

**THE UNIVERSITY OF STRATHCLYDE
STRATHCLYDE BUSINESS SCHOOL**

**Social Capital, Knowledge and Internationalisation:
A Study of Indian Software SMEs**

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Submitted in fulfilment of the requirements for the
degree of doctor of philosophy.

Glasgow
March 2005

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Dedication

To my wife, Deepali.

Acknowledgements

This study was an exercise in leveraging social capital, and I have many to thank for their contribution to this study, only a few of whom I have the space to mention here.

First and foremost, I wish to thank my principal supervisor, Professor Stephen Young for his generous support and sound advice during the intellectual journey I have undertaken whilst completing my doctoral research. I also thank my second supervisor, Dr Pavlos Dimitratos whose inputs on scholarly research in general and my own work in particular have been most helpful. Mrs Christine Donald and Ms Jane Brittin of the Strathclyde International Business Unit office have been a source of moral support and practical assistance, which I greatly appreciate.

A study of this nature cannot be undertaken without the cooperation of a variety of individuals who consent to participate in the attendant research activities. I am grateful to the CEOs of my case-firms, the 102 respondents to my survey and the experts whom I interviewed, especially Srividya Gopalakrishnan who connected me with two of the four case-firms. I also thank Professor Julian Birkinshaw, Dr Marian Jones, Professor Rod McNaughton, Professor Harry Sapienza, Professor K Sivakumar and Professor Ivo Zander for useful comments on my survey instrument.

The financial support of the Carnegie Trust for the Universities of Scotland is gratefully acknowledged. And finally, a big thank you to my parents and brother for all their encouragement, and especially to my wife, Deepali for her unstinting love and support and also for her very practical help with the execution of the survey.

Abstract

This study examines the role of social capital and knowledge in the internationalisation of small- and medium-sized enterprises (SMEs). In particular, it is concerned with uncovering the differential effects of social capital types on SMEs' international growth and mode choice.

Using a mixed methodology that combines case studies with a survey of knowledge intensive SMEs in a developing economy context viz., Indian software SMEs, the study found that knowledge – both market knowledge and knowledge intensity – is a vital driver of international growth. Social capital, particularly bridging social capital, could facilitate early-stage international growth but could, over time, get “exhausted”. Thus knowledge may be a more enduring source of international growth. As for mode choice, this study seeks to contribute to extant understanding of SMEs' modal commitment, by invoking the emerging concept of the micromultinational, which is an SME that goes beyond mere exporting to establish a presence in international market(s). Modal commitment (i.e., the propensity for an SME to become a micromultinational) seemed to be significantly associated with social capital – specifically bonding social capital – rather than knowledge.

Thus a contribution of the study pertains to the relative role of social capital and knowledge in SME internationalisation. It was also seen, particularly from the case studies, that social capital may facilitate the creation and acquisition of knowledge, and therefore internationalising SMEs may do well to direct their efforts to knowledge-enhancement within networks.

Table of Contents

Declaration of Author's Rights	ii
Dedication	iii
Acknowledgements	iv
Abstract	v
Table of Contents	vi
List of Figures	ix
List of Tables	x
List of Abbreviations	xii
Chapter One: Introduction and Overview	1
1.1 Introduction	1
1.2 Theoretical Approach	3
1.3 Research Questions	6
1.4 Research Design	8
1.5 Conclusion	10
Chapter Two: Review of the Literature	11
2.1 Introduction	11
2.2 The Growth of the Firm	11
2.2.1 Knowledge and the Growth of the Firm	11
2.2.2 Social Capital and the Growth of the Firm	16
2.3 International Growth of the Firm	26
2.3.1 Knowledge and International Growth	26
2.3.1.1 Market Knowledge and International Growth	27
2.3.1.2 Knowledge Intensity and International Growth	39
2.3.1.3 Toward a Knowledge-Based Conceptualisation of Internationalisation	43
2.3.2 Social Capital and International Growth	46
2.4 Scope for Further Research	52
2.4.1 Gaps in the Literature	52
2.4.2 Modal Commitment and SME Internationalisation	53
2.4.3 Social Capital Types and SME Internationalisation	58
2.4.4 The Developing Economy Context and SME Internationalisation	64
2.4.5 Research Questions and Hypotheses	69
2.5 Conclusion	71
Chapter Three: Empirical Setting	72
3.1 Introduction	72

3.2 Choice of Firm Type: The Knowledge Intensive SME	73
3.2.1 The Smaller Firm	74
3.2.2 The Knowledge Intensive Firm	77
3.2.3 The Knowledge Intensive SME: Synthesis	83
3.3 Knowledge Intensive SMEs and Social Capital	83
3.4 Choice of Sample: The Indian Software Industry	88
3.4.1 The Software Industry in General	88
3.4.2 The Software Industry in India	90
3.4.3 The Indian Software Industry and Social Capital	103
3.5 Conclusion	108
Chapter Four: Research Methodology	110
4.1 Introduction	110
4.2 Major Research Choices	111
4.2.1 Nature of the Study	112
4.2.2 Orientation of the Study	113
4.2.3 Research Methods	117
4.3 Research Methods Adopted in this Study	120
4.3.1 Survey	120
4.3.2 Case Study	125
4.4 Design of the Case Studies and Survey	128
4.4.1 Design of the Exploratory Case Studies	128
4.4.2 Design of the Survey	132
4.4.3 Design of the Explanatory Case Studies	139
4.5 Conclusion	143
Chapter Five: Findings of the Exploratory Case Studies	144
5.1 Introduction	144
5.2 Exploratory Case Studies (March 2002)	145
5.2.1 Exploratory Case Study of Ekomate	145
5.2.2 Exploratory Case Study of Mitoken	148
5.2.3 Exploratory Case Study of New Creation	152
5.2.4 Exploratory Case Study of Vikas Global	156
5.2.5 Synthesis of Case Studies and Supplementary Expert Interviews	160
5.3 Linkages to the Research Framework	167
5.3.1 Exploratory Case Study Findings on Market Knowledge	167
5.3.2 Exploratory Case Study Findings on Knowledge Intensity	169
5.3.3 Exploratory Case Study Findings on Social Capital	171
5.4 Implications for Survey Research	176
5.5. Conclusion	178
Chapter Six: Findings of the Quantitative Survey	181
6.1 Introduction	181
6.2 Sample Response Rate and Descriptives	183
6.3 Measures of the Variables	187
6.3.1 Measures of the Dependent Variables	188
6.3.2 Measures of the Independent Variables	190
6.3.2.1 Market Knowledge Scale Items	190

6.3.2.2 Knowledge Intensity Scale Items	195
6.3.2.3 Social Capital Scale Items	197
6.3.3 Measures of the Control Variables	201
6.4 Regression Analyses	201
6.4.1 Data Considerations for Multivariate Regression Analysis	201
6.4.2 International Growth (Linear Regression)	203
6.4.3 Modal Commitment (Logistical Regression)	207
6.5 Conclusions and Implications	211
Chapter Seven: Findings of the Explanatory Case Studies	216
7.1 Introduction	216
7.2 Explanatory Case Studies (February 2005)	217
7.2.1 Explanatory Case Study of Ekomate	217
7.2.2 Explanatory Case Study of Mitoken	224
7.2.3 Explanatory Case Study of New Creation	234
7.2.4 Explanatory Case Study of Vikas Global	239
7.2.5 Synthesis of the Case Studies and Supplementary Expert Interviews	243
7.3 Linkages to the Research Framework	249
7.3.1 The Relationship Between Knowledge and Internationalisation	250
7.3.2 The Relationship Between Social Capital and Internationalisation	252
7.3.3 The Relationship Between Social Capital and Knowledge	255
7.4 Summary of Key Findings from the Explanatory Case Studies	257
7.5 Conclusion	260
Chapter Eight: Conclusions and Implications	261
8.1 Introduction	261
8.2 Summary of Approach	261
8.3 Summary of Findings	264
8.3.1 Findings	264
8.3.2 Contributions	267
8.3.3 Limitations	271
8.4 Implications for Theory, Practice and Public Policy	273
8.5 Conclusion	285
References	286
Appendix One: Interview Guide for the Exploratory Case Studies	311
Appendix Two: Survey Questionnaire	314
Appendix Three: Interview Guide for the Explanatory Case Studies	321
Appendix Four: Executive Summary of Survey Findings	324

List of Figures

Figure 2.1: A Holistic View of Growth	25
Figure 2.2: The Internationalisation Process of the Firm	30
Figure 2.3: Knowledge and International Growth	46
Figure 2.4: Social Capital, Knowledge and International Growth	52
Figure 2.5: Social Capital, Knowledge, International Growth and Modal Commitment	58
Figure 4.1: Induction versus Deduction	114
Figure 6.1: Research Framework	181
Figure 8.1: A Re-Specified Model to Guide to Guide Future Research	277

List of Tables

Table 2.1: The Resource-Based View in International Business	12
Table 2.2: Stage Models of Internationalisation – A Summary	36
Table 2.3: Knowledge and Internationalisation – A Synthesis	45
Table 2.4: Internationalisation and the Network Model	48
Table 2.5: Portfolio of Network Relationships for Knowledge Intensive SMEs	64
Table 3.1: Taxonomy of Software Exporting Nations	97
Table 3.2: The 3 Is of Software	97
Table 3.3: A Comparison (Ranking) of India and Other Asia Pacific Nations	99
Table 3.4: Nature of Exports Undertaken by Indian Software Firms	100
Table 3.5: A SWOT Analysis of the Indian Software Industry	102
Table 3.6: TiE at a Glance	106
Table 4.1: The Research Process	110
Table 4.2: Summary of Research Hypotheses	111
Table 4.3: Positivist versus Phenomenological Paradigms	114
Table 4.4: Research Activities in Inductive Research vs. Deductive Research	115
Table 4.5: Major Options for Research Design	118
Table 4.6: Merits and Demerits of the Major Options for Research Design	118
Table 4.7: The Four Case-Firms	130
Table 4.8: Summary of Measures and their Sources	134
Table 4.9: Summary of Design of Case Studies and Survey	143
Table 5.1: Designations/Responsibilities of Mitoken’s Top Management Team	149
Table 5.2: Postgraduate Qualifications of Mitoken’s Top Management Team	149
Table 5.3: Summary of Exploratory Case Studies	166
Table 6.1(a): Descriptive Statistics of the Sample – Geographic Spread	187
Table 6.1(b): Descriptive Statistics of the Sample – Age, Size, International Intensity and Age at Internationalisation	187
Table 6.1(c): Descriptive Statistics of the Sample – Largest International Market	187
Table 6.2: Component Matrix for International Growth Items	189
Table 6.3: Suitability of Factor Analysis for Market Knowledge Items	193
Table 6.4(a): Factor Analysis of Market Knowledge Items – Commonalities	193
Table 6.4(b): Factor Analysis of Market Knowledge Items – Total Variance Explained	194

