integrated framework. This exploration is used as the foundation for the proposal for a new EM orientation scale in pursuit of a more appropriate tool for understanding marketing in small entrepreneurial firms in dynamic and challenging environments.

There is growing interest in research at the interface between marketing and entrepreneurship (Bjorke and Hultman, 2002; Collinson, 2002; Gardner, 1994; Hills and Hultman, 2005) together with the importance of SME marketing, EM and MO for firm growth which is well documented in the SME literature (Blankson and Stokes 2002; Carson 1990; Carson et al. 1995; Stokes, 1998). This has led to a developing body of knowledge around SME's and their unconventional marketing strategies, informal planning and, entrepreneurial activities. More recently, mainstream MO researchers have recognised that firms who adopt other strategic orientations combined with MO are likely to perform better than firms adopting only a market orientation (Grinstein, 2008). It is proposed that being market oriented is an essential prerequisite for technology firms who need to bring products and services to market that create value for customers.

Technology firms also need to be entrepreneurially oriented, investing in R&D and being proactive in the marketplace.

Han et al., (1998), examined MO and its relationship with innovation and performance. Lukas and Ferrell (2000) considered the effect of MO on product innovation while a few notable scales have measured the interaction between MO and EO (Atuahene-Gima and Ko, 2001; Kwaku and Ko, 2001; Matsuno et al., 2002; Miles and Burns, 1994; Morris and Paul,1987). Hult et al., (2004) measured aspects such as innovativeness, learning orientation, MO and EO together with profitability and market turbulence. This scale was based on Hurley and Hult's innovativeness scale (1998), Narver and Slaters (1990) MO scale and the EO scales of Covin and Slevin (1989) and Naman and Slevin (1993). The results of this research appear indicative of the positive effect that entrepreneurial marketing strategies could have in small entrepreneurial firms that operate in markets of high turbulence. MO had a significant effect on innovativeness under high market turbulence conditions whilst EO was positively related to innovativeness. Learning orientation had no significant effect on either innovativeness or business performance.

Although such research has measured MO and EO as separate constructs there has been no integration of the concepts. In fact a review of the literature on MO scales show that they tend to omit proclivity to entrepreneurial activity (Blankson and Stokes, 2002), therefore, arguably such scales will fail to appreciate and to fully investigate MO in small firms managed by entrepreneurs. New product developments and their patents have often been used as innovation outputs to measure marketing effectiveness and entrepreneurial activity in small firms. However the EM literature views the concepts of innovation, marketing and entrepreneurship as central to the EM paradigm; therefore innovation can play a major part of the firm's development, creating new market opportunities and delivering customer value.

Development of a suitable research framework for investigating EM fills a gap in the EM literature where there are few tested scales or frameworks, with one notable exception, that of Kocak (2004). This is a quantitative scale for measuring EM that is

based on Morris et al's (2002) seven EM dimensions of proactiveness; calculated risk taking; innovativeness; opportunity focus; resource leveraging (EO dimensions); customer intensity and, value creation (MO dimensions). Accordingly, this research project also fills gaps in the MO literature in respect of SME research as MO scales preclude specific marketing activities that are recognised by SME researchers (Carson et al.1995; Gilmore et al. 2001).

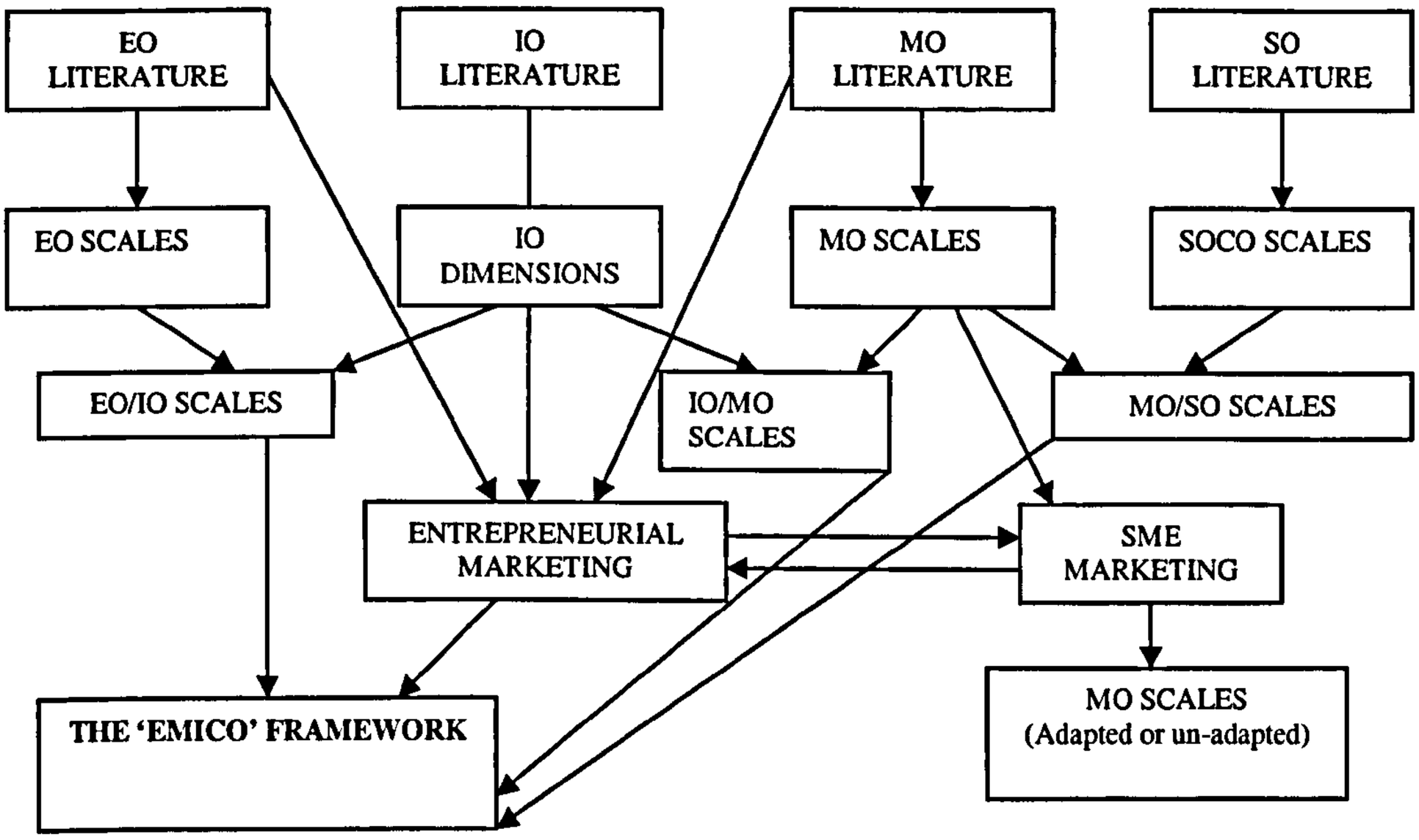
3.3 Supporting literature for the 'EMICO' framework.

This section presents the literature used in the development of the 'EMICO' framework.

3.3.1 Overview of the literature.

This literature review draws together the existing EO, MO, IO, CO and SO scales and literature. These theoretical concepts are drawn together to build a model with which to carry out research investigation of EM in small technology firms. The proposed framework draws on relevant EM theory and specifically identifies aspects of the CO and SO literature as essential in the research of technology firms who create bespoke software for their customers. The literature research process and how it informs the proposed model is outlined in a theoretical model (figure 3.0). This figure illustrates the interrelationships between the different theoretical concepts. IO scales are omitted from the diagram because although there are some useful IO dimensions in the literature, there are no reliable and tested IO scales as yet. CO is also omitted from the framework as CO does not exist as a distinct concept but rests within either the MO or the SOCO scales.

Figure 3.0: Building a theoretical model for the 'EMICO' framework



3.3.2 Entrepreneurial orientation

The way in which firms orient themselves in the marketplace has been a subject of research interest for some time. The EO literature is generally interested in the effect that an entrepreneurial orientation has on firm performance. A general consensus within the literature has been reached in respect of an entrepreneur's inherent personality traits, with most EO scales including the dimensions of risk taking, proactiveness and innovation (Covin and Slevin, 1991; Ginsberg, 1985; Khandwalla, 1977; Lumpkin and Dess, 1996; Miles and Arnold, 1991; Miller and Friesen, 1983; Morris and Paul, 1987; Naman and Slevin, 1993). Small firm research of EO includes Salavou and Lioukas' (2003) investigation of market focus, technological posture and EO in SMEs and whether this would lead to more radical product innovations. This research showed that, unlike larger firms, IO in SMEs comes from the 'entrepreneurial push' rather than the MO or technology policy of the SME.

Kreiser et al., (2002) also researched EO in SMEs and focused on the research of culture, innovation, risk taking and proactiveness in small firms.

Khandwalla (1973) developed a popular 9 item scale for measuring corporate entrepreneurship, the 'ENTRESCALE' which has been subsequently refined by Miller and Fiesen (1978) and Covin and Slevin (1989). The scale measures innovation and proactiveness and also displays elements of entrepreneurial proclivity and propensity for risk taking, other facets of EO noted by researchers. The 'ENTRESCALE' has shown strong reliability and validity in numerous studies (Covin and Slevin, 1989; Khandwalla, 1977; Miles and Snow, 1978). A more recent scale was adapted from the 'ENTRESCALE', Knight's (1997) 'ENTRE' scale has been developed and positively tested and uses 7 of the original 9 items of the scale.

Matsuno et al., (2002) drew on a wide range of entrepreneurial and EO literature, to identify three main underlying dimensions of organisational predisposition to entrepreneurial management processes; innovativeness, risk taking and proactiveness. Using Miller's (1983) and other's works (Covin and Slevin, 1989; Morris and Paul, 1987), Matsuno et al. developed a 7 item measurement scale, incorporating receptiveness to innovation, risk-taking attitude and proactiveness towards opportunities in order to assess the effects of MO and entrepreneurial proclivity on business performance.

Knight's (1997) 'ENTRE' scale is now used in the 'EMICO' framework. The 'ENTRE' scale specifically informs the 'EMICO' framework dimensions of 'research and development' and 'speed to market' (appendix G). The framework also uses Matsuno et al.'s (2002) Entrepreneurial Proclivity scale (appendix H) as this scale considers entrepreneurial proclivity towards innovativeness, risk-taking and pro-activeness in the market place. Matsuno et al.'s scale specifically informs the 'EMICO' framework dimensions of 'proactiveness' and 'risk taking.' Both scales are popular scales and well known for their validity and reliability.

3.3.3 Market orientation

Researchers have been interested in exploring the effect of market orientation proclivity on firm performance over the last two decades. There are a range of MO scales in the literature with most researchers appearing to adopt one of two MO scales of measurement with differing perspectives (Tajeddini *et al* 2006;Verhees and Meulenberg, 2004), that of either Kohli or Jaworski (1990) or Narver and Slater's definition (1990). Kohli and Jaworski adopt a behavioural perspective using marketing intelligence rather than a customer focus as the central element because it is a much wider concept that takes in:

> "the exogenous market factors that affect customer needs and preferences and current as well as future needs of customers." (Kohli and Jaworski, 1990, p. 3).

They adopt three themes of customer focus, coordinated marketing and profitability. Conversely, Narver and Slater (1990, p.21) focus on a cultural perspective, defining market orientation as:

> "the organisation culture that most effectively and efficiently creates the necessary behaviours for the creation of superior value for buyers and thus, continuous superior performance for the business."

There are three identified behavioural components are embodied within this concept: a customer orientation; competitor orientation; and inter-functional coordination. Both of these models have been rigorously tested for their suitability for measuring MO but opinion remains divided as to which is the more suitable. Tajeddini et al., (2006) considered Narver and Slater's definition of MO to be more popular, whilst Kohl and Jaworski's scale of measurement is considered by others to be more favoured by researchers (Hart and Diamantopoulos, 1993; Pitt et al., 1996).

Deshpande et al., (1993) developed an MO scale which had a customer focus and was based on part of a broader study that included the impact of corporate culture and organisational innovativeness on firm performance. Later Deshpande and Farley (1998) tested the following MO scales; Deshpande et al.'s scale (1993); Kohli et al.' s

MARKOR scale, (1993) and; Narver and Slater's scale (1990). Deshpande and Farley found remarkable similarity in terms of reliability and internal and external validity and synthesised a managerially simplified scale from the three scales, which they called the MORTN scale.

Other authors have redeveloped the main MO scales. Pitt et al., (1996) investigated the relationship between MO and performance using Kohli et al.'s (1993) MARKOR scale whilst Gray et al., (1988) utilised parts of different scales from Deng and Dart, (1994); Jaworski and Kohli, (1993) and; Narver and Slater, (1990) to develop a valid instrument for measuring MO in firms. Their recommendations for further research included using different modes of MO where combinations of a customer and competitor orientation, inter-functional coordination, responsiveness and profit emphasis may be considered. It is interesting to note that most scales view MO as a reactive activity, with one notable exception where MO is seen as a proactive activity, the 'MOPRO' scale (Narver et al., 2004).

Kohli and Jaworski's (1990) and Narver and Slater's scales (1990) have often been applied to small firms with little or no adaptation. Kohli and Jaworski's model (1990) was tested for suitability in small firms (Blankson and Stokes, 2002). Researchers Rexha, et al., (1988), Salavou et al., (2004) and Verhees and Meulenberg, (2004) have investigated various aspects of MO in their studies whilst Appiah-Adu (1997) used Pelham and Wilson's scale (1996) which was specifically designed for the research of MO in small firms. Appiah-Adu compared MO in both large and small firms and found that MO increased small firm performance by increasing the likelihood of new product innovations and hence new market developments, which in turn increased profitability and growth.

Venkatesan and Soutar (2000) applied Kohli and Jaworski's (1990) and Narver and Slater's (1990) MO models to the Australian SME sector. The research concluded that the behavioural and culturally based model of Narver and Slater was more suitable for SMEs as Kohli and Jaworksi's model focused more on specialised activities which were

less applicable to small firms due to the informal nature of their marketing activities. Despite Narver and Slater's model being described as suitable, one of the three constructs was eliminated in its entirety as the researcher considered that the inter-functional construct did not apply to SMEs because they were found to lack separate functions, such as production, accounting and marketing.

Conversely, Kara et al. (2005) when measuring the effect of MO on business performance in small-sized service retailers applied Kohli and Jaworski's (1990) MARKOR scale describing it as more suitable to the data collection than other frameworks. Kara et al. applied the scale without adaptation to the small firm context, however, the researchers proposed that this scale may not totally capture the true picture, suggesting that a customer satisfaction measure may be a more suitable measure for investigating the effects of a long term MO in small firms.

A key feature of historical MO measurement is the use of quantitative analysis. Blankson et al., (2006) therefore sought to develop a qualitative research investigation. They developed a framework to identify the marketing practices of small firms using earlier work from Blankson and Omar (2002). Blankson et al., (2006) concluded that their framework, using open ended questioning and qualitative analysis uncovered not only the business practices but also the rationale behind those practices, an approach previously overlooked by other MO studies (Gummesson, 1999; Laurent, 2000). However, Blamkson et al's framework contains a very limited specific focus on MO questions, asks for comparative data on competitors when SMEs are often unaware of their competitors (Jones and Rowley, 2009a) and has an organisational focus to the questioning that excludes consideration of marketing proactivity and innovation.

Accordingly, due to their robustness, reliability and validity Narver and Slater's MO scale (1990; appendix I) and Kohli et al.'s 'MARKOR' Scale (1993; appendix J) are used to inform the 'EMICO' framework. The dimensions of 'responsiveness towards competitors' and 'responsiveness towards customers' are drawn from the MARKOR

scale whilst the dimensions of 'integration of business processes' and 'communications with customers' are drawn from Narver and Slater's MO scale.

3.3.4 Innovation orientation

Research into the innovation concept has its roots in new ventures, small firms and the technology industry. The innovation literature recognises distinct advantages for innovative firms who produce creative products, processes and strategies that better satisfy customer needs (Covin and Miles, 1999; Miles and Darroch, 1994). Although innovation research has had a focus on small firms and the hi-tech industry there are few innovations scales that have been developed. Hurley and Hult's (1998) much cited work considers two innovation constructs, innovativeness and the capacity to innovate in relation to a firm's MO. Firstly innovativeness is considered part of the firm's culture, being a measure of the organisations orientation to innovate. The firm characteristics are learning, participative decision-making, support and collaboration, and power sharing. Secondly the capacity to innovate is described as the ability of the organisation to implement new ideas, processes or products successfully. The capacity to innovate is measured using the number of innovations (for example, new product patents) an organisation can produce or adopt successfully within a given timescale. Often much of the research in this area relies on self-reporting by respondents; this tends to be a very simplistic and output oriented approach to the identification of innovation orientation.

Siguaw et al. (2006) propose an IO scale, describing IO as a delineated knowledge structure composing of a learning philosophy, strategic direction, and a set of trans-functional beliefs in the organisation which are embedded in the company in areas of resource allocation, technology employees, operations and markets. They have drawn pertinent strands of the innovation literature together to develop a framework of propositions for the measurement of IO which contains a set of inter-firm behaviours. Siguaw et al.'s scale was judged to be the most appropriate for the 'EMICO' scale as they conceptualise IO using a behaviourial perspective, which is considered more suitable for this research enquiry. Although the IO scale dimensions are untested, they are built using a comprehensive and thorough review of the innovation literature. In the

absence of a more suitable innovation scale which has already been tested this scale is used in the development of the new framework. The 'EMICO' scale dimensions of 'knowledge infrastructure' and 'propensity to innovate' are specifically drawn from Siguaw's IO scale (appendix K).

3.3.5 Customer orientation

The significance of customer relationships and small firm marketing has often been discussed in the SME literature. Zontanos and Anderson (2004) found that a small firm's marketing advantage is precisely linked to those close relationships between the entrepreneur and his or her customers. The small firms' generally narrow and localised customer base creates a much shorter line of communication between the firm and its customers (Weinrauch et al., 1991) with entrepreneurs often knowing their customers personally (Stokes 2000). As a result of such a close interactive relationship, benefits are produced such as higher customer loyalty and higher levels of customer satisfaction (Carson, 1985). Long term relationships between the customer and entrepreneurs are often cemented by the small firm's ability to react to customer needs quickly as small firms are more likely to be flexible in their ability to respond to customer enquiries (Carson et al., 1995).

Specific research of the CO concept rests in several research domains. As early as 1954 Drucker described CO as a set of organisational philosophies and behaviours which are directed toward determining and understanding the needs of the target customer, and adapting the selling organisations response in order to satisfy those needs better than the competition. The services marketing literature describes those companies that adopt a customer satisfaction perspective as more likely to provide a quality service, contribute to customer satisfaction and attain organisational goals more efficiently and effectively than its competitors (Rodriquez et al., 2004) whilst Narver and Slater (1990), from a MO perspective, proposed that an organisations CO requires sufficient understanding of their customers to create products or services of superior value, defining CO as a culture which accentuates the creation of customer value as the overriding organisational goal.

Within the literature MO and CO are often considered to be interchangeable concepts (Deshpande et al., 1993; Shapiro, 1988) while Saura et al., (2005) propose that the concept of CO can be drawn from two areas of the literature, firstly the sales literature and secondly the MO literature. Saura et al.'s Customer Orientation scale uses the dimensions of CO, SO, job satisfaction, service leadership and human resource management (HRM) practices. Service orientation and customer orientation (SOCO) scales, such as the scale developed by Saxe and Weitz (1982) continue to be successfully adapted and used in the sales and SO literature. SOCO scales tend to consider the relationship between customer orientated selling (for example, helping customers assess their needs and offering products that will help satisfy those needs), together with the quality of the sales person (customer relations, ability to help).

Berthon et al. developed and tested a scale, the ICON scale (2004)to explore innovation and CO, however, no scale descriptors were offered in relation to CO. Hajjat (2002) developed the CUSTOR scale in order to capture the general customer orientation and disposition of the firm. He considered the firm's consistency of approach towards acquiring and retaining customers through needs-satisfaction processes and activities. Unfortunately this scale is unsuitable for using with the 'EMICO' framework as its findings have remained largely untested.

Deshpande et al.'s scale (1993), an MO scale which views CO as an interrelated concept and considers the impact of culture and organisational innovativeness on firm performance, has been chosen for development of the new framework (appendix L). Saura et al.'s (2005) scale has also been chosen for inclusion as it views CO and service orientation holistically throughout the organisation (appendix N). The scales of Saxe and Weitz (appendix M) also inform the framework as they are known for their reliability and validity. The framework dimension 'understanding and delivering customer value' with its underpinning descriptors are drawn specifically from these three scales.

3.4 Construction of the framework

The following subsections describe the construction of the 'EMICO' framework.

3.4. 1 Synthesizing of a new framework

There are numerous replications and adaptations of marketing scales in the literature using popular scales (Hart and Diamantopoulos, 1993; Strutton and Lumpkin, 1994). The development of the proposed scale is guided by the following commentators; Zeller and Carmines (1980) recommend using an economical approach when designing measures as is the rule of scientific theory, citing particular examples of purposeful item omission in the marketing literature (Williams, 1998). The deletion or merger of certain items is considered acceptable where they are conceptually related (Blankson and Stokes, 2002; Churchill, 1985) while Parasuraman et al., (1985) consider it acceptable to eliminate constructs in cases where, by merging them with others there was no improvement in the internal reliability, a view espoused by Blankson et al., (2006) and Wright and Kearns (1998) who suggested replication of the existing marketing scales.

The framework dimensions were constructed using the following approach:

- Suitable dimensions and underpinning descriptors for each dimension were drawn from the existing EO, MO, IO, CO and SO scales (discussed in subsections 3.3.2 to 3.3.5). Care was taken to ensure that such scales would compliment a new EM measurement model and would offer validity and reliability (except in the case of IO where the scale dimensions had not been tested).
- The overall framework was then revised in respect of the different literatures for omissions. Using this approach the network literature was identified as being excluded from the extant measurement scales in the literature. Research of the literature, specifically the SME and EM literature, informed the development of the dimension 'networks and relationships' (Carson et al., 1995; Cegara-Navarro

and Rodrigo-Moya, 2007; Morris et al., 2002). This dimension was added to the 'EMICO' framework as it was considered highly relevant to business and marketing activities in small firms.

- The framework was then revised for any further omissions using the EM literature. The dimensions 'exploiting markets' 'sales and promotion' were added to the framework (Hills and Hultman, 2005).
- Then the EM literature was fully integrated into the framework by incorporating key dimensions identified by mainstream EM researchers. These important aspects formed underpinning descriptors for eleven of the 'EMICO' dimensions (Hills and Hultman, 2005; Morris et al., 2002). In all, thirteen of the dimensions have been informed by the EM literature (with the exception of research and development and speed to market, derived from the EO literature).

In Figure 3.1 shown overleaf the dimensions are shown with the underpinning dimension descriptors which provide a brief statement of their meaning. These statements are indicative of the items that might be developed to measure each of the dimensions. In order to make explicit the links between this framework, the previous scales and the literature from which it is derived, the prior authors that have informed the inclusion of the specific dimensions are cited alongside each item.

The 'EMICO' framework now needs developing and testing rigorously not least in the SME context because earlier component scales that have informed scale development have their roots in a notion of marketing that is grounded in 'marketing as a profession' and 'marketing in large businesses' which has much clouded the issue.

Figure 3.1: The proposed 'EMICO' framework

Research and Development (Knight 1997) *Level of emphasis on investment in R&D;technological leadership and innovation.*

Speed to Market (Knight 1997) *Competitive stance- collaborator, follower, leader, defensive etc.*

Risk Taking (Matsuno et al. 2002) *Calculated risk taking; Preparedness to seize opportunities; preference for incremental and transformational acts; reliance on intuition and experience.*

Proactiveness (Matsuno et al. 2002) *Commitment to exploiting opportunities; inherent focus of recognition of opportunities; a role for passion, zeal and commitment.*

Exploiting Markets (Hills and Hultman 2006)
Vision and strategy are driven by tactical successes; planning, or lack of, in short incremental steps; proactively exploiting smaller market niches; flexible, customisation approach to market; marketing decisions linked to personal goals and long term performance.

Market Intelligence Generation (Kohli et al. 1993) *External (to the firm) intelligence gathering; informal market research generation.*

Responsiveness towards Competitors (Kohli et al. 1993) *Responsiveness to competitor action; ongoing adapting of competitive positioning.*

Integration of Business Processes (Narver and Slater 1990) *Closely integrated functions, R&D, marketing etc; sharing of resources; product/venture development is interactive, formal processes or informal processes with little research/analysis; marketing that permeates all levels and functional areas of the firm.*

Networks and Relationships (Carson et al. 1995; Cegara-Navarro and Rodrigo-Moya 2007; Morris et al. 2002). *Resource leveraging; capacity for building network and business competence; use of social networks (PCNs); creation of value through relationships/alliances; intra-firm networks; market decision making based on daily contact and networks.*

Knowledge Infrastructure (Siguaw et al. 2006) *Formal and informal policies, procedures, practices and incentives; gathering and disseminating information about customer and competitor markets.*

Propensity to Innovate (Siguaw et al. 2006) *Processes for sustaining and shaping the organisations culture to stimulate and sustain innovation; covering all innovation types- new product, services, process and administration.*

Responsiveness towards Customers (Kohli et al. 1993) *Responsiveness to customer feedback and behaviour; speedy reaction to shifts in customer preference.*

Communication with Customers (Narver and Slater 1990) *Strives to lead customers; formal and 'informal' feedback gathering mechanisms; ongoing dialogue with customers to build long term relationships; delivery to customers, customer confidence with marketing based on personal reputation, trust and credibility.*

Understanding and delivering customer value (Deshpande et al. 1993; Saura et al. 2005; Saxe and Weitz, 1982) *Closely linked to innovation practices; often two- way marketing with customers; customer knowledge often based on market immersion/interaction.*

Promotion and Sales (Hills and Hultman 2006) *A focus on sales and promotional activities.*

3.5 Conclusion

This chapter has explained the development of a new research model, the 'EMICO' framework. This framework is grounded in earlier research on EO, MO, IO, CO and SO in general but specifically focuses on previous scales in this area. A systematic process of comparing and matching these scales, and eliminating overlap as appropriate, has been completed and a new framework proposed. The further establishment and refinement of this framework lies at the heart of this research and the testing and further development of the framework is explained in Chapter 6. Chapter 4 explains the process whereby:

- The ethnographic case study supported the theoretical development of the framework in figure 3.1.
- Further research is undertaken with respondents in a number of other small technology firms to verify the dimensions in the framework and their descriptors.

4.0 RESEARCH PHILOSOPHY, DESIGN AND METHODS

4.1 Introduction

This chapter describes the methodology used to explore the marketing activities and behaviours that exist in small technology software firms.

- Section 4.2 introduces the research philosophy used in this project.
- Section 4.3 explains the use of integrated multiple mixes of qualitative methods.
- Section 4.4 describes the methodological approaches used in the extended case study of Company A.
- Section 4.5 discusses the survey of the educational software sector; focusing on marketing issues and comparison of small and large firm marketing activities.
- Section 4.6 explains the application of the 'EMICO' framework and card game methodology which consolidates the framework dimensions and allows for research exploration of EM in a sample of small technology firms.

4.2 Research Philosophy

An ontology is described as the reality whilst epistemology is described as the relationship between the researcher and that reality (Perry, 1999, cited in Carson et al., 2005). An ontology may be based on the positivist or the interpretivist epistemology.

4.2.1 Positivism

There are two views about research processes that appear to dominate the business and management literature: positivism and interpretivism. Positivism adopts the philosophical stance of the natural scientist, 'working with an observable social reality and that the end product of such research can be law-like generalisations similar to those

produced by the physical and natural scientists' (Remenyi et al., 1998). Such an approach emphasizes a highly structured methodology to facilitate replication and quantifiable observations that lend themselves to statistical analysis (Gill and Johnson, 1997). The data is collected in a detached way by objective analysts, therefore the researcher is independent of and neither affects or is affected by the subject of the research (Remenyi, 1998).

4.2.2 Interpretivism

Interpretivist researchers who are critical of the philosophy of positivism argue that the social world of business and management is far too complex to lend itself to theorizing by definite 'laws' (Saunders et al., 2003). They argue that by using positivism there is a danger that rich insights are lost when researching complex and unique research phenomenon. This is particularly relevant to research of firms in the technology business context as the environment is frequently changing and each small business is likely to be unique. Therefore the value of generalisation tends to be lost. Perhaps the strongest argument for interpretivist research is to discover what Remenyi et al., (1998, p.35) describe as:

> "the details of the situation to understand the reality or perhaps a reality working behind them."

Saunders et al., (2003) associate this with constructionism or social constructionism which follows on from the interpretivist notion whereby it is necessary to explore the subjective meanings motivating people's actions in order to be able to understand them. Social constructivism views reality as being socially constructed as people interpret their own situation from their own viewpoint which may affect their actions and social interaction with others. The role of the interpretivist therefore, is to undertake research that uncovers the subjective reality of those that they study in order to make sense of, and understand their motives, actions and intentions so that their own actions may be seen as meaningful in the context of socially constructed interpretations and meanings. As with most holistic qualitative methodologies, this researcher's position is based firmly in the interpretivist/relativism end of the research spectrum (figure 4.0), although

it is noted by Carson et al., (2005) that much of Yin's case study work (1994) is positioned from the positivistic end of the continuum.

Figure 4.0: The Researcher's Position

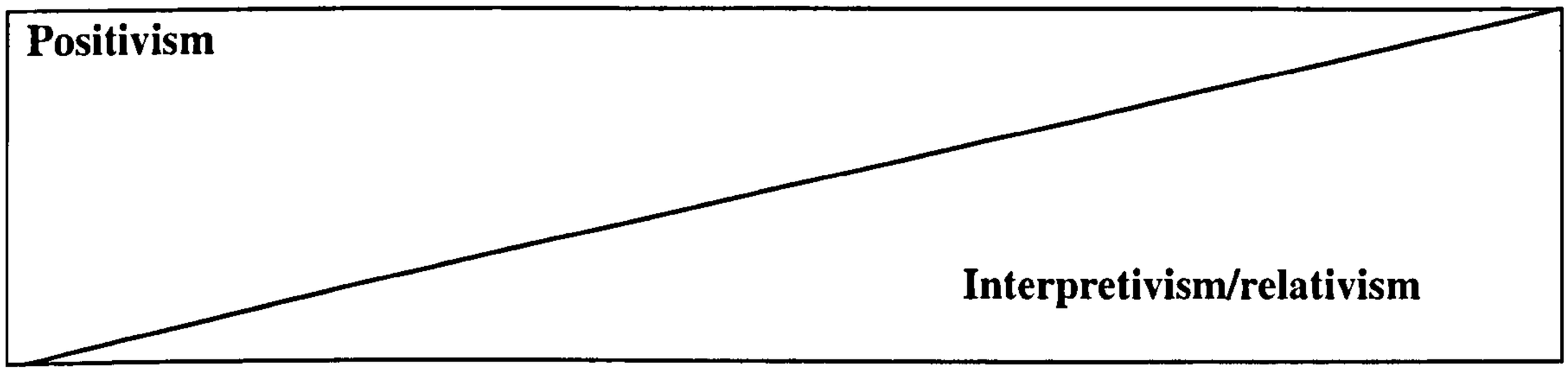


Figure 4.0: Extracted from Carson et al., (2005) Qualitative Marketing Research and Gilmore, (2008) Methodological Approaches for Research at the Marketing/Entrepreneurship Interface, Doctoral Colloquium, AMA SIG.

4.2.3 Choice of research method

Methodological philosophies encapsulate many different approaches to carrying out research. What is chosen is dependent on what is best for researching the particular question, as business research is often a mixture of positivist and interpretivist research approaches. Deductive research uses a highly structured methodology to facilitate replication (Gill and Johnson, 1997). For scientific rigour a conceptual and theoretical structure is developed prior to testing through empirical research methods. Although it begins with a somewhat abstract conceptualisation it is then tested with the application of theory so that new experiences or observations are created. These tend to be:

> "quite abstract concepts that are abstractions that allow us to select and order our impressions of the world by enabling us to identify similarities and differences." (Gill and Johnson, 1991, p. 28, citied in Carson, 2005).

A causal chain may be developed where the hypotheses link two or more concepts. These are often untested assertions about the relationships between the concepts and therefore need to be empirically tested and operationalised (Carson et al., 2005; Saunders et al., 2003). Inductive researchers often criticise the deductive approach for

its tendency to follow a rigid methodology that does not permit alternative explanations for what is going on. Research following the inductive approach is particularly concerned with the context in which the events are taking place and takes into account the way humans interpret their world (Saunders et al., 2003). Researchers in this area are much more likely to use a variety of methods to collect their data in order to establish different views of phenomena (Easterby-Smith et al., 2002). Figure 4.1 illustrates the main differences between deductive and inductive approaches to research.

Figure 4.1: Major differences between deductive and inductive approaches to research

Deduction emphasizes-

Scientific principles
Moving from theory to data
The need to explain causal relationships between variables
The collection of quantitative data
The application of controls to ensure validity of data
The operationalisation of concepts to ensure clarity of definition
A highly structured approach
Researcher independence of what is being researched
The necessity to select samples of sufficient size in order to generalize conclusions

Induction emphasizes-

Gaining an understanding of the meanings humans attach to events
A close understanding of the research context
A collection of qualitative data
A more flexible structure to permit changes of research emphasis as the research progresses
A realization that the researcher is part of the research process
Less concern with the need to generalize

Figure 4.1: Extracted from Saunders et al., 2003, Research methods for business students, p. 89.

Inductive research is an approach which allows the data to guide the research and theory building:

> ''using observations of the empirical world to allow the construction of explanations and theories about what has been observed.''
> (Carson et al., 2005, p.12).

As this research has its focus on a relatively unexplored area of research, the nature of the research demands interpretive analysis; a flexible research approach that uses a balance of both inductive and deductive approaches. This research project uses two key approaches:

- Firstly the research project uses an extended case study of Company A and exploration of the literature on EM and SME marketing. Data is evaluated inductively through empirical means to allow new insights to emerge (Carson et al., 2005).

- Then, based on these research insights, a further review of the literature is used to develop a model for qualitative research, the 'EMICO' framework. Application of this qualitative research framework to a sample of small technology firms allows for research that is both deductive and inductive in nature, deductively applying and testing the proposed framework dimensions with six case study firms whilst inductively investigating and articulating the EM attitudes, behaviours and key issues for small technology firms.