Table 6.4(c): Factor Analysis of Market Knowledge Items – Component Matrix	194
Table 6.5: Suitability of Factor Analysis for Knowledge Intensity Items	196
Table 6.6(a): Factor Analysis of Knowledge Intensity Items – Commonalities	196
Table 6.6(b): Factor Analysis of Knowledge Intensity Items – Total Variance Explained	197
Table 6.6(c): Factor Analysis of Knowledge Intensity Items – Component Matrix	197
Table 6.7: Suitability of Factor Analysis for Social Capital Items	199
Table 6.8(a): Factor Analysis of Social Capital Items – Total Variance Explained	199
Table 6.8(b): Factor Analysis of Social Capital Items – Rotated Component Matrix	200
Table 6.9: Correlations	203
Table 6.10: Descriptive Statistics	203
Table 6.11(a): Linear Regression for International Growth – Model Summary	204
Table 6.11(b): Linear Regression for International Growth – ANOVA	204
Table 6.11(c): Linear Regression for International Growth – Coefficients	205
Table 6.12(a): Logistical Regression for Modal Commitment – Variables in the Equation	207
Table 6.12(b): Logistical Regression for Modal Commitment – Variables not in the Equation	208
Table 6.12(c): Logistical Regression for Modal Commitment – Omnibus Tests of Model Coefficients	208
Table 6.12(d): Logistical Regression for Modal Commitment – Model Summary	208
Table 6.12(e): Logistical Regression for Modal Commitment – Variables in the Equation	208
Table 6.13: Tolerance and VIF Coefficients	210
Table 6.14: Collinearity Diagnostics	211
Table 6.15(a): Leveraging Social Capital – Local Bonding Social Capital	213
Table 6.15(b): Leveraging Social Capital – Local Bridging Social Capital	213
Table 6.15(c): Leveraging Social Capital – Foreign Bonding Social Capital	213
Table 6.15(d): Leveraging Social Capital – Foreign Bridging Social Capital	213
Table 7.1: Explaining the Unexpected Findings	260
Table 8.1: Potential Combinations of Social Capital	273

List of Abbreviations

AIIESEC	International Association for Students in Economics and Management
CEO	Chief Executive Officer
CFO	Chief Finance Officer
CII	Confederation of Indian Industry
DCS	Drop and Collect Survey
DoE	Department of Electronics
FDI	Foreign Direct Investment
GATT	General Agreement on Tariffs and Trade
GE	General Electric
GPS	Global Positioning System
HAL	Hindustan Aeronautical Limited
IB	International Business
ICT	Information and Communication Technology
INV	International New Venture
IP	Intellectual Property
ISO	International Organisation for Standardisation
IT	Information Technology
ITES	Information Technology-Enabled Services
JIBS	Journal of International Business Studies
KBV	Knowledge-Based View
KIF	Knowledge Intensive Firm
KIFOW	Knowledge Intensive Firms, Organisations and Workers
MIT	Ministry of Information Technology
mMNE	Micromultinational
MNC	Multinational Corporation
MS	Master of Science
MSA	Measure of Sampling Adequacy
NAL	National Aeronautical Limited
Nasscom	National Association of Software and Service Companies
NCR	National Capital Region
NRI	Non-Resident Indian
OECD	Organisation for Economic Cooperation and Development

PC	Personal Computer
PhD	Doctor of Philosophy
R&D	Research and Development
RBV	Resource-Based View
SME	Small- and Medium-sized Enterprise
SPSS	Statistical Package for the Social Sciences
STAC	Scottish Technology and Collaboration
STPI	Software Technology Parks of India
SWOT	Strengths, Weaknesses, Opportunities and Threats
TiE	The Indus Entrepreneurs
TMT	Top Management Team
UK	United Kingdom
US	United States
USA	United States of America
VC	Venture Capital
VIF	Variable Inflation Factor
VP	Vice President
Y2K	Year 2000

CHAPTER ONE

INTRODUCTION AND OVERVIEW

1.1 Introduction

Internationalisation constitutes a core area of interest to international business (IB) researchers (Buckley, 2002). Despite a general preoccupation with large multinational enterprises, recent years have seen a surge in the study of internationalisation of small- and medium-sized enterprises (SMEs), especially in knowledge intensive industries (Etemad and Wright, 2003; Peng, 2001). While Young (1987) was among the first to highlight the emerging importance of the internationalisation of knowledge intensive smaller firms, such interest caught on fairly rapidly within the IB field as evident from the following observation seven years later by Wright and Ricks (1994, p.699) on significant trends in IB research:

“Another, even newer thrust of research activity is *international entrepreneurship* and the internationalization of *small business*. In the emerging global environment, entrepreneurs and their businesses become less limited to domestic markets. Even small firms are entering the realm of international business...International players in the world of tomorrow will no longer be limited to big business.”

It was, coincidentally, in the same year that entrepreneurship scholars, Oviatt and McDougall (1994), profoundly influenced the IB community with their ideas on the accelerated internationalisation of so-called international new ventures, resulting in considerable research activity over the subsequent decade (Zahra, 2005), at the intersection of IB, entrepreneurship and strategy (Oviatt and McDougall, 2005; Zahra and George, 2002). As seen above, Wright and Ricks (1994) did not clearly delineate between interest in the internationalisation of *small* firms and of *new* firms. It is suggested here – at the risk of oversimplification and while acknowledging that

exceptions exist – that IB scholars have tended to focus on smaller firms (e.g., Bell, Crick and Young, 2004; Coviello and Munro, 1997; Jones, 1999) and entrepreneurship scholars on younger firms (e.g., Autio, Sapienza and Almeida, 2000; Yli-Renko, Autio and Tontti, 2002; Zahra, Ireland and Hitt, 2000).

The present study, which is clearly rooted within a tradition of IB scholarship, focuses on the smaller firm but liberally draws upon the work of such entrepreneurship scholars as Autio, Oviatt, McDougall, Sapienza, Yli-Renko and Zahra. The rationale for deeming this entirely appropriate is two-fold. First, both smaller and new firms are resource-constrained, and it generally takes resourcefulness on their part to engage with international markets (Zahra, 2005). Second, common to both IB and entrepreneurship researchers is the routine utilisation of Johanson and Vahlne's (1977) ideas as a starting point or point of departure (e.g., Sapienza, Autio and Zahra, 2003; Young, Dimitratos and Dana, 2003), thus facilitating synthesis and cross-fertilisation of emergent thinking on internationalisation. Indeed, in his review of the international management literature, Werner (2002, p.283) has clearly included such work as Autio et al (2000) and Zahra et al (2000) under the sub-field of internationalisation. It is to this area that the present study seeks to make a contribution.

The opening chapter of this doctoral thesis provides an overview of the specific way in which the study seeks to do so. It is organised in the following way. In the next section, some of the literature that primarily informs this study is highlighted, and the theoretical approach taken identified. Subsequently, the intended contribution is

outlined by drawing attention to the gaps in the literature being addressed and the study's aim, objectives and research questions. This is followed by a discussion of choices made in carrying out this piece of research, notably in terms of the empirical setting chosen and the research design. Finally, an indication is given of the structure of the remainder of this doctoral thesis.

1.2 Theoretical Approach

The founding premise for this study is Penrose's (1959, p.24) view of firms as a "collection of productive resources, the disposal of which between different uses and over time is determined by administrative decision". She proposed that growth is a natural objective for firms and that the firm's resources influence its growth. Market-seeking internationalisation, which is the form of internationalisation of concern to the present study, is a route to firm growth. According to Luostarinen (1980, p.64), "Internationalisation can be regarded as one of the alternative growth strategies in general".

Drawing on resource-based scholarship, two key resources influencing growth can be identified – one that is internal to the firm viz., knowledge (Ambrosini, 2003; Grant, 1996) and another that emanates from inter-firm relationships viz., social capital (Adler and Kwon, 2002; Gulati, 1999). A synthesis of the internationalisation literature (in Chapter Two) reveals that these constructs (knowledge and social capital) are vital in determining international growth and also, arguably, modal commitment.

Bell and Young (1998) rightly point out that there is no unanimity in the definition of the term, 'internationalisation'. Welch and Luostarinen (1988, p.36) define internationalisation as "the process of increasing involvement in international operations", which is similar to Young et al's (1989) definition. Subsequently they explicitly recognised that internationalisation involves both outward (e.g., market-seeking) and inward (e.g., resource-seeking) activities (Welch and Luostarinen, 1993). Thus internationalisation is an evolutionary process for many firms and has also been defined as "the process of adapting firms' operations (strategy, structure, resources, etc.) to international environments" (Calof and Beamish, 1995, p.116). It is thus an issue of importance for firms, and often results in useful learning outcomes for firms (Zahra et al, 2000) and has a significant impact on their performance (Lu and Beamish, 2001). The selection of definitions referred to above indicates the commonalities in scholars' perception of this phenomenon: it is a *process* of the development of a firm's *cross-border operations*. This is the understanding of internationalisation that is adopted for this study.

As noted, a significant development, at the intersection of international business, and entrepreneurship, has been the growing interest in the internationalisation of resource-constrained firms, such as small and new firms (Westhead, Wright and Ucbasaran, 2001; Zahra, 2005). Among such firms, a specific type of firm of continued interest is the smaller knowledge intensive firm (Bell, Crick and Young, 2004; Young, 1987), many of which internationalise proactively and rapidly (Knight and Cavusgil, 2004), and go beyond exporting to utilise higher-commitment modes of international operations (Dimitratos, Johnson, Slow and Young, 2003). The latter

is significant because the issue of mode choice has increasingly been rather neglected in the small firm internationalisation literature.

As noted, the work of Oviatt and McDougall (1994), which challenged traditional notions of internationalisation as a gradual process (Johanson and Vahlne, 1977), provided considerable impetus to internationalisation research. It has since been argued that there are many complementarities between the two approaches as they both primarily utilise a knowledge-based conceptualisation, albeit with differing emphases (Sapienza, Autio and Zahra, 2003; Yli-Renko, Autio and Tontti, 2002). Madsen and Servais (1997, p.570) point out that “many basic assumptions and the dynamic process (state and change aspects) underlying the internationalisation process of [Oviatt and McDougall] are not necessarily different from what is outlined in the original [model of Johanson and Vahlne].” Furthermore, Johanson and Vahlne (2003) have latterly revised their original thinking. Their more recent views marry a knowledge-based approach with a network perspective, as have those of McDougall and Oviatt (2003), as will be seen in greater detail in the next chapter.

This study of SME internationalisation is based upon a three-fold premise. First, there has been a growing emphasis on integrating network perspectives with the dominant knowledge-based conceptualisation of internationalisation (Johanson and Vahlne, 2003; McDougall and Oviatt, 2003). Second, the social capital concept provides a very useful – and increasingly used – means of conceptualising networks and the benefits accruing from them (Adler and Kwon, 2002). Third, despite pioneering work on the role of social capital in internationalisation in recent times

(e.g., Arenius, 2002) there are vital gaps that need to be addressed by scholarly research, such as the differential role of social capital types. This particular shortcoming is a major motivation for the present study, which draws upon both knowledge- and social capital-based theoretical perspectives.

1.3 Research Questions

The focus of this study is on outward market-seeking internationalisation, which involves two decisions on the part of firms: choice of market and choice of mode (Tallman and Yip, 2001). The former influences, directly or indirectly, various aspects of internationalisation such as market diversity, international intensity (i.e., the proportion of revenues accruing from international business) and international growth. This study is concerned with the last-mentioned, viz., international growth. Additionally, the issue of mode is also considered in this study, with a view to broadening the scope of the contribution to SME internationalisation that this study hopes to make.

Despite useful prior research, two conceptual gaps in the SME internationalisation literature are identified, concerning:

- The aspect of mode choice has been underplayed in the small firm internationalisation literature (Dimitratos, Johnson, Slow and Young, 2003)
- As noted, little is known about the differential role of forms of social capital (e.g., bridging versus bonding social capital)

Therefore, the study's central research questions are:

1. *Do firms with a higher stock of knowledge (a) achieve greater international growth and (b) utilise higher-commitment modes, compared to firms with a lower stock?*
2. *Do firms with a higher stock of social capital (a) achieve greater international growth and (b) utilise higher-commitment modes, compared to firms with a lower stock?*
3. *Do social capital types influence international growth and mode choice differentially?*

Additionally, an empirical gap in the SME internationalisation literature is noted, viz.