4.3 Integrative Multiple Mixes of Qualitative Methodologies

4.3.1 Suitability of using qualitative research methods

In order to carry out this research project an integrated multiple mix methodology is used. This contextualises the data by viewing organisations from a range of different perspectives, recording data such as observations, experiences and interpretations in order to gain a comprehensive view of the research phenomenon. Multiple mixed methodologies are recognised for their usefulness by qualitative researchers in the SME and entrepreneurial marketing field (Carson et al., 2005; Carson and Coviello, 1996; Gilmore and Carson, 1996). Carson et al's (2005) 'suitability of qualitative research methods for marketing' model (figure 4.2, overleaf) provides a suitable guide for this research project. This model is useful as it was developed for research in the services marketing context as this project also investigates firms with a service element to the 'intangible' software product offering. The marketing characteristics in column one are applicable to this research context as changes in the market are frequent and the researcher needs to be close to the phenomena under study, being flexible and adaptable as events occur.

Matching Suitability features-

Descriptive data- Matching suitability features include descriptive data, which includes descriptions of events, situations and interactions between people and things, providing depth and detail (Patton, 1980, citied in Carson et al., 2005). Data that is descriptive allows the phenomenon to be explored in a contextualised way allowing for meaningful interpretation and response. Using longitudinal research and by gathering data over a period of time allows the researcher to develop a much deeper understanding of the phenomena. This is described by Geertz (1973, cited in Carson et al., 2005) as generating a 'thick description'. In this case the researcher investigated marketing activities in small technology firms by immersing herself in the software technology environment. Data was recorded from the researcher's perspective.

Figure 4.2: Suitability of qualitative research methods for marketing.

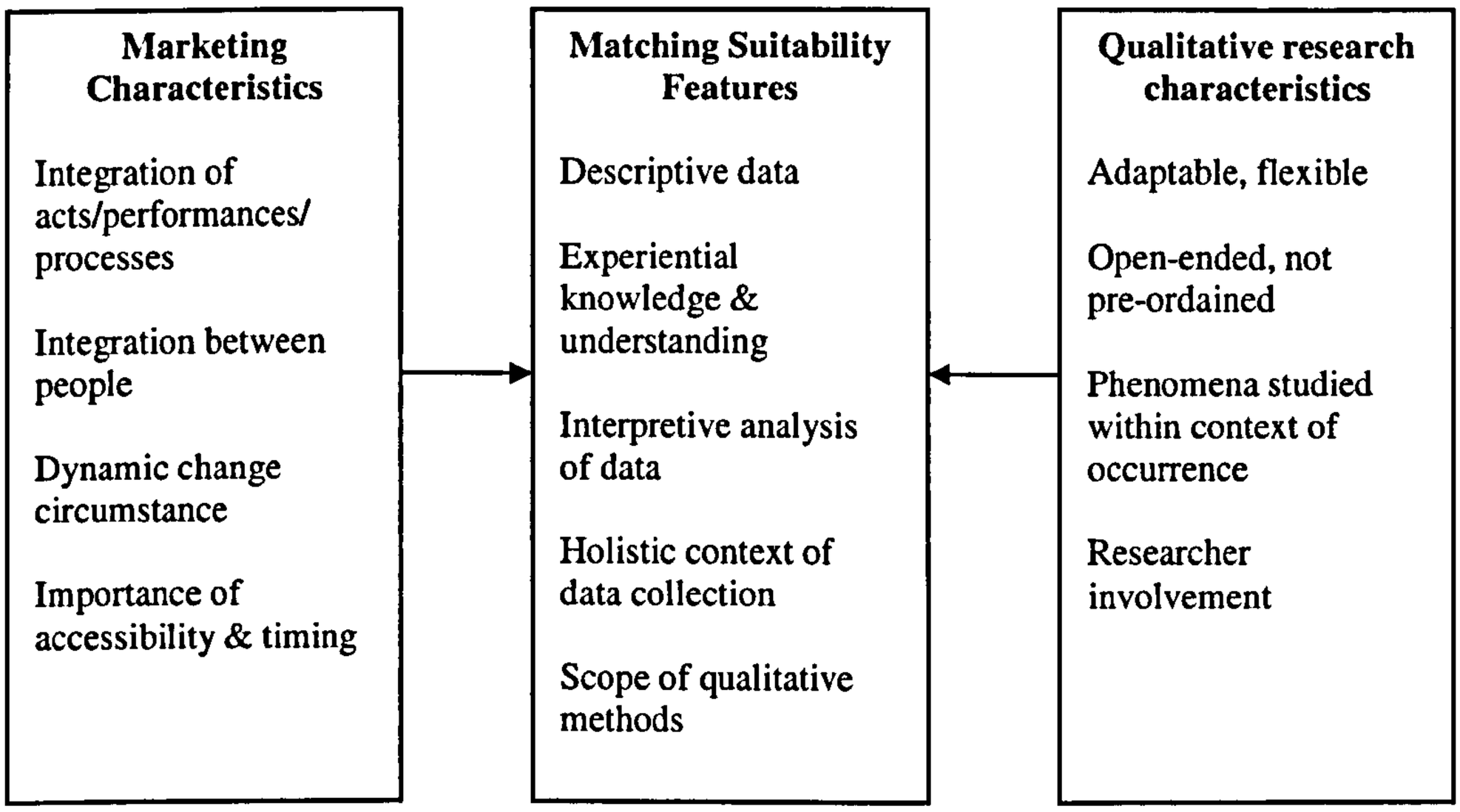


Figure 4.2: Extracted from Carson et al., 2005 p.205, adapted from Gilmore and Carson, 1996).

Experiential knowledge and understanding of the researcher- During the research exploration, the researcher not only works to produce findings, but also considers what has been learnt throughout the process, allowing the researcher to:

> "directly experience the world of informants and all of its variations. Living through the "highs" and "lows" of informants' lives allows the researcher to know the phenomenon under investigation in a way few other methodologies permit." (Hill, 1993, p.260, cited in Carson et al., 2005).

As the researcher develops expertise in that area of research and in the application of the research methodology, experiential knowledge of the research phenomenon will develop, so that the researcher will be able to understand, identify and interpret what lies behind the outlying research question. It is particularly important for the qualitative researcher to recognise such developments in experiential knowledge and understanding

as they are essential requirements for developing and interpreting the data that emanates from the research study.

Interpretive analysis of data- Carson et al., (2005, p. 207) view interpretation as integral to both qualitative studies and marketing research whereby the research of marketing phenomena usually involves actions or performance. They cite O'Shaughnessy (1987) who describes this as:

> ''interpretive understanding of action'' where phenomena are considered within the specific context, taking into account of the subject's view and understanding, and the meaning of the situation.''

Analysing in this way provides an opportunity for the initial coding of data, and then further recoding if necessary when further data is collected.

This research project gathers data from a range of respondents who offer different perspectives on the research phenomenon. This data is interpreted as part of a continual process, using coded themes that emanate from early exploratory research (data from the extended case study and a survey of marketing activities of firms in the educational software sector). These findings together with a review of the existing literature inform the development of the model presented in Chapter 3. The 'EMICO' qualitative research framework provides further opportunity for both deductive and inductive research investigation by research and analysis, using a group sample of case study firms. At this point in the research, the new data is coded using the model's framework dimensions. This data is contextualised by using the earlier research findings and the developing experiential knowledge and understanding of the researcher. The two remaining matching features identified in figure 3, holistic context of data collection and scope of qualitative methods are discussed in the following subsection.

4.3.2 Integrated research

Qualitative research methodologies include case studies, focus group discussions, in-depth interviewing, longitudinal studies, observations, ethnographic and grounded theory approaches, action research and action learning. A combination of these approaches provides an opportunity to explore not only specific organisations and their intra-firm and external contexts, but individuals, their responses and behaviours within a specific organisational context. This enables the determining of key issues and a deeper understanding of how, why and where these issues are occurring, in this case EM attitudes and behaviours in micro and small software technology firms.

EM is a developing concept and draws upon several research disciplines that include marketing, SME marketing, entrepreneurship, innovation and the inter-relationships between these disciplines. Developing an understanding of what marketing means to firms in technology sector is also complicated by the fact that this area remains relatively unexplored, therefore a single research methodology would not suffice. An integration of a variety of research methods provides a holistic approach to research, known as 'integrative research' where research purpose and method are viewed holistically (Gilmore, 2008). Such a variety of methods can form a 'stream' of research so that a 'pool of knowledge and understanding develops'. The following integrated research diagram (figure 4.3), based on the model adapted from Carson and Coviello, (1996) and more recently from Gilmore, (2008) shows an adapted model, this model shows the research strategy employed in the overall study. It shows the combination of qualitative research strategies, the methods used and the way in which they interact and therefore inform each other to support the overarching aims of the research question. How these integrative research methods are deployed in the study, and how they integrate to support this 'holistic oriented' approach are explained in greater detail in the subsequent sections of this chapter.

Figure 4.3: Integrated Research, an applied model.

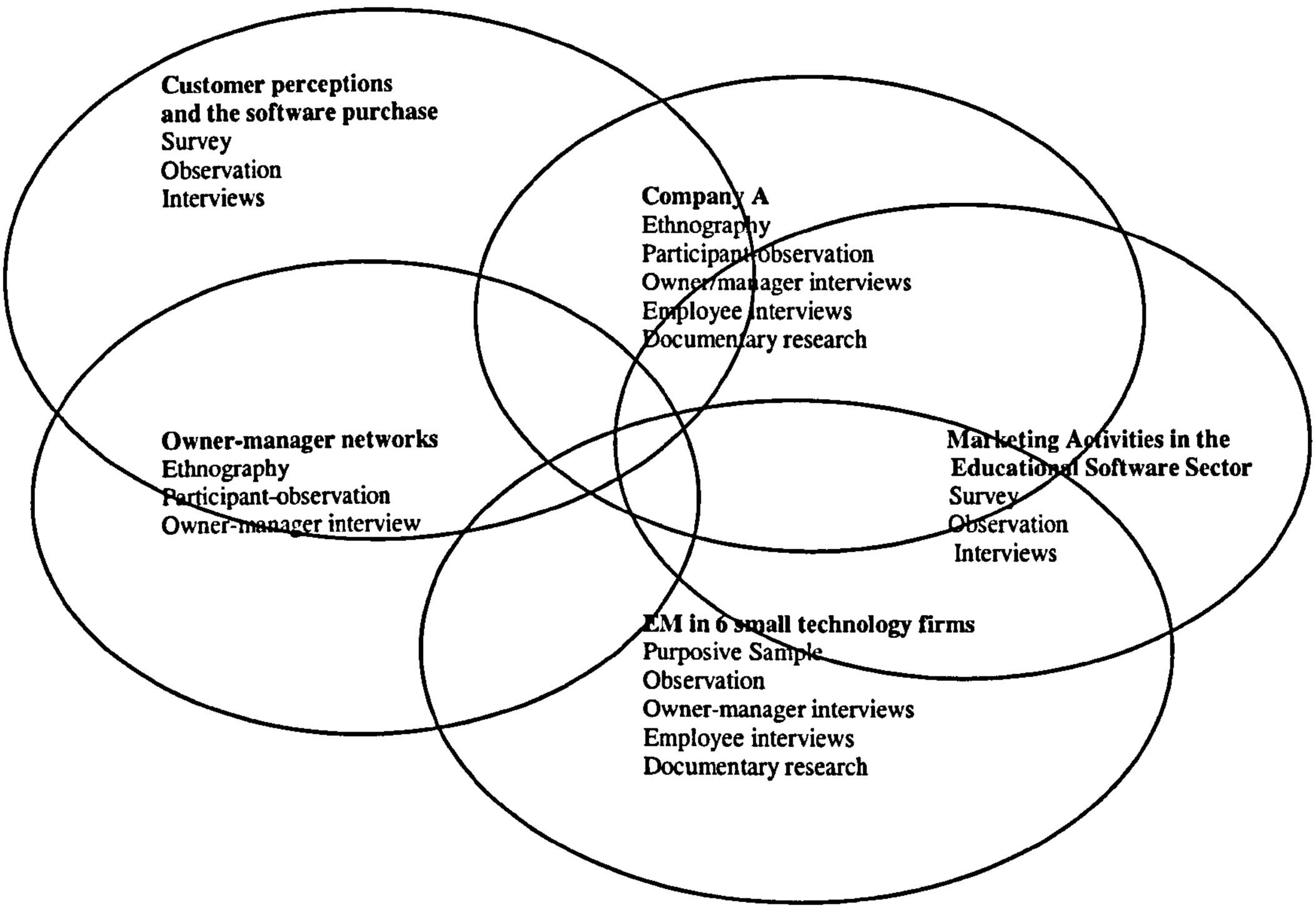


Figure 4.3: Extracted from Gilmore (2008) Methodological Approaches for Research at the Marketing/Entrepreneurship Interface, Doctoral Colloquium, AMA SIG.

4.4 The case study Company A.

This section describes the research methodologies used in the extended case study.

- Section 4.4.2 presents the methodology for research of the case study company.
- Section 4.4.3 discusses the research approach used in exploring and defining the operational owner-manager's networks.
- Section 4.4.4 describes the methodology for the research of Company A, it's customers and the complexities that surround the IT purchase decision.

4.4.1 Introduction

As discussed in Chapter 2, there is limited literature about the marketing of hi-tech, or software technology products or services, and even less with regard to marketing in SMEs in these sectors. Therefore early stages of the research involved a two staged exploratory approach; firstly, familiarisation with the case study Company A, owner-manager networks and their customers (subsections 4.4.2, 4.4.3, 4.4.4) and, secondly, developing understanding of the competitive marketplace in which the firm operates.

This section discusses the methodology for the research based on Company A, the ethnographic case study organisation. As this research project is an ESF funded project which is intended to benefit the company and PhD researcher, the owner-manager of the company was committed to offering a certain amount of time and financial commitment to the project. As a result the researcher has enjoyed considerable support and involvement from the firm in the project. Such accessibility to the firm offers significant value to the research project as the researcher is able to spend long periods of time with the company, work very closely with the owner-manager and employees and have open access to secondary data such as company documents and promotional material.

Company A is a micro sized technology firm that shows a propensity towards being both innovative and entrepreneurial in nature, whilst seeking to develop long term business

relationships with their customers. They operate mainly in the educational software sector, a competitive marketplace where networks and B2B partnerships are prevalent. It is easy to allow spurious data to cloud the research focus when researching an extended case study. Therefore the researcher identified three important aspects for research investigation:

- Research exploration of Company A.
- Use of owner-manager networks.
- Customer perceptions of Company A and the software purchase decision.

4.4.2 Research exploration of Company A

The three year study of Company A involved research that (particularly in the early stages) was exploratory and inductive in nature. Research progressed using SME marketing literature theory combined with empirically based research. An extended case study methodology was chosen and a semi-structured research investigation process that included ethnographic research. Ethnographic research such as this closely involves the researcher who becomes an integral component of the study and can guide the research. This method was valuable in the study of Company A as this research method allows for studying a group of people in their own environment over a period of time using more than one method of data collection (McGivern, 2006). It also allows:

> ''for exploration as to the culture and behaviours of the firm and the reality of people's perceptions of the phenomena under enquiry in an unstructured way'' (Carson et al, 2005, p. 73).

The researcher becomes immersed in the detailed lives of the people, in this case the owner-managers and employees of Company A, in order to get a detailed understanding of behaviour, circumstances and attitudes of the firm. This enables a detailed, holistic understanding of the firm and a detailed description of issues in this context. The advantages of using this method are:

- They provide insights that may not be gathered by interview alone.
- They allow the social and cultural context of the firm to be explored.
- They allow the researcher to see the view from the employee or owner-manager's perspective.
- They allow the employees and owner-manager to describe things in their own words and in their own way.
- The research sees things happen; behaviour, activities, in the setting that they normally take place (McGivern, 2006, p. 178).

Ethnographic research typically involves one or more methods of data collection such as observation and interviewing. In this case, the researcher took the participant-observer role but at required times undertook interviews and observations. This method is a qualitative method originally used by anthropologists which is ideal for this research as it blends seamlessly with every day work activities (Robson, 2002) and can supplement the findings of other data to either complement or set in perspective data collected in other ways. Due to the extended nature of the research, a great deal of data was gathered mainly through participant-observation and interviews with owner-managers and employees at different stages of the research process. These included regular one-to-one meetings with the operational owner-manager and also researcher involvement in team meetings, stakeholder and other business meetings and attendance at exhibitions and other business and marketing events with the firm.

Research exploration began with early fact finding interviews with owner-managers (interview template, appendix A) and employees (interview template, appendix B). These were carried out with the two owner-managers of the firm and the three employees (another employee joined later as a Knowledge Transfer Partnership (KTP) Associate). These were exploratory in-depth semi-structured interviews that were recorded by hand and then later typed up so as to remain relatively informal and so as not to distract the respondents by the use of a tape recorder. This was particularly important in the early stages of the research when familiarity and trust in the researcher

had not been established. When interviewing both the owner-managers a critical incident technique was used to draw out information from respondents. This technique allowed respondents to reflect on past incidents in the start-up and development of the company. Data from early interviews was then used to explore the reasons as to how and why the business started and to record the historical development of the business from both of the owner-manager's perspectives until the point at which the researcher joined the company in October 2005. It also allowed the researcher to develop an understanding as to the motivations of both the owner-managers as to why they started the business and how they envisioned the firm to progress.

As the researcher took the role of participant-observer the research became interactive with the employees, the owner-managers and the researcher so that the way in which the organisation was structured and how it was managed became apparent. Researcher involvement with the company and the informality of the research process which included informal discussions, allowed the researcher to draw out the honest views and perceptions of the owner-manager and employees, together with the close observation of the owner-managers personality and his influence on the firm.

During the exploratory interviews with the firm's owner-managers and employees, care was taken on the interviewer's part to ensure that the language used during the interviewing process deliberately excluded specific business and marketing terminology. This was a vital prerequisite for the study as researchers have found that entrepreneurs will adapt the mode of the recipient to their views (Hills and Muzyka, 1993). This is even more likely if the entrepreneur has had a technology transfer or prior knowledge in the area of business or marketing management. Other data gathering during the ethnographic study helped to develop a comprehensive view of the firms business and marketing activities, company attitudes and behaviours. Further interviews were undertaken with the owner-managers and employees as part of a staged research process over the period of the extended study. The findings of the extended case study are reported in section 5.2 of the thesis.

4.4.3 Use of owner-manager networks

The specific research of networks involved a more structured approach to the research study as owner-manager networks were more difficult for the researcher to explore by participant-observation alone. For the purposes of this area of the study, the research strategy proposed by Yin (1994) was employed, which is an empirical enquiry that investigates a contemporary phenomenon within its real-life context, and is especially useful when the boundaries between phenomenon and context are not clearly evident. Close and participative qualitative research approaches are able to investigate how a small firm interacts with others in their networks and find out the 'how and why' questions.

As the case study research progressed it became apparent that Company A suffered similar business and marketing constraints that are identified in the SME marketing literature (Carson et al.,1995). The researcher wished to investigate how the company overcame some of its constraints. Therefore the researcher focused one area of the case study research on the operational owner-manager's inter-organisational and personal contact networks (PCN), as the SME literature indicated that entrepreneurial networks may be a prerequisite for firm growth. A case study and participant –observer approach was used so that an in-depth understanding the context of the networks in which they were embedded was developed. Then an interview template was developed using the B2B network literature together with data gathered from participant-observation (appendix C). An in-depth interview with the operational owner-manager of the case study company was then carried out. An in-depth interview was chosen as the most appropriate means for collecting the relevant data specifically about networks as it provides a means of understanding why persons act as they do, and to understand the meaning and significance of their actions, in such a way as they can tell the interviewer in their own terms. Tull and Hawkins (1990) describe the in-depth interview as the most effective way to probe in detail an individual's behaviour and attitudes. This method also offers an opportunity to understand in greater detail how such networks were formed and the reasons for the formations of these relationships. This provides a

framework within which respondents can describe their own perceptions in their own way (Patton, 1987). Data gathered from prior participant- observations in the company ensured the quality of the information used to develop the open ended qualitative questions. This could have only been developed from long periods of time and interaction between the researcher and the firm.

The open-ended interview template was developed using this knowledge and prior literature on the topic and questions were formed that would encourage in-depth exploration of networks; how and why these networks were formed; and how the owner-manager leveraged resources for his company. Again care was taken during interviews to ensure the language of the researcher did not influence the owner-manager's responses. Entrepreneurs have been identified in the network and SME literature as being the major influencer and decision maker for the firm and builders of networks. Although it is recognised that other employees within the firm may interact with the firm's networks, the operational owner-manager has been chosen as the unit of analysis, being representative of the firm's activity and playing a pivotal role in the development and continuation of firm networks. The interview with this owner-manager included specific in-depth open ended questions about the firm's network relationships. The interview was recorded and then transcribed verbatim.

Reflection on the findings and interpretation of the data was carried out by integrating the research findings with the network literature. The different types of networks were identified and their level of their interaction with the case study company explored. Network contribution to small firm core competency building and entrepreneurial action using resource leveraging in this context was analysed by coding the data into common themes and then 'pattern matching', whereby several pieces of information from the same case may be related to the stated theoretical propositions, a technique used successfully in psychology experiments (Campbell, 1969; 1975).

The combination of the participant-observation and qualitative research questioning provided a reliable source of data collection from very close, interactive research of a complex research phenomenon and enabled the researcher to gain knowledge and

understanding of the case study company and the competitive environment in which it operated. Reliability and validity of these results is increased as this research of owner-manager networks was informed by the integrated research process, by the contextual analysis of the whole research phenomenon in which these networks are embedded. Contextual analysis included analysis of the competitive environment in which the firm operates; barriers for firms in this sector; and problems faced by the case study company where working closely with the company had surfaced issues for the firm such as a drop in the level of new customers committing to purchase their software (sections 5.4 and 5.5). Unsurprisingly perhaps, the original focus of the study, which was marketing, also became research into other aspects of the business due to the nature of research in small firms. Other aspects included entrepreneurial and innovation aspects of the business, a fact which alludes to the overlap or blurring of boundaries between entrepreneurship, innovation and marketing in small firms. The findings are reported in section 5.3 of the thesis.

4.4 .4 Customer perceptions and the software purchase decision.

Earlier discussions in this chapter described the need for flexibility in the research approach. This is particularly pertinent for this part of the study as this research was triggered by a problem raised by the operational owner-manager. In the early part of the study, a one-to-one progress meeting with the owner-manager uncovered an area of concern for the company. This was that, although sales leads had improved and demonstrations of the software in schools had increased, sales were failing to improve. This prompted investigation as to why schools were failing to commit to purchase and led to investigation of the decision-making process for schools. The researcher undertook analysis for the company which proved very useful for the company and for the research project as it provided valuable data about customer perceptions of Company A and the complexities of the software purchase decision for customers. A review of the literature confirmed that the area of buyer-seller relationships had been little explored within the SME literature and therefore again, the research would be exploratory in

nature and its investigation would require an inductive and interpretivist research approach to the research. The research objectives were developed as follows:

- To investigate the decision-making process in schools and the actors involved in the DMU (Decision Making Unit).
- To investigate the influencing factors and evaluation criteria used by schools when purchasing software and to determine their relative significance.
- To explore the role of trust and customer relationships in the purchase decision.

A critical incident technique (Flanagan, 1954) was adopted in which current customers were asked to reflect and comment on the original purchase decision with the case study firm. An interview protocol was used (Creswell, 2003) that included an opening statement explaining the purposes of the research, key research questions and probes to follow key questions with a section for reflective notes (appendices D1 to D2). This instrument was designed to collect qualitative data regarding the respondent's views about the original form of the DMU, the influencers, key members and decision making processes involved. The majority of the questions were open –ended, probe questions designed to encourage in-depth discussion (Carson et al., 2001). Questions were semi-structured and were closely aligned to the literature on the purchase decision process (Brennan et al., 2007). Within this process eleven respondents from different schools were asked to identify the evaluation criteria that they used when making the software purchase.

Towards the end of the interview respondents were asked to reflect upon current relationships between the school and the firm, the advantages and disadvantages of using small firm from the respondent's perspective, and the relevance of trust in negating perceived 'high risk' purchases. A model was used from the B2B purchase and supply chain literature. Bevilacqua and Petroni's framework (2002, cited in Brennan, 2007, p.35) was adapted by Brennan, then further adapted for use by the researcher to reflect the issues that were being explored in respect of this case study. The model has been

illustrated and discussed earlier in the literature review (section 2.4.1, figure 2.4). The decision criteria Total Quality Management (TQM) and Just in Time (JIT) were removed as they were considered unsuitable in this context. A Likert scale was developed for the question. Questions were as follows:

How far was your decision to purchase based on the following?

(using a Likert scale between the numbers of 1 and 10, 1 being of extremely low importance and 10 being of extremely high importance).

- Financial stability
- Total cost
- Technological capabilities
- Geographic location
- Cultural compatibilities
- After-sales technical support
- Flexibility

The sample selection for the case study was provided by the company from their database of current customers. It included all current schools that had purchased the case study companies school reporting software and included all current customers on long term contract with the company. The sample included high schools from across England, in a spread of geographic regions, Greater London (2) and Essex (6) Warwickshire (1) and Oxfordshire (1) and Bradford (1). Schools were all high schools with an average of 1,800 pupils aged 11-18 years. Some schools had specialist status such as sports status or technology status, one was a Catholic school and one was a single sexed school.

Care was taken to choose respondents who had a major role in the DMU and the original purchase decision process, which in one case involved tracing the respondent who had since moved schools. Respondents were either working in senior management roles in the IT department or were the Deputy Head of the school who had a particular interest in IT. Data was coded by segmenting statements into categories and using the actual

language of the respondent (Rossman and Rallis, 1998) and interpreted by capturing common themes and unusual issues (Lincoln and Guba, 1985). A narrative approach was used to report findings verbatim, with findings then compared with the literature theories on the topic.

The researcher had already at this point developed an in-depth understanding of the phenomenon under study and could convey details about the firm, the climate for school performance and demand for software and the context of the marketplace (Creswell, 2003). Research tools were developed in consultation with the owner-manager of the case study company and a pilot study was carried with those schools not involved in the study (non-purchasers). Key research respondents were chosen on the basis that they were actors who had been initially involved in the original purchase decision and were part of the school's DMU. Six respondents were working as Managers of IT in schools and five respondents were Deputy Head Teachers in schools.

The researcher was then introduced to the respondents by the case study firm, via e-mail. This e mail was explicit in explaining the independence of research so as to ensure honest replies. Although it is preferable in case study research to record names of customers, in this context anonymity was assured as the topic of investigation was likely to be viewed by the respondents as contentious and would therefore limit research exploration. In retrospect this was indeed the case. Interviews were then completed over the telephone due to the geographic spread of schools. This approach was found useful as some respondents were initially reluctant to discuss some issues openly due to the confidentially issue and it was felt that by visiting the respondents this would add to their concerns. In addition the use of a tape recorder would have been likely to hinder the flow of conversation.

The telephone interview was then transcribed verbatim, then immediately typed up and returned to the respondent for clarification. Respondents were then asked to validate the interview transcript's accuracy by way of a confirmatory e-mail and to add additional comments as and where necessary. This method provided an additional opportunity for

the clarification of issues arising from the interview and to confirm the findings of the interview. The research findings were then categorised into five main themes emanating from the study: actors and the decision-making process; influencing factors and evaluation criteria; customer attitudes towards small firms; business relationships; trust and confidence in purchasing decisions. The findings of this research on customer perceptions and the software purchase decision are presented in section 5.4 of the thesis.

4.5 Marketing activities of firms in the educational software sector

This section presents the methodology used to survey marketing activities in the educational software sector.

4.5.1 The research approach in context

The primary objective of this aspect of the research was to gain an understanding of the challenges in the educational software marketplace. In the first two years of the research the researcher attended several software exhibitions and education conferences with Company A where the company was marketing their software products. In this period of the research when exploring and comparing the marketing activities of both small and large firms in the sector, the researcher used the role of observer rather than the role of participant-observer as it was important for other firms to recognise the independence of the researcher. This enabled the researcher to glean more of the intimate details of marketing activities of competitor firms. Direct observation allowed for examination of events as they occurred in 'real time' and included the context in which the event was situated.

Direct observation included making note of the design of exhibition stands (the role of employees working on the exhibition stands, stand size, colours/branding/strap line used, and the gathering promotional material) so that marketing communications and branding methods could be viewed and which were later analysed to inform a contextual backdrop to the research. Observation also included listening and note taking whilst observing company employees working on the exhibition stands and conversations between

attendees at the exhibition and exhibiting companies. A competitive analysis report was then completed for the case study company and the main competitors of Company A were then identified, so that those companies working in the same sector were readily identified through this process.

For educational technology software firms, exhibitions are the most popular way to raise their profile and to market their software. Exhibitions include the BETT show, an international educational technology show held in London, the Education Show, held in Birmingham, the SHA Cymru Annual Conference (Senior Head teachers Association, Wales) and the ASCL Annual Conference (Association of School and College Leaders). Attendance at these events allowed the researcher to not only develop understanding of the competitive environment for Company A and issues within the sector, but also gain an understanding of the requirements for their potential customers. Schools in the UK are very much influenced by government requirements and legislation; this in turn has changed the marketplace over the last three years.

The market initially for Company A offered a significant level of opportunities. More recently, as the government have recognised the significance of Management Information Systems (MIS) for driving up the performance of schools and colleges, the educational marketplace has become much more competitive. There are global companies entering the market and the market is more regulated. The educational software environment is influenced by the politically driven education agenda and the demands made on schools which in turn, restrict the purchasing decisions some schools and LEAs (Local Education Authorities) can make. This change has occurred during this period of research from 2005 in which the government have introduced a five year agenda of 'Improvements through ICT' in schools and set up a new agency BECTA (British Educational Communications and Technology Agency), a key government partner in the strategic development and delivery of e-strategy for schools and the learning and skills sectors.

This research therefore investigates the marketing activities and strategies of both small and large firms in a specific niche of the UK educational software industry and compares the differences if any, between the way in which small firms market in this sector and the way in which larger firms market in this sector. This activity generated insights into issues for the sector and the key players in the industry.

4.5.2 Marketing in the educational software sector- a survey methodology

This research adopts a survey approach. Interviews with a clear structure and clear and precise questions (Perry, 2001) were used as the primary means of data collection.

Interview questions for exploring the marketing activities for firms in this sector were formulated on the basis of the literature review and became 'working guidelines' (Thomas, 1993, p. 151, citied in Creswell, 2003). It was important to understand the social context of the employees, their work and professional experience, their age and their job role within their company and gain a little understanding of the organisational contexts. Introductory questions were asked that included these aspects covering: number of employees in the company, age of the company, age and professional experience of the respondents, along with the respondent's current job role.The remainder of the questions were arranged under six sequential main headings; market knowledge, competitors, customers, promotion, price and service. Two questions for small firms were designed and specifically added. Open-ended questioning was used using exploratory verbs whilst care was taken to avoid the use of marketing terminology. In this way it was hoped that rich descriptions would be gleaned that would show the types of terminology used around marketing activities, particularly in micro businesses (interview template, appendices E1 to E4).

The interview schedule was tested with a company in the educational software sector which did not participate in the main study (Kinnear and Taylor, 1987). This pre-testing led to a longer, more structured interview schedule, thereby creating deeper discussion

around the topics. Most interviews took place at an exhibition venue; this allowed direct observation of marketing activities alongside the execution of face-to-face interviews.

4.5.3 Identification of respondents

Sixteen companies were chosen for the convenience sample used in this study. The number of cases was decided on the basis of the diversity of the sector (Eisenhardt, 1989; Lincoln and Guba, 1985; Romano, 1989). Hedges (1985) sets a maximum upper limit of 12 due to the high costs involved and, perhaps more importantly, the difficulty in assimilating a large quantity of qualitative data, a view espoused also by Miles and Huberman (1994, p.30, citied in Perry, 2001) who suggest more than 15 cases make a study unwieldy. That said Patton (1990, p.185, citied in Perry, 2001) concludes:

> "the validity, meaningfulness and insights generated from qualitative enquiry have more to do with the information-richness of the cases selected and the observation/analytical capabilities of the researcher than with sample size."

Case types were included on the basis as 'multiple experiments' rather than 'multi-respondents in a survey'. Maximum variation sampling is deemed most appropriate as it includes extreme cases, where the maximum variation in marketing activities may be observed. In this case, a range of companies from micro to very large were chosen so as to provide valuable insights and relevance (Stake, 1994). These cases were chosen to produce contrary results for predictable reasons rather than literal replication where the expectation is that of similar results.

Exploration into the research context had shown that SME software companies needed far fewer employees to produce their software product than traditional SMEs such as those involved in manufacturing and factory processes. Software firms with less than 200 employees had often developed a strong brand name and were in the 'top ten' recommended and government approved companies. They operated globally and had designated marketing teams, with a focus on technical research development, service support, sales and marketing. Therefore two groups were identified:

- **smaller firms** - micro and small firms, those firms with under ten employees and those with under 50 employees, unlikely to have a designated marketing resource,
- **larger firms** - medium, large and very large firms, those with between 50 and 200 employees, those with 200-500 employees and those with over 501 employees.

As far as possible cases were distributed by business size, but constraints were imposed in this selection by the size of firms in the sector. Nine firms were included in the 'smaller firm' category; and seven firms were included in the 'larger firm' category.

Care was taken to select key informants who had direct responsibility for marketing strategy in the company. In micro firms these were owner-managers in firms where there was no marketing manager, whilst in very large firms senior managers were chosen as only they would be likely to have a strategic understanding of the firms marketing strategy and activities. Where a firm had a distinct marketing function, the most senior marketing manager who held the main responsibility for marketing was chosen. This was to ensure that respondents were those who had the greatest understanding and awareness of marketing in their company, so that their views were most representative of the company. In the sample 3 respondents were experienced in business management, 5 had a marketing experience background (4 had obtained a marketing degree); whilst 6 were from a computer technology specific background and 2 had technology experience and were retired teachers. A profile of respondents and a profile of firms are shown in figures 4.4 and 4.5.

Figure 4. 4 Micro/small firm data- profile of respondents and their firms

Respondent Age Range= A= 18-30, B= 31-40, C= 41-50, D= 51-65.

Firm ID	Sex	Age	Previous Work Experience	Current Job Role	Firm Age (yrs)	Firm Size (up to)	Firm Base
1	M	C	Technology	Director- Manager	3	10	Denmark
2	M	D	Technology	Head of Sales & Marketing	9	10	England
3	M	D	Teacher	Co-Director- Manager	2	10	England
4	F	A	Technology	Manager- daughter in Family Firm	19	10	Spain
5	M	C	Technology	Co- Director- Manager	13	10	Greece
6	M	B	Technology	Co- Director- Manager	7	10	Wales
7	M	A	Technology	Co-Director- Manager	4	50	Australia
8	M	C	Technology	Co-Director- Manager	5	10	England
9	F	C	Business	Business Development Manager	5	50	England

Figure 4.5 Medium/large firm data- profile of respondents and their firms

Respondent Age Range= A= 18-30, B= 31-40, C= 41-50, D= 51-65.

Firm Allocated Number	Gender	Age	Previous Work Experience	Current Job Role	Firm Age (yrs)	Firm Size (up to)	Firm Base
10	F	B	Marketing Exp/Degree	Marketing Manager	10	200	UK arm
11	M	D	Business	Commercial Director	30	500	England
12	F	C	Marketing Exp/Degree	Marketing Director	35	500	England
13	F	C	Marketing Exp/Degree	Marketing Director	23	200	UK arm
14	F	A	Marketing Degree	PR & Marketing Director	7	200	England
15	M	D	Teacher/ Technology	Business Development Manager	14	200	England
16	F	B	Marketing Experience	Marketing Manager	20	500	UK arm

4.5.4 Data analysis, validity and reliability of research findings

Quality of research findings was ensured in several ways; following the initial gathering of promotional material and notes from observations at exhibitions, de-briefing with the research supervisor helped to sort out what the researcher had seen and heard. This helped guard against bias and produced new insights. Research in the natural setting of the phenomena, which in this case are companies marketing in educational software exhibitions and educational conferences, allowed for interview data to be gathered in the respondent's own surroundings. During the respondent interview process the venue noise precluded the recording of interviews, so that all interview data was recorded on paper.

All interview transcripts were typed verbatim, and e-mailed to respondents who were asked to check the transcript and confirm by e-mail that the transcript was accurate and make necessary comments or observations about the interview. This process allowed respondents to corroborate the findings by making comments about their own statements and allowed them to make their own interpretations upon reflection. The triangulation of data from several sources, using observations, promotional material and interview data from different exhibitions and using different methods of data collection and analysis also improves the quality this interpretivist approach.

This survey conducted a comparative study between the marketing approaches of businesses of different sizes. Although this was a small sample, its external validity is assured for several reasons, the context of the research investigation took place at the one international educational software exhibition that all firms operating in this specific marketplace attend. Background investigation involved the multi-observations of firms within this marketplace prior to choosing respondents. The structure of the market sector and its inherent uniqueness makes the identification of key themes from fewer cases more able to be generalised to the whole sector; this was confirmed by the results which showed very similar responses from the identified groups of firms, micro, small firms, medium firms and large firms. No doubt closer examination of processes and practices

within the company would show a disparate range of results but in this case the focus was on activities, perceptions and attitudes towards marketing. The findings from this research are presented in section 5.5 of the thesis.

4.6 Using the 'EMICO' framework for exploring EM in technology firms

Chapter 3 described the development process and construction of the proposed 'EMICO' framework. Section 4.6 now describes the research methodology for validating the model and for exploring EM activities and behaviours in small technology firms.

- Section 4.6.1 presents the research methodology used in this aspect of the research.
- Section 4.6.2 describes the validation and consolidation of the framework dimensions.
- Section 4.6.3 discuss how the dimensions were prioritised
- Section 4.6.4 explains how key issues for technology firms were identified.
- Section 4.6.5 presents the sample group of firms, Companies B to F.

4.6.1 Research methodology

MO research in firms has been measured mainly by quantitative research methods. However, it is proposed that the use of qualitative research approaches to explore EM are much more likely to offer an opportunity for exploring not only firm business and marketing activities but also an understanding of what lies behind the rationale for these practices (Blankson et al., 2006). Qualitative research has the potential to be particularly useful for exploring and explaining implicit and explicit EM activities and behaviours in the small firm context. Entrepreneurs are also known to have distinct personality traits which require an interview protocol that limits the use of formal marketing and business terminology. Therefore use of informal interview approaches are more likely to gain valuable insights into the attitudes and behaviours of individuals in the firm.

A card game system developed by Müthel and Högl (2007) is used within the context of semi-structured interviews. This approach had been successfully used in the research of the complex notion of trust and all it's 'intangibles,' using the prioritisation of certain trust attributes in forming trusting relationships between international innovation teams. As such it was considered highly suitable for exploring both the implicit and explicit activities and behaviours within firms whilst reducing the extent of likelihood of the researcher bias and intervention. The fifteen dimension terms from the 'EMICO' framework were placed on identical plain cards and incorporated into the semi-structured interview process which included the gathering of respondent firm data and personal data during the initial stages of the interview. Pilot testing of the interview process was carried out in Company A and suitable adjustments were made. In particular the terms 'intelligence generation' was changed to 'market intelligence generation' to make the term more specific as it was too broad an interpretation. 'Innovation pervasiveness' was changed to 'propensity to innovate' as the term 'pervasiveness' was unfamiliar to the operational owner-manager and one employee. Interestingly, the owner-manager described pro-activeness primarily in terms of pro-activeness with customers.

Then, using purposive sampling procedures (Shaw, 1999) a sample of micro and small firms were chosen for the testing and consolidating of the 'EMICO' framework. Purposive sampling is used when the researcher needs to develop a comprehensive understanding of the research problem, therefore the number of cases must be less that when using probabilistic sampling (Easterby-Smith et al., 1991). Instead, as the research progresses, analysis of the data identifies common themes and patterns in the data. The number of participating firms in the sample is determined by the extent to which the collection of data from that additional firm will contribute to that understanding. In this case the researcher completed research with five additional companies before the data became 'saturated' and common themes and patterns emerged. Five micro and small technology firms were chosen to be included with Company A in the sample (figure 4.6). They were chosen on the basis four criterion:

- firms satisfied the age criterion (over 5 years old).
- firms satisfied the size criterion (micro and small firms under 50 employees).
- firms produced both a software technology product and offered IT service support.
- firms were based in the same geographic area, in this case North Wales, UK.

Figure 4.6: Case study sample- software technology firm data

Firm ID	Firm Age	Firm Size	Product/Service Offerings	Employee Base as at July/08	Location of operations	Qualified Marketing Employee	Specialist Marketing Resource	% Increase in T/O over last 5 years	Annual T/O in 2007
A	8	Micro	Service based product portfolio	3F/T 4P/T	UK Canada	None	None	10% each year	£194,000
B	14	Micro	Service based product portfolio	4 F/T 2 P/T	UK	None	None	0%	£200,000
C	9	Micro	Service based product portfolio	5 F/T 1P/T	UK	None	None	10%	£280,000
D	9	Micro	Mainly Service based product portfolio	4 F/T	UK	None	None	0%	£200,000
E	9	Small	Product & Service Offerings	12 F/T 1P/T	UK	Sales Person	None	10%	£375,000
F	8	Small	Single product & service offering	22F/T 1P/T	Global	Yes- two at director level	None	100% (in last 2 years)	1M

A purposive sample was expected to be more useful for this research as this group of firms would be more likely to offer commonalities for the framework's development and generate insights into the key issues for marketing in small bespoke software technology firms. It was important that firms were either micro or small firms, had a software product offering and also service offering so that reasonable comparisons could be drawn across the group of firms. It was also important that firms were over five years old so that long term growth and sustainability could be observed and that the factor of growth volatility, which is normally associated with start-up phases in the first four years of trading, could be eliminated (Storey and Johnson, 1986; Storey, 1989, cited in Gilmore et al., 2001). Firms were chosen from the same geographic area as Company A but were not necessarily competitors of the firm.

The firms were all approached prior to the research and readily agreed to participate. Although small firm research often focuses on the owner-manager or entrepreneur of the firm as the unit of analysis, this research also includes employees as research participants. This is in order to encapsulate a range of opinions so that the firm's activities and behaviours may be viewed holistically. Using this method is also likely to increase internal validity of this research approach by viewing the research problem from different respondent perspectives. Firms of less than four employees were excluded from the research as the sample had to include a number of employees. A minimum of two employees in each firm were interviewed. Owner-managers were asked to choose willing respondents who would provide a reliable source of information and would be 'representative' of the company. In some cases owner-managers volunteered more employees to take part in the research and therefore some firms have more respondents than others. The study consisted of a series of personal interviews, company documents and site visits. Participants included 21 owner-managers, technical employees, finance managers and other employees in the firms. Respondent personal data was also gathered during interviews (figure 4.7).

Wherever possible interviews were held privately at the respondent's place of work or using the telephone with the respondent being in their own office. Interviews were taped and transcribed verbatim. Three interviews were handwritten at the request of the respondent. In all but one case the researcher met the respondents face-to-face during informal fact finding site visits. Findings were presented to respondents for correction and comment. Respondents were re-contacted in person, by telephone or by email to clarify certain points and to confirm their statements where necessary. Finally, a report concerning the specific findings of the research in relation to their own firm was given to the participating owner-managers. Owner-manager comments and reflections were then noted. No corrections or additions were made to the card interviews but positive and confirmatory feedback was given. This ensured greater validity of the findings.

Figure 4.7: Owner-manager and employee respondent data

Respondent Age: A= 18-30, B= 31-40, C= 41-50, D= 51-65.

OWNER-MANAGERS	Sex	Age	Educational Experience	Business Background	Prior Contacts	Type of Contacts
Company A	M	C	PhD Neuroscience	None Ad-hoc employment	At inception	University networks PCN s
Company A	M	C	PhD Chemistry	IT industry/university	At inception	University networks PCN s
Company B Creative & MD	F	D	BA Art & Design	Freelance Illustrator SME	No	One-2-One relationships
Company C	M	C	BSc Computer Engineering & Technical Graphic Design	Worked in IT for 6 months in an SME	At inception	PCN s
Company D	M	C	BSc Agricultural Engineering	Lecturer in Engineering & IT	At inception	PCNs
Company E	M	C	BSc Computer Science	3 Years Senior Manager in a Global Company	After start-up	PCNs Customer networks
Company F Business Development MD	M	C	BSc Property Surveying	Sales & Marketing in a Global Company	At inception	PCNs Business Advice networks Customer networks
EMPLOYEES	**Sex**	**Age**	**Educational Experience**	**Business Background**	**Prior Contacts**	**Type of Contacts**
Company A						
Senior Software Architect	M	B	MSc Computer Science	Software developer in an SME	No	None
Book Keeper	M	B	BSc Zoology	Manual Worker	No	None
No Official Title	M	D	MA English	Deputy-Head (retired)	No	Customer networks
Company B						
Senior Designer	F	B	BA Art, Design & Media	Design work in SMEs	No	Customer Networks
Software Developer	M	A	Self taught IT	Freelance IT technician	Yes	IT networks
Financial Administrator	F	C	BSc Management Science	Self employed	Yes	Customer Networks
Company C						
Senior Developer	M	C	BTec Photography	Web developer in an SME	Yes	IT networks
Systems Administrator	M	B	B Ed.	Systems admin in a large company	Yes	IT networks
Company D						
Software Developer	M	A	BEng Software	was KTP associate in current firm	No	Customer networks
Software Developer	M	A	BEng Software	Technical support	No	IT networks
Company E						
Software Development Manager	M	A	BSc Computer Science	Ran own software company	No	Business Networks Customer Networks
Senior Software Developer	M	B	BSc Computer Science	SME Software company	No	IT networks
Company F						
Strategic Business Manager	M	C	BSc Science	Business Development Manager in global companies	At inception	IT networks Business networks
Senior Software Consultant	M	C	PhD numerical analysis	IT database work in SMEs	No	IT networks

4.6.2 Validating the dimensions and consolidating the framework.

To increase internal validity of the 'EMICO' framework, it was considered necessary to capture each respondent's opinion of the appropriateness of each dimension by member checking. In doing this, it was hoped that the developed framework would truly reflect the EM activities and behaviours that occurred in small technology firms from the respondent's perspective. During the interviews the suitability of the framework's dimensions were tested and consolidated with respondents. This was completed in the following stages:

- ***Describing the dimension term-*** Respondents were shown each dimension card using a randomised card order. Respondents were then asked what the term on the card meant to them from their perspective and what it meant in relation to the company in which they worked. This would offer useful insights as to the attitude of the respondent towards the dimension and the type of activities and behaviours that occurred in the firm in relation to that dimension. It also allowed for the testing of the proposed dimension terms on the model and to test the reliability of the underpinning descriptors that are proposed for the dimensions.
- ***Respondent feedback on suitability of dimensions-***After each interview respondents were asked to reflect on the dimension cards, to comment on the suitability of the dimensions and; to consider whether there were any omissions in the fifteen dimensions. Again this is to test the reliability of the model by member checking.
- ***Prioritisation of the dimensions-***At the end of each interview, respondents were asked to place the cards on the interview table and again to consider each dimension card carefully. Respondents were then asked to rank the cards in order of priority and to consider which dimensions were the most important, in their own opinion, for their firm's future growth. Each respondent's card order was recorded using a camera where possible or recorded by hand. In asking the respondents to order the dimensions it would identify the most important

dimensions and identify any dimensions that may be unpopular or unsuitable. It also allows for formation of patterns in the data such as the groupings of certain dimensions. (An example of dimension cards and the card ordering process is shown at appendix U).

- ***Mining the data-*** Data from respondents was then coded using each dimension term as a code i.e. risk, pro-activity etc. From these groupings, the most frequently used respondent statements for the descriptors were identified and, if suitable, were included as underpinning descriptors to the appropriate dimension. Using this method the dimension terms on the proposed model and the proposed underpinning descriptors were rechecked for accuracy so that they reflected the EM activities and behaviours that occurred in small entrepreneurial technology firms.
- ***Reconfirming the framework dimensions and descriptors-*** finally the findings were compared with the original literature used in developing the framework and reconfirmed to ensure the accuracy of the dimensions and descriptors.

4.6.3 Identifying EM dimension priorities.

The researcher then wanted to ascertain whether respondents considered that each dimension was of equal importance or whether respondents (and therefore the firm) were focused on some aspects more than others. Interview responses to the cards were coded using *en vivo* statements which were placed under 'dimension codes' on a coding framework for each respondent. 7 *en vivo* codes were developed, based on respondent descriptions of dimensions relevance and importance in the firm from the respondent's perspective. These were 'critical', 'very important', 'important', 'important/procrastination' (we should be doing more of this…), 'not sure', 'not very important' and 'not important.' Using a triangulation methodology the researcher used her developing knowledge gained from the research, the respondent's responses for each dimension and cross-referenced this response against the card ordering priority that respondents gave, and; in doing this data inconsistencies were eliminated. Using this

method *en vivo* statements were also examined for the respondent's comprehension and confidence in responding to the dimensions placed on the cards and hence, the suitability of these dimension descriptors for this research enquiry.

On completion of the coding, a coding matrix for each company was created. Rankings from each respondent about each dimension were plotted on the company coding matrix so that the firm's overall orientation could be ascertained (Miles and Huberman, 1994). To ensure validity of findings the data was recoded by an experienced researcher familiar with the research of marketing in small software technology companies and the findings checked for inconsistencies or omissions in the analysis. Recoding confirmed the accuracy of the findings. At the end of the interview process the 'card game methodology' was reviewed by the researcher in respect of it's usefulness in this research context.

4.6.4 Key themes for technology firms

Again using the same respondent data that had been coded, the data was analysed for emerging themes. The emerging themes were then reconsidered by the researcher, by 'sense making', using the findings from this study and the knowledge of the researcher before they were identified as key themes for small technology firms. These themes were also confirmed during the recoding process by an experienced researcher in this field.

4.6.5 Description of firms in the sample

This subsection presents five case studies that are used to validate the 'EMICO' framework and to explore EM activity in a purposive sample of small technology firms. Company A has already been presented as an extended case study (section 5.2). Firm names are excluded in the thesis to ensure confidentiality.

4.6.5.1 Company B

This company has two owner-managers. The owner-manager interviewed is both the creative director and a managing director of the business; she has a degree in art and design. The other owner-manager is also an operational manager who works in software development aspect of the business. This micro sized website design and development company was founded in 1995. It employs four full time and two part-time employees. They specialise in bilingual website design. There is no designed marketing or sales person in the firm. They operate in Wales and England. The firm's annual turnover in 2007 was approximately £200,000. Over the last five years annual turnover has been level, with profits decreasing some years then showing an increase other years. This variance is explained by the owner-manager as the effect of working on projects where payments for projects may fall in the next financial year. The company's customers include several public sector clients and private companies. Their market offerings include client managed websites and large corporate multi-authored websites. They create branding for organisations or websites that complement offline brand identity. Services include customising the functionality of the website or the e-commerce capability of the website. The web designers work with software developers to develop the product. The software developers work on service aspects of product, the customisation and functionality aspects of the software. The company use a Windows based network with secure webhosting based remotely. Customers can either have individual websites, shared servers, or they offer a dedicated server solution for corporate clients. Other services include general software support and training that is described by the owner-manager as a portfolio of web services.

4.6.5.2 Company C

Company C is owned and managed by one person who has a degree in computer engineering and graphic design. After working for a short period in another SME after university he used his network contacts to move from this company to establish a firm on his own. The firm was set up in 2000 and now has five full time employees and one

part time employee. Two family members also work in the firm. There is no designated marketing person and the owner-manager is responsible for sales. Annual turnover in 2007 was £280,000 and there has been a 10% increase in turnover each year, over the last five years. The owner-manager describes their market offering as mainly services based domain registration, website hosting and design, e-commerce solutions, search engine optimization, on-line marketing and consultancy. The company is mainly involved in bespoke design, development and the marketing of websites ranging from a standard brochure format to more sophisticated e-commerce sites. They provide continued design, marketing and feedback services. Website hosting is remote whilst secure website domains are also offered. The company encourages customers to use the online content management systems for customers to update their own website. However the company also offers monthly maintenance agreements to do this on behalf of the customer.

4.6.5.3 Company D

Company D is owned and managed by one person who has a degree in agricultural engineering and worked as a lecturer in IT and Engineering. Through his work, network contacts and requests from other businesses he established the business to meet demand in 1999. The company employs four people on a full time basis. In 2007 the company's annual turnover was £200,000.There has been no increase in turnover over the last five years, with one dip in performance during this period due to investment in a large and unprofitable project. However, the company very quickly recovered. Their market is mainly in Wales with both public sector and private sector clients. Software applications include small business databases to entire workflow management systems, intranet applications and content managed websites. They create a 'digital poly-filler' a term used to describe software that fills the gap that appears as information systems change. This software helps improve data management and accuracy, reduce operational costs and increase productivity. Other software solutions include internet applications and hosting, content management, database design, development and maintenance. Other services provided by the company include business process and IT consultancy and e-

business software development. They describe their work as 'working in partnership' with their clients using a 'results delivery process'. The owner-manager describes their company as a predominantly serviced based company, offering consultancy, web and software development, database development and maintenance. They also offer a product, a content management service. The company repackage it as an open source off-the-shelf product.

4.6.5.4 Company E

Company E is owned and managed by one person who has a degree in computer science and has worked for three years as a senior manager of a global distribution company. His parents were both entrepreneurs and this encouraged him to move to a new area and set up business. He brought no networks with him but soon established networks in the initial stages of company set up and now regards them as fundamental to his business success. The company has been running since 1999. The company employs between 9 and 12 people. Normally there is a salesperson but they are presently recruiting for a replacement. This employee figure varies as the firm uses people on contract that have worked for them before which allows them some flexibility. In July 2008 the firm employed 12 people full time and one part-time. The firm's annual turnover in 2007 was £375,000.

Over the last five years it has had a 10% average increase in turnover every year. This factor along with the increase of employee base indicates that the firm has grown successfully over this period. The owner-manager considers this to increase even more in the near future based on the strategic plan for their business. The company promote their commitment to the Welsh language bilingual and multi-lingual technology. They are a partner of Microsoft and a bespoke software developer. Their chosen area of business is the UK, with operating offices in both North Wales and Cardiff. The company has some large clients and sells to both the public sector and private companies. The firm offers its customers customised solutions and bespoke development. The service element of their product includes support functions after the

project is implemented. There is no service contract charge. The company monitors their response times and promotes their service support as a key element of their market offering.

4.6.5.5 Company F

This company has three directors based on different sites, two in Wales and one in England. The owner-manager interviewed was one of the founding directors and was the business development manager for the company. His previous work experience was based in sales in a large company. The company was originally founded in 1996 and bought out in 2000. In its current form it has been running for 9 years. The company has 22 full time employees and 1 part-time employee. In the last two years percentage increase in turn over has increased by 100% each year. Annual turnover in 2007 was 1M and this is predicted to rise to 2M in 2008/9. The company offers one software solution that contains a set of software tools. Consultancy around the software product and support is offered. There is no on going service support after the software product has been delivered and integrated.

Two directors are responsible for the sales for the company. Their new strategic business unit manager also has a lot of experience in the marketing and sales of software in large companies. The company operates globally supplying a software toolset which captures, manages and leverages data both internal and external to companies if required. The software has a wide range of applications for businesses and the company has supplied CRM systems to oil companies, automotive companies etc. Their customers tend to be large global companies. Their software product is a customised end-to-end solution. There are no long term service support contracts but there are training days and consultation during implementation. They have a range of well known partners, commercial partners, other equipment manufacturers (OEMS) and resellers.

4.7 Conclusion

This chapter has described the research methodology for the thesis. A range of qualitative research methods have been described here; these form part of a stream of research which will facilitate the holistic gathering of data. This methodological approach will add greater knowledge of the research phenomenon. Carson et al., (2005, p.67) propose that reliability, validity and hence trustworthiness of qualitative research can be assured by applying the dimensions of 'credibility, dependability and conformability'. Therefore these aspects have been taken into account in the careful use and interpretation of empirical data, assessment of the appropriate literature and the careful structuring of the analysis. This will ensure full and descriptive evaluation and assessment, particularly in relation to the development of a new model for research of EM and the extrapolation of key issues for small software technology firms. The next chapter, Chapter 5 discusses case study findings from the research of Company A together with a survey of the marketing activities of firms in the educational software sector. Chapter 6 reports on the findings of the 'EMICO' framework application and research of EM in small technology firms.

5.0 FINDINGS- COMPANY A AND MARKETING FOR FIRMS IN THE EDUCATIONAL SOFTWARE SECTOR

5.1. Introduction

This chapter firstly reports the findings from an extended case study of Company A and reflects upon three main aspects; the organisation, owner-manager networks, customer perceptions of the firm and the software purchase. Then challenges for firms in the educational software sector are examined along with the marketing activities of both large and small firms.

- Section 5.2 reports on Company A and their channel partner; firm growth and development, management and ethos, business and marketing activities.
- Section 5.3 explores owner-manager networks and how they are used to build capacity for the firm.
- Section 5.4 describes customer perceptions of the company and the complexities that surround the software business purchase.
- Section 5.5 discusses specific issues for firms in the educational software sector and compares marketing activities between small and large firms in the marketplace.

5.2 A case study of Company A.

Three important themes have been identified in the case study research and are reported in the following three sections.

5.2.1 Company background

The case study company is a micro software technology company based in North Wales, UK. The company has two co-directors (one part time), two full time employees (one a university associate) and three part time employees. The firm does not have an office base and employees are geographically dispersed. Internal and external communications

are mainly through their channel partner's computerised database. This provides a historical record of communications in the company and with customers. Skype and mobile phone contacts are also used in the course of their business. The operational owner-manager has a PhD in Neuroscience and the other co-director has a PhD in Chemistry. The firm has been running for eight years. One of the owner-managers works full time in the operational side of the business and the other owner-manager has full time employment in a university based technology project. This owner-manager works for Company A on a part-time basis, mainly evening and weekends, working on new software projects or incremental software improvements for the company. There is one full time technical employee working on product development and service support to schools, and one part-time employee who, as a retired deputy head teacher, liaises closely with customers in schools and offers technical service support and consultancy when required. There is also a part-time employee who is the book keeper for the firm.

The operational owner-manager, the technical employee and the deputy-head have the most contact with schools. The operational owner-manager is the salesperson for the firm, carrying out all the demonstrations of their software in prospective schools. The firm also now has an additional employee resource, a Knowledge Transfer Partnership (KTP) associate who is working on a specific software innovation project. The firm uses additional employee resource by sub contracting work to experienced software developers. This provides flexible employee resource and extra capacity to take on new software development projects. The company also works very closely with a telephone-marketing company also based in Wales, who are contracted by the case study company to make the initial contacts with schools and provide sales leads.

The firm was initially founded in 2000 following a university spin-off project between British and French schools. The new software product was very popular with the schools involved in the project and so the company was set up by the co-directors, who were also involved in the project. The company continues to focus on innovative software development for the educational software market and sells software directly to high schools or Local Education Authorities (LEAs). The company has won innovation

awards for some of its new projects and continues to develop and sell software in the UK and abroad for the public and private sector, often in partnership with other initiatives.

5.2.2 Channel partners

Company A is a channel partner for a large global technology company with blue chip clients. The global company is based in Canada and has business arms which include a UK base. Despite being a small company Company A is the main reseller of the channel partner's Virtual Learning Environment (VLE) software in the UK. The company also develops and sells its own bespoke software so that it can be integrated and sold with the channel partner's platform. The case study's main software product is pupil reporting software. This has enabled schools to move from paper based administrative processes to the production of professional reports that can be written by teachers at home or at work within a secure environment. The reporting system allows for pupil tracking of performance and therefore allows for teacher intervention to improve pupil performance.

Company A offers both a product and service offering; they have formal contracts to supply software to schools. The company's most profitable customers are the schools which use the company's own bespoke software, pupil reporting software. As the contracts are long term and provide a substantial income for the business, they are very important and require a high level of service maintenance and support.

5.2.3 Development and ethos of the company

Company A was formed by two English friends. The non operational owner-manager described the relationship as follows:

"we go back a long way, we're good friends."

Both owner-managers decided to live in North Wales. The non operational owner-manager described how the firm started:

> "I worked with (says the name of the deputy-head, now an employee and the operational owner-manager) for one year on a project that links British schools to those in France called 'Electronic Village.' This was managed as part of a British exchange program called 'Dialogue 2000.' There was a one month exchange aimed at 16-19 years olds. There were five pilot schools involved and so I got to know (says the name of the deputy head employee)."

The operational owner-manager described the business opportunity:

> "We thought that if these schools that we've come across have this requirement then a lot of other schools would want to do that as well."

The project was very successful, the pilot schools were enthusiastic about the VLE platform that they were using and the owner-managers enjoyed working with people who are now a fundamental part of Company A. The global partner was also keen to continue a channel partnership arrangement. The non operational owner-manager describes the firm development and development of the product which was co-created with input from the schools:

> "it's grown organically. We needed tools to maintain data and then we spotted an opportunity which was customer driven, when we took on the second school they needed different functions and a lot of support.....tools were then made as generic as possible so we can customise with minimal intervention."

In January 2006 the non-operational owner-manager was asked to describe the firm's future objectives. He defined a need for stabilising the firm and growing it in a managed way, with himself continuing in a 'back seat' role. In the next three to five years he hoped that they would have an office, a communal phone number and secretarial support. Beyond that he hoped for two further technology employees and an office manager/business development manager who would be non technical. He also suggested that there should be more formalised people management structures, with personal development plans and a pension scheme. In terms of new products he hoped that there would be design of a new timetabling and scheduling software.

In December 2005 the operational owner-manager described the organisational aims and objectives as:

"To make some money and keep us all employed and to try and, tricky one…to produce some really user friendly software for schools with good support…..er….well maybe…..I guess the long term aim is to be in a position where someone might think we're attractive to buy. Depends how much they were offering. Also maybe have a closer relationship with (says name of channel partner) in terms of their (says software name) to advise on which sort of direction this should be going."

Although the operational owner-manager in the long term views this business as an opportunity to make money, he is also interested in improving software for schools and to be influential in the channel partner relationship.

The firm keeps tight control of their finances particularly in the area of financial planning and forecasting:

> "we have a grid plan, an accelerated growth plan that I completed in 2004, having attended a training course."

In December 2005 the operational owner-manager described the firm's development in five years time:

> "we will have a head office in North Wales, employing twelve staff, a regional office employing six staff and a small overseas presence…….Our highly skills staff will be loyal and have an enjoyable working environment. We will have close links to academia and will pursue research and development of programs. Our products will be well recognised in the education market and will represent the 'de facto' standard for schools information management systems."

The operational owner-manager is responsible for the employees but it appears very important to him that he does not 'manage' employees. These are people who he views as colleagues and friends. The technology employee describes the firm as non-bureaucratic and describes the importance of trust between himself and the owner-managers:

"there's no hierarchy, there's one level, one structure. I don't need to ask what to do, everyone has their specific job. There is no documentation as we are a small company with very good communication and flexible working. Working relationships are described as informal friendships with nothing hidden and a high level of trust…….with one bad mistake on my side, trust can easily be ruined. I have to be careful at all times. A bigger company can cover or live with it. Here I have to double check it."

The technical employee describes timescales for new product developments as a struggle as schools often want additional integrated software products designed at short notice. He finds it difficult to both provide service support and to work on innovative new projects at the same time. New software product innovations, issues in the sector and customer feedback is often gathered by the owner-manager and deputy-head employee, by keeping in touch with the educational software sector, listening to customers and working closely with schools.

5.2.4 Marketing activities in Company A

In 2005 the firm had approximately seventy customers using the channel partner's VLE platform and six that use the VLE with Company A's software. When describing their marketing approach the operational owner-manager observed:

> "Company A only needs a small market. We don't need market share.....We don't market. We use word of mouth using networks like (refers to the deputy head employees' networks). It goes from school to school."

The operational owner-manager describes their marketing objectives:

> "to raise our profile so they think of us first. Make sure our current schools are happy so we can get good references. Long term we would want no one to drop out of (says the name of their reporting software). People have dropped out of (says the name of the VLE) for a variety of reasons."

The technology employee also describes the firm's organisational aims and objectives:

> "Lots of money, to do financially well. From (says the names both owner-managers) perspective, they really believe in good customer service. (Says name of operational owner-manager) is passionate about that. Support is the backbone of the company."

The operational owner-manager is the salesperson for the company. He frequently travels the country doing demonstrations of the software in schools. The decision making structure in schools is such that he is often required to visit several times. The non-operational owner manager describes the operational owner-manager as 'their secret weapon' for selling and goes on to describe his co-director's likeable personality,

remarking that everyone is drawn to his personality, a factor that arises later in the findings from research with customers.

The researcher observed that the firm's close relationships with customers appeared to facilitate co-creation of software products. In July 2008 when asked whether customers helped to implement incremental innovations and new products, the operational owner-manager responded:

> ''with customers? All the time....almost daily! That's mostly what (says employees names) do, is have customers phone them up saying can you just change this, can you do that, and what we need, what (says technical employee's name) started to do is actually get together a big sort, like, table about what school has what application.''

Three years ago both owner-managers defined current marketing activity as handouts, a stand, emails, brochures and telesales. The firm used marketing communication messages such as 'ease of use', 'customise to their needs,' which are placed on leaflets. Over the last few months the operational owner-manager has been refocusing their marketing communications:

> ''there's something, some big part, (talks with passion) that we're missing and it's not just like logos, or branding you know...or a website, more of an approach, and you know, how..just to try to communicate in a lot subtler ways to customers, not subliminal, but presenting ourselves in everything that we do to customers. I think we're missing a massive part of that.''

In 2008 Company A redeveloped their marketing approach, acknowledging that they now realised that their customers were not the teacher or the end-user, but the purchasers, the senior decision makers in the school or the LEA. Therefore the marketing message should focus on tracking of pupil performance and driving up performance in schools.

The technology employee views his contribution to the firm's marketing strategy in the following ways:

> ''There is a marketing timeline with continuous support for schools and relationships. Existing schools can get us new jobs, it's the whole way we deal with schools. If I'm off say, schools won't see any difference; we all have good

> customer relationships, we make an effort and try to create a relationship back, it's a human thing. Customers need to trust us, I need to know how to relate to older people which I try to do and those with few IT skills, and don't make promises.''

Over the period of the research there have been changes in the market with increased competition and regulatory constraints. In July 2008 the operational owner-manager observed:

> ''in the last two years it's definitely got harder, in the last two years because there's more competitors in the space that we're selling to, particularly the learning platforms.....when we started there was, we probably had the only learning platform but no one knew what learning platforms were and there was no political push to, for schools to have learning platforms so it was really hard to sell because of that, and now there are loads of learning platforms and because of the political push this has led to learning platforms so all of a sudden it's still really hard to sell because there's more competitors!''

5.2.5 Summary of the Company A Case Study

Company A is a micro company which has grown organically from a university spin off project. The company is based in North Wales because the owner managers, who are English, relocated to live here, where most of their friends are based. The owner-managers view their employees as both colleagues and friends. They use a flexible workforce which includes a KTP associate working on an innovation project and use their global channel partner's VLE platform to keep in touch with each other and their customers. Company A sells bespoke software with a significant element of service support. At times it is difficult to deliver new projects whilst providing high levels of customer service. The operational owner-manager is the salesperson for the firm and uses a local tele-marketing company to provide sales leads. The operational owner-manager described their marketing in 2005 as mainly using leaflets, brochures and a promotional stand. More recently the owner-manager has refocused the firm's marketing communications and developed a deeper understanding of who their purchasing customers are. Customer relationships are described as the backbone of the company, with the customer co-creating software and facilitating marketing by WOM recommendation, a particularly useful approach in this sector. The financial aspects of

the firm have been tightly controlled from the outset, whilst more recently the educational software sector has become a more challenging sector in which to operate because of the political educational agenda and larger, more powerful firms entering the marketplace.

5.3 Owner-manager networks

Interesting patterns have emerged from the research of networks and relationships in Company A. These networks have developed over time, involving both social and formal networks. Some of these network relationships are fundamental for building core competencies, specifically business, marketing and innovation competencies. To investigate how networks were used Company A, the operational owner-manager was interviewed (interview template, appendix A).

5.3.1 Networks and firm growth

This part of the case study research examines the operational owner-managers use of networks in Company A from the time of the start up of the company. Each theme is illustrated by respondent observations which are transcribed verbatim and integrated within the explanatory text. This is an area of particular interest as network researchers are still debating about the role of social and formal networks in start-up companies and whether, or not, formal networks tend to be formed much later on in the firm's development.