- There is a dearth of literature on SME internationalisation in a developing economy context (Ibeh, 2003; Zafarullah, Ali and Young, 1998).

It is argued in this study that a developing economy context would constitute an appropriate setting to address the above research questions in the light of often accentuated resource constraints and collectivism (Hofstede, 1980) that may lead firms based in such a context to proactively leverage networks (Redding, 1995).

Taking all of the above (i.e., the two conceptual gaps and one empirical gap) into consideration, this study seeks to make the following contributions. First, it seeks to strengthen efforts to renew interest in mode choice in SME internationalisation research by studying modal commitment as an outcome of knowledge and social capital. In so doing it seeks to take forward – at least by a small step – the emerging

concept of the micromultinational (mMNE) i.e., a smaller firm that goes beyond exporting to employ higher-commitment modes (Dimitratos et al, 2003). Second, it seeks to deepen extant understanding of types of social capital and their differential influence on internationalisation, and thereby to provide a more nuanced understanding of the use of an internationalising SME's resources, with special reference to social capital types. Third, it seeks to empirically study a developing economy setting, on which there is a dearth of literature.

1.4 Research Design

Given the key constructs of social capital and knowledge in this study, a suitable empirical setting to test the model would comprise knowledge intensive SMEs. Even within knowledge intensive industries, the knowledge intensity of individual firms is known to vary (e.g., Autio et al, 2000). As argued above, a developing economy context, where resource constraints are more acutely felt and (compensatory) networks widely leveraged, would be very suitable for this study. Given these considerations, the software industry in India, which has been cited as an excellent example of a developing economy engaging with the wider global economy (Kobrin 1999), provides an ideal setting for the study. Chapter Three elaborates upon the smaller knowledge intensive firm and the Indian software industry, which jointly constitute the study's empirical context.

In terms of research methodology, a mixed approach is taken where a survey-based quantitative study in India's five major cities for information technology is preceded and followed by qualitative case-studies of four software firms in Bangalore, which

is the city most prominently associated with the software industry in India. While the pre-survey qualitative research provides insight into the phenomenon under study in light of the study's research framework (Birkinshaw, 2004) viz., internationalisation of software SMEs in India, the quantitative study allows the falsifiable research questions to be addressed. Post-survey qualitative research helps to shed light on survey findings that may be inconsistent with the literature-derived hypotheses. The research methodology adopted in this study is elaborated upon in Chapter Four.

Definitions of the key terms used in this study are provided below:

Internationalisation: a *process* of the development of a firm's *cross-border operations*. The focus of this study is on outward, market-seeking internationalisation (derived by the author from the literature).

Knowledge: "information whose validity has been established through tests of proof" (Libeskind, 1996, p.94).

Social Capital: "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network" (Nahapiet and Ghoshal, 1998, p.243).

Knowledge Intensive Firm: a firm where the majority of its employees comprise a highly qualified workforce which is its most important resource and is engaged in knowledge work – meaning that knowledge is inherent in the firm's main activities – as its central preoccupation (derived by the author from the literature).

Small- and Medium-Sized Firm: A firm with fewer than 250 employees, based on the European Union definition (*Official Journal*, 1996).

1.5 Conclusion

The introductory chapter has sought to present a broad overview of this study's research questions, the theoretical approach taken and the main contribution sought to be made. This thesis is structured as follows:

Chapter 1: Introduction and Overview

Chapter 2: Review of the Literature

Chapter 3: Empirical Setting

Chapter 4: Research Methodology

Chapter 5: Findings of the Exploratory Case Studies

Chapter 6: Findings of the Quantitative Survey

Chapter 7: Findings of Explanatory Case Studies

Chapter 8: Conclusions and Implications

The next chapter provides the review of literature.

CHAPTER TWO

REVIEW OF THE LITERATURE

2.1 Introduction

Before presenting a review and synthesis of the small firm internationalisation literature later in this chapter, two theoretical strands – resource-based and social capital theories – are reviewed by way of background. This has utility in providing a robust theoretical base on which to build the ensuing discussion of internationalisation, many ideas about which can be linked to resource-based and social capital theories.

This chapter is structured as follows. The next section reviews literature on the resource- (and especially knowledge-) based and social capital perspectives in relation to the growth of the firm. Subsequently, based upon the foregoing resource-based and social capital theoretical perspectives, the SME internationalisation literature pertaining to growth is discussed. Thereafter gaps in the literature are identified and three related streams of the internationalisation literature – arising from these gaps – are discussed, on the basis of which research questions and corresponding hypotheses are identified.

2.2 The Growth of the Firm

2.2.1 Knowledge and the Growth of the Firm

The growth of the firm is an issue of interest to scholars in fields as diverse as international business, entrepreneurship, marketing and strategy. It was the focus of Penrose's (1959) work, which is widely perceived as a key precursor of the

Resource-Based View (RBV). Penrose conceived of firms as bundles of resources held together by an administrative framework. She suggested that firms grow as they exploit resources that are “lumpy” and in excess, as they cannot be traded; instead they are best utilised in expanding the firm’s activities. In other words, diversification may provide a vital avenue for the exploitation of excess rent-yielding resources (Teece, 1980; Montgomery and Wernerfelt, 1988) especially because trading such resources can be hindered – particularly in the case of knowledge – by transaction costs (Teece, 1980). The RBV is said to be the most dominant perspective in strategic management (Barney 2001), and its influence on international business, including small firm internationalisation, is evident in Peng’s (2001) discussion of the contribution of the RBV to the field of international business, as depicted below:

Table 2.1: The Resource-Based View in International Business

	Firm size		
Sophistication of international operations		<i>Small</i>	<i>Large</i>
	<i>Mature</i>		MNC Management
	<i>Start-Up</i>	International entrepreneurship	Market entries

Source: Adapted from Peng, 2001 (p. 810)

Using the RBV, and therefore Penrose, as a starting point in terms of the theoretical background to a study on small firm internationalisation is both appropriate and relevant given that, as will be expanded upon presently, internationalisation is an important means of firm growth (Casson, 1992; Luostarinen, 1980). Furthermore, the RBV is evident in the dominant perspectives in small firm internationalisation, viz., Johanson and Vahlne’s (1977) internationalisation process and Oviatt and

McDougall's (1994) international new venture approaches, which provide the main bases for the model that is developed and tested in this study.

The RBV is concerned with, among other issues, characteristics of resources that make them a source of competitive advantage (and growth) to firms. A well-known treatment of this issue is found in Peteraf (1993). Synthesising ideas from other RBV scholars as well, she identifies four “cornerstones” of competitive advantage with respect to resources viz., (a) heterogeneity; (b) ex ante limits to competition (i.e., acquisition of resources at a price lower than the discounted net present value); (c) ex post limits to competition (i.e., difficulty to imitate or substitute); and (d) imperfect mobility (i.e., firm-specificity). Resource heterogeneity is highlighted by Barney (1991) as the basis for heterogeneity of firm strategies. Similarly the ex ante limits to competition are discussed in Barney's (1986) exposition on factor markets where he argues that unless a firm is lucky or has superior information, the price it pays in a competitive factor market fully capitalises the rents from the asset. As for ex post limits, Dierickx and Cool (1989) have noted that mechanisms such as causal ambiguity hinder imitability and substitutability. Imitability is further rendered difficult owing to their historic determination, social embeddedness within the organisation and tacitness (Barney, 1991).

Given these characteristics, it is understandable that *knowledge* should have attracted widespread attention as a resource of particular significance (Grant, 1996; Kogut and Zander, 1992; Nonaka, 1994). While other types of resources – including physical assets (Collis and Montgomery, 1995) – can be vital, knowledge has been viewed by

some scholars as the most significant resource for firms (Grant, 1996). As Zack (1999: x) comments, “Today, *knowledge* is being considered the most important strategic resource, and the ability to create and apply it the most important capability for building and sustaining competitive advantage”. From the perspective of the internationalisation literature, this is of immense significance as knowledge can be identified as the core of the dominant perspectives (Johanson and Vahlne, 1977; Oviatt and McDougall, 1994), thus rendering possible an integrative knowledge-based conceptualisation of internationalisation, where these apparently disparate strands of the literature can be partially reconciled (Autio and Sapienza, 2000; Sapienza, Autio and Zahra, 2003; Yli-Renko, Autio and Tontti, 2002).

The importance of knowledge to the growth of the firm follows closely from a similar emphasis in Penrose’s (1959) own work. She viewed the ability of managers to integrate resources, i.e., managerial knowledge, as a vital growth-facilitating resource of the firm. Spender (1994), suggests that “organizational knowledge is the key to competitive advantage” because such knowledge allows the coordination of resources which in turn leads to “viable bundles” of resources. In other words, Spender (1994) strongly echoes Penrose as he argues that competitive advantage is not merely explained by individual resources but by a different type of resource, viz., knowledge; this refers to the *coordination* of resources, which inheres in the activity itself and therefore the firm (rather than its individual members). Thus, competitive advantage has come to be seen as based on knowledge, not raw materials. Further, Penrose saw tacit knowledge as being particularly vital. The importance of tacit knowledge is subsequently seen in the work of Kogut and Zander (1992, 1993, 1996)

where the firm is viewed as a social repository of knowledge. This is consistent with Demsetz's (1991: 172) conceptualisation of firms as "repositories of specialized knowledge and of the specialized inputs required to put this knowledge to work".

The importance of knowledge is reiterated by Liebeskind (1996) who defines knowledge as "Information where validity has been established through tests of proof". She suggests that in the modern industrial environment, Ricardian rents (i.e. rents generated by unique firm-specific assets) commonly accrue from firms' knowledge. Grant (1996) throws further light on the role of knowledge by distinguishing between the specialist knowledge residing in individual organisational members and the key task of organisational capability viz. that of integrating disparate bodies of specialised knowledge. This capability is akin to Penrose's managerial knowledge and Spender's organisational knowledge. One implication of the importance of knowledge is that firms must, in general, actively protect their knowledge (Liebeskind, 1996).

The acknowledged importance of knowledge has led to an emergent view in the strategy literature referred to as the "knowledge-based view" (KBV) of the firm. According to Grant (2002, p.133), "The emerging 'knowledge-based view of the firm' is not a theory of the firm in any formal sense. It is more a set of ideas about the existence and nature of the firm that emphasize the role of knowledge." The theoretical foundations of the study are consistent with the following notions outlined by Grant (2002): (a) the great importance of knowledge as a productive resource, (b) the variation in transferability of knowledge – it is high for explicit knowledge and

low for tacit knowledge (skills, know-how, and contextual knowledge); knowledge intensive industries may therefore enjoy increasing returns, (c) knowledge is more expensive to create than replicate, leading to potential economies of scale, (d) specialisation leads to greater efficiency in knowledge creation and storage, and (e) the requirement, often, for many types of knowledge in firms' operations.

Thus far it has chiefly been argued that (a) firm resources are a vital determinant of firm growth and (b) knowledge is a resource of paramount importance. However the firm is not the only source of vital resources. It has been recognised that resources, including knowledge, may accrue from inter-firm relationships (Birkinshaw, 2000; Dyer and Singh, 1998; Gulati, 1999). This phenomenon is the central tenet of social capital theory (Adler and Kwon, 2002; Burt, 1992; Coleman, 1988; Putnam, 2000), which is particularly significant to this discussion owing to the link between social capital and knowledge that has been theoretically argued (Nahapiet and Ghoshal, 1998) and empirically demonstrated (Tsai and Ghoshal, 1998). Scholars such as Lee, Lee and Pennings (2001) have called for a holistic approach to resources, particularly in the context of the resource-constrained firm, by integrating internal resources (especially knowledge) and external relationships (specifically social capital). The discussion now turns to social capital theory.

2.2.2 Social Capital and Growth

The historical origins of social capital theory stem from the discipline of sociology. According to Portes (1998), it was Bourdieu (1986, p.248) who provided the first systematic analysis of social capital, which he defined as “the aggregate of the actual

or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition”. The concept became noteworthy with the work of Coleman (1988, p.108) who articulated the “appropriability” of social structure and that of Burt (1992), despite their differing views.

Burt’s (1992) notion of structural holes pertains to the distance between non-redundant ties (essentially Granovetter’s (1973) weak ties), which, when spanned, could result in new information. Coleman (1988) however takes an opposite view, arguing that it is within closed networks (i.e., through strong ties) that vital information is obtained. Despite these differences, their work – as also that of Putnam (1993, 1995) – led to consensus on the main tenet of social capital theory, viz., that actors, including firms, can (and do) derive resources from external relationships (Burt, 1992; Coleman, 1988). This is distinct from intellectual capability that resides within firms and individuals. Thus, according to Burt (1997, p.339), “While human capital refers to individual ability, social capital refers to opportunity”.

That one kind of social tie (e.g., friendship) can achieve a different purpose (e.g., work-related advice) is, as such, a long-held belief in sociology (Portes, 1998). Social relations – as distinct from market or hierarchical relations – underlie social capital. Of course, market or hierarchical relations may, over the course of time through repeated interaction, yield social relations – and therefore social capital (Adler and Kwon, 2002). The social capital concept has formalised the notion that

benefits can be derived from social ties and encapsulated it in a manner that has attracted considerable interest beyond the confines of sociology. Adler and Kwon (2002) note that social capital theory has been applied to a variety of contexts including the study of career success (Burt, 1992), job searches (Granovetter, 1973), inter-unit exchange and knowledge creation (Nahapiet and Ghoshal, 1998; Tsai and Ghoshal, 1998), enhancement of new venture creation (Walker, Kogut and Shan, 1997) and containment of firm dissolution (Pennings, Lee and van Witteloostuijn, 1998).

However a casualty of this growing interest in social capital has been definitional precision. Authors have tended to emphasise differing facets of social capital. Leana and Van Buren (1999) suggest that two broad patterns emerge among definitions of social capital. The first entails an emphasis of the “private good” nature of social capital i.e., social capital is appropriated by the actors who are directly involved, such as for personal career gain (e.g., Burt, 1997; Granovetter, 1973). The second is more concerned with the “public good” nature of social capital i.e., benefits may accrue for actors from social capital despite not having invested in it, such as civic benefits from being part of a community (e.g., Coleman, 1988; Putnam, 1993). Another issue of note in terms of the variety of ways in which the social capital construct has been employed in social science research is the multiplicity of levels of analysis – including individual, organisational and national levels.

Thus, care is required in choosing the definition of social capital used in research such as the present study. Following other management scholars (e.g., Bolino,

Turnley and Bloodgood, 2002; Inkpen and Tsai, 2005), this study adopts Nahapiet and Ghoshal's (1998, p.243) definition of social capital as "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network". The rationale for this choice is three-fold. First, this definition is conducive for research on firm-level social capital, including social capital derived from inter-firm relationships, which is the focus in the present study. Second, this definition is integrative of previous work, which is useful given the diversity of views on social capital; for instance, it combines both the public and private good perspectives (Inkpen and Tsai, 2005) and is neutral on the dimension of bridging versus bonding social capital (Adler and Kwon, 2002), which is discussed presently. Third, Nahapiet and Ghoshal's (1998) definition – along with their ideas – establishes a relationship between social capital and knowledge wherein repeated and intensive social interaction facilitates the transfer of knowledge (Yli-Renko et al, 2001; Zahra et al, 2000). This approach therefore sits harmoniously with the knowledge-based view of the firm discussed above. (It also later emerged from Vahlne (2003) that, coincidentally, this was the definition that guided Johanson and Vahlne's (2003) updated thinking on internationalisation).

Nahapiet and Ghoshal (1998) distinguish between three aspects of social capital, viz., structural (configuration of linkages among actors), relational (the nature of relationships, e.g., respect), and cognitive (shared systems of meaning); various authors differ in their emphasis on and selection of these aspects. This discussion is

concerned primarily with the relational aspect. Structural and cognitive aspects are de-emphasised primarily for pragmatic reasons. The structural aspect of social capital is typically operationalised in “purist” social network research through measures of spatial aspects of networks that are rarely used in the internationalisation literature that this study informs. Similarly, prior social capital research – and internationalisation literature (for an exception, see Zahra, Korri and Yu, 2005) – have tended to neglect the cognitive aspect and hence building a link to previous work will not be straightforward and is hence not attempted here. While these very reasons may warrant their inclusion in research such as this, the view taken here is that a focus on the relational aspect alone will yield sufficient novel insight that can, importantly, relate well to the prior literature that this study seeks to extend.

Benefits arising from social capital are information, influence and solidarity (Adler and Kwon, 2002). Of these, *information* is seen as especially vital in the business context (Gulati, 1999). Information benefits may be in terms of access, timing and referrals (Burt, 1992); also, these can be considered in terms of the volume, diversity and richness of information (Koka and Prescott, 2002). Such benefits can result in the growth of the firm (Florin, Lubatkin and Schulze, 2003), including international growth (Yli-Renko et al, 2002). Social capital signals legitimacy (Burt, 1992) and provides a guiding frame of reference particularly when actors have few peers (Burt, 1997). Social capital enhances returns on other resources, e.g., human capital (Coleman 1988). Social capital is increased through trust resulting from obligation or threat of censure (Coleman, 1988; Granovetter, 1985) However the effects are not exclusively positive; negative effects of social capital include the potential to exclude

actors from a network and the negligence of responsibility that may arise from overdependence on the goodwill of others (Adler and Kwon, 2002).

A useful concept in the social capital literature, with potentially interesting implications for management research, is the distinction between *bridging and bonding social capital*, a distinction attributed to Gittel and Vidal (1998) and popularized by Putnam (2000) and Woolcock (1998). Putnam (2000, p.22) asserts that “of all the dimensions along which forms of social capital vary, perhaps the most important is the distinction between *bridging* (or inclusive) and *bonding* (or exclusive)”.

According to Putnam and Goss (2002, p.11), “Bonding social capital brings together people who are like one another in important aspects (ethnicity, age, gender, social class, and so on), whereas bridging social capital refers to social networks that bring together people who are unlike one another”. In other words, bonding social capital pertains to social groups that are homogenous or similar; bridging social capital pertains to heterogeneous or dissimilar groups (Putnam, 2000). At a basic social level, an individual’s parents represent the former, while acquaintances through community activities (e.g., church membership), the latter (Beugelsdijk and Smulders, 2003; Davidsson and Honig, 2003). Putnam (2000, p.363) notes that “...bridging and bonding social capital are good for different things”. More specifically, he suggests that “Bonding social capital is...good for “getting by”, but bridging social capital is crucial for “getting ahead” ” (Putnam, 2000, p.23). Bonding

social capital is characterized by higher levels of trust, but bridging ties are more likely to yield new information, ideas and opportunities (McEvily and Zaheer, 1999).

It is interesting that in his treatise on social capital, Putnam (2000, p.22) introduces the notion of “many different forms of social capital” – including bridging and bonding – in the context of a discussion of the potentially negative outcomes of social capital. It has been noted of social capital that “there are also a number of less beneficial aspects, which are under-explored in the current empirical literature” (Edelmen, Bresnan, Newell and Scarbrough, 2004, p.S59). Furthermore, Putnam and Goss (2002, p.8) point out that “although the phrase “social capital” has a felicitous ring to it, we must take care to consider its potential vices, or even just the possibility that virtuous forms can have unintended consequences that are not socially desirable.” For instance, Hitt et al (2002, p.357) point out that social capital may be unhelpfully “sticky” and that “ties within one network may forestall ties in other networks”. In particular, the potential ill effects of bonding social capital, such as groupthink and a loss of originality, have been highlighted (Beugelsdijk and Smulders, 2003). While taking due cognizance of these observations, it is however important not to overlook the virtue of social capital in general and bonding social capital in particular (Davidsson and Honig, 2003). A recent study of intraorganizational social capital in relation to a project team revealed that building bridging social capital in the absence of bonding social capital is difficult (Newell, Tansley and Huang, 2004).

It is acknowledged here that in reality, most forms of social capital are a blend between bonding and bridging ties (Putnam and Goss, 2002) and this distinction can be somewhat artificial (Adler and Kwon, 2002), which poses a challenge for operationalising these constructs. Despite this, the distinction is an important one and Putnam (2000: 23) exhorts scholars to, “like researchers on global warming...make do with the imperfect evidence that we can find, not merely lament its deficiencies”. It is argued here, therefore, that there is considerable utility in this distinction since many ties can be considered as *predominantly* one or the other, based on which the role of the tie would vary. One helpful approach is taken by Hitt et al (2002) who distinguish between firms within and outside the network as sources of bonding and bridging social capital, respectively. Another is to attribute, a priori, a predominance of a bridging or bonding nature to a set of relationships – for example, family ties represent bonding social capital and relationships through networking organizations represent bridging social capital (Davidsson and Honig, 2003).

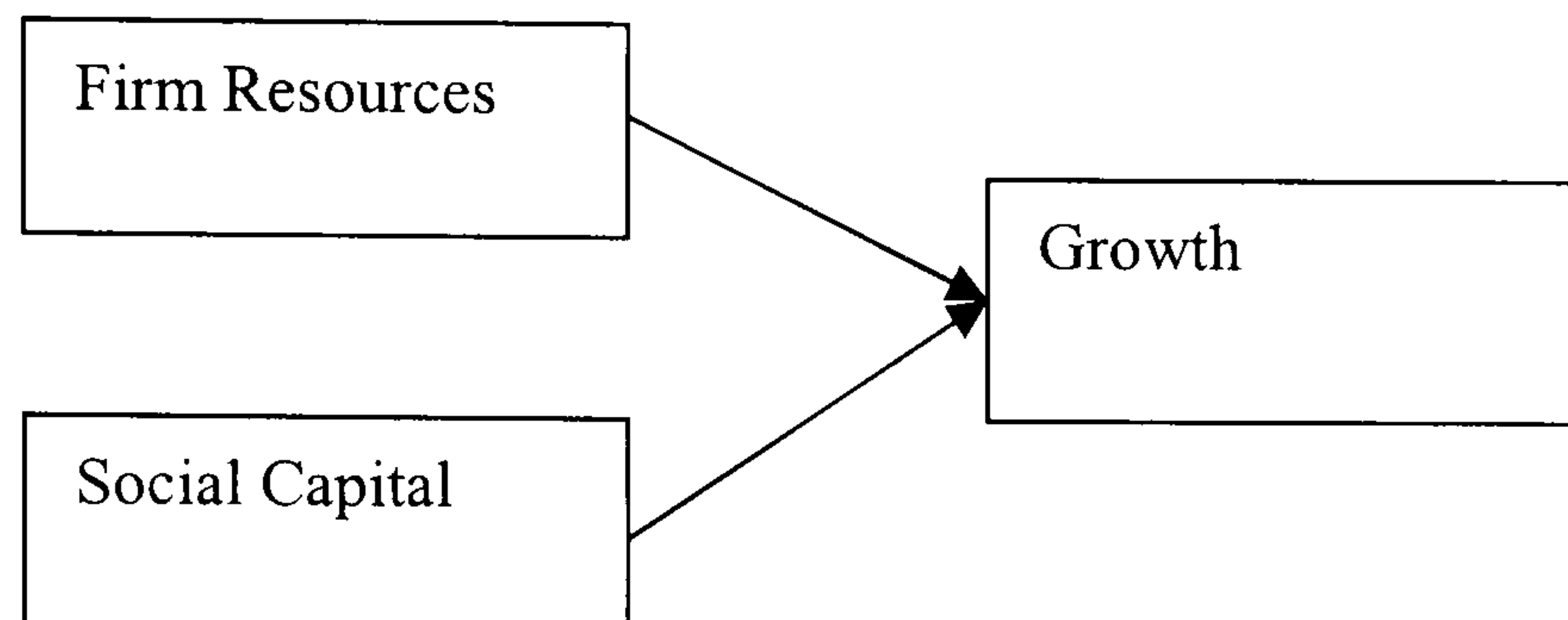
It would be useful, for clarity, to prevent the blurring of the distinction between bridging and bonding social capital and that between strong and weak ties (Granovetter, 1973). Putnam (2000) is culpable of being less than precise in statements such as: “...bridging and bonding social capital are good for different things. Strong ties with intimate friends may ensure chicken soup when you’re sick, but weak ties with distant acquaintances are more likely to produce leads for a new job” (Putnam, 2000, p.363). Elsewhere in the same work, he explicitly makes reference to Granovetter (1973) while introducing the notions of bonding and bridging social capital (Putnam 2000, p.23). However there is more clarity