The company was developed from a successful university collaborative project and therefore some of the operational owner-manager's contacts for the business were made prior to the firm's inception. Contacts ranged from school contacts, contacts at the School of Education where he used to work and also contacts from the other co-director of Company A who continued his employment in the School of Informatics which gave the company continued access to university technology contacts. The case study firm was originally conceived by using networks that were both social and formal. The

owner-manager developed a particular strategic network that had emanated from their work in a university project. The university's 'school motivation' project involved their current global channel partner from Canada and the channel partner's VLE collaborative learning platform in a school motivation project. Company A was formed because work with schools on the motivation project had been so popular that schools asked to continue to use the collaborative software after the project had finished. Accordingly, the owner-managers set up Company A and became reseller and channel partner with their global channel partner so that they could sell the VLE software together with their own bespoke software.

Therefore the business began its early stages already having several contracts with high schools to provide software which became a distinct, strategic university network that also includes other areas of the university responsible for driving up innovation and growth in the North Wales region. This is an interesting network because although it can be described as a formal network it is also one that contains friends and colleagues. It is a strategic relationship that still plays a major part in the firm's development today.

The owner-manager identified another early key network relationship for the company. This is their 'channel partner' relationship between Company A and the Canadian global software company. This is also strategic in nature and provides a network of contacts for the company. Other formal networks that were used early in the firm's development were financial networks which included their accountants and business advisors, and the Welsh Development Agency (WDA) business advice centre advisors. These relationships helped the company in its early stages of growth but strength of network ties has changed over time.

5.3.2 Building business competency

The educational software sector poses a number of challenges. The sector has become more challenging because of the dominance of large firms in the industry and also the introduction of new regulatory guidance regarding IT purchase in schools. The relationship with their channel partner is described by the owner-manager:

> "they are our supplier and our technology partner."

As their global channel partner provides over half of Company A's sales and turnover they are the company's most important partner in terms of business performance. New business is generated from their global channel partner who offers the small firm credibility and reassurance to customers:

> "if we weren't here they'd still have support from them".

Company A's channel partner has a virtual partner network and regular partner days where the company meets other resellers. This provided the opportunity for licensing their software for resale in Alaska, which was very profitable when:

> "we licensed our application to them."

This channel partnership is vertical but also reciprocal; Company A operate much more closely to the market in the UK and can provide vital market information to the managers at the channel partner's UK base by reporting new opportunities and solving local software issues. In the case of finding out information close to the market the owner-manager describes why their knowledge is important to the Canadian global company:

> "they have to look after everywhere apart from the States... so she (the UK business development manager) can't know the nitty gritty of what's going on in schools."

The owner-manager then goes on to describe a college merger that he heard on the grapevine, which has created an opportunity for him to sell the VLE platform to both colleges. He worked with the colleges and the global partner's UK business development manager to encourage the colleges to choose the VLE software. Other

networks in respects of building business competencies that were identified were financial and business support networks, but these were more important to the business in the early stages of its development. However, they still have strong links with their accountancy firm:

> "we have a really good relationship with them."

5.3.3 Building innovation competency

The owner-manager described the firm's investment in innovation as leading to future new business later. The firm invests a significant amount of their time on research and development (R&D). One relationship that has increased their capacity to innovate is a KTP (Knowledge Transfer Partnership) with Bangor University and the university innovation support agency 'Innovation Bangor'. The owner –manager recognised that without the contacts that his co-director had developed, they would not have got the KTP because they are only a small firm:

> "it swung it in our favour because the guys (at the innovation support agency) supported our application."

Having a full time technically qualified employee (KTP associate) to develop new innovative software has led to opportunities for further innovation relationships. This initiative spawned another project, the Schools Interoperability Framework (SIF) in which the company is now leading. This is quite extraordinary given the power of larger firms who are often more influential in this sector and tend to dominate government IT project initiatives. This is a UK based project and involves the government regulatory body, the British Education Communications and Technology Agency (BECTA), the Welsh Assembly Government (WAG), the Technology Innovation Board and representatives from other companies who the owner-manager describes as their competitors. The owner-manager describes the project as:

> "relationships with our competitors in a format where we're trying to build a common technology."

If successful this will have a massive impact for Company A in terms of leading the field and working with government regulatory bodies to create new innovative software

for schools. This will undoubtedly lead to increased business and further credibility for this firm in the educational software sector. Company A also works on other innovative projects which include a collaborative project with the Welsh Language Technology Unit, at Bangor University, to develop integrated software in the welsh language. This should increase opportunities in new markets when the software can be sold to schools that teach the curriculum in the Welsh language.

Other creative and innovative projects have reformed over a long period of time, indicating that strength of network ties vary depending on the demands at the time. The company has recently built new health and safety software for a contact in schools:

> " They resell via a subscription service, they keep the system updates etc.....that totally came from that very first contact years ago, it has been phenomenally successful."

5.3.4 Building marketing competency

For the last two years Company A has partnered contractually with a North Wales marketing company that they met at a local business network event. The marketing company use telesales to build sales leads and to undertake some marketing activities, for example, creation of a promotional CD-Rom. It uses a Customer Relationship Marketing (CRM) database to chase up leads and track customer contact with progress reports. To a certain extent market research is gathered from the contracted sales team as feedback is sent by way of computerised customer contact reports. The owner-manager recognises that it would be too time consuming for their company to attempt to contact schools themselves to obtain leads. The owner-manager describes the marketing partnership as follows:

> "it's good, it's something we really need."

Using their global channel partner also increases the company's opportunity to increase revenue and sales in a number of ways. Firstly by providing credibility for the firm by partnering with a well known brand name in the sector and secondly by indicating that the small firm is financially secure and successful. These are factors which will encourage potential purchasers to purchase software as the software purchase is often

seen as a high risk purchase. Company A's channel partner also supply sales leads from their website to Company A and supply promotional material. The channel partner also offer marketing opportunities such as sharing the use of the exhibition stand at main promotional events. The partnership also provides new market opportunities through interactive business network meetings with the channel partners global resellers:

> "a (names the global channel partner) reseller bought some of our stuff....they built a student information system for a bunch of schools in Alaska and they wanted our document engine application. So we licensed that to them."

The researcher observed that these opportunities were not necessarily open to all resellers. This opportunity has been developed because of the personal reciprocity of relationships between employees in the global channel partner's UK office and the operational owner manager of Company A.

The most powerful method of marketing in this sector is by word-of-mouth (WOM). This method is recognised by firms in this sector as being a very successful approach because business software is considered a high risk purchase. Company A concentrate a lot of their marketing activity on building long-term relationships. Contact with customers and regular software support is frequent:

> "almost daily ...can you just change this—can you do that..?"

To create better value and increase product awareness for customers, the firm set up an interactive customer conference area on their server for schools to interact and to discuss issues. This will enable schools to share best practice and make use of new software incremental innovations that other customers are using:

"It will also provide a mechanism for every school, every school can tell each other that they are using something better."

The firm have also had increased sales due to personal recommendation and software demonstrations from schools:

> "we've got a local authority up in North Lanarkshire which has led them recommending us to one of the schools, and then they work with us."

The owner-manager clearly identifies a network of schools who either directly and indirectly facilitate sales of their software products, stating:

"The schools definitely do this. Our school in Coventry went to see our new school in Coventry, that was a big thing for us, and also our school in Marlow has been to other schools in the area (that uses Company A' software)....one of our schools in Essex advised another school, that was really good."

5.3.5 Network life-cycles

It is interesting to observe that those strategic partnerships made prior to the firm's inception, those with the software channel partner and the university, remain central to business, marketing and innovation in the firm eight years later, whilst the financial network has changed. Contact with the WDA is now at a strategic rather than local level where the company is now at the forefront of the SIF project. The financial support from the accountancy firm has naturally continued as this is fundamental for the business. The relationships with the WAG appears to be cyclical, as the owner-manager says:

> "they are there to fulfill a need at a particular time."

The owner-manager does not directly identify what he does as 'networks' but described them more as relationships with people. He considers most of his contacts to be personal contacts and perhaps that is because he often develops very close and informal relationships with the people that he does business with. The only relationships that he thinks are now more formal are those that have had to be out of necessity, these being the SIF project and the KTP project. This is because they have now become contractual. The health and safety project has also evolved from informal to more formal:

> "it's a bit more formal now, but it's not a contract in place as it were, but an agreement between us that they would continue using us as a software technology provider."

The relationships with those in this health and safety project began as a personal relationship that was formed with one of the company's employees twelve years ago and has remained very informal for many years, until recently an opportunity arose to create new software and the ties were strengthened and formalised during 2008.

5.3.6 Summary of Company A's network collaborations

The owner-manager recognised that their channel partner network and the reciprocal relationship that they had, was their most important network for building business capacity. New business has been derived from investment in R&D and software product innovations. The KTP has been vital in stimulating more sales from new innovations and new markets, particularly with development of the new health and safety software. The university network was key to stimulating innovation within the company. This network provided vital employee capacity in the form of a KTP associate who could take on new projects. This has led to a new SIF project, working with competitors and the government to provide new solutions for schools. Investment in R&D was seen by the owner-manager as a precursor for future business development as it created more opportunities in the marketplace.

Marketing capacity is increased using customer networks and WOM marketing. Company A also use a formal relationship with a dedicated telesales team, and also uses input from this research project. The owner-manager views this particular research project as just as important as the innovation networks that he has described and has interestingly described it as an R&D activity. This is perhaps due to the fact that the researcher's action research has tended to involve a great deal of market and business research activities which has in turn informed their R&D activities.

5.4 Customer perceptions and the IT purchase decision

5.4.1 Introduction

This research provided insights into customer perceptions and shed light on the effectiveness of customer relationships with Company A. Research of firm activities in the educational software sector indicated that the software purchase for schools was perceived as high risk and that schools were 'naive' purchasers. The operational owner-manager also wanted to understand the decision making process and purchase decision in schools so that he was more informed and aware when he was demonstrating the software product to schools. Using a critical incident technique and discussing the time when the software was purchased, eleven respondents from different schools were interviewed (respondents from schools are numbered 1 to 11). These were the firm's main customers who used both the channel partner's VLE platform and Company A's bespoke pupil reporting software.

The research findings have been categorised into five main themes emanating from the study: actors and the decision-making process; influencing factors and evaluation criteria; customer attitudes towards small firms; business relationships; trust and confidence in purchasing decisions. Each theme is illustrated by respondent observations which are transcribed verbatim and integrated within the explanatory text.

5.4.2 Actors and the decision making processes

Firstly the decision making process was explored. Responses showed that this is a multi-layered decision making process. Replies were unanimous in this respect, all respondents describing one person who acted as an advocate in the process, usually the IT manager, Administration Manager or Deputy Head who first sourced the software. The software solution was usually sourced by attending the UK based International BETT show (an educational software exhibition), by mail shot or more often by word-of-mouth.

> "We had visited a couple of schools, and some of us had previous experience, for example, I've had experience with this software in my last job" (IT Manager- 4).

When asked how the right software was found that matched their specification, respondents replied:

> "by word of mouth, this was of great importance. I got to BETT as well, that way you see the software live" (Deputy Head- 1).

> "Word- of- mouth. The Head of IT at the time rang around schools to see if they were using software" (IT Manager- 2).

> "I already knew of (case study name). At the time I wasn't aware that we needed to upgrade the software at the school, but when I was told of this, I recommended them" (IT Manager- 6).

Schools considered no more than three software options, proposed by the advocate. The case study company often completes several presentations to the school because of the layers of decision making involved and the cost of the purchase. The budget holder is the Head Teacher of the school but ultimately it is a consensus decision made by the Senior Leadership Team (SLT) in schools which comprises of senior manager (the Head) of IT and other senior managers (Heads and Deputy Heads) of teaching departments.

> "No one person has authority. It has to be a collegiate decision. There is some bias obviously, because the person, the one person that does the initial research, you only get what that person found." (Manager of IT- 5).

> "For example, both art and IT departments want different things, IT would like a PC version but the art department would prefer Apple Mac so this has got to be arbitrated, the PC version might be not as good for the art department but it would serve it's purpose. It's a bit like a father buying something for the family" (Deputy Head- 1).

The purchase decision process is then scrutinised by the Board of Governors (this includes parents and other stakeholders) to check mainly for compliance to the process undertaken rather than about the actual choice of software made.

5.4.3 Influencing factors and evaluation criteria

Respondents were asked about the people involved in the purchase decision process, their roles and the structural influences in the decision making structure. Surprisingly the influence from the LEA was only felt by one respondent. The major influencer of the decision was the person who sourced the different software options available who acted as an advocate.

> ''If I want to purchase reporting software then they allow me to purchase what I want and I will make it work. When I purchased (Company A's) software not a lot of research was undertaken, the research was done by me, I didn't ask other people. I take the responsibility to make it work'' (Deputy Head -2).

> ''Mainly the members of the Leadership team. One gentleman in particular who was in charge of the Administration team.'' (IT Manager- 4).

Bevilacqua and Petroni's supplier selection and evaluation model (2002, p.247) was then used to investigate consideration sets or evaluation criteria that schools use. A 10 point Likert scale was used by the researcher as the form of measurement. 1 being of extremely low importance and 10 being of extremely high importance. An average for each of the criteria was calculated from the total group of respondents. The evaluation criteria that scored the highest overall were 'technological capabilities' of the software and 'after-sales technical support'. These aspects were viewed as equally important and reflect the need for software companies to provide a high level of service along with a high quality product. Full results are shown at figure 5.0

Figure 5.0: Supplier selection and evaluation model

Evaluating criteria	Score
Financial stability	5 *
Total cost	8
Technological capabilities (quality)	9
Geographic location	3
Cultural compatibilities (between the customer and the firm)	7.5
After-sales technical support	9
Flexibility (of the firm to meet customer requirements)	5 *

Source: Adapted from Bevilacqua and Petroni, 2002, p. 247, citied in Brennan et al., 2007).

* 'Financial stability' achieved extreme scores. Respondents who gave 'financial stability' a low importance rating did so because the financial stability of the company was already assumed at point of purchase decision as the case study company was a channel partner of a large software company. Other respondents rated this consideration as very important.

> "Financial stability? This wasn't something that we considered." (Deputy Head- 1).

> "When I was looking I didn't think of that, having a big parent company behind it was useful." (Deputy Head-2).

* 'Flexibility' also received extreme scores. This is because some respondents did not consider at the time how important the flexibility of the company was at point of purchase (although retrospectively this factor was acknowledged as important), whilst others viewed the flexibility of the company as being very important from the outset.

> "Before I wouldn't have thought that this was important, but I do now." (Deputy Head- 3).

5.4.4 Customer attitudes towards small firms.

The researcher then probed for respondent perceptions as to the advantages and disadvantages of using a smaller firm and the level of perceived risk in this type of purchase. Current relationships with the case study company were then explored. It was important to firstly assess the level of perceived risk with schools and then it was hoped that factors could be identified that would mitigate or reduce the perception of risk for future customers. Small firms were seen to offer distinct advantages compared to contracting with large firms. Respondents often described the benefits of a more personalised and responsive customer service:

> "The advantage is that they're very customer focused." (IT Manager- 2).

> "Using a small business, there is a big advantage, you are valued a little bit more, we are a bigger part of their profit I suppose. I would definitely recommend a small company. You feel that you are getting a better service." (Deputy Head-1).

> "I see the advantages as being personal, instant response, you can talk to the person who is designing the product and everyone in the company knows the product. In a big company you have to go through too many stages before talking to the developer. You go to a bigger company so it's cheaper, but it's mass produced and less flexible....My people feel that it's not much of a chain between them and the people developing it." (Deputy Head- 4).

However, there were two main potential disadvantages noted by respondents, these being: a lack of employee resource could limit the consistency of service response; and, concerns at to the longevity of the company. Respondents also highlighted changes in the market such as large firms beginning to imitate small firm service support with a more personalised service and software products that enabled them to reach into market niches that were previously the domain of the smaller firms:

> "Two years ago the situation for schools was very different. Schools buying software now will be looking at software that does everything, and now there's companies out there that can supply this." (IT Manager-4).

> "Minuses would be, whether we get the support we need. The advantages are that you can phone the individual. Alot of big companies are doing this however. The

smaller companies have got to get all the accreditations. It's something that the schools need.'' (IT Manager- 5).

''The advantages are that you would expect a small company to be more responsive. But you wouldn't have a dedicated help desk as a large company would. You worry about the financial solvency of such a business; will it still be there next year?'' (Deputy Head- 5).

5.4.5 Business Relationships

Respondents were then asked about their current relationship with the case study company. The majority of respondents were extremely positive, and the relationships described were highly responsive and personal, with the company employees working closely as a multi-functional team:

> ''Their employees are like a family, rather than a group. I expect that they will be working for the company for a number of years, so you can build a relationship with them. I've dealt with larger firms and we haven't maintained any working relationship, the salesperson has gone within a year, we have dealt with three different customer service people and now the company has been sold to another company.'' (IT Manager-2).

> ''It's a bit like... the relationships are on different levels with different people. The technical staff talk to (employees name), then me, I'm at the middle level, I talk to (another employees name) who designs input and output bits. Me, also talking to (owner-managers name) about what is necessary and what is bugging us. I get the impression they are able to change seats, we send them a request for support and it's picked up by a variety of people at different times. Nobody's too big to pick up a message there''(Deputy Head-1).

5.4.6 Trust and confidence in purchasing decisions

When asked, respondents generally viewed the software purchase as a high risk purchase for schools:

> ''If we were an office then it would only need to think about its output, the office documents that it produces. A school has to think of the output and everything that it interacts with, for example the LEA, the formats needed for government'' (IT Manager- 1).

> "It's difficult. It's a world where we are not IT developers or specialists, we're end users. When we buy text books you get what you see. With IT, it offers a lot but then there are problems that you have to unpick. It is active not passive.....it's harder buying IT than other stuff" (IT Manager-7).

Although none of the respondents specifically mentioned 'trust' as a factor in the reduction of risk, they did describe factors of 'confidence' that appeared to reduce the perceived levels of risk when purchasing the software and gave them confidence in the company supplying the software. There were two main 'confidence giving' factors identified by respondents: when confidence was developed between the purchasers and the owner-manager of the company because of 'salesmanship' and other personal attributes such as his expert knowledge; and also because the owner-manager had given a 'competent', and effective software presentation.

> "This was an add-on (to the channel partner's software) and we were already feeling positive about it already and then with a demonstration by (owner-managers name) we could see what it could do in the long-term. Having confidence in the person demonstrating the software is really key"
> (IT Manager- 7).

> "The salesmanship, size and friendliness of the company gave me the final push..... we invited (the owner-managers name) to make a presentation and he demonstrated it. Essentially he really matched, or overlaid, the features we needed over the top of (the case study company's) product and they seemed to fit. His presentation was in depth and he answered our questions very competently. I haven't had cause to alter my opinion" (IT Manager-2).

Respondents felt that the perceived risk of the purchase was further reduced when they were invited to see the software working in other schools. In this way the case study company used schools using their software as a network of advocators to increase their customer base:

> "it is difficult. It becomes much less of a risk when you have seen it and you have talked to somebody who has used it already. (Owner-manager's name) told me to ring a school who was already using the software. In a school, going to another school,....it was nice to talk to another school" (Deputy Head-1).

> "That link came from seeing this software system work in another school."
> (Head of IT- 7).

> "I do think that it's risky, so things like references and recommendations from other schools help, and a clear demonstration so that we know what we are going to get" (IT Manager- 3).

Overall the quality of business relationships between the case study company and their high schools is such that customers appear reluctant to switch in the future:

> "we grumble and moan. There seems to be a good relationship between the customer and the company, the people in the company are prepared to listen and we are therefore much less likely to go somewhere else" (Deputy Head-1).

5.4.7 Summary of customer perceptions and the software purchase decision

Five main themes emanate from the research study of Company A's customers: actors and the decision making process; influencing factors and evaluation criteria; customer attitudes towards small firms; business relationships and; trust and confidence in the software purchase decision. Research findings show that the purchase process was facilitated and influenced by an advocate in the school who usually sourced Company A's software solution by WOM recommendation. Technological capabilities and after-sales technical support were the most important criteria for consideration when purchasing the software. Company A's customers stated that small firms offer advantages over large firms, for example, a more responsive and personal service. Company A's business relationships with schools are seen as long term, with the employees of the firm appearing to be 'like family.' The personal qualities of the owner-manager helped develop consumer confidence in the software product and the firm, whilst the firm's customer relationships supply the firm with an increased capacity to market by using WOM recommendation, a low cost approach which provides a cost effective and powerful means to market.

5.5 Marketing activities of firms operating in the educational software sector

5.5.1 Introduction

This research provides a profile of sixteen companies that also operate in the educational software marketplace together with the structure of the educational software marketplace. The two main sections that follow then explore marketing issues that are common to all businesses in the sector, regardless of their size, then marketing attitudes and perceptions that are dependent on business size and respondents viewpoint are discussed.

5.5.2 A profile of organisations and market structure

Firms in the 'larger firm category' consisted of four medium to very large sized firms that were operating solely from England across the UK, with three firms that had small 'operational arms' in England, and had a focus mainly on the educational market place within the UK. All had been established for between seven and thirty five years. All had designated marketing personnel and marketing departments. The seven micro firms investigated were all owner-managed, one firm (Firm 2) had a designated marketing resource whose experience was technical not marketing based. The two small firms investigated (with 11-50 employees) both had a dedicated marketing resource, however one was from a business background and one was from a technology background. Companies or their company arms were all based in Europe, except for one small firm (Firm 7) from Australia; they all focused mainly on the educational market place within the UK, or, where the educational structure was compatible to that of the UK. Firms in the 'smaller firm' category had been established for between two and nineteen years.

In terms of product portfolio, there is some differentiation on the basis of firm size. Large firms included: educational publishers with virtual learning environment (VLE) software; re-sellers of VLE software on behalf of other software companies; computer platform providers; and, MIS (Management Information System) providers. In some

cases firms offered both VLE and MIS software and in some cases the educational software business was only one Strategic Business Unit of the company. The larger small firms with around 50 employees in the group offered VLE and MIS software, but smaller and micro firms tended to produce either a one-off educational software product or promote a limited but specialist range of bespoke products for schools with inter-operability to allow schools to purchase additional software packages without having to purchase an entire new MIS system for the school.

The marketplace of software companies supplying software to schools is dominated by a few large firms, with a clear market leader, Capita SIMS. This situation is likely to be exacerbated by recent government regulatory requirements delivered through the Department for Education and Skills (DfES) and BECTA, government agencies concerned with the standardisation of IT procurement and delivery throughout all schools across Britain. BECTA has published requirements for curriculum, purchasing and standards frameworks. Government approval from the BECTA agency would seem to ensure relative company stability in the marketplace. There are ten companies on the 'BECTA approved' list, but only one of these fits into the category 'small' as defined in this research. In addition secondary schools have been given extra funding to purchase IT for their school under a system called 'e-learning credits'. For schools to be able to use their credits they must only purchase their IT products from government approved e-learning credits suppliers. The somewhat undefined, yet strict government compliance regulations for the most part deter or inhibit emergent small firms from becoming BECTA approved suppliers or being eligible for 'e-learning' credits status.

5.5.3 Marketing issues common to all participants in this sector

Despite the differences in business size and market strength between different firms in the sector, interviewees agreed that five major issues affected marketing in the sector.

5.5.3.1 Locating the customer

Schools have a range of decision makers, deputy heads and IT teachers who need to be contacted about a possible IT purchase. It was difficult for all companies to gain access, contact and spend time talking to potential customers in schools. Respondents from a range of companies observed:

> ''It's very difficult to contact those who make the decision. It's very difficult to market.'' (owner manager from a small firm)

> ''Teaching is a closed shop...They are hard to contact. Those who want us to contact them give us their mobile number. It depends on individuals, whether they are trying to avoid the role of IT technician. Cold calling and leaflets make no difference'' (marketing manager from a medium sized firm).

> ''It's hard to get time with the decision maker. Head teachers have other demands on their time'' (marketing manager from a large firm).

5.5.3.2 Budgetary constraints

Companies had to consider carefully what price they charged for products and support services as schools, particularly those managed by Local Education Authorities (LEAs) with public rather than private budgets. It was recognised that if the current government sponsored system of 'e-learning credits' funding ended, this could negatively affect the market for those companies who are 'e-learning credits' approved:

> ''they don't want to spend twelve months bedding in a resource and then have to stop using it because they've run out of funding'' (director/ manager from a very large firm).

> ''we have to be careful of the cost of our product, it's a price sensitive market'' (owner-manager of a micro firm).

"schools don't understand the total cost of ownership. It's not just the purchase cost. The real cost is in the training and support" (marketing manager from a large firm).

5.5.3.3 IT competence of teachers

Decisions to purchase are affected by a variety of decision makers and can be negatively affected by reticence of some IT teachers to make improvements in IT. Some teachers also had a fear of technology, particularly some more senior in the profession. Head teachers were described by one company as 'vulnerable purchasers' in view of their ability to confidently purchase IT for their school:

"In a sense you're selling something that they're not comfortable buying. To that extent they are vulnerable purchasers." (marketing manager from a large firm).

"the sales force have a range of varied experience, but we have found that they must make the software look easy to use otherwise teachers will not be able to use it and it will put them off.....unfortunately in the rush to purchase some teachers have had their fingers burnt as the software that they have bought has not done the job expected of it." (marketing manager from a large firm).

"If you give them something easy to use they will more easily accept the change. You have got to get into the hearts and minds of everybody within the school, because everybody is going to use it. It's the psychological management of the change." (owner-manager from a micro firm).

5.5.3.4 Word-of-mouth

Development of relationships with teachers and schools was viewed as a particularly powerful way to promote the company and its products. Very often proactive teachers were viewed as the best people to promote the products, but large companies also used designated salespeople to visit schools to promote products. In some cases current customers (schools) were used to promote a company's products at such events as IT technicians meetings. In some cases teachers were happy to promote a good product without any financial gain, but more as a method of suggesting 'best teaching practice':

"Teachers sell to teachers, we have eight teachers presenting here, we use those that have bought from us before. We pay their expenses." (marketing manager from a large firm).

"One thing I must say is that teachers sell to teachers. They don't trust sales people." (marketing manager from a medium sized firm).

"We use word-of-mouth, it's self perpetuating, we go by recommendations more than anything.' '(owner-manager of a micro firm).

5.5.3.5 Partnerships

Partnering with other companies is used extensively in this sector.

Large firms in addition to building partnerships with schools and LEAs where applicable, tended to use formal business alliances. The larger firms had supplier-reseller relationships whilst other companies developed alliances with other software companies and educational bodies such as BECTA and DfES, and become actively involved in national initiatives and new educational agendas:

"we will work with the 'building schools for the future program."

"we are able, because we have a good reputation, to partner with other companies."

"lots of software companies do, we resell, we sell third party products, we provide the technological expertise."

Some large firms also partnered with smaller firms, supplying small firms with marketing and sales resources, whilst smaller firms supplied innovative new products:

"we really need the left field of small innovative companies.... we've partnered with these smaller innovative firms....you can't compete in this marketplace without finding a unique factor that is the link to curriculum resources."

Three small firm partnership types were identified from micro and small firm respondents, those focusing respectively on improvements in product development, product distribution and marketing capabilities. One micro firm observed that being partnered with another government approved company:

"it reflects positively on us."

whilst another small firm observed:

"we have just recently partnered with another company in order to increase our market, in terms of selling."

whilst sharing marketing costs provided them with a larger stand at the exhibition in a prime location:

"we have one large stand that we share with another company and a smaller one"

It was also noted by one owner-manager of a micro firm that:

"We tend to do things ourselves. Big companies don't like to work with small businesses. There's no point in asking them."

5.5.4 Marketing approaches that differ between small and large firms

When examining the marketing approaches undertaken by firms it was important to view the findings within context, that is, taking into account the respondents age, job role and work/professional experience as well as the size of the firm in terms of employees and the firms age. In particular, the aspects of job role and prior work/professional experience had the greatest bearing on the results.

Micro firms did not necessarily grow from their small base, this could be due to a number of factors such as the owner-managers entrepreneurial orientation, lifestyle choice, family ownership of the firm or the difficulty of increasing market share in a competitive environment where there are several significant barriers. Micro firms all had owner-managers who were technical experts rather than business or marketing managers, whilst one was a teacher with technical expertise. Two micro firms (Firms 2 and 4) had respondents employed as a designated marketing resource but who had a background in technology and business respectively. Small firms (Firm 7 and 9) also had designated a dedicated marketing resource but these respondents also did not have a marketing background, being technology and business experienced respectively. As firms grew in size, designated 'expert' marketing managers were used and larger firms

had a dedicated marketing team. Although many informants identified similar marketing challenges facing this sector, there are differences in marketing engagement and orientation between the smaller and larger firms in the sector. This can be explained in part by the fact that marketing attitudes and approaches to marketing were influenced by the prior professional marketing experience of the respondent, particularly in the use of marketing terminology, understanding and usage of traditional marketing concepts. This was particularly noticeable in the areas of marketing knowledge, competitor awareness and company positioning in the market sector. Owner-managers were all male, tending to be technical, not business or marketing experts who understood the requirements of schools and had succeeded in the marketplace by providing quality software innovations in niche markets while offering high levels of service to their customers.

Firms with a dedicated marketing resource showed greater understanding of marketing knowledge, competitor awareness and company positioning in the sector because they employed qualified marketers. Micro and small firms succeeded by focusing on the support service that they offer their customers and bespoke and innovative software solutions. These attributes compound the differences between 'smaller' and 'larger' firm group results. Key differences include:

5.5.4.1 Understanding of competitive structure

Owner- managers of micro businesses had no current or previous professional marketing experience. Generally they viewed the market place as a non-competitive environment and were non-competitive in their approach, viewing the marketplace as having plenty of space to compete with other small business owners, whilst still recognising the power of larger firms:

> "there's not really any competition, it's a big market, there's space for everybody."

> "it's a big market. There is space for everybody. It's the big companies that are the problem."

Respondents from larger firms were either Marketing Managers with marketing experience (most also with a marketing degree) and/or Senior Managers who displayed marketing knowledge and had responsibility for marketing and marketing strategy in their company. They displayed knowledge of their competitive position against their major competitors and an awareness of who their major competitors were. Large and medium sized firms in general, did not consider that smaller firms were a threat, having little knowledge of them but recognising that they ate a little into the market with innovative products,

> " they have nibbled away at the market share with Attendance and Truancy Call, using automated systems; there will be some people that will compete with us, but I am not sure of their names." (marketing manager from a medium sized firm).

> "we don't face competition from SME firms. Competition for us is with the large solutions companies." (marketing manager from a very large firm).

Both small and micro firms tended to be less aware of competitors, whilst larger SME s who had designated marketing managers were able to pinpoint their exact present position, prior movement and future progression in the marketplace:

> "there were 20 companies that I would say were above us; then we were in the top ten and since gaining our very large contract (following BECTA approval status) I would say that we are now in the top three."

Similarly small and micro firm respondents were generally aware of large competitors but had little awareness of other small companies or new ventures. Some felt that they had no competitors as their product was superior and that was considered enough to protect them from competition, but large firms are now introducing some of the niche products that were originally designed by small firms. Respondents from small firms observed:

> "Yes, we compete (with large firms) particularly because (says company's name) now has an assessment manager."

> "I don't see them as competitors, software wise, whatever they do, we can do it better."

> "We do face competition from other small firms I guess. It's hard to say because you never see them.....I guess if a school were looking they would look for people to get quotes. If we contact them they may not go down this path."

"if the product is good, then it has a good chance of selling."

Those companies with a higher market share typically had an enhanced awareness of their position relative to competitors and were able to list and discuss their competitors and relative position against their competitors.

5.5.4.2 Perceptions of marketing strengths

Large firm respondents noted their advantages of economies of scale, particularly in research and development (R&D). Here the costs of R&D were not passed onto the customer as they were a very large company that could absorb this cost and mass produce products to recoup the cost:

> "We invest upwards to eight billion in R &D, we are sourcing a lot of the costs, no other company does this. We have economies of scale."

Small firms recognised that large companies were not limited in their marketing activities by a restrictive marketing budget:

> "we can't have the advantages in marketing, they can market their product any way they want."

> "we don't market the product a lot. It's more effective by word of mouth."

When asked if the size of the company limits their ability to undertake certain activities this was described by micro firms as follows:

> "yes, massively, in terms of developing marketing and sales."

> "they have far more money and a huge marketing budget. We are relative minnows."

> "big companies have a strong name, brand and image."

While another small firm observed:

> "Having enough resources to develop the ideas we have and being able to market in the more expensive media for example, the national press, Times Ed and big marketing features on us in show guides, sometimes I think this would give us credibility from the customers point of view."

As micro firms recognised that they had more limited resources, they felt that they had no specific advantage in terms of marketing their product or service compared to larger companies. However, when asked about the general advantages that their firms could offer schools because they were a smaller business, respondents gave a range of very positive replies indicating that they saw their business as flexible, adaptive, and easy to communicate with:

> "We make it tailor made, more like, customer focused."

> "We are like a speed boat versus a super tanker in comparison to larger firms! We can nip in and out whereas it takes longer for a super tanker to change course."

> "It is a small company. I am always there, we are more flexible, more friendly and it's a good price."

One middle sized firm further differentiated their firm from very large companies describing their firm as:

> "quick to move, whilst the very large firms are slow to adapt and change."

Interview responses from small firm owner-managers indicated that they viewed marketing exclusively as the promotion and selling of products rather than viewing marketing from a much wider perspective that would include such activities as intuitive market approaches, simply satisfying a customer's needs as part of an effective marketing strategy.

5.5.4.3 Communication and interaction with customers

Large firms gathered their marketing intelligence via strategic partnerships with government agencies and LEAs. Any information gathering from schools is collected from sales teams out in the field or technical support staff:

> "one of our main strengths is the fact that we have a sales force that are very experienced and understand the full curriculum.....it was quite difficult to manage as the transition and speed of changes in the market meant that schools were very quickly looking for software."

Large firms therefore rely upon a highly effective inter firm communications strategy to manage their marketing activities. Small firms, on the other hand, had the advantage of much quicker, direct lines of communication. Small firms much more closely to the customer and gained immediate feedback derived from development of close relationships from the owner-manager with teachers and IT technicians within schools. This feedback was often managed on a highly informal basis. All firms in the small firm category dealt directly with schools and LEAs. As a direct supplier of school software, the owner-manager becomes a key contributor to the school and its organisational strategy. He is therefore closely involved in the process, particularly where there is a service element to the software product:

> "we have very good contact with teachers. Big firms don't have that. They send an ordinary sales person and give three hours training. I know teachers problems and understand the British system. It is unnecessarily complicated."

On the other hand, operating in this way is recognised as demanding because the supplier has to have the technical, financial and human resources to operate with the customer in this way. This is especially difficult in a firm of limited size and scope. Owner-managers were seen to utilise a combination of specialist technical expertise, often developing the software themselves and having professional (teaching) expertise.