subsequently. Putnam and Goss (2002, p.10) distinguish between “thick versus thin social capital”, akin to “a closely related distinction between ‘strong ties’ and ‘weak ties’”. The emphasis is on “frequency of contact and closedness”, i.e., on intimacy. They make a *separate* distinction between bridging and bonding social capital, where the emphasis is on demographic similarity in aspects like ethnicity, gender and age (Putnam and Goss, 2002, p.11). Furthermore, Woolcock (personal communication) offers the following helpful understanding of the difference between the bridging/bonding and strong/weak distinctions: “while there is much empirical overlap, in principle the distinction is that Granovetter's “ties” refer (primarily) to frequency of social interaction, whereas bonding/bridging...is more a demographic divide.”

Unlike the resource-based view, which is primarily a product of ideas from economists (notably Penrose), social capital, as seen, is a contribution from the sociology discipline, albeit one that has been enriched subsequently by other disciplines (including economics). Combining these perspectives is consistent with the interdisciplinary nature of strategic and international management research (Buckley, 2002; Zahra and Dess, 2001). Scholars such as Lee, Lee and Pennings (2001, p.616) have explicitly argued for the complementarity of resource-based and social capital related theories, stating that “these theories ought to be synthesized” particularly in the case of resource-constrained firms such as start-ups (and by extension, smaller firms), which need to “develop firm-specific assets while obtaining complementary external resources through their social networks”. Furthermore, the work on social resource and network resources by sociologists Lin

(1999) and Gulati (1999), respectively, facilitates the integration of the RBV and social capital theory, offering a more holistic view of growth, as depicted below.

Figure 2.1: A Holistic View of Growth



Such an approach (integrating knowledge and social capital) is taken next in the subsequent synthesis of the internationalisation literature. Consequently, the resultant framework is likely to be partial, but having the strength of parsimony; furthermore, it is found to resonate with two dominant perspectives in the internationalisation literature, viz., those of Johanson and Vahlne (1977) and Oviatt and McDougall (1994), thereby allowing a fruitful synthesis of views that are normally perceived as contradictory. While the resultant model is expected to apply in a range of settings, a particularly useful empirical context in which to test it pertains to firms that are *resource-constrained* (and therefore particularly likely to leverage social capital) and *knowledge intensive* (and therefore particularly likely to leverage knowledge). Thus a logical choice for the empirical setting is a sample of *knowledge intensive SMEs*; this is elaborated upon in the next chapter on the study's empirical context. For the present, the discussion turns to internationalisation as a means for firms to achieve growth.

2.3 International Growth of the Firm

2.3.1 Knowledge and International Growth

As Luostarinen (1980, p.64) has pointed out, “Internationalisation can be regarded as one of the alternative growth strategies in general”. The following discussion of the small firm internationalisation literature, in keeping with the theoretical foundation of the study selectively reviews ideas pertaining to knowledge and social capital; of particular relevance are the ideas of Johanson and Vahlne (1977, 2003) and Oviatt and McDougall (1994) / McDougall and Oviatt (2003). Many reviews of the internationalisation literature typically categorise the literature in terms of four or six main theoretical strands such as international trade theory, foreign direct investment (FDI) theory, internationalisation theory, stages theory, the network approach and international new venture theory. In this review, a different approach is taken. Here, the focus of the review is on unearthing key *determinants* pertaining to resources (especially *knowledge*) and *social capital*. In so doing, it still covers all the key internationalisation literature that a study of this nature must take into account. In the interest of parsimony, however, it focuses on the key determinants, and the resultant model is therefore, by design, partial and not comprehensive. This approach (of selectivity) is however commonly taken in many management studies (e.g., Autio et al., 2000). The starting point for the discussion below is Johanson and Vahlne’s (1977) thesis and the central point here is the role of market knowledge. Subsequently, the importance of knowledge intensity, drawing on the ideas of Oviatt and McDougall (1994), is highlighted.

2.3.1.1 Market Knowledge and International Growth

In the 1970s, international business scholars, notably Johanson and colleagues (Johanson and Vahlne, 1977; Johanson and Wiedersheim-Paul, 1975), argued that a firm's market knowledge determines its internationalisation. Similar ideas emanated from neighbouring Finland, through the work of Luostarinen (1980). Additionally, a similar manifestation but different underlying theory could be seen in the work of Bilkey and Tesar (1978) and Cavusgil (1980, 1984), where the focus is on innovative response to unexpected events (i.e., unsolicited business from abroad). The difference is perhaps related to the difference in the size of the domestic market in US (where Bilkey and Tesar conducted their research) and Sweden (the home country of Johanson and Vahlne).

Given the relatively small domestic market for software services in India, for the current study Johanson and Vahlne's thesis appears more relevant. Further, the work of Bilkey and Tesar is (a) not as generative as Johanson and Vahlne of further theorising and debate (as evident from frequency of citation in the subsequent internationalisation literature) and (b) not as holistic, given its predominant exporting orientation and is hence of limited value to this discussion. The focus therefore remains upon the Nordic ideas (Johanson and Vahlne, 1977). Nonetheless, both strands of the literature are reviewed below.

“Stage” Models (Uppsala Model): The founding ideas of internationalisation stem from Sweden, from the work of Johanson and Wiedersheim-Paul (1975) and Johanson and Vahlne (1977). Taken together, their papers seek to explain both the

“where” and “how” questions. The explanatory independent variable is knowledge – experiential knowledge of foreign markets. It is conceived that as this knowledge increases, firms will increase the distance of the markets they enter and the commitment of the modes they use, in an incremental fashion. The distance referred to here is “psychic” rather than merely geographic. It is the incremental nature of internationalisation that has led it to be referred to as “Stage” models, and more specifically the “Uppsala model”. Also often grouped with this approach (e.g., Dunning, 2001) is the work of Finnish scholar Luostarinen (1980) who also posited an incremental internationalisation process for firms. The pre-internationalisation scenario is set by Wiedersheim-Paul, Olson and Welch (1978) who identify three pre-export activities of the firm: willingness to start exporting, information collection and information transmission.

Johanson and Wiedersheim-Paul (1975) have suggested that internationalisation may be an *attitude* of the firm or actual *activities*. In their view, firms would begin operating in the domestic market before, over time, establishing increasingly resource-intensive activities (exporting, sales subsidiaries and finally production units) in progressively (‘psychically’) distant markets. “Our basic assumption is that the firm first develops in the domestic market and that the internationalization is the consequence of a series of incremental decisions. We also assume that the most important obstacles to internationalization are lack of knowledge and resources” (Johanson and Wiedersheim-Paul 1975, p.306).

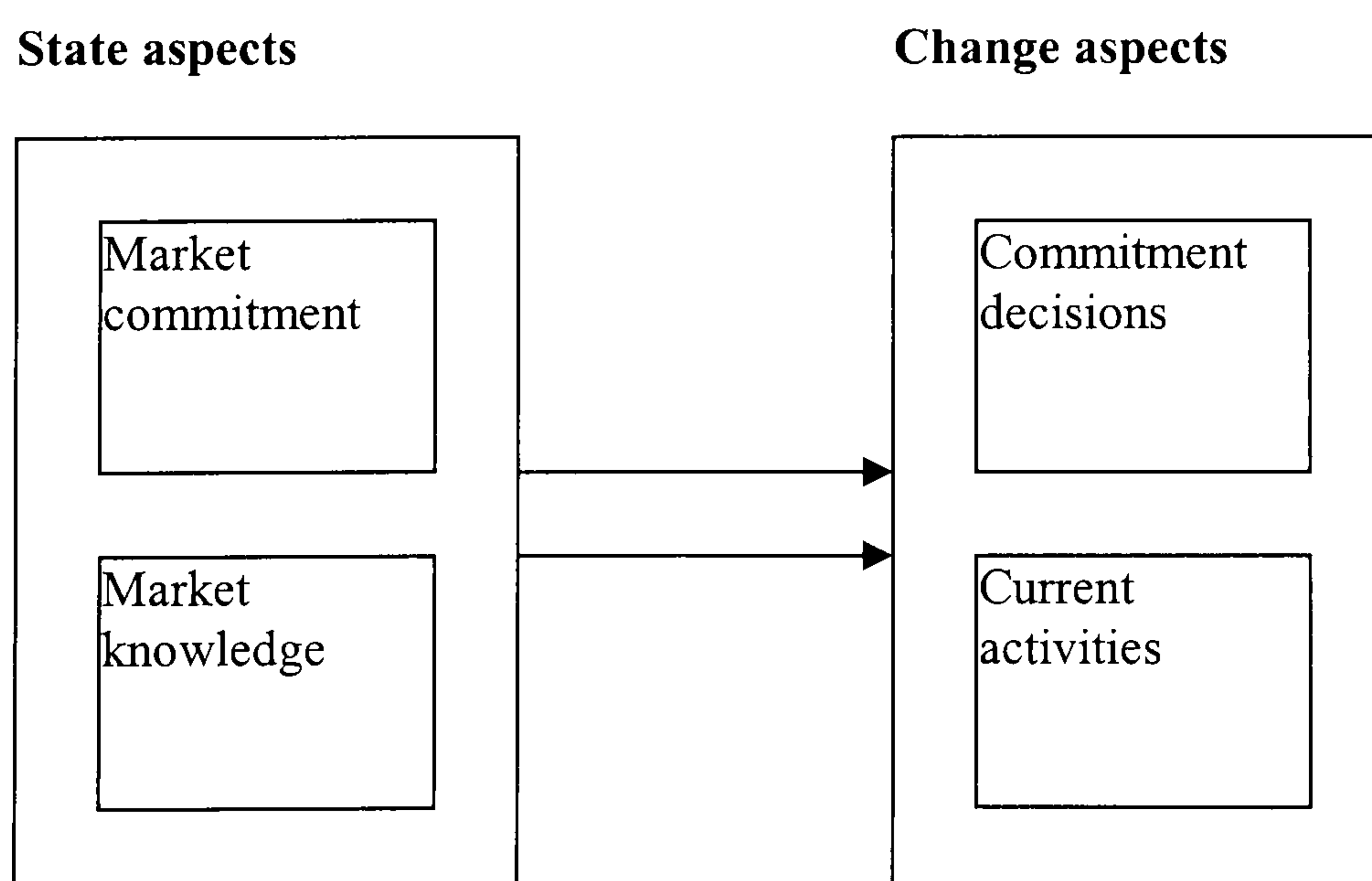
A central notion to their theory is that firms take *a series of incremental steps* in their internationalisation process. Four broad stages were identified that encompass the “establishment chain”:

- Stage 1 No regular export activities
- Stage 2 Export via independent representatives (agent)
- Stage 3 Establishing a sales subsidiary in a foreign market
- Stage 4 Establishing a production/manufacturing unit in a foreign market

The authors make allowance for these stages to be absent or irregular in certain firms. “Of course, we do not expect the development always to follow the whole chain. First, several markets are not large enough for the resource demanding stages. Second, we could expect jumps in the establishment chain in firms with extensive experience from other foreign markets” (Johanson and Wiedersheim-Paul, 1975, p.307). Another concept that the authors discuss is the ‘psychic distance’ of markets from an internationalising firm’s own domestic market. The concept essentially highlights the psychological distance that a firm’s managers can feel from a market; while this may have to do with geographic distance several other factors come into play including cultural proximity and language barriers. Thus an example cited of geographically distant yet psychically close markets are Britain and Australia. Here again an incremental process is envisaged with firms progressively entering markets that are at a greater psychic distance. Given the advancement of communication technology since the 1970s however, this issue is not deemed to be pertinent to the current study.