Supply chains for large companies tended to consist of business alliances or VAR relationships, leading to indirect contact with schools, through VARS. Some medium sized firms sell software directly to schools and LEAs. They use marketing and sales teams to promote software products to schools. Medium and large firm respondents were asked about the after sales service that they provided. Often this was described in financial terms with different levels of support offered by specialist service or after sales teams. The service support element of the software product was of key importance in customer relationships with micro and small firms who went into greater detail as to what they offered:

> "everything is dependent on maintaining a Rolls Royce level of service because it is a market where the customers network like crazy. If you screw it up it is dangerous. We can only expand by keeping the quality high. If we take on to many schools then we can't maintain them properly and the quality would drop."

> ''everything is bespoke, the school get exactly what they want, need and afford'.
> 'with a combination that the school wants, it's tailor made.''

While larger firms who directly sold software to schools encouraged purchasing schools to promote products and recognised the importance of word-of-mouth recommendation, small firms had a more instinctive approach to generating word of mouth recommendation using a personalised, highly developed and close supply chain relationship. Using this method, small firms quickly responded to customer complaints and generated word-of-mouth recommendation using informal and inexpensive methods.

5.5.5 Summary of customer perceptions and the IT purchase decision

The educational software sector is dominated by large firms but all firms in the sector face the same issues; difficulty locating the influencer/purchaser in the school, school budgetary constraints; the teacher as an inexperienced IT purchaser; using WOM recommendation and; working in partnership. Small firms in the sector did not always grow quickly; it is a challenging market environment with lots of competitors. Micro and small firms tended to be owned and managed by technical experts. Those firms without the designated resource of an experienced marketer tended to be less aware of competitors or their position in the market, but succeeded by differentiating themselves by offering high levels of software service support and innovative bespoke software solutions.

5.6 Conclusion

Company A has grown organically from a university spin off project with their global channel partner. The ethos of the firm is perceived by employees and customers as informal and friendly. Although culturally the firm is not Welsh it is presently developing a Welsh Language software product to launch onto the market. Most of Company A's market is in the UK. The firm's flexible workforce allows them to take on new software product development projects but the firm is challenged by balancing high levels of customer support with the delivery of new bespoke software for schools. The

operational owner-manager is knowledgeable about software and it's application and is the 'face of the firm.' His personality provides confidence for the inexperienced IT purchaser which reduces the customer's perception of risk in the IT purchase. The development of long term customer relationships are important to the owner-managers and employees. Customers often co-create new software with the firm and Company A's software products are mainly marketed through WOM recommendation.

The financial aspects of the firm are tightly controlled so that short term planning for the future can take place. The operational owner-manager implicitly uses a range of networks to increase business, innovation and marketing capacity, the most important business network being with their global channel partner who provides some credibility in the eyes of IT purchasers. The company is keen to invest in R&D and is supported by innovation networks that are viewed by the operational owner-manager as a precursor for future business development. Marketing networks include customer networks and a formal marketing relationship with a dedicated telesales team.

The educational software sector is dominated by large firms but all firms in the sector face the same issues; difficulty locating the influencer/purchaser in the school, school budgetary constraints; the teacher as an inexperienced IT purchaser; using WOM recommendation and; working in partnerships. Micro and small firms tended to be owned and managed by technical experts. Those firms without a designated marketing resource are less aware of competitors or competitive positioning, but succeed in the market by offering high levels of software service support and innovative bespoke software solutions. Small firms recognised that they couldn't compete with large firm marketing budgets but offered a range of benefits of being a small firm, being flexible, swift in responding to customers and offering a more personalised service.

This chapter has presented research findings in relation to Company A, from a range of perspectives, and also the marketing activities and issues for large and small firms which operate in the educational software sector. Some of these issues reported here were influential in prompting the development of the 'EMICO' framework (Chapter 3). The

next chapter, Chapter 6, reports the findings on the consolidation of the framework's dimensions and presents the findings from research of EM using the research of six small software technology firms.

6.0 FINDINGS- ENTREPRENEURIAL MARKETING IN SMALL TECHNOLOGY FIRMS AND REFINEMENT OF THE 'EMICO' FRAMEWORK.

6.1 Introduction

This chapter explains the findings from the application of the proposed 'EMICO' framework with the study of six software technology firms. The data from this sample is used to confirm and to consolidate the dimensions and their underpinning descriptors. A refined 'EMICO' model suitable for small firm research in the technology context is then presented (Figure 6.0).

- Section 6.2 introduces the firm and the respondent data.
- Section 6.3 discusses the validation and prioritising of the framework dimensions.
- Section 6.4 presents findings gathered from respondents, under each dimension and confirms the underpinning descriptors.
- Section 6.5 presents the final revised 'EMICO' framework.

6.2 Firm data and respondent data.

The sample of firms consisted of four micro firms and two small firms of between eight and fourteen years old. They all produced bespoke software products with a service element to their market offering. Six of the seven owner-managers interviewed were males aged between thirty one and forty five years old. Company A, B and F had more than one Director. Company E and F, the larger companies had designated marketing personnel. Company A, C and E reported steady growth at an average of 10% increase in turnover over the last five years. Company B and Company D had generally maintained a level turnover over the last five years with both firms reporting dips in

profit from which they quickly recovered. Company F has rapid growth in the last two years with 100% increase in turnover.

Two owner-managers have computer science degree qualifications whilst five employees have computer science degree qualifications. The majority of owner-managers are in the forty one to fifty year age group. Employee respondent ages range from eighteen to over sixty years old. Employee respondents have a wide range of work experience that is not always commensurate with their post. Networks were identified as being fundamental for these businesses with five out of seven owner-managers viewing networks as essential for business growth at inception and one owner-manager, noting that business and customer networks were essential after start-up. Types of networks identified were specifically; PCNs, business networks, business support networks and university networks. Company B's owner-manager did not use networks but viewed networks as being individual relationships with different people, a view espoused by the operational owner-manager of Company A. Crucially, employee respondents use networks mainly customer networks and, in the case of technical employees, informal web-based IT networks.

6.3 Confirming the framework dimensions.

6.3.1 Internal validity of the dimensions

To ensure the framework's reliability it was necessary to ensure internal validity. Therefore as part of the final stage of the interview process respondents were asked to consider all fifteen dimensions on the cards and their suitability. Respondents all confirmed that each dimension was necessary for firm development and growth, whether this activity was currently being undertaken in the firm or not. Respondents were also asked if there were any omissions in the dimensions; there was a general consensus that there were no omissions.

6.3.2 Prioritisation of the dimensions

Following the card interview respondents were asked to prioritise the dimensions which they viewed as most important for their firm's future growth. Priorities for respondents have been placed on a company level matrix (appendices O to T). It was interesting to note the different methods deployed by respondents. Generally the dimensions cards were either placed in a 'strategic stream' or grouped together on levels of priority. It was also interesting to note that two respondents who had been business managers in larger companies deviated from the group norm. The strategic business manager from Company F did not place the card dimensions in order. After some considerable thought he placed the cards in a pile because he perceived each dimension as being of equal importance for business growth. He observed:

"You can't have one (dimension) without the other."

The owner-manager from Company E also deliberated on all the dimensions on the cards and after some time had elapsed, he observed:

"Oh see, you can't just prioritise these; they're all…that is absolutely fundamental."

6.4 The dimension responses

6.4.1 EM dimension responses and confirmed underpinning descriptors.

This section presents each of the fifteen dimensions and their initial proposed underpinning descriptors. The findings are discussed under each dimension in the order shown on the proposed model (Figure 3.1). This discussion of the findings surfaces the most suitable underpinning descriptors that are required for a new refined framework suitable for small firm research in the technology context. The refined 'EMICO' framework is presented in Section 6.5 (Figure 6.0).

Research and Development

The underpinning framework descriptors for this dimension describe 'a level of emphasis on investment in R & D, technical leadership and innovation.' Research and development was considered critical in the case of Company F's owner manager and very important, important or more needing to be done in this area with other companies. Company A's non operational owner-manager acknowledged a heavy investment in R&D in their firm, observing:

> "For a small company we've got a disproportionately large investment into research and development.....but I think it's important for us."

The level of investment in R&D is viewed as fundamental for competing in the marketplace by all firms. It is controlled by careful investment as R&D requires employee time, draws financial resources and may not get an immediate return:

> "So I think 25% of what we spend of our turnover spend on R&D, any more than that, then we put the company completely at risk. It just sucks up all our profits. But it's absolutely fundamental because the nirvana, the thing that will get us out of this nightmare is the product." (Company E owner-manager).

Owner-managers and employees of other technology firms acknowledged that R&D had to be a carefully managed process but owner-managers were all keen to take the lead in new technology innovations where possible.

These descriptors are confirmed by respondent statements and are therefore to be included in the refined framework.

Speed to Market

The underpinning framework descriptor defines speed to market as a competitive stance, being either a collaborator, follower, leader or having a defensive stance. 'Speed to market' prompted a diverse range of opinion between respondents and was considered on a range from very important to not important. This can be explained by the fact that the bespoke software product requires less of a speed to market compared to NPD s. Therefore getting it to market is seen as less of a priority for those firms who solely offer bespoke software:

> "I don't think that applies to us really because, as a bespoke developer, the market is one particular project, it's not as if we've got a fantastic idea that we want to launch, that would be more applicable to off the shelf software."
> (Company C owner-manager).

> "It's less important, it's more about er...reliability and em...stability of a product rather than getting it out of the door as fast as possible."
> (Company F owner-manager).

Speed to market was viewed as important in respect of NPD s. However, sometimes the lack of employee resource hindered the speed of getting NPD s to market. Where software technology firms were successful in taking new products to market, they used a collaborative approach. Partnerships were an effective method for small firms to invest in long term costly innovative projects. Company A collaborated with a university and with other business contacts on a range of new innovative projects. Company E had very recently partnered with a large global company on a successful new innovative project. This was instigated because the owner-manager realised that they would lag behind in the market without partnering with this potential competitor and since then:

> "You know, every week I'll get two or three others potential partners calling, oh can we work with you? Can we learn from you?" (Company E owner-manager).

Company E's owner-manager observed that where small firms work with larger technology firms as partners, the larger partner is able to launch the new innovative product and develop a new market for the product where demand does not yet exist, a costly exercise which small firms cannot afford to do.

This dimension is confirmed by respondent statements in firms which have NPD s.
A collaborative stance improves NPD speed to market for small technology small firms.
As these underpinning descriptors are confirmed by respondent statements they are therefore included in the refined framework.

Risk Taking

The underpinning framework descriptor describes this as calculated risk taking; a preparedness to seize opportunities; a preference for incremental and transformational acts; a reliance on intuition and experience. 'Risk taking' was found to be the most contentious dimension as it had the widest range of responses. It provided a striking contrast to other results as it was considered by far the least important of all the dimensions. It was described as not important and regularly placed at the bottom of the card order, but in some case was also placed at the top of the card order. Clearly, owner-managers were more able to relate to this dimension and discussed it in greater depth. Company B's owner –manager considered it to be of top priority for the firm's future growth and development and it was also considered of great importance to the owner-manager of Company E. This was because both owner-managers felt that not taking risks had led to missed opportunities in the marketplace which could have meant further growth for their firms. Company B's owner-manager reflected:

" I think we could be a lot more confident and bold, and go for it a lot more." (Company B owner-manager).

Company E's owner-manager observed:

> "We've just taken too many baby steps which is a weakness. It's a fundamental weakness, lack of risk taking and speed to market (Company E owner-manager).

Other owner-managers described their approach as being one of calculated low risk. The risk for owner-managers is mainly a financial risk:

"Its usually because you're spending money that you might not get back, is generally the risk" (Company A operational owner-manager).

Owner-managers seemed prepared to seize opportunities if the financial risk was seen as equitable. Most companies tended to progress incrementally due to business constraints and the nature of the bespoke software product. In some firms both incremental and transformational acts were carried out in partnership with larger firms (Company A and Company E). Transformational acts occurred in the design and development of NPD s, not in bespoke software development. Risk taking was based on the intuitive knowledge and experience of the owner-manager. In some companies employees felt that the owner-manager may have taken more risks and taken more opportunities in the market. However it was also noted that employee did not have ultimate responsibility for the firms finances, therefore this would be a relatively uninformed view.

These underpinning descriptors are confirmed by respondent statements and are therefore to be included in the refined framework.

Proactiveness

The underpinning framework descriptors describe proactiveness as a commitment to exploiting opportunities, an inherent focus of recognition of opportunities and a role for passion, zeal and commitment. 'Proactiveness' ranged from being critical in importance to a perceived need to be more proactive, especially in respect of marketing:

> ''Again I would say we are quite proactive in making new things and developing new things, I think where we are reactive is literally marketing it.''
> (Company A technical employee).

> ''It makes me laugh, everyone of these phrases is something that we are applying to our customers (giving marketing advice to other businesses) and not ourselves.....I should take a leaf out of my own book and listen to myself sometimes and act on it.'' (Company C owner-manager).

However proactive marketing approaches in the firm are often constrained by lack of employee resource and lack of marketing knowledge:

> "It's important to be proactive to get the work in, but we've got designated jobs so getting more work is difficult. In a small firm it's difficult, it would be good to have someone with specific training to do this."(Company D technical employee).

One of Company E's technical employees describes the business limitations that affect the general proactiveness of his firm:

> "Yes, we're proactive but we can also be very slow, we take our time. I think a lot of times we're aware of what we need to be doing but again it's having the capacity to do it...erm...often people are proactive as individuals rather than as a team if you see what I mean."

Responses from this descriptor mainly described the individual's behaviour in firms rather than proactivity forming part of an overall organisational behaviour of the firm. Although owner-managers all showed a zeal, passion and commitment to their work and to their customers, this did not always permeate the whole firm. Certain individuals were acknowledged as being more proactive than others. Sometimes where there were proactive behaviours, this commitment to exploiting opportunities was hindered by the limitations of the firm's size and capabilities.

These underpinning descriptors are confirmed by respondent statements and are therefore to be included in the refined framework.

Proactively Exploiting Markets

The underpinning framework descriptors of 'proactively exploiting markets' are as follows; vision and strategy being driven by tactical successes; planning or lack of planning, in short incremental steps; proactively exploiting smaller market niches; a flexible customisable approach to market; marketing decisions linked to personal goals and long term performance. Companies C, D and E considered proactively exploiting markets to be important whilst Company F considered more could be done in this area. Company A and B considered exploiting markets to be less relevant to them. Company A's finance employee explained how they exploit markets:

> "I think that.....we don't really have the capacity to fully exploit markets so we have to be choosy in the way we do it. We target where our customers already are and build on this. We are exploiting small segments of the market where we've already got a foothold."

This is interesting as the description of the way the firm exploits markets matches the underpinning descriptor of the dimension. In other words, there is some ambiguity around the meaning of 'exploiting markets.'

Often the technology firm's ability to exploit markets is inhibited by the firm's efforts to maintain very high levels of customer satisfaction and by the general limitations of being a small business:

> "I think the potential is there. We've certainly got the expertise and the systems there that we could look at particular industries and certainly we've looked and there are certain demands in industry sectors there that we could supply services to, and we could supply services that are a hell of a lot better than they've got now. It's always a question of really following through from start to finish and having the time to see a project through." (Company C owner-manager).

The owner-manager of Company D describes their marketing strategy for exploiting opportunities in the market:

> "Yes, we do that by having,...funding a bespoke projects in a new market and then trying to exploit that vertically and then running out new ideas, we take that idea and take it horizontally into other markets, like a different industry, for example, from agriculture to construction." (Company D owner-manager).

Company E's owner-manager describes how his business has grown from a micro business to a small business which can now exploit markets as it now has the business capacity to do so:

> "So we were completely market led and market driven because it was a survival thing. You know, you don't think about exploiting or market intelligence when you're surviving, you just go after the easiest food source. And so that's what we've done. Now, in this phase that's much more relevant."
> (Company E owner-manager).

Responses suggest that tactical successes appear to drive the firm's strategy for exploiting markets, with close engagement in the marketplace offering opportunities in

niche markets were there is little competition. Decisions are based on the owner-managers intuition and personal goals of the business, often with a long term view for the business rather than a swift growth strategy. Customisable approaches such as those described by Company D's owner manager are cost effective methods for proactively exploiting marketing opportunities.

These underpinning descriptors are confirmed by respondent statements and are therefore to be included in the refined framework.

Marketing Intelligence Generation

The underpinning framework descriptors are as follows: 'marketing intelligence generation' as external (to the firm) intelligence gathering; informal research generation. Company A and B viewed this dimension as less important than other dimensions. However the technology employee in company B explained that he used information through his web-based contact networks:

> "I take huge amounts of information about the marketplace, it's sort of how every developer works, there's so much that you know that implementation of all different these ideas……there's almost a limitless source of information out there….which is very useful as well because then you can see where things are going." (Company B technology employee).

Marketing intelligence generation was viewed by Company C, D, E and F as either an area of importance or where more needed to be done. Again business constraints were cited as reducing the firm's ability to gather market intelligence effectively:

> "It is important, but we do it the hard way really, the internet I guess,…companies house,….we don't put enough importance on it and we should be treating it as a higher importance. (Says name of employee) takes on the marketing side but with doing the project work as well, it is difficult." (Company D owner-manager).

This view is confirmed by Company D's technical employee:

> "Uum...again we probably should be more of this but uum we don't have a lot of time to be...I think the problem is almost universal to all small companies or even medium sized companies that, when we've got work we have to spend our time working and then when we don't have work we have to spend our time panicking,..and in between we don't devote a lot of time to the whole research area or market intelligence generation."

Company E's owner-manager explained the problem he associated with marketing intelligence generation:

> "Years ago I always had a marketing, business development plan and there'd always be market research and I never knew what to write in there, because I never knew how to actuate it..... so I think in terms of market intelligence..yeah we need to understand that better, understand our markets before we invest too heavily in them..... and it's very hard...I've found it very hard as a small business to be anything other than reactive, because that is a very proactive activity."

Although some respondents in both small and micro firms acknowledge that more needs to be done in this area, there appears to be a tendency to view the gathering of data as solely a formal process. All except one of the technical employees are already gathering vital implicit competitor marketing intelligence on NPDs and innovations to the market by the use of implicit and informal network contacts. Owner manager PCNs and customer networks and relationships also supply the firm with essential and timely market information. These networks will be discussed in greater depth in the section about 'networks and relationships' dimension.

The dimension terms are confirmed by respondent statements. In addition the underpinning dimension 'gathering market intelligence through PCN s and web- based IT networks', based on information from respondents, has been added. This is because all firms in this sector use informal intelligence gathering through networks and relationships. This method appears to be an effective method for keeping firms up to date with competitor offerings in the high speed software technology market.

Responsiveness to Competitor Actions

The underpinning framework descriptors describe this aspect as being: responsive to competitor action; ongoing adapting of competitive positioning. Most respondents considered responsiveness to competitor actions as less important than other dimensions. However, others felt that their company should be more responsive:

> "..again we're not very good at that, 'cos we don't really monitor what our competitors are doing, so.....er... it's something need, we should do a lot more of, but again it's just you know, just finding time." (Company A owner-manager).

Offering excellent customer service and innovative software products are cited as approaches which differentiate these firms from the competition:

> "We don't really worry too much about that.....we find ourselves to be fairly nichey even though we are offering what looks to an outside eye, kind of an identical service, because...it's the extra mile that we go that other, in the web developer sites that we've come across,...had feedback from customers, saying that the others just don't provide it." (Company B owner-manager).

> "We probably don't do much there. It certainly is important but we've been fairly cutting edge, so we don't have to respond to competitors. Talking to our closest competitors, we beat them to it because of our innovations...we don't stand still with our innovations, being a small company we can also implement change quickly." (Company D owner-manager).

Company E's owner-manager defines his firm's deliberate non-competitive strategy:

> "I read a really good book over the summer called Blue Ocean Strategy and it says why fight in a red ocean which is b***** good...go and find a blue ocean where there's no competition....and it's not a lack of desire to compete, it's just a recognition that you can't always compete with competitors so the best way sometimes with competitors is to make them not a competitor."

Company F's owner-manager defines their approach in responding to competitors and their customer centric approach:

> "Erm.....that's a complicated one for our particular business because..we can't be responsive to all the competitors out there, because there's so many and so many different technologies and so on...so in some respects it's kind of uum...we're less responsive to our competitors but far more responsive to the actual customers who are actually buying from us or prospects that walk through the door."

Small technology firms tend not to respond to competitors or adapt their competitive positioning. The technology market is an extremely fragmented market where it is difficult for small businesses to identify their competitors. What they are good at is in identifying the new products of competitors using implicit methods such as immersion in the market and the use of owner-manager PCNs, feedback from customers and for technology employees, use of informal communications from web-based IT networks. Small technology firms tend to differentiate themselves from their competitors by using innovative bespoke software products and providing a high level of flexible, customer centric service.

Respondent statements confirm that these underpinning descriptors are not suitable. Respondents describe niche markets and differentiation by service quality as strategies to enable them to position themselves away from general competitors. Firms are responsive to NPDs and innovations in the market rather than to specific competitors. Therefore the unpinning descriptors for inclusion in the refined framework are based on respondent responses and are: responsiveness to competitor innovations and NPDs; niche marketing strategies; differentiation strategies using software quality; software innovation; quality and responsiveness of software service support.

Integration of Business Processes

The underpinning framework descriptors are as follows: closely integrated functions, R&D, marketing etc.; sharing of resources; product/venture development is interactive and informal; formal and informal processes with little research/analysis; marketing that

permeates all levels and functional areas of the firm. When talking about this dimension most respondents referred immediately to the importance of business planning, or project planning and management. This dimension was considered absolutely essential in all the software firms, ranging from critical in importance to a recognition that more need to be done in this area. Implementing formalised business processes became even more necessary as firms grew in size:

> "As the company grows from a micro business if you like, to a small or hopefully uum..heading towards a medium sized business of some description then, those processes become absolutely critical to get, to get something in place."
> (Company F owner-manager).

> "Now we're starting to bring in some processes, it's only recently whereas before OK , this is an area, because when we started off we'd not much processes, it was all people doing their own style, their own way, you know...."
> (Company F technical employee).

Some micro firms have difficulties in this area and need to do more:

> "Now this is something that we're not very good at. It's really hard, you know, for a small firm, I'm sure we're not unique in that, because we are small but the sort of personalities in the company tend to have a lot more weight than the processes in the company, I'd imagine than in a bigger company."
> (Company A owner-manager).

> "We have been running a long term project to get on top of our work practices and processes and it has been taking a long time. And just recently one of our Directors has picked up the ball again and started documenting particular processes which is good. It does need to happen." (Company B finance employee).

Interestingly Company D's owner-manager considers this of medium importance. However this may be explained by the fact that they already have an efficient, formalised project and business management process in place whilst all four software technology developers have the advantage of working in the same small office:

> " Integration of business processes is useful from an efficiency point of view, and to enable us to have information at our fingertips, but without the administrative overload. We develop our own system which is a full suite of time keeping, project management and monthly revenue."
> (Company D owner-manager).

Company E is described by the owner-manager and the employees as very process driven. Every morning there is a half hour planning and update meeting in their office with all employees. The owner-manager used to work in a large company and uses some of the business practices learnt from his time there. He describes the implementation of business processes in his firm and the challenges:

"It's a journey and we're only really at the foot holes of it. We talk about (says the name of the company in which he worked as a senior manager), you know a company so process driven it's just know…it is one of the world's most great process driven companies…so…measured against them we're probably only about 20% of the way there. But I think that that's probably about 90% further than most other companies. At least we've got the awareness…. so it's a process improval and a process definition which is key…."

These difficulties with implementing effective project planning are confirmed by a technical employee in Company E:

"We know in our heads what comes first, what comes second, how they fit together and why they're important, remembering that one hundred percent of the time it is a problem, which is why we've got a focus on that."

Project planning and management was frequently cited by respondents as a key issue under this dimension. Technology firms begin business with flexible, informal processes that are interactive. As the firm takes on more projects, employees and has more customers, a need is identified for some form of project planning. As the firm grows in size it becomes much more of a challenge for the firm and a more functionalised structure has to be put in place.

Resources in the firm tend to be shared to maximise firm capacity. Venture development is organic and inextricably linked to the development of the software products. Processes relating to marketing were not identified under this dimension term. However marketing responsibility tends to reside with the owner-manager rather than permeating through the organisation, a factor specifically addressed in the discussion about the 'sales and promotion' dimension. Processes in small software technology firms tend to be formal. In fact these businesses strive to formalise business planning processes. This is because the effective delivery of the bespoke software product needs to meet project deadlines

and therefore demands highly effective project management skills in the company. This becomes all the more important for small firms who already suffer business constraints and where project delays can cause severe financial penalties.

Respondent statements confirmed all the descriptors except 'informal processes with little research/analysis.' Software technology firms require formal processes and procedures and business planning in respect of carrying out projects and project management. Therefore 'informal processes with little research analysis' is removed and 'project planning' and 'project management' are added. Although marketing did not permeate the firm the researcher felt that this EM characteristic was an activity that would improve business performance and therefore was not removed. The confirmed underpinning descriptors will also be used in the refined framework.

Networks and Relationships

The underpinning framework descriptors describe networks and relationships as follows: resource leveraging; capacity for building network and business competence; use of social networks (PCNs); intra-firm networks; creation of value through relationships/alliances; market decision making through daily contact and networks. Use of relationships and networks was highly prevalent in these firms, particularly with owner-managers. Other networks were also identified with some employees in the firms. These networks and relationships fulfilled different needs for the firm with owner-managers, technical employees and customer-facing employees belonging to different networks and having different relationship contacts. Development of networks was often part of an intrinsic activity, forming part of the organic development of the firm:

> "Maintaining those networks of contacts and er…you know…it's again, absolutely critical to a business, if you don't have those personal connections you're going to struggle to make any, any headway in the future. Some of the people that we employ now have been people that we have known, er…some of the customers we have, have been original people that we had contact with before the business was set up, erm…some of the advice that we get…er..you know…comes from individuals that we knew before the business er….I mean I guess it crosses every aspect of the business really."
> (Company F owner-manager).

Owner-managers and customer facing employees developed vital customer relationships. These were viewed as essential for WOM recommendation:

> "This is the key to our marketing strategy really. We try to keep our relationships with customers as good as possible and try to feed into the customer network." (Company A finance employee).

> "We've been part of some very good networks in the past whereby we haven't had to market ourselves.' (Company C owner-manager).

The development of effective customer relationships helped to establish credibility and trust in the small firm:

> "Because if you look at a company like us that been around for ten years and our ability to go on with business....I would say..without being arrogant that we stand a phenomenally high chance of doing that than a one day start-up and relationships is the difference. You can call it brand, you can call it what you like, that's not a brand, it's just a relationship with the company."

Networks were also useful for keeping up to date with strategic changes in other industry sectors and issues in the broader software technology markets:

> "Key to any company. If you haven't got any networks, you haven't any relationships, you're not going to get anywhere.....You have to start getting feedback on where the customer pain points are, which industries are causing, or having difficulty.' (Company F strategic business manager).

Partnerships with larger firms leveraged critical resources for Companies A and E, increasing business, new product developments and marketing capacity:

> "Erm, very important to keep good relationships with our supplier, erm, we do have a good relationship with them, we help them out, pitching for large, for bids, there's a network of support within the (says channel partner's name) community." (Company A non-operational owner-manager).

Technical employees used a range of network contacts on the internet for keeping up to date with new software product innovations in the market. Contacts included old university and work colleagues, other technology companies and specific websites with online conferencing facilities. In some cases technical employees accessed this network for training purposes, vital for keeping technical skills up to date in a cost effective way for small firms:

"Well, networks. That's an interesting one, obviously as a developer, ...with new information, new ideas and stuff.....for the most part you need outside influences and stuff which is why being involved in the outside developing community is quite important because that's where you find inspiration if you like or new concepts..." (Company B technical employee)

"You can get a tremendous insight from your past networks. Asking friends what are you doing with regard to this....etc, etc? That's very important to me to keep abreast of the real world stuff." (Company C technical employee).

Building networks in these technology firms was recognised by owner-managers as essential for firm growth and development. Owner-managers and customer facing employees strived to build effective long term relationships with customers. Effective customer relationships not only developed trust and credibility in the small firm but created opportunities for WOM recommendation, a low cost and highly effective method for selling software in these firms. Firms who formed channel partnerships with other larger software firms leveraged additional resources particularly in business, innovation and marketing capacity. The ability of the owner-managers to make decisions based on close, daily contact with the market was a critical advantage for these firms where the software technology market is frequently subject to change. Technology employees implicitly built web-based IT networks that were highly informal but absolutely critical for the gathering of information on new products and changes in the market.

Respondent statements confirmed these dimensions. Therefore these dimensions will be used in the refined framework.

Knowledge Infrastructure

The underpinning framework descriptors define 'knowledge infrastructure' as follows: formal and informal policies, procedures, practices and incentives; gathering and disseminating information.' The majority of respondents considered 'knowledge infrastructure' to be either very important, important or that more needed to be done in the firm. Only respondents in Company B showed disparity of responses under this dimension. Company B's technical employee considered that 'knowledge infrastructure' was important, the finance manager considered that more needed to be done in this area whilst the owner-manager (a creative designer) and the other non-technical employee viewed this dimension as less important than other aspects. This indicates that 'knowledge infrastructure' is a particularly relevant dimension for owner-managers and employees who develop the software. Some firms described highly formalised 'knowledge infrastructure' processes and described the advantages for the firm:

> ''That's er....structured so they can see all the versions and code and all that sort of stuff; and also with the (says name of their software system), 'cos the conferences, we can all see what's going on in all the schools, which then means anyone coming in can quickly get up to speed.'' (Company A owner-manager).

> ''One of the big areas is process, because if you get the process right and it works and you can document it then you'd be to a degree rising up against the threat of knowledge loss.'' (Company E owner-manager).

Where there are no set procedures in place firms acknowledge that more needs to be done in this area:

> ''...now being the time that we need to address that, and certainly make the most of the education and experience that a lot of staff have got, and to certainly utilise it a lot more than we have done.''(Company C owner-manager).

For these small technology firms it is important that 'knowledge infrastructure' is part of a formalised process so that the details of each software project are held in a data repository. This allows for some product replication, even for bespoke software developments and therefore saves the firm time and money. It also allows each employee to know what is going on with each project and to be accountable. Such

formalised knowledge infrastructures ensure that tacit knowledge of employees is retained by the firm and protects firms from a sudden loss of expertise; particularly important for small firms with few employees. Therefore for these software technology firms, it is particularly important that there is proactive rather than reactive organisational approach and a formalised process to ensure not only the dissemination of information but a tangible repository for knowledge that is continually referred to and updated.

The underpinning descriptors are insufficient for small technology firms who have formalised IT based knowledge infrastructures and data repositories to hold a considerable amount of vital information. Therefore the underpinning descriptors are confirmed and a further descriptor which is on responses from respondents is added. This is;'formalised IT based knowledge infrastructures.'

Propensity to Innovate.

The underpinning framework descriptors describe this dimension as follows: processes for sustaining and shaping an organisations culture to stimulate and sustain innovation; covering all innovation types, new product, services, processes and administration. Respondents (with one exception) felt that 'propensity to innovate' was very important, important or more needed to be done in this area. However the firm's capacity to innovate was inhibited by three main factors: risk of entering new projects (time and money), the firm's focus on providing high levels of customer service and lack of employee resource.

A technical employee of Company D felt that a 'propensity to innovate' was less important than other dimensions. Although the firm in which the employee worked made use of innovative approaches, caution was required in investing time and money in long term potentially unfruitful projects:

"We're always drawn towards it...but then I think we pull back from it obviously because we had that experience with the product development (refers to a failed project) and I think we're constantly trying to remind ourselves that our core services are bespoke development." (Company D technical employee).

Other respondents described why a 'propensity to innovate' was so important:

"This is essential because with so much competition, if we don't keep ahead at the top end of the field then we're going to go under."
(Company A finance employee).

Respondents also described a balance between being innovative and realistic in delivering a good service to current customers:

"I suppose it's a double edged sword, on the one level we want to innovate because they're supposed to fulfill the requirements.....but if you don't manage it rigorously it becomes,.....they'll (referring to technical employees) make it 90% of their job when it should be 10%."
(Company E owner-manager).

Innovation can also be inhibited by lack of resources in the firm:

"In mental attitude yes.....we've got the propensity to innovate....sometimes given the number of resources we've got and the number of projects we've got on the go it's simply getting things out of the door but the... yes, we do come up with great ideas but the opportunities to actually implement them is very remote."
(Company E senior developer).

Interestingly, a technology employee and the strategic business unit manager from Company F considered that this growing company had become less innovative:

" There's been no product development in probably, about three years, and er... to innovate, well, we're struggling to try and get people to think differently..."
(Company F business unit manager).

"Erm.....yes, when we started off in the company (gives name) back in 2002 I think that was pretty good, you know innovation was high on the list then, but then not since, I think we've become pretty stuck in our sort of ways." (Company F technical employee).

Company F appears to have moved away from its original focus on innovation as it grew in size and became more profitable, although this is felt by the employees and not acknowledged by the owner-manager. Interestingly the strategic business development

manager suggested during his interview that innovation should mean creativity in the organisation. All other smaller technology firms show propensity towards innovation in most aspects of the firm, for example new and incremental software product innovations, new technology projects, flexible and adaptive services, new innovative processes and administrative practices. Often, although the will was there, the firm was held back by practicalities of running the firm; the risk of entering into new projects; the time taken up with current customers and provision of high levels of service excellence; and a lack of employee resource.

The first underpinning descriptor has been amended to include the notion of creativity with innovation. The underpinning descriptors are all confirmed and included in the refined framework.

Responsiveness towards Customers

This dimension, together with the dimension of 'understanding and delivering customer value' were considered the most important of all fifteen EM dimensions, with some respondents stating that both these dimensions were closely related to the dimension of 'communications with customers.' The underpinning framework descriptors are as follows: responsive to customer feedback and behaviour; speedy reaction to shifts in customer preference. This dimension was described by respondents as follows:

> ''It's important that we're not just this back hole of information where people are sending queries and they don't hear from us.'' (Company D technical employee).

Company F's strategic business unit manager describing the firm's responsiveness towards customers:

> ''It's probably the most responsive I've ever seen with customers, in my career.''

Company A's non-operational owner-manager describes how the company responds to customers:

"I think that's pretty good because er...our customers email us individually, they rarely use the general support email address and they know they can phone our mobiles anytime and we can obviously respond quite quickly out of hours as well, because we tend to live on our email. I think it's really important, it's the differentiator between us and our large competitors who can never be as responsive or as personal."

However, it was also acknowledged that because of the firm's size some firms did not always manage to respond as quickly as they'd like to and some respondents they felt frustrated that they were not able to respond to customers more quickly. On the other hand, some firms not only reacted swiftly to changes in customer preference but also led them to change their preferences:

"I think we actually respond probably above our customer's expectation. I'd like to think so..... We're sort of, very responsive to what they want and through a bit of extra education, giving them something extra."
(Company C owner-manager).

While responding to customer requests, several respondents described difficulties in managing customer's expectations, where the customer fails to understand the time needed (and hence the cost) to make changes to software functionality, especially mid project:

"Yes,..... it depends on how the customer is....you can respond to the customer but invariably it is not the response that the customer is expecting. Whether is because different people have a different makeup, like a mathematical mind and respond differently, but responding to customers can be quite interesting to..... We've responded to them but it's not what they wanted. So, responsiveness in the way they'd like it to be...it has to be within budget."
(Company C technical employee).

"Expectation management....it's a big problem. Uum especially...we have this problem because we tend to do things for free quite often as...because...we're too nice. We'll do little things and then it becomes an expectation that you'll do anything they want...at a drop of a hat...for free."
(Company D technical employee).

All firms were highly responsive to customer feedback and behaviour, although at times this was difficult due to the constraints of the business. Firms were reactive to shifts in customer preference to the extent that customers often had changes made to their

software product at no cost to them. Management of customer expectations was a major issue for several firms. Customers often had limited understanding of the complexities of software development and failed to comprehend the amount of technical employees time is needed to make additional amendments to functionality of the software.

These underpinning descriptors are confirmed by respondents and are included in the refined framework.

Communications with Customers

The underpinning framework descriptors are as follows; strives to lead customers; formal and informal feedback gathering mechanisms; ongoing dialogue with customers to build long term relationships; delivery to customers, customer confidence, marketing based on personal reputation, trust and credibility. Communications with customers were viewed as critical for the owner-managers of Company E and F. Other respondents considered this dimension to be very important, important or there was a perceived need to improve their communications with customers:

> "I think we need to be more proactive in communicating with our customers in terms of telling them, um…..because we're very reactive you know." (Company A operational owner-manager).

> "There's a preference towards email with customers but it's not always appropriate I think. I quite like it when customers who have perhaps regular problems phone and if they're not perhaps the kind of people who are not so technically comfortable, it's very much easier on the phone. It can take a lot of time but you get all the questions answered."(Company B technical employee).

Generally this is a demanding area for firms where most of their time and effort appears to be consumed:

> "Generally I think they're very good (communications with customers). Whether it's a down side… possibly too amenable to our customers if there is such a thing. A lot of us will still be answering emails 9, 10 o'clock in the evening from 8 o'clock in the morning." (Company C owner manager).

The dimension 'communications with customers' appears to be inextricably linked to the 'integration of business processes' dimension as the management of projects, tight timescales and budgets requires frequent and productive conversations with customers especially during early stages of the project and during the project:

> "I like to communicate with my customers really on the telephone, really, speak to them face-to-face and get them into the office to discuss where they are on the project, let them see the development of the (web) site."
> (Company C owner-manager).

> " Very important, even if there's nothing to talk about, we do a courtesy call, otherwise things niggle away, and then there's someone who has a concern, so if we keep in contact it doesn't fester....just touching base, being friendly."
> (Company D owner-manager).

The development of effective customer communications is particularly important when managing the expectations of customers and their bespoke projects. Some software firms found it difficult to calculate the full cost of bespoke software projects, often losing out to the customer by thousands of pounds. Managing customer expectations was again frequently mentioned by respondents and was often viewed as a highly contentious issue by technology employees:

> ".....people change their minds about what they want and especially if you have been away from them for a while, when you come back they've seen something else and so they've changed their minds completely and you've spent all your time developing this thing for them and they go well actually there's something different they want now and they'll refuse to pay you because...they'll dig their heels in demanding many changes which can become quite costly..."
> (Company D technical employee).

> "If the contact is too much they can ask for extra features for free or we have to say no, which doesn't go down very well. It's surprising how many people tend to think that they're paying for the solution, not the time to do it, so we have to quantify everything. A poor specification can be a problem and often customers don't know what it is they need." (Company D technical employee).

Clearly there were advantages for owner-managers whose technical employees were comfortable with communicating with customers as this eased the project management process (Company B technical employee). But they were few and far

between. One owner-manager expressed the view that his technical employees were not comfortable communicating on the telephone or face-to-face with customers. This view is espoused by a few technical employees that were interviewed:

"The problem seems to be the inevitable phone call and the expertise of the client, for me...for situations where I normally reply..... essentially, you can't drive a car ....or you'll crash easily, you shouldn't be surprised. If you're dealing with systems that you have no comprehension of and you're not happy with the answers you're getting then...I just have to be as forthright and polite as possible and pass it onto someone else to deal with."
(Company C technical employee).

"Uum. Divided on this one. It's very.....it's important for the project manager, the project lead, all that sort of people to be in touch with the customers and be clear and keep them in the loop. However, what I object to is when you're a developer and you've got a phone next to you and customers have a direct line, it gets on my nerves..... if you get interrupted even if it's only a five minute call, that's another ten, fifteen minutes to get back up to speed to remember where you are, so it can be up to half an hour for a quick phone call. So like, people like junior developers or people who've got code to write or things, or tick lists to do shouldn't really have phones. Project leads and managers probably should. I just find it a pain in the a***." (Company E technical employee).

These software technology firms usually did not succeed in the leading of their customers. The firm's eagerness to please customers frequently gave customers the balance of power in the relationship. This meant that firms often accrued costs or sold software below the appropriate price (confirmed by respondents in Compaies C, D, E and F). Firms use both formal and informal feedback gathering mechanisms with communications via a range of channels, usually by email and telephone. Methods of communication caused tension in some firms, often technical employees preferred to use email while owner-managers preferred them to use the telephone. Conversely in Company B the technology employee preferred to use the telephone and the owner-manager preferred them to use email. Respondents recognise that ongoing dialogue with customers is essential in the successful delivery of software projects and in the successful building of long term relationships. Customer trust and confidence is essential, particularly in the

software purchase decision, software service support and the repeat purchase. These software firms develop long term relationships with customers which help establish the firm's personal reputation, trust and credibility.

Respondents confirmed all the underpinning descriptors. Therefore they are included in the refined framework.

Understanding and delivering customer value.

This dimension was clearly ranked the most important of all the fifteen dimensions. The underpinning framework descriptors are as follows: closely linked to innovation practices; often with –two-way marketing with customers; customer knowledge often based on market immersion and interaction. Respondents described why this dimension was so important for them:

> "Yes…this is of primary importance because our work is expensive. The rate is not expensive, but the cost of the people working on the project is expensive, time is expensive. People won't take on projects unless they see Return on Investment, and we can demonstrate a Return on Investment." (Company D owner-manager).

> "Er….yeah that's quite critical……what they use to measure it, for example like er…Return on Investment and um, you know Time to Value" (Company F Owner-Manager).

There was acknowledgement that understanding value for customers of bespoke software was different from off-the –shelf software products:

> "Er…well this is crucial for our business model really because it's…we're creating software for people based on what they want. Uum..if we don't understand what they want they obviously understandably get quite annoyed with us…and then they won't come back for more…for repeat work…so..that's probably core to our business really."

Two owner-managers reflected that the value for customers may not have been effectively communicated in the way that they market:

> "I think we do,... but I think we've focused on the er,..... um..... our products are focused more for teachers rather than the people who we're actually selling to, rather than the people who need to do all the number crunching uum.. so we need to...but we have a lot better understanding of that now."
> (Company A owner-manager).

> "I think..we do offer added value of what we do through the knowledge and experience we have over nine years. Really I suppose possibly aggrieves us a bit more the fact that we don't market this a little bit better."
> (Company C owner-manager).

Yet again, the issue of management of customer expectations and the issues of project cost was raised with several respondents:

> "...people expect other things to be included within that and find it quite hard to understand why admin costs can be generated when you're offering them support. I think a lot of the behind the scenes work is...for me...is trying to make sure I can accommodate the customer without really as far as possible without incurring costs..." (Company B technical employee).

> "It is very important to have perceived customer value for what people are paying for. Yes, this is certainly an important point, when people underestimate the cost of projects it's a problem.....they'll often haggle, especially those who we've had a long time, it's a personal relationship so they feel more at ease to ask."
> (Company D technical employee).

Customer value in these firms appears being closely linked to innovation practices and often there is co-creation of software development. Also firms gather knowledge about customers from market immersion and interaction. However some firms have difficulty communicating the value of their product to potential customers and have difficulty managing customer's expectations as the value that they are getting.

These dimensions are confirmed by respondents and are included in the refined framework.

Sales and Promotion

The 'sales and promotion' dimension is defined by the following underpinning descriptor: a focus on sales and promotional activities. The 'sales and promotion' dimension caused disparity between respondents in Company B, D and E with views ranging from very important to less important. The owner-manager of Company F viewed promotion and sales as critical:

> "Sales and marketing is absolutely, again fundamental. .....that is the lifeblood, that is the oxygen that feeds the business...."

The owner-manager and one employee of Company B considered promotion and sales as less important than other dimensions. However the owner-manager explains why she views sales and promotion less important and why using relationships and WOM recommendation as more relevant:

> "....it's very sort of..a natural process that we sort of do, but it doesn't sound like a sale. I think that's the way. We're not strong on going out there and saying I've got a, b and c to sell to, what we're selling is, the whole thing, and the reliability and the safety aspect, all that sort of thing that, you know they're safe with us. So that's what we sell is..sort of...almost like a safety net for people, I suppose...a trust. So we're selling concepts rather than things."

Other respondents also described certain promotion and sales methods as being inappropriate for the software product, whereas trust and credibility in the firm are of greater importance to the software purchaser:

> "We don't advertise because advertising doesn't work for us. We're after one in a thousand people, you know, the actual IT decision maker in a certain type of organisation so, but PR, press and all that builds a profile. I think profile and credibility is what we need because people will look at us, software is a very emotive decision. Do I trust this company and will it be around in three years time?" (Company E owner-manager).

All the respondents in Company C agreed that more needed to be done in the area of sales and promotion, where at present they rely on their existing customer base:

> " Promotion I'm not too sure of, obviously a lot of our business is done through referrals and recommendations so a lot of our business is done through our

existing customer base. It's something that we should do a little bit more of, more actively promoting the business.'' (Company C owner-manager).

The owner-manager and a technical employee in Company D describe the main difficulties of selling in small technology firms where there is no designated experienced marketing or sales employee:

''This is very important to us….but we're not really doing enough of it…..we can't afford to have a dedicated person, so we have to do it ourselves.'' (owner-manager).

''Sales is an area we struggled with……we're all techie kind of people we're not natural sales people.'' (Company D technical employee).

Owner-managers were seen very much in a distinct role as the one salesperson for the firm and 'face' of the company, from both the employee perspective and the owner-manager perspective:

''From my point of view, sales, I'm not really involved in it, or promotion partly because from what I see is that (says owner manager's name), sees a client and comes back with the requirements and needs and then we just do that.'' (Company E technical employee).

''I'm in sales, on the business development side of things and the key thing for me, my key objective is to build the sales erm…that the business you know, achieves. So for me, without that, for me, everything becomes almost irrelevant.'' (Company F owner-manager).

The two small firms in this sector were very much focused on sales and promotion (Company E and F). Micro firms in this sector appeared to have less of focus on sales or promotional activities and mainly relied on WOM and their current customer base. Although Company E's owner-manager stated that advertising does not work for his company he uses a range of other methods, such as public relations (PR) to build his company's brand image, holding promotional events to launch products with their software partner and usually employs a designated experienced salesperson who has very good contact (sales) networks across the UK. Company F, whose owner-manager

has a sales and marketing background has a considerable focus on this aspect of the business.

Although the micro firms did not have a focus on sales and promotion the small, higher growth firms did. The researcher considered this descriptor to be a contributing factor for firm growth therefore the underpinning dimension was confirmed and included in the revised framework.

6.4.2 Consolidation of the underpinning dimension descriptors

All fifteen dimensions have been confirmed and by analysing the responses from respondents during the card interviews, the underpinning descriptors for the refined 'EMICO' framework have been confirmed. Some underpinning descriptors were removed whilst the following items were added 'gathering intelligence through PCNs and web-based IT networks,' 'formalised IT infrastructures,' 'creativity,' 'project planning' and 'project management.' The researcher then went back to the literature used in the development of the model and, by comparing the literature with the responses on each dimension, found that several of the other twenty three EM characteristics identified by Hills and Hultman (2005) were very pertinent to EM in this context. Therefore the following underpinning descriptors were added to the framework. 'competitive advantage based on understanding of customer needs,' was placed under the responsiveness to competitors dimension. The underpinning dimensions of 'organisation driven by customer satisfaction' and 'understanding of how customers value products/services' were placed under understanding and delivering customer value.

6.4.3 Summary of the dimensions

Research of six micro and small software technology firms has allowed for the internal validation and refinement of the 'EMICO' framework dimensions. Following the card dimension interviews and with some considerable reflection, respondents confirmed that

all fifteen dimensions were essential for their firm's future growth, whether their firm was undertaking the activity or not. There was wide recognition from respondents that more needed to be done in certain areas as the emphasis for firms was often more on one dimension than another. Often firms had not implemented certain dimensions due to the limitation of the business; lack of financial resource and technical employee resource, as well as a lack of a specialised and experienced marketing resource and the demands of supplying high levels of software support. Limitations that particularly impacted on the firms ability rested in four dimensions; 'propensity to innovate', by reducing the firm's ability to complete innovative new projects which in turn reduced their potential for 'exploiting markets'. 'Proactivity' was reduced in some micro firms particularly in respect of marketing their software and in their 'market intelligence generation' capabilities.

'Understanding and delivering customer value' was by far the most important aspect for all firms together with 'responsiveness towards customers.' 'Communications with customers' was also deemed as important and viewed as conceptually related to these two dimensions. These three dimensions were often grouped together in the card ordering process. 'Knowledge infrastructure' and 'propensity to innovate' were also indentified as important dimensions for firms. The particular relevance of these five dimensions may be explained by the market sector in which they operate and because the development of bespoke software requires an understanding of the customer and creation of incremental innovations that encourage repeat business. A propensity towards innovation also allows for new product development opportunities and business processes where possible, given the constraints of small businesses. Key issues for firms were; the importance of project planning, building effective IT knowledge infrastructure, customer relationships, managing customer expectations and use of networks and relationships. Other issues of note were the controlled investment in R&D projects, the lack of sales and promotion focus in micro firms, the emphasis on quality and reliability of software rather than speed to market for bespoke software projects and a low propensity towards risk taking that is carefully calculated but ultimately may inhibit swift firm growth.

6.5 The 'EMICO' framework.

The proposed framework dimensions in the earlier model (figure 3.1) have been tested and validated using empirically based research in a sample of micro and small technology firms. The refined model suitable for the qualitative research investigation of EM in small software technology firms is presented overleaf at figure 6.0.

6.6 Conclusion

This chapter has discussed the validation and consolidation of the framework dimensions and their underpinning descriptors. It also presented the findings. These were the responses from respondents about each dimension. The final section presented the revised 'EMICO' framework. Recommendations for its further application are discussed in Chapter 8. Chapter 7, the next chapter presents the five key themes emanating from this research. The latter part of the chapter proposes the contributions that this research has made to the literature.

Figure 6.0: The 'EMICO' framework

- **Research and Development-***Descriptors-level of emphasis on investment in R&D; technological leadership and innovation.*
- **Speed to Market-***Descriptors-competitive stance- collaborator, follower, leader, defensive etc.*
- **Risk Taking-***Descriptors-calculated risk taking; preparedness to seize opportunities; preference for incremental and transformational acts; reliance on intuition and experience.*
- **Proactiveness-***Descriptors-commitment to exploiting opportunities; inherent focus of recognition of opportunities; a role for passion, zeal and commitment.*
- **Proactively Exploiting Markets-***Descriptors-vision and strategy are driven by tacticalsuccesses; planning, or lack of, in short incremental steps; proactively exploiting smaller market niches; flexible, customisation approach to market; marketing decisions linked to personal goals and long term performance.*
- **Market Intelligence Generation** *External (to the firm) intelligence gathering; informal market research generation; gathering marketing intelligence through PCNs and web-based IT networks.*
- **Responsiveness towards Competitors-***Descriptors- responsiveness to competitor innovations and NPDs; niche marketing strategies; differentiation strategies using software quality; software innovation; quality and responsiveness of software service support; competitive advantage based on understanding of customer needs.*
- **Integration of Business Processes-***Descriptors- closely integrated functions, R&D, marketing etc; sharing of resources; product/venture development is interactive, formal processes; project planning; project management; marketing that permeates all levels and functional areas of the firm.*
- **Networks and Relationships-***Descriptors- resource leveraging; capacity for building network and business competence; use of social networks (PCNs); creation of value through relationships/alliances; intra-firm networks; market decision making based on daily contact and networks.*
- **Knowledge Infrastructure-***Descriptors- formalised IT based knowledge infrastructures;formal and informal policies, procedures, practices and incentives; gathering and disseminating information.*
- **Propensity to Innovate-***Descriptors- processes for sustaining and shaping the organisations culture to stimulate and sustain creativity and innovation; covering all innovation types- new product, services, process and administration.*
- **Responsiveness towards Customers-***Descriptors- responsiveness to customer feedback and behaviour; speedy reaction to shifts in customer preference.*
- **Communication with Customers-***Descriptors- strives to lead customers; formal and 'informal' feedback gathering mechanisms; ongoing dialogue with customers to build long term relationships; delivery to customers, customer confidence with marketing based on personal reputation, trust and credibility.*
- **Understanding and delivering customer value-***Descriptors- organisation driven by customer satisfaction;understanding of how customers value products/services; closely linked to innovation practices; often two- way marketing with customers; customer knowledge often based on market immersion/interaction.*
- **Promotion and Sales-***Descriptor- A focus on sales and promotional activities.*

7.0 ENTREPRENEURIAL MARKETING IN WELSH TECHNOLOGY FIRMS: KEY ISSUES AND CONTRIBUTIONS.

7.1 Introduction

The first part of this chapter provides an integrated discussion about the key issues for small software technology firms. The key issues for these firms are drawn from the study of the sample of six technology firms (Companies A to F). The second part of the discussion then draws upon the main findings of the thesis and identifies the contributions that this thesis makes to the EM and SME marketing literature. The research findings from research with Company A and the educational software sector (Chapter 4) are embedded within the development and construction of the proposed 'EMICO' framework (section 3.2) and are therefore not specifically discussed in respect of the key themes.

7.2 Key themes arising from the research

A number of key themes arose in the study EM in micro and small software technology firms and the activities and behaviours they exhibit. The key themes are discussed in the following five subsections.

7.2.1 IT based knowledge infrastructures

The formal and informal policies, procedures, practices and incentives understood to facilitate innovation (Siguaw et al., 2006) are insufficient for small technology firms. Respondent descriptions of the dimension 'knowledge infrastructure' illustrated the importance of having formalised IT based knowledge infrastructures in place. This was a relatively easy transition for firms as they already used communication platforms for the rest of their business which would readily support a formalised knowledge IT infrastructure. Due to the nature of the software product and the complexities of software development, technology firms found that they needed to record detailed

project data codes in data repositories so that there was a record showing how the software product had been developed. Where an effective knowledge infrastructure was in place the information held on previous projects was used to inform new projects and therefore this made software developments more efficient (Company A, D and E). This enabled the knowledge of that particular bespoke software product to be retained by the firm and be replicated, or form the basis for another similar software project. Reusing elements of the software coding saved the firm vital software developer time and hence this was a much more cost effective method of bespoke software development. Having effective IT based knowledge infrastructures also allowed for the generating and sharing of knowledge within the firm. Firms were also using 'Wiki' pages as discussion forums for stimulating and sharing new ideas and general communications. In this way information was quickly generated and readily disseminated between employees.

Formalised knowledge infrastructures for these firms were instrumental in generating knowledge and retaining tacit knowledge in the firm. Micro and small firms were found to be particularly vulnerable to the loss of such knowledge, for example, where a software developer had left at short notice. It also enabled new employees to get quickly up to speed with the firm's software projects and the way that the firm processed and managed its work. Making information available to all employees also made all the employees in the firm accountable and answerable to customer enquiries. Where firms had no procedures in place they were working hard towards addressing this issue as they recognised that they were not fully utilising the technical knowledge of their senior developers or sharing the experiences of each new project with other employees.

7.2.2 Project planning and management

The importance of project planning and project management was frequently mentioned by respondents and particularly owner-managers, in response to the dimension 'integration of business processes'. Planning in entrepreneurial SME s is described as a flexible process where decision making is only partly rational and tasks are less specialised (Carson et al., 1995). This informality suits the personality of the

entrepreneur in the early stages of the firm when the firm has few customers and it is closer to it's customers. However, the findings of this study show that because of the nature of the software product, the timing and delivery of the project requires an efficient planning process that is embedded in the firm. Micro firms quickly identify a need to carefully plan for the projects they take on or get their fingers burnt when expensive projects (in terms of investment in technology employees time) slip. Project planning not only requires the software tools but requires a formal set of procedures for employees to follow that needs to be effectively embedded in the organisation. This matter becomes more urgent as the firm grows in size and takes on more customers. The informal checking of project progress then becomes more unwieldy and unmanageable.

Owner-managers expressed concern about the costs of delayed projects to the firm and the difficulty of implementing formalised procedures. Company D was the only firm that felt that they had efficient project management procedures in place. However, they also had a very small team of software developers working in close proximity to each other, which also made communications very much easier. Other firms were either thinking of improving their project planning procedures or had implemented them but were finding adherence to the project planning process difficult. Project management was clearly an area that had to be continually managed on a day to day basis. For owner-managers of micro and small firms this is difficult because they are frequently away from the office seeking new business in the salesman role.

The overrunning of projects can be particularly detrimental to micro and small firms as they lack the business capacity to absorb project delays. Moreover the knock on effect of delaying other customers and projects becomes detrimental to firm efficiency and profitability. Moving from informal business processes to more formalised procedures becomes even more critical as firms grow in size and take on more projects, employees and more customers (Company F owner manager). These issues are confirmed by Hall et al.'s (2007) research of software developers and project outcomes. They found that those developers with technical competence, interpersonal skills and adherence to good practice had the biggest impact on project success. The findings from this research

project indicate that having effective communications with customers is closely linked to the successful delivery of projects for these firms. This is illustrated by respondent feedback under the dimension terms of 'integration of business processes' and 'communications with customers,' and is confirmed by Hall et al., who identified ineffective communications with customers as a key factor of software project failure.

7.2.3 Customer relationships

Existing research of entrepreneurs and owner-managers illustrates that they are adept at developing close relationships with their customers (Carson et al., 1995; Stokes, 2000). The firms in this sample were unequivocally customer oriented focusing on the development of bespoke software solutions for customers that naturally demanded a customer centric approach. The service support element involved software maintenance, technical support, training and consultation within the purchaser's business to ensure that the software was implemented smoothly within the business organisation. This made significant demands on these micro and small firms who frequently make themselves available outside the '9 to 5' to offer a more responsive and personal service than larger firms. Responses from three of the EM dimensions; 'responsiveness towards customers,' 'understanding and delivering customer value' and, 'communications with customers' confirmed that the building of long term relationships with customers was absolutely essential for all of these software technology firms.

The highest ranking EM dimension in this research was 'understanding and delivering value.' This is particularly interesting as owner-managers and employees were all concerned about what 'value' meant for the customer. Some owner managers expressed this as return on investment (ROI) but for others this was less clear. It was also difficult to for firms to communicate exactly what the value of their solution would be to the potential customer. However owner-managers appeared to undertake entrepreneurial marketing by focusing their efforts on building relationships with customers and creating customer value as part of a value creation process (Hills and Hultman, 2005). This value, identified in the EM literature emerges when the customer, in this case the software

customer uses what is required, as part of a co-creation process. In bespoke software development therefore, customer value is generated initially during the software development project and continues thereafter in the effective service provided. Software firms in this sample market an 'intangible' software solution to buyers who are active and are able to exploit the potential customer value that is embedded in each software offering. In stable markets, perceived customer value will become established over time and is known as the 'value logic' but a growing entrepreneurial firm must engage in other methods such as customer knowledge based on immersion in the market and value creation through relationships and alliances. In this way, firms in this sector undertake entrepreneurial marketing by focusing their energies on developing reciprocal co-creative relationships with customers.

Day et al., (1998) in their study of RM found that entrepreneurial firms were more likely to use RM strategies and had greater benefits. They had greater growth and profitability whilst retaining a much higher percentage of their customers than other non entrepreneurial firms. This is interesting because this sample of software technology firms relied heavily on their current customer base to generate business from repeat custom. Small software firms benefited from WOM recommendation as a method of marketing their software as this alleviated some the issues around the perception of risk for the customer in the purchase decision. Also potential customers who had greater knowledge and positive perceptions of the software service that the firm could offer would be more likely to have increased confidence in the service provided (Coulter and Coulter, 2003). Development of trust increases repurchases, with firms stating that they had few customer defections (Reicheld, 2003; Sharma and Patterson, 1999). WOM recommendation was the most powerful method of marketing their software and this method was relied upon by all the firms. Company E and F used WOM but also had more of a sales focus and used other methods such as PR and sales techniques. Bespoke software development often involved incremental innovations rather than NDPs particularly for the micro firms. In this way customer relationships are used as part of a co-creation process (Prahalad and Ramaswamy, 2004).

This research identified that software developers (technical employees) had a great deal of contact with the customer from the start of the project. Owner-managers were observed to have people skills and were natural communicators, whereas software developers appeared uneasy and lacked confidence and patience in dealing with customers. This was partly due to the customer interrupting them whilst they working with complex data coding and also because of general frustration at the customer's general lack of IT knowledge. Yet, having software developers who can effectively communicate with customers is important and is confirmed by the findings of Hall et al., (2007). Despite this, within this sample, the software technology firm's close relationships with customers allowed for co-creation and development of software products whilst a 'bottom up' approach to marketing was observed, selling to one customer in an area and looking for more of the same. Frequently the reselling of software was undertaken through current customer contacts; this could be improved by encouraging technology employees to be part-time marketers (Gummesson, 1996). The firms in this sample by their own admission had yet to maximise their potential in this area of reselling to current customers.

7.2.4 Managing customer expectations

Management of customer expectations emerged as a strong theme in the research. Firms in this sample develop software solutions or interactive websites for other companies or organisations. This requires an understanding of the requirements of the purchaser and the end-users of the software solution. Some owner-managers described issues around the initial planning period of the project when the customer is not sure of their software requirements. Failure to manage the expectations of customers can result in a loss of perception of service quality as this forms a key element of the customer evaluation process when determining service quality (Groth and Dye, 1999). For small firms in this sector this was one of the most difficult aspects for firms to manage and was mentioned by most of the owner-managers and technology employee respondents under the dimension terms of 'responsiveness towards customers,' 'communications with customers,' and 'understanding and delivering value.' The bespoke software product is

typically difficult to cost at the outset, a factor identified in this research and confirmed by Mohr (2001). The owner-managers and technical employees faced difficulties in managing the expectations of customers particularly during the period of the development project, again factors that are highlighted in Mohr's research. This occurs because the technology purchase is marked by customer anxiety about the use of the product, the timing of the delivery and its functionality. Frequently customers changed their minds about the functionality of the software and expected this to be changed with little or no extra cost. Technology employees and sometimes owner-managers had difficulty convincing customers of the time and costs involved for changes in the software specification.

In an effort to please customers firms often waived the additional fees that should have been charged as additions to the original project specification. Such demands are surfaced by Rao (2005) who described the demands of customer, their expectations and their lack of clarity about the product as making the marketing of software difficult. Rao suggests that it is the responsibility of the software firm to understand the both the needs of the business customer and their end users whilst Sureshchander and Leisten (2005) propose that the human element of the service delivery is one of four key performance indicators (KPI s) for the measurement of customer satisfaction along with the core service, the service delivery process and the 'softwarescapes' (infrastructure, functionality etc.).

The demands that customers made in this sample of firms was partly due to the customer's naivety concerning the software development process but in other cases long term customers appeared to try to take advantage of the 'friendly' long term relationship with the firm by asking for additional software developments without expecting to pay extra for it. In other cases, for example, the development of completely new innovative projects, firms also bore the brunt of excessive costs of the project, in order to satisfy the customer in the hope of return custom. Although this method was proven as successful, it cost one particular firm an initial loss of £10,000.

7.2.5 Use of networks and relationships

The use of networks and relationships were prevalent in firms in this sector and the dimension term itself generated a lot of discussion in all firms. Owner-managers were particularly enthusiastic about the benefits of using networks although two owner-managers preferred to view networks as simply relationships with individuals. The literature suggests that entrepreneurial networks are fundamental to SME marketing and EM activity (Carson et al., 1995; Collinson and Shaw, 2001; Gilmore et al., 2001). The findings of this research confirmed the importance of networks in small firms in the software technology sector. Networks were considered by owner-managers as being essential for firm growth prior to or at point of start-up of the business. In all cases, those network contacts that were made at the firms inception were long term investments as they are still in use now. These identified networks are viewed as absolutely essential for firms and they have helped the firms develop and grow.

Identified networks in this sector included owner-manager PCNs, business networks, business advice networks (banks, accountants, solicitors, business support agencies), university networks and customer networks. The owner-manager has the most network contacts and used them to increase capacity in the firm for a variety of reasons. Networks in this sector were vital for leveraging resources. Innovation networks and partnerships created opportunities through shared projects, in one case university collaborations were used to further develop R&D in the firm. As the research on technology companies suggests business alliances and partnerships with larger firms create a wealth of opportunities for firms (Boussara and Deakins, 1999). The small firm's marketing capacity was increased in firms where they had entered channel partnerships and partnerships with larger companies. This reciprocal arrangement benefited smaller firms by increasing business opportunities in the market, innovation opportunities in partnering to develop new products and particularly important in NPDs, large firms had the marketing resources to prepare the market and create demand for a new software product. There were also obvious benefits for larger software firms in the

partnership, smaller firms were often more able to develop unique and innovative products, were closer to the market and had more knowledge of that market.

Customer relationships and networks were also identified during the research. These relationships were usually with the owner-manager and sometimes with 'customer facing' employees in the firm. Generally employees in the firms tended to have fewer networks. Customer-facing employees developed customer networks and close relationships with individual customers. This provided essential marketing for the firm as customers often became 'advocates' and generated new customers by WOM recommendation.

The research uncovered implicit networks that were used by technical employees. These were informal web-based IT networks. Software technology firms all had a low awareness of their competitor firms. This is perhaps because the software technology market is large and fragmented with a lot of small firms and only a few large players. PCN s and immersion in the marketplace kept owner-managers in touch with changes in the market. Technical employees were quite insular in their workplace, tending to prefer to work on software programming rather than deal with customer enquiries. However, surprisingly they had all (with only one exception) developed informal network contacts using web-based IT networks. These appeared to be essential for keeping the technology employee and hence the firm, up to date with the current market trends. This implicit activity allowed for vital, swift and informal market research; information gathering, keeping up to date with software technology changes and new innovations in the marketplace. In some cases technology employees updated their expertise with online training and contact with more experienced colleagues, providing a free source of learning and training for employees. These IT networks were uncovered during the research and were not identified during owner-managers interviews in any of the firms. Therefore it is assumed that they are a relatively unexplored, implicit network activity.

7.2.6 Summary

There are five key issues for small software technology firms. These are the importance of IT based knowledge infrastructures, the necessity of project planning, the development of long term fruitful customer relationships, managing customer expectations and the role of networks for building business, innovation and marketing competency for micro and small firms in this sector. These issues relate to seven of the fifteen framework dimensions and these issues all relate directly to the firms internal and external communications that may be formal or informal. For example, use of formal IT infrastructures facilitates knowledge infrastructures and intra-firm collaborative communication. Formalised project management procedures facilitate effective intra-firm communication between the firm and its customers. Customer relationships create opportunities for innovation by co-creation and WOM recommendation. The management of customer expectations depends on effective communications with the customer, whilst networks and relationships involve both formal and informal relationships throughout the firm, but, as the literature suggests, the owner-manager is the person who is most likely to make use of a range of networks for the leveraging of a firm' s resources.

7.3 Original Contributions to Knowledge.

The first research objective of this research project was 'to contribute to the literature on EM and SME marketing in respect of small software technology firms.' The researcher believes that there are several contributions to knowledge emanating from this research project. This section presents the research contributions in the following subsections.

7.3.1 Contribution to entrepreneurial marketing and SME research in software technology firms.

This thesis contributes specifically to the EM and SME marketing literature. EM is a still a developing paradigm that is still very much in debate. There is much disparity and

debate in the literature as to what really constitutes EM whilst there are a number of interesting themes emanating from it, in particular marketing and entrepreneurship and their interfaces. Central to EM is the notion of innovation which is viewed as a key aspect of the EM concept (Hills and Hultman, 2006). It is proposed that the research of small software technology firms has much to offer EM research due to the nature of the software business and the industry sector in which it operates. This research has endeavored to explore EM from the small firm perspective. This is one of the three comparative groups of EM research proposed by Hills and Hultman (2006, p.6) in which existing thoughts, empirical observations and emerging theories inform development of the EM paradigm.

There is a paucity of EM and SME marketing research that focuses on the marketing of technology products and more specifically, the marketing of software. Much of the software technology research tends to focus on innovation, new product developments and business performance (Narver et al., 2004; Salavou et al., 2003; Subin and Workman 2004;Verhees and Meulenberg, 2004). Therefore this research makes a contribution to EM and SME marketing research by furthering the knowledge of marketing within the software technology sector.

The findings of this research suggest that Company A had managed to succeed in a challenging marketplace of high speed, dominant global competitors and UK government legislative constraints (Jones and Rowley, 2007c). The operational owner-manager was entrepreneurial, leveraging resources by using networks to build capacity for the firm and building partnerships for innovation. Central to the firm's development was their focus on building long term relationships with customers which brought them marketing opportunities through WOM recommendation. WOM was the most successful method of selling software for the firm mainly as it reduced the perception of risk in a high involvement software purchase. This is because confidence and trust in the supplier and the firm is required before a long term commitment is made (Jones and Rowley, forthcoming; Jones and Rowley, 2008c).

Although common themes have emanated from this research, the research did not highlight being Welsh or being based in Wales as a factor, in fact culturally they were not welsh. However two companies promoted bilingual welsh software which, particularly in one company had provided them a USP and some local competitive advantage.