This work was further developed in Johanson and Vahlne (1977, p.23) who reiterated that “internationalization is the product of a series of incremental decisions”. They introduced a model for internationalisation, involving two aspects: *state* and *change*. The state aspects are two-fold: *market commitment* and *market knowledge*. In terms of market commitment, firms would have to take decisions on the amount of resources and degree of commitment; these decisions in turn would be initiated and alternatives evaluated on the basis of market knowledge. Knowledge could be objective or experiential; the latter was seen to be of particular significance where activities were not well structured or defined as in the case of marketing, for instance. “Especially in the marketing of complex and software-intensive products, experiential knowledge is crucial” (Johanson and Vahlne, 1977, p.28). Further, knowledge could be categorised as general or market-specific. While the former can be transferred from one market to another, the latter mainly results from experience in a market, and would hence be predominantly experiential. The change aspects are: *current business activities* and *commitment decisions*.

Figure 2.2 The Internationalisation Process of the Firm



Source: Johanson and Vahlne (1977, p.26)

In terms of current business activities, the authors suggest that sources of experience are three-fold: current activities themselves, hiring of experienced personnel and taking advice from people with experience. They point out however that experience again can be two-fold: firm- and market-related. They argue that in functions where the firm interacts with the external environment – typically marketing – it becomes imperative to entrust it to people with experience of the firm and in this instance hiring external parties would not be advisable. Attention is also drawn to the time lag involved in acquiring experience; thus a fairly lengthy process of learning is alluded to. In terms of commitment decisions, the choice of alternatives as well as the process of choice itself, are highlighted. Opportunities and problems are seen as the main drivers of decision-making and in dealing with these, experiential knowledge – both of the market and firm – are seen as crucial. Knowledge of opportunities or problems may emanate from both within the firm and external parties that the firm interacts with. Additional commitment may cause effects that are economic, affecting the scale of operations or effects related to uncertainty, leading to market uncertainty.

Although not strictly part of the Uppsala theories (given that they are so-called because of the university where the original research was conducted), it seems well worth noting the contribution of another Scandinavian scholar, Luostarinen (1980)¹.

His “empirical study of the internationalization of firms with small and open

¹ This is in keeping with Dunning (2001) who categorises Luostarinen’s (1980) work alongside Johanson and Vahlne (1977) as part of the literature of that period seeking to explain the internationalisation process.

domestic markets with special emphasis on lateral rigidity as a behavioural characteristic in strategic decision-making” (as described in his book’s sub-title) led to conclusions similar to those of Johanson and Vahlne (1977) noted above. Drawing on behavioural theories of the firm, Luostarinen (1980) posited that firms’ internationalisation, especially initially, is marked by lateral rigidity i.e., the reluctance to consider new alternatives. Limited perception, restrictive reaction, selective search and confined choice cause firms’ lateral rigidity.

Like Johanson and Vahlne (1977), Luostarinen (1980) places great importance on (market) knowledge. According to him, “Lateral rigidity and knowledge go hand in hand. The less the stock of knowledge the higher the degree of lateral rigidity” (Luostarinen 1980, p.35). By the same token, increased knowledge through learning – which may be induced by a “strong trigger signal” – will reduce lateral rigidity, thus facilitating international activities. In his words, “A company starts to consider international business alternatives only if there is a reduction in the degree of lateral rigidity...this decrease is due to organizational learning” (Luostarinen 1980, p.59). His findings coincide with the Uppsala model: gradually over time, as their experiential knowledge increased, firms’ internationalisation progressed in stages. In terms of the markets they entered, they progressed from culturally closer to more distant markets. In terms of their entry mode, they progressed from non-investment marketing operations to marketing operations involving foreign direct investment, and finally to setting up production facilities overseas. Additionally, his study indicated that firms’ choice of offerings for foreign markets changed over time,

increasing in familiarity; they progressively introduced physical goods, services, systems and know-how.

“Stage” Models (Innovation Model): Another body of literature, which emanated from North America (Bilkey and Tesar, 1977; Cavusgil, 1980, 1984; Czinkota, 1982; and Reid, 1983), also predicted stage-wise development of firms from a non-interest in, to a strong commitment to, international markets. As posited by the Scandinavian scholars, in these models firms’ managers have an important role to play and it is their innovative response to international opportunities that facilitates their firms’ internationalisation; hence these studies have been collectively referred to as the “Innovation Model”. A key difference between these two sets of “Stage” models perhaps is the empirical context on which they are based; for example, the “unsolicited order” as a trigger of internationalisation is prominently mentioned in the American rather than Scandinavian studies. This however hardly seems surprising given the relative vastness of the American domestic market. Perhaps more significantly, the North American scholars explicitly focussed on smaller firms, whereas Johanson and Vahlne’s thesis presumably was deemed to be applicable to all firms. Given the former focus, it does not seem unusual that much of the research emanating from the cited North American scholars and their colleagues later on, deal primarily with exporting. This seems further evident from the focus on export behaviour in a literature review conducted by one of them (Bilkey, 1978).

Bilkey and Tesar's (1977) presented, based on empirical work on a sample of 423 small- and medium-sized firms in Wisconsin, USA, a six-stage model of small firm internationalisation:

- | | |
|---------|--|
| Stage 1 | Management is not at all interested in exporting |
| Stage 2 | Unsolicited orders filled; feasibility of exporting not explored |
| Stage 3 | Management actively explores feasibility of exporting |
| Stage 4 | Experimental-basis exports to psychologically close markets |
| Stage 5 | The firm is an experienced exporter |
| Stage 6 | Management explores exporting to psychologically distant countries |

A key element in this model is the *unsolicited order*. In stage one, firms are seen to be unwilling to even fill an unsolicited order whereas in the next stage they are, but show no further interest in proactively seeking opportunities in foreign market. In relation to stage three the authors raise the question of what induces some firms to explore the feasibility of exporting in the first place. Drawing on various sources of research, the authors suggest that a key determinant is the positive disposition of key personnel of the firm to a foreign market(s); this may be the result of knowledge of a foreign language or good experience overseas.

The subject of the unsolicited order recurs in the discussion on the transition from stage three to four, it is the arrival of an unsolicited order that is seen as the most crucial factor: “[t]he overwhelmingly most important single determinant of whether or not...firms entered Export Stage Four – exported experimentally – was the receipt or non-receipt of an unsolicited initial order (Bilkey and Tesar 1977, p.94). The

authors found differences between firms whose initial export order was not solicited and those whose initial export order was. The latter group comprised typically bigger firms with better expectations of exporting, more dynamic managements and fewer perceived barriers.

This is not to suggest however that smaller firms were not able to export successfully and in fact one of the key conclusions of the authors was that successful exporting was not the preserve of larger firms. Other conclusions included the applicability of learning theory to export development, the need for a variety of policy initiatives tailored appropriately to a firm's stage of exporting, and importance of formulating a step-by-step export plan on the part of management.

Cavusgil (1980) similarly found internationalising firms to demonstrate distinct stages in a gradual process:

Stage 1	Domestic marketing
Stage 2	Pre-export stage
Stage 3	Experimental involvement
Stage 4	Active involvement
Stage 5	Committed involvement

The transition from the non-exporting to exporting stages was dependent upon a firm being able to offer unique and competitively priced offerings to international markets and, it would appear from a separate profiling study (Cavusgil, Bilkey and Tesar 1979), upon top management's optimism in relation to the prospect of exporting. An

evolutionary approach to internationalisation persists in Cavusgil's subsequent work (Cavusgil 1984) although there has not been consistency in the stages identified (for instance, his 1984 paper identifies only three stages viz., experimental, active and committed involvement), which has posed a problem in evaluating the theory (Andersen 1993). This latter classification of stages broadly resembles Czinkota's (1982) stages of interest (uninterested, partially interested and exploring firm), experimentation and experience, and Reid's (1981) stages of export awareness, export intention, trial, evaluation, and acceptance.

Table 2.2: Stage Models of Internationalisation – A Summary

Johanson and Wiedersheim-Paul (1975)	Bilkey and Tesar (1977)	Cavusgil (1980)	Czinkota (1982)
Stage 1 No regular export activities	Stage 1 Management is not interested in exporting	Stage 1 Domestic marketing: The firm sells only to the home market	Stage 1 The completely uninterested firm
Stage 2 Export via independent representatives (agents)	Stage 2 Management is willing to fill unsolicited orders, but makes no effort to explore the feasibility of active exporting	Stage 2 Pre-export stage: The firm searches for information and evaluates the feasibility of undertaking exporting	Stage 2 The partially interested firm
Stage 3 Establishment of an overseas sales subsidiary	Stage 3 Management actively explores the feasibility of active exporting	Stage 3 Experimental involvement: The firm starts exporting on a limited basis to some psychologically close country	Stage 3 The exploring firm
Stage 4 Overseas production /manufacturing units	Stage 4 The firm exports on an experimental basis to some psychologically close country	Stage 4 Active involvement: Exporting to more new countries – direct exporting – increase in sales volume	Stage 4 The experimental firm
	Stage 5 The firm is an experienced exporter	Stage 5 Committed involvement: Management constantly makes choices in allocating limited resources between domestic and foreign markets	Stage 5 The experienced small exporter
	Stage 6 Management explores the feasibility of exports other more psychologically distant markets		Stage 6 The experienced large exporter

Source: Adapted from Andersen (1993)

Critique: Internationalisation process theory, as the stage models are also referred to, is an enigma. As widely as they are cited, the stage models are criticised. At a conceptual level, internationalisation theory – and especially the Uppsala model – has been plagued with criticism on various fronts, such as oversimplification (Bell and Young, 1998), conceptual validity and empirical rigour (Andersen, 1993; Leonidou and Katsikeas, 1996), and a lack of integrative approach that will allow a more eclectic and effective theory of internationalisation (Rialp and Rialp, 2001). Young et al (1989) rejected this theory, seeking to replace it with a strategy-oriented approach, which appears vindicated by Yip, Biscarri and Monti's (2000) finding that firms with a systematic approach to internationalisation (by far, a minority) were more successful than those that did not.