The research findings that have been surfaced are interesting because the EM literature recognises entrepreneurial activity and influence, use of networks and network relationships together with marketing and innovation. However, despite the fact that researchers recognise that entrepreneurs develop close customer relationships as part of their marketing activity, and EM views customer relationships as part of a co-creative activity and a value creation process (Hills and Hultman, 2005; Stokes, 2000) the importance of a customer orientation is not core to the EM concept. Accordingly, this research has sought to extend the knowledge of EM by investigating a sample of small software technology firms. In this way, investigation of software firm's EM activities and behaviours has drawn into the debate the importance of customer relationships for the marketing of software in small entrepreneurial firms, a key factor identified and challenged in the early stages of the research (Jones and Rowley, 2007b).

The application of the empirically and theoretically based 'EMICO' framework (discussed later in section 7.3.4) confirmed many of the EM characteristics that have been identified by EM researchers (Hills and Hultman, 2005; Morris et al., 2002). EM characteristics which were particularly visible in small firms in the software technology are now discussed.

Owner-managers of small software technology firms were adept at entrepreneurially leveraging resources for their firm (Morris et al., 2002). Networks and partnerships were prevalent in the sector and resources for business, innovation and marketing were obtained by implicitly using this approach. Characteristics identified by Hills and Hultman, (2005) were also confirmed. The founder is central to marketing in the firm; owner-managers were the sales person for the firm and the firm's 'brand' identity. They were the 'face of the firm' and as such their method of marketing was based on their

personal reputation, trust and credibility. This was extremely important in this sector as software is a high risk purchase that requires trust. Marketing tactics were often two-way with customers, with customers taking an active role in the development of the software to the extent that software was often co-created. WOM recommendation was also highly prevalent in this sector. Marketing in these firms was frequently based on daily contacts and networks whilst value was created through effective relationships, partnerships and alliances. Interestingly, there were several EM characteristics outlined by Hills and Hulman (2005) in the literature review (section 2.2.3) that did not occur in this context. These were; 'marketing permeates all levels and functional areas of the firm'; 'strives to lead customers' and; 'heavy focus on selling and promotion'. These are characteristics that were not found in this sample of firms. Yet, these characteristics would prove highly beneficial to firms in this sector (Company E and F are noted for their sales focus and have higher growth and turnover).

Some of the thesis contributions relating to SME marketing have already been mentioned in the discussion of EM as they are related concepts. However, there are other specific contributions that this research has sought to make. The research specifically extends the limited research of marketing in micro and small software technology firms in the software technology sector by using qualitative research. Research findings confirm that micro and small firms in this sector use a customer oriented approach. This approach is driven by the nature of the high involvement of the B2B purchase decision and the service support requirement of the software purchase. This confirms the SME literature which identifies the close relationships the entrepreneur has with his customers (Stokes, 2000) and the 'bottom up approach to marketing' (Dalgic and Leeuw, 1994). This sample of small software technology firms like other SMEs have decision making that tends to be non-bureaucratic, informed, flexible and organic (Carson et al., 1995). This in turn informs the learning culture and orientation of the firm (Cegara-Navarro and Rodrigo-Moya, 2007). However these technology firms appear to differ from other small firms in other business sectors in that they also require formalised project management and project planning. To facilitate learning in the firm they also need to have formalised IT based knowledge

infrastructures with which to facilitate knowledge and spread tacit knowledge across the the firm.

This research also furthers the findings of the SME literature on networks which are identified as being a fundamental activity for SME marketing (Carson et al., 1995; Gilmore et al., 2001). This research has confirmed a range of networks that are prevalent in the software technology sector. Networks that have been identified in this research include; customer relationships and networks, owner-manager PCNs, business networks, university networks and business support networks. This research also confirms that in the software technology sector networks are instrumental for the start-up of new ventures and essential for continued firm growth. Specific SME networks have been identified in this research, with the surfacing of implicit networks that are used by technology employees. These are extremely valuable for providing informal market intelligence for the firm as more formal methods are time consuming for small firms with limited resources. Technology networks in particular provide informal information from colleagues and other software developers about innovations to market such as NPDs and changes in the market. This provides the firm with a very effective method for gathering market intelligence in high speed markets.

The research also confirms the SME literature in respect of the inherent business constraints that SMEs face (Carson et al., 1995; Carson, 1985). The micro sized technology firms in this sample particularly suffered from an inherent lack of business resource; mainly a lack of employee and financial resource, having no specialist marketing resource or expertise. Business limitations were acknowledged by respondents as reducing the firm's opportunity to carry out some of the EM activities. Limitations that particularly impacted on the firms ability rested in four dimensions; 'propensity to innovate', by reducing the firm's ability to complete innovative new projects which in turn reduced their potential for 'exploiting markets'. 'Proactivity' was reduced in some micro firms particularly in respect of marketing their software and in their 'market intelligence generation' capabilities.

7.3.2 Contribution to comparative research of small firms and large firm marketing in the educational software industry.

This thesis contributes to SME marketing research by investigating the differences between small and larger firms by way of a comparative study. It also contributes to the limited research of the educational software sector, a sector of increasing significance in the UK. Research that examines the differences between different sizes of firm in the same sector is very limited despite the fact that researchers acknowledge that small firms market differently (Carson et al., 1995; Hill, 2001). The B2B literature provided a number of relevant concepts and models to support this study particularly in the areas of network relationships and supply chains, and the high specification product purchase (Brennan et al., 2007). B2B theory was integrated with discussions about the SME literature to enable comparisons to be drawn. Software technology products require effort on the part of the customer in not only acquiring the product, but also in the assessment and taking of high risk decisions (Murphy and Enis, 1986) whilst risk is an inherent feature of exchange in business markets where owner-managers have to deal with uncertainty and possible negative consequences surrounding purchase and supply decisions (Mitchell, 1995).

A survey was carried out to gauge the types of marketing activities that were carried out by different sizes of firms in the educational software industry. Five factors were identified that effected both small and larger firms in the sector: challenges in identifying the 'customer'; school's budgetary constraints; the IT competence of teachers; the importance of WOM recommendations; and, the use of partnerships. The differences between small and large firms were particularly visible in the area of the firm's understanding of competitive structure. Small firms had different perceptions of their business's marketing strengths. They also approached communication and interaction with customers differently. Those differences observed in behaviour and attitudes are associated with company size and the respondent's professional and work expertise. In particular, smaller businesses were found to be customer oriented, but much less market oriented (Jones and Rowley, 2009a; 2007a).

This research proved valuable as it surfaced from the research why being customer oriented is so effective for small firms in the software technology sector. Interestingly both large firms and small firms place value on building relationships with customers and using WOM recommendation and therefore confirms the SME marketing literature (Stokes, 2000). The differences really become clear in the way small firms approach customers. They are more customer oriented, and less market oriented, offering a more personalised, flexible software service support and are therefore more likely to respond to the individual customer's wishes.

7.3.3 Research of business and marketing using an extended case study.

This research has contributed to the research of SME business and marketing literature, particularly in relation to software technology firms and marketing of software where there is a paucity of research. The extended case study of Company A has offered an interesting opportunity to generate new findings by exploration and observation of one particular firm for an extended period of time and from within it's own context. This research was able to uncover implicit and explicit marketing activities, attitudes and behaviours that are inherent in the firm, and which often include a combination of innovative and entrepreneurial approaches. The study particularly provided an opportunity to research three important aspects for research investigation. These key themes were drawn from the study.

Firstly the extended case study reinforces the views of SME researchers by research of Company A. This micro sized firm is highly customer oriented, and focuses on the development of long term customer relationships. As the SME literature suggests, this firm has a very small scope and small scale of operations and are managed in a very personalised way (Schollhamer and Kuriloff, 1979). The owner-managers view employees as friends and colleagues, and decisions are made in an informal and ad-hoc way which is, as Carson et al. (1995) suggests, flexible and non-bureaucratic in nature. Both owner-manager's business motives and personal goals are also closely inter-twined (Carland et al., 1984). Company A's marketing approach was affected by a range of

factors that have been noted in the SME literature (Carson et al., 1995), having a distinctive style that is influenced by the owner-manager's way of doing things, characterised by an inherently informal approach.

This research also makes a contribution to the SME and entrepreneurial network literature with regard to research investigation of Company A and the way in which the operational owner-manager develops core business competencies by using networks (Aldrich and Zimmer, 1986; Jones and Rowley, 2008a). Personal contact networks (PCNs), business networks, industry and marketing networks were identified in the research and this research confirms the work of EM and SME marketing authors (Collinson and Shaw, 2001; Gilmore et al., 2001; Hill, 2001). The research approach used here validates Dubini and Aldrich's (1991) recommended research approach which is to investigate the phenomenon over time so that the dynamic nature of networks is to be captured, with the 'subtle nature' of the processes involved in small firm networks. This research has extended the knowledge of owner-manager networks by research in the software technology sector. The value of networks for building capacity for the firm was confirmed in this sector and three areas for capacity building using networks was identified. These are the areas of business, marketing and innovation.

The third part of the research study considers the role of business purchasing, customer attitudes towards the small firm and purchase decision making in schools (Jones and Rowley, forthcoming; Jones and Rowley, 2008c). This research offers an opportunity to explore dyadic business to business relationships and the perception of customer in respect of the small firm. In doing this, the research furthers the knowledge of software technology research as it explores the decision to purchase process (Brennan et al., 2007). This research adapts Bevilacqua and Petroni's (2002) 'evaluation criteria' for decision-making to the software technology sector. Most notably, after-sales support and software quality are the most important factors, confirming the importance that customers place on the software service. This provides some explanation as to how small firms are able to compete in highly competitive markets as they use a customer oriented approach which offers high levels of service. This research has also investigated

issues that particularly affect small businesses, trust and confidence in the SME and the role of the owner-manager in the purchase decision.

7.3.4 Development of the 'EMICO' framework.

The development of 'EMICO' framework forms the major contribution of this thesis and it is proposed that it advances research in both the EM and SME literatures. The development of the 'EMICO' framework is important for several reasons. Research in SMEs tends to be sector specific, the terminology used in the popular MO scale items reflects the type of responses expected from professional marketers, not those of owner-managers and; the models used tend to be quantitative scales which limit our understanding of the way in which small firms market.

Development of the model has been furthered by the gathering of valuable feedback from experts in the research field of EM and SME research (Jones and Rowley, 2008b). Empirical research of the educational software sector showed that marketing was extremely important to small technology firms in this sector but their marketing activities differed from that of large firms in the same sector (Jones and Rowley 2009a; 2007a). A review of the EM literature confirmed that research in this area can offer much to the research of small software technology firms as they operate in competitive marketplaces where there are frequent changes in the market and NPDs are frequently introduced. Development of a suitable research framework for investigating EM fills a gap in the EM literature where there are few tested scales or frameworks, with one notable exception, that of Kocak (2004). This is a quantitative scale for measuring EM that is based on Morris et al.'s seven EM dimensions (2002).

The importance of SME marketing, EM and MO for firm growth is well documented in the SME literature (Blankson and Stokes, 2002; Carson, 1990; Carson et al., 1995; Stokes, 1998). This has led to a developing body of knowledge around SMEs and their unconventional marketing strategies, informal planning and, entrepreneurial activities. More recently, mainstream market orientation (MO) researchers have recognised that

firms who adopt other strategic orientations combined with MO are likely to perform better than firms adopting only a market orientation (Grinstein, 2008). Being market oriented is an essential requirement for technology firms who need to bring products and services to market that create value for customers. Technology firms also need to be entrepreneurially oriented, investing in R&D and being proactive in the marketplace. A review of the MO literature shows there is little extant research of MO in the small firm context, with popular MO measurement scales (Kohli and Jaworski 1990; Narver and Slater 1990) tending to preclude SME entrepreneurial marketing activities such as networking approaches that are recognised by researchers in the literature (Carson et al. 1995; Gilmore et al. 2001).

Existing literature on EO, MO, IO, CO and SO was drawn together in order to carry out the appropriate research investigation. It was important to draw on different elements of the literature that would reflect the sorts of activities being carried out in small firms in the software technology and not to treat the literature as existing in silos of knowledge. The proposed framework also draws on important aspects of the EM and SME literature and specifically identifies CO and SO literature and the use of networks in the research of technology firms who create bespoke software for their customers.

The 'EMICO' framework was empirically and theoretically developed and then tested with a sample of small software firms. The 'EMICO' framework dimensions are established as being suitable in this research context as respondents confirm the dimensions as necessary aspects for firm growth, with the recognition that within firms there was more needed to be done, in certain areas. Customer orientation for firms was extremely important while an innovative focus for firms was also necessary due to the market sector in which they operate and because bespoke software requires an understanding of the customer and creation of incremental innovations that encourage repeat business. Research investigation of a sample of software firms has identified five issues for firms that market bespoke software solutions: 'business planning', 'knowledge infrastructure', 'management of customer expectations', 'building customer relationships', and 'use of networks' (Jones and Rowley, 2009c).

These findings have informed the SME marketing and EM literature as to the issues that surround EM in small firms that operate in the software technology sector. The application of the 'EMICO' framework and subsequent findings have illustrated the need for scales or frameworks that are more appropriate for the research of small software technology firms. Whilst there is recognition that all EM dimensions are necessary, small technology firms choose to focus on some activities more than others. It is proposed that the 'EMICO' framework presented in the thesis offers an effective method for assessing how small entrepreneurial technology firms market. The development and testing of a qualitative research framework has allowed for inductive exploration of the research phenomenon. This framework has generated interesting findings and captured implicit and explicit EM activities and behaviours which exist within these small firms. It is suggested that, particularly in the context of small firm research, that this qualitative framework offers greater opportunities to explore EM than by other scales and measurements in the MO literature. This research therefore furthers research on EM specifically in the context of SMEs, by developing a qualitative research framework suitable for application in the software technology sector. This research not only contributes to development of EM theory but also to the under-researched topic of SME marketing in small technology firms.

7.3.5 A methodological contribution using the 'card game' approach.

This research approach makes a contribution to the methodological approaches used in small firm research. It uses the 'card game' methodology together with the 'EMICO' framework dimensions (Müthel and Högl, 2007; Jones and Rowley, 2009d). This method uses qualitative research approaches to explore EM that are much more likely to offer an opportunity for exploring not only firm business and marketing activities but also an understanding of what lies behind the rationale for these practices (Blankson et al., 2006). Qualitative research has the potential to be particularly useful for exploring and explaining implicit and explicit EM activities and behaviours in the small firm context.

The 'card game' methodology was used with semi-structured interviews. This method had been successfully used in the research of 'intangible' notions of trust. It had been used to discuss and prioritise certain trust attributes in forming trusting relationships between international innovation teams. As such it was considered highly suitable for exploring both the implicit and explicit activities and behaviours within firms. The 'card game' methodology was evaluated as part of the research process. On reflection the method of using a 'card game' approach during interviews had several benefits. Firstly it provided an unstructured method of getting respondents to talk around the notion of each dimension, uninhibited by the researcher and therefore allowed 'free speech' with very little influence from the researcher.

Careful prompts were given at appropriate points in the interview. As this could not be planned from the outset, these prompts were developed during the research and started with the pilot study. The focus of these prompts was to encourage respondents to reflect on the dimension on the card, and talk about what the term meant for them and then, what it meant to them in relation to their company. The card methodology was a particularly suitable method for small firm investigation as it provided a less structured 'loose' style of interview that generated a range of rich and deep insights about attitudes and behaviours in the firm. Using the card methodology readily engaged respondents who treated it as a 'fun' exercise. The researcher observed that the respondents answers were much more detailed than perhaps by using the usual semi-structured interview design. This was because the respondent was handling the card and focusing on the dimension on the card rather than looking at the researcher. This method appeared much less formal and no doubt this helped to alleviate any hesitation or lack of openness on the part of the respondent, particularly in the view of the fact that employee respondents had been asked to be interviewed by their manager. Also, the researcher did not intervene frequently with questioning and this may have reduced the likelihood of the researcher bias and intervention. It also reduced researcher influence and the risk of the entrepreneur emulating the words of the researcher.

The card prioritisation methodology was an unstructured 'loose' method of research which benefitted this research by drawing out a range of themes. However, if required this process could have been completed with greater intervention on the part of the research. Interestingly, respondents found it easier to identify dimension cards that they disliked first and foremost before choosing which cards were most important which confirms the findings of Müthel and Högl (2007). Finally, a further unexpected advantage of using the cards was in coding the data. It was much easier to code the data as it appeared in 'chunks' of data under each card term and was not broken by questions from the researcher.

7.3.6 Contribution to the Relationship Marketing, B2B and Services Marketing literature.

This research builds on the limited RM literature in SME s. There is very little specific research of RM in SMEs with only a few notable exceptions (Day et al., 1998), despite the fact that small firms exhibit a number of activities and behaviours that could be identified as RM strategies. Small firms in this sector focus on building long term relationships. The strength and reciprocity of these relationships often mean that there is co-creation of software products and a two-way marketing with customers (Hills and Hultman, 2005) which facilitates vital marketing for small firms by WOM recommendation. This strategy particularly benefits small firms by creating further sales by WOM recommendation and reducing the 'risk' element in the high involvement purchase decision.

This research also extends the knowledge of Services Marketing in the B2B context in several key areas. The extended case study builds on the B2B literature by examining the post-purchase outcome, an area of limited research (Tyler et al., 2007) whilst the research of a sample of firms has also informed the literature in relation software purchase and supply relationships. Purchase and supply relationships are prevalent in this sector along with partnerships and business alliances which allow opportunity for innovations and greater opportunities in the market, particularly for smaller firms

partnering with larger, more powerful companies. Smaller firms however, benefit larger firms by creating the innovative product and gleaning market information by being closer to the market.

The importance of managing expectations is a key finding of this research and confirms aspects of the Services Marketing literature and the importance of managing expectations in relation to the perceived quality of the product (Groth and Dye, 1999). The importance of trust in the purchase decision has also been surfaced by this research. The cultivation of trust is noted in the Services Marketing literature as service encounters carry a certain degree of risk due to the intangible nature of the service product. The findings of this research confirm that WOM recommendation helps to provide customer knowledge and perceptions of the service and therefore trust in the software support service (Coulter and Coulter, 2003). The need for trust and loyalty for the business repurchase intention identified by Reicheld, (2003) and Sharma and Patterson, (1999) is also confirmed by the findings of this research.

7.4 Conclusion

The first part of this chapter describes the key issues for firms in this sector. Then the second part of the chapter presented the researcher's main contributions to academic knowledge that are contained within this thesis. Chapter 8 provides the conclusions and recommendations for the research project. Firstly the chapter discusses the implications for the research and presents a schematic model which illustrates both core entrepreneurial marketing dimensions and the peripheral dimensions for small software technology firms. The chapter then concludes by addressing the managerial implications and making recommendations for further research.

8.0 CONCLUSIONS AND RECOMMENDATIONS

8.1 Introduction

The PhD is the researcher's contribution to academic knowledge. This thesis presents an empirical study of marketing in small software technology firms in North Wales. Central to this thesis is the empirically and theoretically developed 'EMICO' framework which has been tested, consolidated and refined within the small firm software technology context. The theoretical concepts applied in this study include EM, SME marketing together with contextual theories relating to the marketing of software technology products and services. The researcher has used qualitative research and an integrative multiple mix of methodologies, together with a comprehensive review of the literature to draw together dimensions for the framework. This research project has identified suitable EM dimensions that are representative of the attitudes and behaviours that micro and small software technology firms exhibit.

The application of the 'EMICO' framework has been empirically tested and refined using a sample study of small Welsh technology firms. This qualitative model is suitable for use in further research of SMEs in other sectors and has illuminated the research of EM and SME marketing with findings of interest. An overview of these findings and their specific contribution to EM and SME research is provided in the first part of this chapter together with a schematic model (figure 8.0) which illustrates the core EM dimensions for small software technology firms and those that are peripheral. This chapter concludes the thesis by reporting on the key outputs of this research, discussion of managerial implications and provision of recommendations for further academic research.

8.2 Meeting the Objectives of the Research

The introductory chapter of the thesis sets out the main aims and objectives of this research study. The main research aims were twofold; 'to contribute to the literature on EM and SME marketing in respect of small software technology firms' and, 'to make a contribution to our understanding of how small software technology firms market; their activities, behaviours and key issues for small firms in this sector.' These aims were underpinned with a set of research objectives. The meeting of objectives has been addressed throughout the course of the study. The answering of the research questions together with the meeting of the objectives are encapsulated in the findings of the research along with the models which are presented in the thesis. Accordingly, the concluding answers to these two main research questions are set out in the following subsections. Under each subsection are related academic papers that have been generated as a result of this research.

8.2.1 To contribute to the literature on EM and SME marketing in respect of small software technology firms.

This thesis has extended knowledge with regard to the EM and SME marketing literature in respect of small firm EM activity and marketing in the software technology sector, a relatively unchartered area of exploration. This is particularly important as EM is a developing paradigm which has had frequent calls from researchers to forward further development and exploration of the concept (Collinson and Shaw, 2001; Kraus et al., 2006; Morris et al., 2002). The concept of EM identifies the notion of entrepreneurship, marketing and innovation as core elements. This literature has provided a useful basis with which to explore the way in which micro and small firms market in the software technology sector where innovation and entrepreneurial activity are prevalent. The findings of the research project indicate that small firms in the software technology sector carry out marketing activities differently from large firms in the sector, being highly customer oriented and innovative in their approach. Of particular importance is their customer focus, rather than a market focus, and their approach to forming long

term customer relationships that facilitate the co-creation of software products and WOM recommendation. Using this approach alleviates some of the issues that surround the high risk software purchase such as reduction in the customer's perception of risk during a relatively high involvement software purchase.

More specifically this thesis has contributed to the SME marketing literature in reporting new knowledge and understanding of how micro and small software technology firms market. Firms have a customer oriented focus which is driven by the nature of the software purchase decision and the service support requirement of the software purchase.

This research also sheds light on the use of networks which are prevalent in this sector and particularly in small firms as part of a fundamental activity for SME marketing (Carson et al., 1995; Gilmore et al., 2001). There has been advancement of the types of networks identified in the software sector where alliances and partnerships between resellers and suppliers are common. Specific networks which relate particularly to the small software firm are those implicit IT based networks used for the generation of marketing intelligence. Specific papers which inform and describe the early direction of the thesis are as follows:

Jones, R. and Rowley, J. (2007b), 'Entrepreneurial Marketing: a considered approach for further analysis,' *Best Paper in Track: Entrepreneurial and Small Business Marketing, 'Marketing Theory in Practice', Academy of Marketing Conference 2007, Kingston Business School, Kingston University, 3rd-6th July.*

Jones, R. and Rowley, J. (2007c), 'Marketing in SMEs in the Educational Software Industry,' doctoral conference paper, *Doctoral Colloquium, 'Marketing Theory into Practice'' Conference 2007, Kingston Business School, Kingston University, 1st-2nd July 2007.*

8.2.2 Contribution to comparative research of small firms and large firm marketing in the educational software industry.

This thesis extends the research of SME marketing by offering a comparative study of large and small firms and their marketing activities. There is a paucity of research in this area despite the recognition that small firms market differently than large firms. A sector specific survey of the small and large firms in the UK educational software sector provides some interesting findings and makes a contribution to the limited research of small and large firm marketing attitudes and activities in a specific sector. The educational software sector is dominated by large firms but all firms in the sector face the same issues. Interestingly both large firms and small firms place value on building relationships with customers and using WOM recommendation. In fact there is evidence to suggest that larger firms are starting to emulate some of the practices of small firms in this sector.

Large firms also use business partnerships but these tend to be more strategic in nature. Where large and small firms differ is particularly in their size of marketing budgets and designated marketing resource. Micro and small firms tend to be without a marketing resource and because of that, they lack an awareness of competitors or competitive positioning. However small firms are able to succeed in the marketplace by offering value to the customer (Hills and Hultman, 2005). Small firms tend to offer a more personalised and flexible software service and try to create innovative and bespoke software solutions. These are often co-created with the customer (Prahalad and Ramaswamy, 2004). The following papers make specific contribution to this area of research:

Jones, R. and Rowley, J. (2007a), 'Marketing activities of companies in the educational software sector,' *abstract published in the B2B Marketing Masterclass conference proceedings. ISBN:9781857213904*

Jones, R. and Rowley, J. (2009a), 'Marketing Activities of Companies in the Educational Software Sector,' *Qualitative Marketing Research: an International Journal,* Vol.12 (3).

8.2.3 Research of business and marketing in an extended case study; the organisation, owner-manager networks, customer perceptions and the software purchase.

This research attests the research of SME business and marketing literature, particularly in relation to software technology firms and marketing of software where there is very little research. The extended research of the case study Company A has contributed to the SME research by offering an opportunity to explore and observe one particular firm for a period of time within its own context. This research makes a contribution to the SME and entrepreneurial network literature with regard to research investigation of Company A and the way in which the operational owner-manager develops core business competencies by using networks (Aldrich and Zimmer, 1986). Use of personal contact networks (PCNs), business networks, industry and marketing networks were identified during the research project, a key theme of EM and SME research (Collinson and Shaw, 2001; Gilmore et al., 2001; Hill, 2001). This study in particular, contributed to the knowledge of owner-manager networks by confirming the value of networks for building capacity for the firm and identified networks particularly in respect of business, marketing and innovation.

This research also furthers the knowledge of software technology research as it explores the purchaser's decision making purchase (Brennan et al., 2007). This research adapts Bevilacqua and Petroni's (2002) 'evaluation criteria' for decision-making to the software technology sector whilst it also contributed to the SME literature by investigating some of the issues for small firms such as the customer perception of the small firm, trust and confidence in the SME and the role of the owner manager in the purchase decision. The following papers contribute specifically to this area of research:

Jones, R. and Rowley, J. (2008c), 'Small Firm Marketing: Inter-firm Relationships, Risk and Business Purchasing,' *conference presentation and abstract paper, the 13th Annual Symposium of the Academy of Marketing SIG in Entrepreneurial and Small Business Marketing, Newport, South Wales, 9th-11th January.*

Jones, R. and Rowley, J. (2008a), 'Entrepreneurial Marketing: developing core competency networks' *conference paper presented at the International Small Business & Entrepreneurship Conference, Belfast, Ireland, 5th-7th November.*

Jones, R. and Rowley, J. 'Networks, Confidence & Buying Processes: A Hi-tech SME Case Study,' *Journal of Research in Marketing & Entrepreneurship*, forthcoming.

8.2.4 Development of the 'EMICO' framework.

The development of the 'EMICO' framework forms the major contribution of this thesis. The framework was developed and tested empirically and theoretically in the early stages of the research and has provided a qualitative research model which has furthered the development of EM and SME marketing research. A new framework for SME research is important because research in SMEs tends to be sector specific; the terminology used in scale items reflects the type of responses expected from professional marketers, not those of technology entrepreneurs. Also the models used tend to be quantitative scales which limit understanding of the way in which small firms actually market.

Therefore the 'EMICO' framework fulfills the need for a suitable qualitative framework with which to inductively explore the phenomenon of small business marketing in technology sectors. It is also proposed that the framework is suitable for the development of a generic model as it uses terminology more suitable for SME research. There are few existing MO measures for the small firm context, with popular MO scales (Kohli and Jaworski 1990; Narver and Slater 1990) tending to preclude SME or EM activities such as networking approaches that are recognised by researchers in the literature (Carson et al. 1995; Gilmore et al. 2001). Development of a suitable research framework for investigating EM also fills a gap in the EM literature where there are few tested scales or frameworks, with one notable exception, that of Kocak (2004). This is a quantitative scale for measuring EM that is based on Morris et al's seven EM dimensions (2002). The following papers contribute specifically to this area of research:

Jones, R. and Rowley, J. (2008b), 'Measuring levels of Entrepreneurial Marketing in hi-tech ventures: the EMIO scale,' *conference paper, the UIC International Research Symposium on Marketing and Entrepreneurship (AMA SIG), Stockholm, Sweden, 15th-16th June.*

Jones, R. and Rowley, J. (2009c),'Entrepreneurial Marketing in Technology Firms: the 'EMICO' framework,' *conference paper, International Conference on Market, Marketing & Entrepreneurship: Creating & Capturing Value in the 21st Century, Antalya, Turkey, 6th-9th April.*

8.2.5 A methodological contribution using the 'card game' approach.

This research approach makes a contribution to the methodological approaches used in small firm research. It uses the 'card game' methodology together with the 'EMICO' framework dimensions (Müthel and Högl, 2007). This method uses qualitative research approaches to explore EM which are much more likely to offer an opportunity for exploring not only firm business and marketing activities and behaviours but also an understanding of what lies behind the rationale for these practices (Blankson et al., 2006). Using this method allows for the exploration of implicit and explicit EM behaviours and activities in small technology firms. It was a particularly suitable method for small firm investigation as it provided a less structured 'loose' style of interview that generated deeper and more meaningful insights into the research phenomenon. It also reduced researcher influence and the risk of the entrepreneur emulating the words of the researcher. The following paper makes a specific contribution to this area of research:

Jones, R. and Rowley, J. (2009d), 'A New Methodology for Analysis of Entrepreneurial Technology SMEs', *Academy of Marketing SIG Conference, Entrepreneurial and Small Business Marketing, Westminster, London, 7th-9th January.*

8.2.6 Contribution to the Relationship Marketing, B2B and Services Marketing literature.

There is a paucity of SME research relating to RM strategy in small firms. This is surprising given the fact that small firms exhibit a number of activities and behaviours that can be identified as RM strategies. For example, developing long term customer relationships, business partnerships, alliances and networks. RM strategy particularly benefits small firms by creating further sales by WOM recommendation and reducing the 'risk' element in the high involvement purchase decision.

This research also extends the knowledge of Services Marketing literature from the B2B perspective, particularly in relation to the post-purchase outcome. There is little extant research as to software purchase and supply relationships, the software purchase decision and research which reflects upon the continuing relationship between a software company and it's business customers.

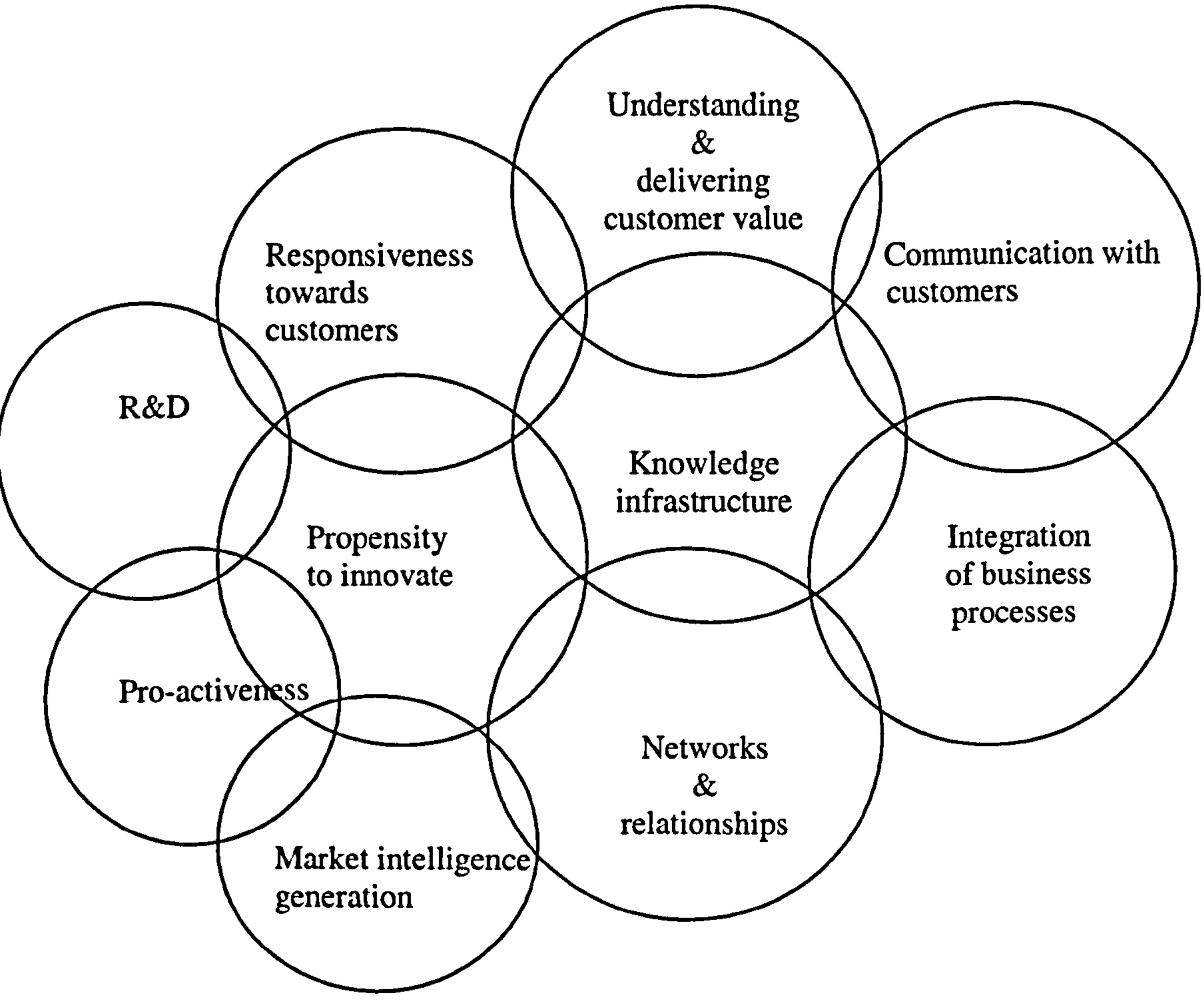
The importance of managing expectations is a key finding of this research and confirms aspects of the Service Marketing literature and the importance of managing expectations in relation to the perceived quality of the product (Groth and Dye, 1999). The importance of trust in the purchase decision has also been surfaced by this research. The cultivation of trust is noted in the Services Marketing literature as service encounters carry a certain degree of risk due to the intangible nature of the service product offering. The findings of this research confirm that WOM recommendation helps to provide customer knowledge and perceptions of the service and therefore trust in the software support service (Coulter and Coulter, 2003). The need for trust and loyalty for the business repurchase intention identified by Reicheld, (2003) and Sharma and Patterson, (1999) is also verified in this sector by this research.

8.3 How do micro and small software firms market in the software industry sector; what attitudes and behaviours do they exhibit and, what are the key issues for these firms?

8.3.1 Entrepreneurial Marketing for micro and small software firms.

The use of the 'EMICO' framework allowed for new and insightful exploration of marketing attitudes and behaviours in small software technology firms. The following schematic model illustrates both the core dimensions that were central to EM in software technology firms and those which were peripheral. It also shows the interrelationships between them.

Figure 8.0: Core EM dimensions, peripheral dimensions and their interrelationships.



Seven dimensions were central to EM in software technology firms. 'Understanding and delivering customer value' was of key importance to all firms. 'Communications with customers' and 'responsiveness towards customers' were viewed as dimensions which were closely related. 'Integration of business processes' was interrelated with effective 'communications with customers' and vital for successful delivery of software projects. 'Knowledge infrastructure' is shown at the centre of the model as it is considered supportive of the other dimensions in terms of the firm having a formalised IT based knowledge infrastructure which feeds into other aspects of EM. 'Networks and relationships' tend to be external to the firm and are particularly interrelated with the firm's business in terms of 'knowledge infrastructure' and 'integration of business processes'; and also with the dimension 'propensity to innovate' through use of alliances, partnerships and networks, and peripherally with 'market intelligence generation,' particularly in respect of IT web-based networks. Also at the periphery are the dimensions 'pro-activeness' and 'research and development.' Although not central to EM in software technology firms they are closely interrelated with 'propensity to innovate' in terms of co-creation with customers, pro-activity with customers, and in innovative approaches for bespoke software projects.

Five other dimensions are excluded from the model, either as they were considered generally of less importance by firms or because firm size limited their capacity for focusing on this dimension. These are as follows: 'risk taking'; 'speed to market'; 'exploiting markets', 'responsiveness to competitors', 'promotion & sales'. A caveat therefore, must be applied to this model. The model reflects upon the findings of this research and what firms presently do in respect of the EM dimensions and not what they should be doing. Managerial implications arising from this research are discussed later in the chapter (section 8.4).

Small technology firms approach marketing with a customer centric approach, focusing on the development of long term customer relationships, a key finding of this research which is discussed later in this chapter. Companies tend to rely on WOM recommendation for building trust and confidence in the company and in the purchase

decision. Owner-managers are the salesmen for the firm whose personality influences the decision that the potential purchaser makes. Most notably, the responsibility for marketing is a very insular practice which firmly rests on the shoulders of the owner-manager therefore there are much greater opportunities for these firms if they encourage employees and particularly software developers who have close contact with customers, to become 'part-time marketers'.

All firms that took part in the research sold bespoke software solutions as a core part of their product offering. Therefore they all offered software which is an 'intangible' product offering along with a certain level of service support. This requires very close participation between the software company and the customer which meant that co-creation of products was often a key feature of the development of new bespoke software, together with incremental software improvements. The software technology industry sector is a particularly challenging sector for micro and small firms. This research has noted the constraints of the industry sector, together with the firms' own inherent business limitations. Small firms in this sector rely on providing superior levels of service together with innovative practice to create quality bespoke software products to compete in the market. Therefore they also view development of a formal knowledge infrastructure together with the firm's propensity to innovate as important factors. A propensity towards innovation also allows for new product development opportunities and creative business strategies where possible, given the constraints of small businesses.

These firms were noted for their low attitude towards risk, employing a finance employee quite early in the firm's development and only taking carefully calculated risks based on the owner-managers knowledge and competence, particularly with investments in R&D. The research indicates that some aspects of EM were inhibited by the firm's size. Limitations included lack of financial resource and technical employee resource, as well as a lack of a specialised and experienced marketing resource. It is of particular concern that such a heavy focus on current customers may further inhibit

growth opportunities for the firm in terms of investment in new innovative projects and exploration of new markets.

8.3.2 Key issues for small software technology firms

This research identified five key issues for micro and small software technology firms. These are: the importance of IT based knowledge infrastructures; the necessity for project planning; the development of long term fruitful customer relationships; management of customer expectations and; the role of networks for building business, innovation and marketing capacity.

8.3.2.1 IT based knowledge infrastructures

Although small firms are noted in the literature as having informal channels of communication, for firms in the software technology industry it is essential for them to store and to generate data about projects that are developed, so as to facilitate knowledge sharing and generation of new information. This also aids some replication of bespoke software projects which saves software developer time and hence costs for the firm of software development. Through the use of web-based structures the firms also shares knowledge and information quickly in a way which is cost effective and efficient. Such formalised knowledge infrastructures are instrumental in retaining tacit knowledge and tended to be introduced when the firm grew in size, when informal communications concerning project progress became unmanageable.

8.3.2.2 Project planning and management

The difficulties of maintaining the smooth running of projects and delivering within the agreed budget was a common theme emanating from this research. Although the literature in entrepreneurial SMEs observes that planning tends to be a flexible process, in the case of software products, the timing and delivery of the project are of paramount importance, demanding careful project management and planning skills in the firm.

Again, as the firm grows and gains more customers it becomes more difficult to check progress of each project through informal methods and then managing such projects becomes unwieldy. Implementing project planning procedures was a particular challenge for these firms but it was absolutely essential as overrunning projects impacted heavily on the small firm. Research findings indicate that effective communications between software developers and customers is closely linked to the successful delivery of projects for these firms. However, implementation and adherence to project planning make the management of projects very difficult and an area of continued focus for owner-managers.

8.3.2.3 Customer relationships

As these firms all offered software products with service support, long term customer relationships were essential for these companies. Micro technology firms relied heavily on their current customer base for future business and relied upon WOM recommendation for the marketing of their products. However, of some concern was the fact that firms ostensibly used WOM very informally with no control over the processes, as there are also negative connotations to the use and reliance on WOM. Notably, the two small companies who had experienced greater growth an turnover (Company E and F) also had more of a sales focus, employing sales personnel and using PR and other sales techniques.

All firms to some extent used their relationships implicitly for the development of incremental innovations so that customer relationships were used as a co-creation process. Despite the fact that the research findings indicated that there were ongoing problems with customer communications, firms were still able to develop sufficient quality of relationship to enable co-creation to occur.

8.3.2.4 Managing customer expectations

The management of customer expectations was a key issue for all firms, tending to be a formative measure of customer satisfaction in business relationships. The bespoke software product is typically difficult to cost at the outset whilst both owner-managers and technical employees found it difficult to manage customer expectations during the period of project development. The main reason for this was the customer's naivety concerning the software purchase and their lack of knowledge about their own business requirements. This led to the customer deviating from the agreed software project specification and the incurring of further costs which were often borne by the software company in an effort to retain good relationships with the customer. Therefore the demands of customers, together with firms' reliance on customer retention strategies pose a risk for small software companies and therefore have to be carefully managed.

8.3.2.5 Use of networks and relationships

Business partnerships and alliances are prevalent in software sector; in particular alliances with large companies are seen as beneficial for micro and small technology firms. Owner-managers recognised networks as being essential for firm growth prior to or at point of start-up of the business. These network contacts remained throughout the firms development and these relationships were seen as long term investments. Firm networks included owner-manager PCN s, business networks, business advice networks, university networks and customer networks. Owner-manager networks leveraged vital resources, increasing business potential and firm capacity. Innovation networks created opportunities through shared projects, university collaborations and business partnerships with larger firms. Capacity for marketing increased by using customer relationships and WOM recommendation and by collaborating with other companies.

Employees tended to have fewer networks. However, those with a customer facing role developed close relationships with individual customers. A key outcome of this research is the surfacing of implicit networks used by technical employees. These networks offer

significant advantages to small firms for gathering market intelligence on NPDs and changes in the marketplace.

8.4 Managerial implications.

This study offers several managerial implications that are useful for both small software technology owner-managers and business support agencies. The major outcome of this research is the development and application of the 'EMICO' framework which has allowed for in-depth qualitative research of a specific sector. This research has illuminated several key themes for software technology firm managers. Firstly the EM dimensions and use of the cards provide a tested and suitable tool for managers of small firms in this sector. The cards were positively received by both respondent owner-managers and employees. The research findings suggest that they would give a clear indication as to the attitudes and behaviours in the firm and suggest avenues for improvement. For example, a greater focus on sales and promotion activities, or a shared responsibility for marketing together with an integrated marketing strategy which allows for the particular resource and business constraints that these firms face. Having guidelines to follow would be useful for SME owner managers where the owner-manager has greater technical competencies rather than managerial competencies (Scozzi et al., 2005). This simple tool would be ideal for small firms where it is difficult to implement formal marketing strategy and planning tools.

Software quality and service are important attributes for any software customers. This is both confirmed in the literature and in this research (Agarwal and Rathod, 2006). Perceptions of quality also relate to the service experience of the intangible software product. Many organisations realise the importance of quality but in this sector software quality constitutes both the product and the service quality. In particular this research has identified that trust in the software supplier makes the repurchase decision more likely. Therefore software technology SMEs should not only look towards improving

products but also carefully manage the services that they provide as this provides them with a competitive advantage.

This research project has found that it is important for software developers to have the necessary skills sets with which to deal with issues such as managing customer expectations and responding to customer enquiries. Therefore software developers and other key personnel should be encouraged to partake in customer service training as poor communications of software developers have been recognised as a contributing factor of project failure. Software customers are unsure of their expectations due to the technical superiority of the software product, and sometimes the software firm does not fully understand the needs of the business mainly because of the business purchaser's lack of clarity about their end-user's software requirements. Therefore it is also the responsibility of the software company to understand the needs of both clients and end users at the outset. Projects need to be costed as accurately as possible and be managed using formal project management procedures that are fully integrated into the organisation.

Project management is not only a benefit for the customer, there is also the issue of organisational efficiency where lack of project planning and frequent demands of customers will have a detrimental effect on the firms outputs. This research implies that technical employees prefer to work undisturbed as is the nature of their job. There is therefore a management requirement to plan which employee takes the telephone calls and who responds to customers. There is a difficult balance between keeping in contact with the customer and frequent and unnecessary interruptions. An effective IT based knowledge infrastructure will create greater accountability in all the employees in the firm by allowing other employees access to information on each project and to handle telephone enquiries. In this way greater efficiencies may be made.

A further managerial recommendation is to consider the view of Alajoutsijarvi et al., (2000) who recommend the use of customer relationship management (CRM) skills that are in frequent use in Service Marketing sectors. This research has illustrated the

importance of customer relationships that are often informally managed. This is perhaps because most software technology firms tend to view marketing as simply the marketing 'mix' as true marketing. However, software firms should consider careful implementation of RM strategies that are wholly suitable for their firm as they may be appropriate to service based software firms due to the nature of the software product.

The use of networks provides additional resources for firms. Those firms who have partnered with larger companies have benefited from greater opportunities in the market and additional marketing and innovation capabilities. Being partnered also provides credibility to a small firm particularly in view the customer's perception of risk and the software purchase. Therefore deliberate strategies to pursue alliances with software partners may create further opportunities for business.

Finally, reliance on marketing through WOM recommendation requires careful management as there are both positive and negative benefits to using this method. Firms in the sample with larger and more significant growth have adapted a promotion and sales focus, identified as an EM characteristic (Hills and Hultman, 2005). This research also confirms that EM characteristics of leading customers in the development of new innovations and, marketing that permeates all levels of the firm, as being recommended EM approaches for firms in this sector.

8.5 Future Avenues for Research

Future research directions are useful in identifying areas that could be further researched in greater depth. These include research questions which are outside the scope of current research as well as identifying new research directions related to this research. In terms of furthering this research study, the main question centres on the application of the 'EMICO' framework and it's suitability for future research. It is proposed that the 'EMICO' framework may be used with little adaptation as a generic framework with which to explore EM in other firms and in other business sectors, therefore further extending opportunities for research in the SME marketing and EM field.

- The 'EMICO' framework should be applied to a heterogeneous sample of technology SMEs to compare the differences in EM activities and behaviours in small firms in high speed markets. Small software firms in this research project offered a bespoke software product and a support service. Firms were all customer oriented rather than market oriented. It would be interesting to apply the framework in the qualitative research of small software firms who develop and sell off-the-shelf products. This research project suggests that although service based software products provide the firm with some stability and reliability of software demand and the likelihood of repeat purchases, the downside for small firms is the difficulty in maintaining the equity in the relationship and in the effective management of software projects and customer expectations. The research certainly implies that the demands of customer may in some way limit the firm's capacity to innovate in two ways, by focusing on small incremental innovations as oppose to radical software product innovations and also by the sheer demands that customers make on the small firm. Therefore it would be interesting to investigate issues for SMEs in other technology sectors.

- It is proposed that the refined 'EMICO' framework should be pilot tested and if necessary adjusted in an unrelated SME business sector. It would be very interesting to compare the findings between the software sector and another more stable market. In particular it would be interesting to see whether the requirements for formalised procedures and knowledge infrastructures would be any different, whether the demand for innovation was similar and to investigate the importance of networks in these firms. It would also be interesting to see the difference between service and product based firms in different sectors. This may further inform the SME research as to whether some small firms are more customer oriented than others and why.

- In the future it would be useful to develop the 'EMICO' framework and test its applicability to large firms in service industries. This would therefore inform EM theory from a different perspective. This area should be investigated as it may inform researchers as to the behaviour associated with corporate entrepreneurship and would be particularly interesting in service based industries.

- This qualitative framework may then be developed into a quantitative analysis tool for EM measurement. Using this method, analysis of EM across a range of sectors and in different countries could be undertaken. It would be useful to apply the 'EMICO' framework to large firms that appear entrepreneurial in nature, in order to gauge effectiveness of the 'EMICO' in the large firm context and how far the framework would need adaptation. It would be very interesting to see whether any of the dimensions are affected by firm size. If the 'EMICO' scale is found to be suitable then this would be likely to help inform researchers as to the behaviour associated with corporate entrepreneurship.

Further avenues for research which have been drawn from the research include the following:

- This research has uncovered both explicit and implicit network activity within software technology firms. It would be useful to further explore in greater depth the use of networks and network relationships within the software technology sector. In particular it would be interesting to examine small firms and the way in which they build competencies for the firm and how entrepreneurs leverage resources in competitive markets. It would also be useful to further explore the B2B purchase and supply relationships within this research context and the use of micro and small firms in these relationships.

- The SME marketing literature has a lot to offer research of RM. It would be useful to examine in greater depth the level at which SMEs undertake RM activities and, in which business sectors are they more prevalent. In particular the research has uncovered the usefulness of CRM systems for software businesses and their management of customers. It would be very interesting to examine CRM and its application and use within SMEs.

8.6 Close

This chapter draws the thesis to a close. This thesis has significantly furthered the boundaries of the developing paradigm of EM and also the SME marketing research by introducing a framework for exploring in much greater depth, marketing in software technology firms.

It fills a gap in the research where there are few suitable scales or frameworks for investigating SME marketing and EM in firms. This research project has fulfilled an opportunity to understand the sorts of activities, attitudes and behaviours that both owner-managers and employees exhibit in micro and small technology firms from a range of perspectives. These findings are important as they report the research phenomenon from a range of perspectives to provide a truly holistic piece of research which encapsulates all the key issues.

The project has provided exciting insights as to how EM is carried out in firms who have very few resources to draw upon and yet have gained a foothold in a highly competitive and complex market. The research has in particular, integrated established mainstream marketing theory and entrepreneurship theory with EM research and in doing this, confirmed many of the characteristics of EM indentified by researchers. In this way the research has provided new knowledge in terms of the relatively unexplored area of marketing in software technology firms. This research also makes significant and important recommendations for managers and business support agencies in respect of small software technology firms that should help increase small business sustainability

and growth in the software sector. This project also proposes further interesting avenues of research with which to investigate EM in a range of business contexts; to further our understanding of EM by adaptation and application of the 'EMICO' framework to a range of industry sectors and organisational contexts through use of both qualitative and quantitative approaches.

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Appendix A

Interview Template- Owner-manager Interviews Company A (03/12/2005).

Respondent details

a) Can you tell me your job title and role in the company?
b) Politely ask the age of the respondent.
c) Note the gender of the respondent.

Section 1 Reflective questions

1.1: Can you tell me how your firm began and who was involved?
1.2: What was the concept behind the business?
1.3: Can you tell me who works for your company and what their roles and responsibilities are?
1.4: What are the organisational aims and objectives?
1.5: Have these priorities changed since the business began?

Section 2 Business objectives

2.1: What are your objectives in the short term?
2:2 What are your objectives in the longer term (3 to 5 years)?
2.3: How would you like to see your firm develop beyond that time?

Section 3 Marketing in Semantise

3.1: What are your marketing objectives?
3.2: Can you tell me about some of the more traditional methods of marketing and whether these apply to your firm?
3.3: How do you currently market your products?
3.4: What methods do you use?
3.5: Have some methods been more successful than others?
3.6: Do you use key messages with customers when promoting your products?

Section 4 Business and customer relationships

4.1: Can you describe your contractual relationship with your channel partner?
4.2: How many current contracts and customers does your company have?

Thank you.

Appendix B

Interview Template- Employee Interviews Company A (04/01/2006).

Respondent details

d) Can you tell me your job title and role in the company?
e) Politely ask the age of the respondent.
f) Note the gender of the respondent.

Section 1 Reflective Questions

1.1 Can you tell me how you began working with this firm?
1.2 Can you describe your job role and responsibilities in the company?
1.3 Can you describe your employment arrangements with the company? (for example part-time, employment base- as the firm does not have an office).

Section 2 Internal Relationships

2.1 Can you tell me who you have contact with in the course of your work?
2.2 What types of communication do you tend to use at work?
2.3 Who is your line manager and how do you communicate with him?

Section 3 Customer Relationships

3.1 Can you tell me what contact you have with new customers?
3.2 Can you tell me what contact you have with current customers?
3.3 Is this mostly with regard to problem solving issues or increasing repeat custom?

Section 4 a) The Software Market *(for non-technical employees only)*

4.1 Do you advise in the development of new products?
4.2 To what extent is your firm affected by political influences in the educational marketplace?
4.3 Can you tell me how you market the company's software?
4.4 Are you aware of any competitors and their products?

Section 4b) The Software Market *(for technology employees only)*

4.1 When you are developing new products where do your ideas come from?
4.2 Do you work to a timescale for new products?
4.3 Do competitor's new product development influence you?
4.4 Would you see your role as adding value to marketing in this company?

Appendix C

Interview Template. Company A- Owner-manager networks (01/07/2008).

1. Were any of your contacts made prior to this business venture? If so, who were they?
2. Do you feel that your firm works in a difficult environment?
3. Do you have relationships with R&D suppliers or technology partners?
4. Do you use any university collaborations?
5. Do you have any licensors, for example where you license out your software?
6. Are you a licensor, for example where you license in products from other firms?
7. Do you have links or relationships with contractors?
8. Do you have any joint marketing and distribution deals?
9. Are there any other technology relationships that you can think of apart from those that have been mentioned?
10. What other business relationships or business networks do you have?
11. Do you consider some of these networks to be informal and personal or formal?
12. Do you think the networks that you have talked about have increase your business capacity or marketing in any way? *(with a view to innovation, business capability and marketing aspects).*
13. Which network or relationship is most important for you in terms of increasing your capacity for marketing?

Thank you

Appendix D1

Interview Template-Company A's customers (19/10/2007)

Section 1: Respondent Identification

Name

Job Title

School

Section 2: Influencers

1. Personal influencers

Can you tell me about the people involved in the choosing of software for your school; who are the people involved; what are their roles?

2. Structural influences

What do you feel are the key influences within this decision making structure? What interaction is there and does anyone exert power and have overall authority to purchase?

Section 3: Stages of decision process

3. Need/problem recognition

a) What made you decide to purchase Semantise software for the school and what key factors did you consider before purchase?

b) Were you experiencing any problems with your previous software in terms of the product or service?

c) Did you think that improvements in software could lead to improvements in the schools performance?

4. Determining product specification

a) How did you determine the software product's specification that you needed? *(functionality)*

b) How did you determine what you as customers expect from the product? *(performance)*

Interview Template. Company A's customers (continued)

5. Supplier and product search

a) How did you find software that matched your specification?

b) How did you find an organization that could meet your organizations requirements?

6. Evaluation of proposals

How far was your decision to purchase based on; *(Likert scale of measurement; between the numbers 1 to 10, 1 being of extremely low importance, 10 being of extremely high importance)*

a) Financial stability of the company
b) Total cost
c) Technological capabilities (quality)
d) Geographic location
e) Cultural compatibility (between both organizations)
f) After sales technical support
g) Flexibility

7. Performance feedback and evaluation

Can you tell me whether you gather feedback about the software and how you evaluate your purchase?

Section 4: Purchaser and supplier relationships

8. Relationships and trust

a) What sort of relationships and contact do you have with Semantise?

b) Do you see any advantages or disadvantages to using a small business to supply your software?

c) Is the purchase of software for schools a difficult decision to make? If so, what makes the decision easier or less 'risky' for you?

Thank you

Questionnaire Template- Marketing Activities in the Educational Software Sector (08/01/07).

Respondent Details

a) Can you tell me your job title and role in the company?

b) Can you tell me about your previous work experience prior to working with this company?

c) Could you please tell me which category your age is in?
A=18-30, B=31-40, C=41-50, D=51-65

d) Note the gender of the respondent

e) Note the e mail address (explain it is for validation purposes):

Section 1

About the Company

1. How many employees does the company have? A= less than 10 B=less than 50 C=less than 200 D= 200 to 500 E= more than 501

2. How long has the company been running?

3. Where is the company based?

4. Does the company promote their products nationally or internationally?

5. Is the educational software sector only part of the company's range of offerings?

6. Does the company work with other companies to develop and sell products/services? If so, with which companies and what is the relationship? (alliance/partner etc.)

Questionnaire Template- Marketing Activities in the Educational Software Sector (continued).

Section 2

Market knowledge

1. Can you tell me why your company has attended this particular conference?

2. Are there any particular issues that arise when marketing to the educational sector?

3. Are there any 'significant events' or future trends in the educational sector marketplace that have, or will affect your company?

4. Do you focus on a particular area or areas of the marketplace? If so which area?

5. Where do you see your company positioned in relation to the competition?

Competitors

1. Do you compete directly against large companies such as Microsoft or SIMS?

2. Do you face competition from small or medium sized firms? If so, in what way?

3. Who are your 3 main competitors?

4. Does your product/service that you offer differ from the competition? If so, how?

5. Do you operate in a specialist market or does your product/service have a broader appeal?

6. In a company of your size, what advantages can you offer your customers?

Questionnaire Template- Marketing Activities in the Educational Software Sector (continued).

Section 2 (continued)

Customers

1. Who are your main customers?

2. Are your potential 'purchasing' customers attending this conference?

3. After meeting potential customers at this conference do you contact them again?

4. How do you maintain this contact?

Promotion

1. What methods do you use when promoting your products/services?

2. Where do you promote your products/services?

3. How effective do you consider this to have been?

Price

1. How do you price your product or service?

2. How does the cost of your product /service compare to those of your competitors, in your opinion?

Service

1. Do you offer service as the sole offering or is service part of what you offer to the customer?

2. Do you offer a choice of service levels to the customer?

3. If you solely offer a product, do you offer after sales service? If so, what does this consist of?

Questionnaire Template- Marketing Activities in the Educational Software Sector (continued).

Section 3

SME specific questions

1. Can you think of any significant advantages in terms of marketing your product or service that your company has, when compared to larger companies such as SIMS and Microsoft?

2. Do you feel that the company's size limits your ability to undertake certain marketing activities?

Thank you

Appendix F

Interview Template. Using the Card Methodology (01/07/2008).

Personal Data

1. What is your current job role?
2. What is your highest level of educational experience: educated to GSCE or A level, undergraduate degree level, post graduate degree level, PhD or other qualifications? (please state qualifications)
3. Could you please indicate which category your age is in?

   A=18-30, B=31-40, C=41-50, D=51-65
4. What is your business background prior to working with this company?
5. Were any of your contacts made prior to this business venture? If so, who were they?

(Note gender of respondent)

Firm Data ***(for owner-managers only)***

6. What is the nature of your business?
7. How many full time employees do you have? (as at July 2008)
8. How many part time staff do you have? (as at July 2008)
9. What was your % increase in turnover over the last 5 years, or annual turnover in 2007?
10. What is your product range?
11. Do you have specialist, qualified marketing/sales resource including separate marketing/ sales team?

End of interview-the randomized introduction of the dimension cards

- The interviewer asks the respondent to place the cards in order of priority (and in any pattern that they see fit). Most important dimensions should be placed at the top.
- The interviewer asks respondents to consider which of the dimensions are, in their opinion, the most important dimensions needed for the firm's future growth.

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Appendix O

COMPANY A DIMENSIONS	Critical	Very Important	Important	Need to do more of this dimension	Not sure	Less important than other dimensions	Not important
Research & Development		¶ §	¶ #	#			
Speed to Market				§ #		¶ ¶ #	
Risk Taking						¶ ¶ # #	§
Pro-Activeness		¶ #		¶ § #			
Exploiting markets				#		¶ ¶ § #	
Market Intelligence Generation		§		¶ #	¶	#	
Responsiveness to competitor actions				¶		¶ § # #	
Integration of Business Processes			¶ § #	¶ #			
Networks & Relationships	#	¶ ¶				§ #	
Knowledge Infrastructure		¶ ¶ #	§ #				
Propensity to Innovate		¶ § #	¶	#			
Responsiveness towards customers	¶ ¶	§ #		#			
Communications with Customers		¶ § #		¶ #			
Understanding & Delivering Customer Value	¶ #	¶ §		#			
Sales & Promotion		¶ § #	¶ #				

Key: Owner-Managers- ¶ Technical employees- § Other employees- #

Appendix P

COMPANY B DIMENSIONS	Critical	Very Important	Important	Need to do more of this dimension	Not sure	Less important than other dimensions	Not important
Research & Development		§			#	# ¶	
Speed to Market				§ #		# ¶	
Risk Taking				# § ¶		#	
Pro-Activeness		# ¶	§	#			
Exploiting markets		§		# ¶		#	
Market Intelligence Generation			§	#		# ¶	
Responsiveness to competitor actions				# ¶		§ #	
Integration of Business Processes	# ¶		§ #				
Networks & Relationships		#	# § ¶				
Knowledge Infrastructure			§	#		# ¶	
Propensity to Innovate		# § ¶		#			
Responsiveness towards customers		§ # # ¶					
Communications with Customers		§	# ¶	#			
Understanding & Delivering Customer Value	#	§	# ¶				
Sales & Promotion		§		#		# ¶	

Key: Owner-Managers- ¶ Technical employees- § Other employees- #

Appendix Q

COMPANY C DIMENSIONS	Critical	Very Important	Important	Need to do more of this dimension	Not sure	Less important than other dimensions	Not important
Research & Development			§	§ ¶			
Speed to Market		¶	§				§
Risk Taking				§ § ¶			
Pro-Activeness	§			§ ¶			
Exploiting markets	§		§	¶			
Market Intelligence Generation		§	§	¶			
Responsiveness to competitor actions			§			¶	§
Integration of Business Processes			§ ¶	§			
Networks & Relationships		§ ¶	§				
Knowledge Infrastructure		§	§	¶			
Propensity to Innovate			¶	§ §			
Responsiveness towards customers	¶		§			§	
Communications with Customers			§	¶		§	
Understanding & Delivering Customer Value	¶	§	§				
Sales & Promotion				§ § ¶			

Key: Owner-Managers- ¶ Technical employees- § Other employees- #

Appendix R

COMPANY D DIMENSIONS	Critical	Very Important	Important	Need to do more of this dimension	Not sure	Less important than other dimensions	Not important
Research & Development		§	§ ¶				
Speed to Market				§			§ ¶
Risk Taking						§ § ¶	
Pro-Activeness		¶		§ §			
Exploiting markets			§ ¶			§	
Market Intelligence Generation				§ ¶		§	
Responsiveness to competitor actions						§ § ¶	
Integration of Business Processes			§ § ¶				
Networks & Relationships		§	§ ¶				
Knowledge Infrastructure			§ § ¶				
Propensity to Innovate		§	¶			§	
Responsiveness towards customers	§	§ ¶					
Communications with Customers		§ ¶	§				
Understanding & Delivering Customer Value	§ ¶	§					
Sales & Promotion		§		¶		§	

Key: Owner-Managers- ¶ Technical employees- § Other employees- #

Appendix S

COMPANY E DIMENSIONS	Critical	Very Important	Important	Need to do more of this dimension	Not sure	Less important than other dimensions	Not important
Research & Development		¶	§	§			
Speed to Market				¶ §		§	
Risk Taking				¶ §		§	
Pro-Activeness		¶	§	§			
Exploiting markets		¶	§	§			
Market Intelligence Generation			§ §	¶			
Responsiveness to competitor actions			¶	§		§	
Integration of Business Processes		¶ §		§			
Networks & Relationships		¶ §	§				
Knowledge Infrastructure		¶ § §					
Propensity to Innovate		¶		§ §			
Responsiveness towards customers	¶	§		§			
Communications with Customers	¶	§		§			
Understanding & Delivering Customer Value	¶ §	§					
Sales & Promotion		¶		§		§	

Key: Owner-Managers- ¶ Technical employees- § Other employees- #

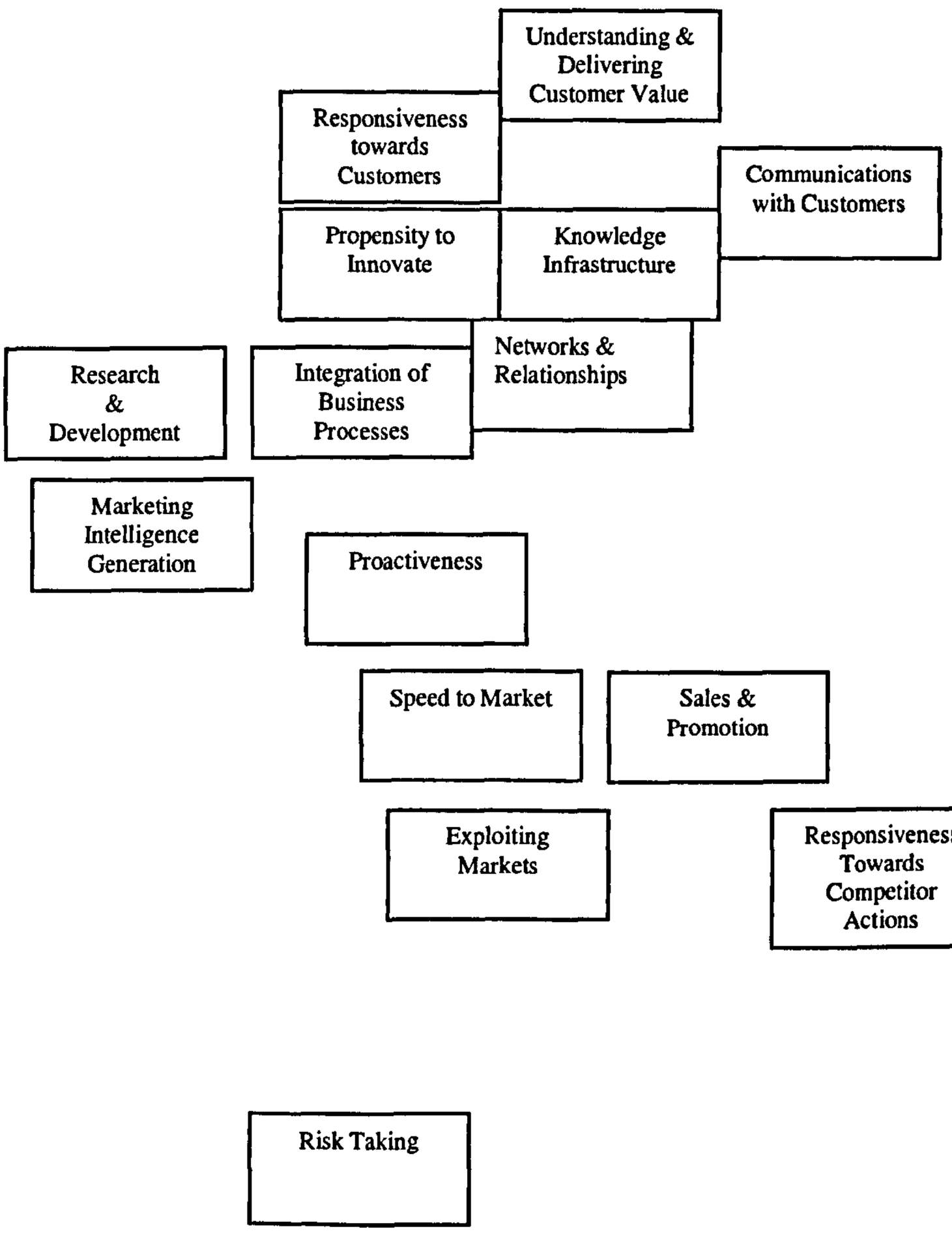
Appendix T

COMPANY F DIMENSIONS	Critical	Very Important	Important	Need to do more of this dimension	Not sure	Less important than other dimensions	Not important
Research & Development	¶			# §			
Speed to Market				# §		¶	
Risk Taking		#				¶ §	
Pro-Activeness				¶ # §			
Exploiting markets				# §		¶	
Market Intelligence Generation				# §		¶	
Responsiveness to competitor actions				# §		¶	
Integration of Business Processes	¶			# §			
Networks & Relationships	# §	¶					
Knowledge Infrastructure			¶ §	#			
Propensity to Innovate		¶		# §			
Responsiveness towards customers	¶	# §					
Communications with Customers	¶	§		#			
Understanding & Delivering Customer Value	¶ §			#			
Sales & Promotion	¶			# §			

Key: Owner-Managers- ¶ Technical employees- § Other employees- #

Appendix U

An example of dimension cards and the card ordering process



LIST OF TERMS

AM	Academy of Marketing
AMA	American Marketing Association
BECTA	British Education Communications and Technology Agency
CO	Customer Orientation
COTS	Commercial off the Shelf (software components)
CRM	Customer Relationship Management
CSF	Critical Success Factors
EO	Entrepreneurial Orientation
EM	Entrepreneurial Marketing
EPD	Electronic Product Development
IMP	Industrial Marketing and Purchasing Group
IO	Innovation Orientation
IT	Information Technology
JRME	Journal of Research in Marketing & Entrepreneurship
KTP	Knowledge Transfer Partnership
LEA	Local Educational Authority
MIS	Management Information System
MO	Market Orientation
OEM	Original Equipment Manufacturer
R&D	Research and Development
PCN	Personal Contact Network
PR	Public Relations

RM	Relationship Marketing
SO	Sales Orientation
SIG	Special Interest Group
SIF	Schools Interoperability Framework
SME	Small and Medium Sized Enterprises
USP	Unique Selling Proposition
VARS	Value Added Resellers
VLE	Virtual Learning Environment
WAG	Welsh Assembly Government
WOM	Word of Mouth