Additionally, at a conceptual level, the stage models have been criticised as being too deterministic and negligent of a firm's contextual factors – such as local governmental policy and industry-specific characteristics – that may influence their internationalisation (Reid, 1984; Turnbull, 1987). As Reid (1984, p.200) notes about Johanson and Vahlne's thesis, "Although their position that firm expansion is incremental in character seems defensible, the authors pay little attention to market- and firm-specific characteristics that can account for the behaviors they observe. Thus the leap toward a general theory implies that firm foreign expansion is deterministic is highly speculative". According to Turnbull (1987, p.37), firms' internationalisation process "is largely determined by the operating environment, industry structure and its own marketing strategy". The initial decision to internationalise may be based on other factors such as the nature of the opportunity

or demand and the firm's product (Cavusgil and Zou, 1994; Welch and Luostarinen, 1988). Furthermore, contrary to Johanson and Vahlne's (1977) suggestion, internationalisation is not inevitable and may be terminated (Benito and Welch, 1997).

At an empirical level, criticisms have pertained to contradictory findings (Axelsson and Easton, 1992; Bell, 1995; Hedlund and Kverneland, 1985; Keogh, Jack, Bower and Crabtree, 1999; Knight and Cavusgil, 1996; Millington and Bayliss, 1990; Moen, 2002; Moen and Servais, 2002; O'Farrell et al., 1996, 1998; Oviatt and McDougall, 1994; Sullivan and Bauerschmidt, 1990; Turnbull, 1987; Turnbull and Valla, 1996). Especially in relation to small knowledge intensive firms, internationalisation was observed to be more rapid than predicted by the stage models, leading to a growing interest in "born globals" (Knight and Cavusgil, 1996) and "international new ventures" (Oviatt and McDougall, 1994; McDougall, Shane and Oviatt, 1994). Further, there has been evidence of firm's utilising modes other than exporting, involving greater commitment and risk, at the start of their internationalisation (Root, 1987). Johanson and Mattsson (1988) find the stage models inadequate when the market in which a firm operates is already internationalised; their network approach is seen to be superior in that situation.

Yet, adherents to its view suggest that the stage model is widely misunderstood and that distinction should be made between predictions of the model and the model itself; the extant criticisms primarily deal with the former (Hadjikhani, 1997). It is widely cited in the literature and some researchers have been reluctant to reject

outright what appears to be intuitively appealing despite contradictory findings (e.g., Sullivan and Bauerschmidt, 1990). Further, many scholars have, wrongly it would seem, been sidetracked by the model's manifestations (stages) rather than focusing on the underlying theoretical insight relating to the role of market knowledge. Moreover studies like Eriksson et al (1997) appear to confirm the basic essence of Johanson and Vahlne's theory. Furthermore, a number of modifications have been made by the authors in response to criticisms and developments in the global business landscape (Johanson and Vahlne 1990, 2003), to make their ideas more compatible with current realities and thus, still relevant. The more recent notions of Johanson and Vahlne (2003) are discussed presently in the sub-section on social capital and international growth.

2.3.1.2 Knowledge Intensity and International Growth

Much of the criticism of Johanson and Vahlne emanated from a spate of empirical findings of smaller firms that internationalised virtually from inception or relatively early in their life-cycle (Knight and Cavusgil, 1996, 2004; Oviatt and McDougall, 1994). What is most relevant to consider, however, is the question of the theoretical underpinning or determinant of internationalisation in these cases (many of which were small knowledge intensive firms). Oviatt and McDougall's work on international new ventures (INVs) deserves particular attention in this regard. Drawing on resource-based theory, *knowledge intensity* is identified as an enabling resource allowing globally mobile offerings to be made by new (and therefore, mostly small) firms.

Autio, Sapienza and Almeida (2000, p.913) define knowledge intensity as “the extent to which a firm depends on the knowledge inherent in its activities and outputs as a source of competitive advantage”. In similar vein, Hedlund’s (1999, p.6) definition is as follows: “The *knowledge intensity* of an activity or a firm is the degree to which it is dependent on an internal supply of advanced, complex and recent knowledge. A possible measure, all imperfections admitted, is the level of education of those involved in the firm or activity”. While more definitions of knowledge intensity are discussed in the following chapter on the study’s empirical context, at this stage it is noted that the foregoing two approaches are consistent with the understanding of knowledge intensity adopted in this study. A knowledge intensive firm, in this study, is *one characterised by a highly qualified workforce, which is its most important resource and is engaged in knowledge work – meaning that knowledge is inherent in the firm's main activities – as its central preoccupation.* Literature on the knowledge intensive firm is discussed more fully in the next chapter.

Of course, knowledge intensity can pertain to a range of business activities including research and development, marketing and production (Bell, Crick and Young, 2004). However this study is concerned with *technological* knowledge intensity. While this construct characterises certain industries, notably software (McNaughton, 2001a) and biotechnology (Baum et al., 2000), firm-level knowledge intensity can vary considerably even within such industries (Autio et al., 2000). Knowledge intensity, although not researched to the extent of market knowledge, is positively associated with internationalisation, as seen particularly in the work of Autio, Sapienza and

Zahra (e.g., Autio, Sapienza and Almeida, 2000; Sapienza, Autio and Zahra, 2003; Zahra, Ireland and Hitt, 2000) as well as other scholars, as indicated below.

Bloodgood, Sapienza and Almeida's (1996) study of 61 new high-potential US ventures found knowledge intensity, as captured by product differentiation, to have a positive and significant relationship with their internationalisation. Fontes and Coomb's (1997) study of knowledge intensive SMEs in Portugal demonstrated a strong focus on internationalisation along technology dimensions (i.e., enhancing knowledge intensity through inward internationalisation), which in turn encouraged greater internationalisation along market dimensions (i.e., outward market-seeking internationalisation). A study of nearly 600 British and German high-technology start-ups revealed a significant and positive association between technological sophistication of products and international growth (Burgel, Fier, Licht and Murray, 2000). A similar study in the US however found such a relationship to hold only in the case of rapidly internationalising knowledge intensive SMEs, but not gradually internationalising ones (Harveston, Kedia and Davis, 2000).

From the foregoing discussion it would appear that knowledge intensity makes firms confident to venture into foreign markets; a study of British knowledge intensive SMEs revealed that technology and skill resources positively influenced their *decision* to internationalise (Almeida, Sapienza and Hay, 2000). Indeed, internationalisation is perhaps even essential for many knowledge intensive SMEs, given that lead markets for such firms typically comprise a set of Triad countries (Berry, Dimitratos and McDermott, 2002).

An influential study, despite the limitation of a small sample size, is that of 59 Finnish knowledge intensive firms by Autio et al. (2000). It demonstrated a significant positive association between knowledge intensity and international growth. Their conceptual argument for this relationship is two-fold. First, knowledge intensive firms are likely to be better “learners” in new international environments. This suggests a mutual reinforcing relationship between knowledge intensity and international expansion in the light of Zahra et al’s (2000) study of American knowledge intensive new firms (which were predominantly SMEs) whose technological learning and performance increased with their internationalisation.

Second, knowledge intensity is an enabling and mobile resource, providing a “flexible platform” for internationalisation; in other words, knowledge intensive offerings tend to be globally mobile (Yli-Renko et al, 2002; Zahra et al, 2000). This is especially in keeping with the ideas of Oviatt and McDougall (1994). In summary, Autio et al (2000, p.913) note that “the more knowledge intensive an internationalising firm is, the more likely it is to develop the learning capacities necessary for rapid adaptation to a foreign environment and to perceive opportunities for continued or accelerated foreign expansion as being less costly”.

Subsequent support for the importance of knowledge intensity comes from Yli-Renko, Autio and Tontti’s (2002) study of British knowledge intensive SMEs. Knowledge intensity, operationalised through the same scales used by Autio et al (2000), was again found to be significantly and positively associated with

international growth. Their study is particularly relevant to the present knowledge-based discussion of internationalisation for another reason. Building on the conceptual approach of Autio and Sapienza (2000), which was further refined in Sapienza, Autio and Zahra (2003), their study seeks to reconcile the views of Johanson and Vahlne (1977) on the one hand, and Oviatt and McDougall (1994) on the other. Such an integrative approach is taken in the present study and elaborated upon below.

2.3.1.3 Toward a Knowledge-Based Conceptualisation of Internationalisation

It is seen that knowledge is at the core of received wisdom on internationalisation. Drawing on resource-based theory, with an emphasis on knowledge, a fruitful basis for synthesising these apparently disparate views, at least partially, can be found. The apparent tension between the perspectives of Johanson and Vahlne on the one hand, and Oviatt and McDougall on the other, can be mitigated by recognising the Penrosian roots in both perspectives, albeit with differing emphases (Sapienza, Autio and Zahra, 2003; Yli-Renko, Autio and Tontti, 2002). These differences primarily pertain to the *type* of knowledge emphasised in each approach, the *role* that knowledge plays in internationalisation, and the *sources* of the knowledge.

For Johanson and Vahlne, market knowledge is the *type* of knowledge that is vital and the *role* it plays is to regulate the resource committed to a foreign market by the firm; by extension, a lack of market knowledge is a significant obstacle for firms' internationalisation (Eriksson et al., 1997). Its main *source* is the firm itself, through its experience of foreign operations (Johanson and Wiedersheim-Paul, 1975), and

network relationships (Johanson and Vahlne, 2003). Oviatt and McDougall's perspective differs from this view in that, in addition to market knowledge, there is an emphasis on the role of technological knowledge intensity in internationalisation; consequently software and biotechnology firms, to cite two popular examples, have been noted for their proactive and early internationalisation. In other words another type of knowledge, viz., technological knowledge intensity, is highlighted, which plays a separate role from resource-regulation, that of an enabling resource leading to the firm's globally mobile offerings in the marketplace. Support for the notion that knowledge intensive firms internationalise earlier in their life-cycle can be seen in the literature (Autio et al, 2000; Zahra et al., 2000).

Furthermore, Oviatt and McDougall explicitly identify the entrepreneur as a vital source of a firm's knowledge resources, from prior professional experience. In other words, while Johanson and Vahlne emphasised Penrose's *managerial* knowledge, Oviatt and McDougall focussed on her *entrepreneurial* knowledge concept (Sapienza et al., 2003; Yli-Renko et al, 2002). Sapienza et al (2003, p.7) correctly note that "implicitly, the core of the difference in the two views is that Johanson and Vahlne do not see prior, individual experience as mitigating firm-level aversion to new markets". Yet, this is perplexing in the light of observations made by some of Johanson's colleagues, at the time of the original Uppsala model, that the "pre-export" experience of individual decision-makers – who might often be the entrepreneur – can greatly influence a firm's internationalisation decisions (Wiedersheim-Paul, Olsen and Welch, 1978). More recently, extending Oviatt and

McDougall's views, Reuber and Fischer (1997) have highlighted the important role of the prior international experience of the top management team as a whole.

In summary, both traditional internationalisation process and international new venture perspectives (epitomised, respectively, by the work of Johanson and Vahlne, 1977 and Oviatt and McDougall, 1994), though apparently contradictory in their manifestations, have sufficient commonality in the knowledge-based view underpinning each to warrant an integrative approach (Sapienza et al, 2003; Yli-Renko et al, 2002) that includes a wider set of knowledge types, role and sources than included in either approach taken on its own. This integration is summarised in the table and figure below, and suggests the following hypotheses.

Hypothesis 1(a): Market Knowledge is positively associated with international growth.

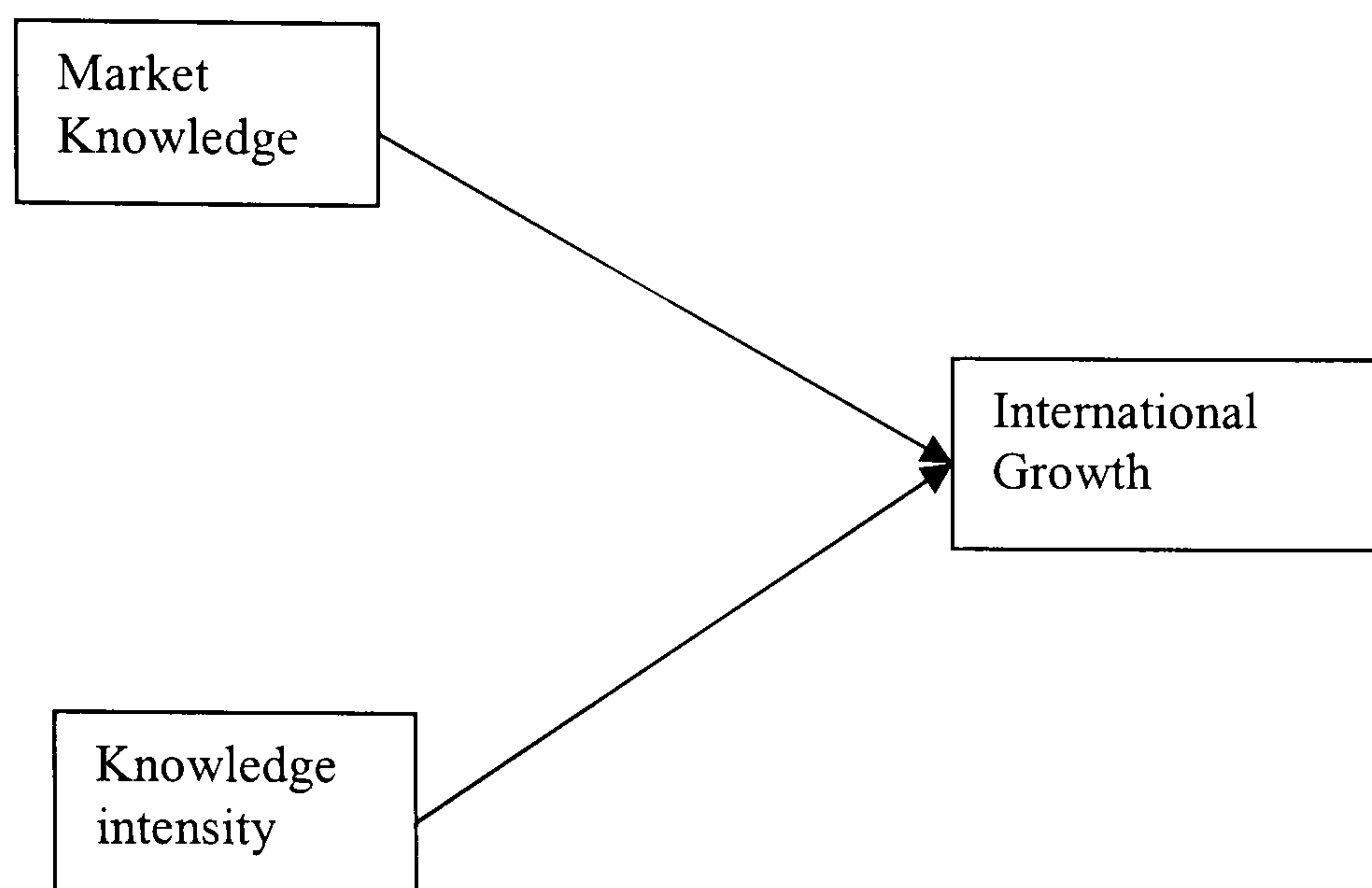
Hypothesis 2 (a): Knowledge intensity is positively associated with international growth.

Table 2.3: Knowledge and Internationalisation – A Synthesis

Types	Theory	Role	Sources
Market knowledge	Penrose's managerial knowledge	Resource Regulator (Eriksson et al, 1997)	<ul style="list-style-type: none"> • Firm (Johanson and Vahlne, 1977) • Entrepreneur (McDougall et al., 1994)
Knowledge intensity	Penrose's entrepreneurial knowledge (Sapienza et al., 2003)	Enabling resource (Yli-Renko et al., 2002)	<ul style="list-style-type: none"> • Top management team (Reuber and Fischer, 1997) • Network relationships (Oviatt and McDougall, 1994; Johanson and Vahlne, 2003)

Source: The author

Figure 2.3: Knowledge and International Growth



Source: The Author

2.3.2 Social Capital and International Growth

Having established a knowledge-based conceptualisation of internationalisation, the discussion now turns to social capital. Social capital is significant in the context of small firm internationalisation for three reasons. First, there has been a long-standing strand of the literature emphasising the role of network relationships (notably, Johanson and Mattsson, 1988), particularly in the context of business-to-business relationships; given the business-to-business empirical setting of the study, this is of particular relevance. Second, there is conceptual compatibility with the views of Oviatt and McDougall (1994) as they clearly alluded to network governance mechanisms, which is also emphasised in their more recent thinking (McDougall and Oviatt, 2003). Equally, it is highly compatible with the most recent views of Johanson and Vahlne (2003), as elaborated upon presently. Third, as argued in the sections on the RBV and social capital theory, there is a strong link between knowledge and social capital (Nahapiet and Ghoshal, 1998; Tsai and Ghoshal, 1998),

making it very appropriate to combine social capital with the knowledge-based approaches of internationalisation discussed above.

Though the term 'social capital' is not always used explicitly, many internationalisation authors emphasise issues of interest to social capital scholars – such as networks, trust and resources that emanate from network relationships (Wright and Dana, 2003). As noted by Johanson and Mattson (1988) – and several authors thereafter (e.g., Coviello and Munro, 1997; Chetty and Holm, 2000; Eriksson and Chetty, 2003; Sharma and Blomstermo, 2003) – a firm may receive useful information and knowledge about foreign markets and opportunities therein from customers, suppliers or other network relationships. The importance of network relationships has been acknowledged by Johanson and Vahlne (1990, 2003). Thus, it is certainly not being suggested that the internationalisation literature is bereft of a network perspective, but rather that it can be fruitfully (and formally) synthesised under social capital theory, which is emerging in the business literature.

Johanson and Mattson (1988) drew attention to the notion that internationalisation of firms may be strongly influenced by their network relationships. Based on a wider study of industrial marketing and purchasing in four Western European countries, they concluded that industrial firms have sets of relationships that are stable, but also changing, as new relationships are added, and some dropped. By and large, however, exchanges take place within existing, long-term relationships, which are characterised by interdependence and co-ordination, emanating from interaction. Complementarity among relationships and their bonds – such as technical, planning

and social – are emphasised. As they say, “...there are *specific inter-firm dependence relations* which are of a different character compared with the general dependence relations to the market in the traditional market model” (Johanson and Mattsson 1988, p.292). Firms acquire positions in relation to other individual firms (micro position) and the network as a whole (macro position), on the basis of cumulative processes over a period of time during which relationships are initiated, nurtured, replaced or discarded.

In applying the network perspective to the internationalisation process of firms, Johanson and Mattsson identify three broad approaches that firms may take: initiation of new relationships in a foreign market (extension), the strengthening of existing relationships in a foreign market (penetration) or the coordination of existing relationships across markets (integration). An additional perspective that the network approach provides, in comparison with the Uppsala model, is that not only do firms differ in terms of their degree of internationalisation, but so do markets (referred to as product nets). Based on this, a typology of firms is identified as depicted below:

Table 2.4: Internationalisation and the Network Model

Degree of internationalisation of the firm	Degree of internationalisation of the market	
	<i>Low</i>	<i>High</i>
<i>Low</i>	The Early Starter	The Late Starter
<i>High</i>	The Lonely International	The International Among Others

Source: Johanson and Mattsson (1988, p.298)

The Early Starter lacks in experience and is likely to initially establish relations through agents. As it evolves into a Lonely International, the additional knowledge accumulated reduces the likelihood of failure and such a firm would seek to integrate into foreign market relationships by coordinating international operations. For the Late Starter, the initial internationalising step may be somewhat larger than that of the Early Starter, especially for a large firm that may consider options such as a joint venture or acquisition. For smaller firms, a specialised domain of expertise will be necessary to enhance its chances of succeeding in a foreign market. Also, the Early Starter will have to compensate for its international inexperience by being especially adept at fostering a customer orientation, and correctly perceiving the special needs and nuances of their new markets. For the International Among Others, as in the case of the Lonely International, advantage will be gained from effective coordination of international relationships and operations i.e., integration; joint ventures and acquisitions may also be actively sought.

Although this typology does not seem to have acquired the prominence of the Uppsala Model's stages, the contribution of Johanson and Mattsson appears to be in drawing attention to the role of network relationships, i.e., social capital, in internationalisation. This is evident from an emerging strand of literature that develops this approach (Chetty and Holm, 2000; Coviello and Martin, 1999; Coviello and Munro, 1995, 1997; Coviello, Ghauri and Martin, 1998; Dana, Etemad and Wright, 2000; Fontes and Coombs, 1997; Madsen and Servais, 1997; Oviatt and McDougall, 1994; Welch et al, 1998; Wright and Dana, 2003). It has been pointed out that network relationships contribute to accelerated internationalisation,

especially among small knowledge intensive firms (Coviello and Munro, 1995, 1997); could reduce flexibility by constraining firms in terms of the opportunities available to them (Coviello, Ghauri and Martin, 1998); and provides valuable social capital.

Perhaps the first instance of the network approach to internationalisation being formally linked to social capital theory appears in McNaughton and Bell's (1999) study of New Zealand's Hard Business Network Programme. As argued by McNaughton and Bell (1999), "networks of firms are a form of social capital providing a supporting environment to offset the inherent instability and constraints of small firm size". Thus the failure of small firms and their entrepreneurs to form and leverage network relationships leads to sub-optimal firm performance.

Significantly, in light of the foregoing knowledge-based synthesis of Johanson and Vahlne (1977) and Oviatt and McDougall (1994), both sets of authors have recognised the importance of social capital in updated versions of their ideas (Johanson and Vahlne, 2003; McDougall and Oviatt, 2003). According to Johanson and Vahlne's (2003, p.94) updated thinking, "...we could expect that international expansion is an outcome first of the firm's development of existing relationships. Second, it will be the result of the firm's establishment of relationships with customer- or supplier-firms...Third, internationalisation of the business firm will be a consequence of its development of relationships with customer firms that are connected to those, which they are already working together with". Although their paper does not explicitly mention the social capital construct, it is clearly implied.

Furthermore, this is beyond doubt in a subsequent paper (presentation) by Vahlne (2003), which highlights Nahapiet and Ghoshal's (1998) definition of social capital as the guiding basis of their revised thinking about internationalisation. This augurs well for the present study as it coincides with the definition of social capital adopted, independently, in this study.

Similarly, Oviatt and McDougall have recently taken social capital-related notions into cognizance as well (McDougall and Oviatt, 2003). They acknowledge that the "entrepreneur's network represents social capital that is intangible and idiosyncratic, and it appreciates through repeated interactions that help build trust... Networks help entrepreneurs identify international opportunities, establish credibility, provide access to critical resources including knowledge, and often lead to strategic alliances and other cooperative strategies".

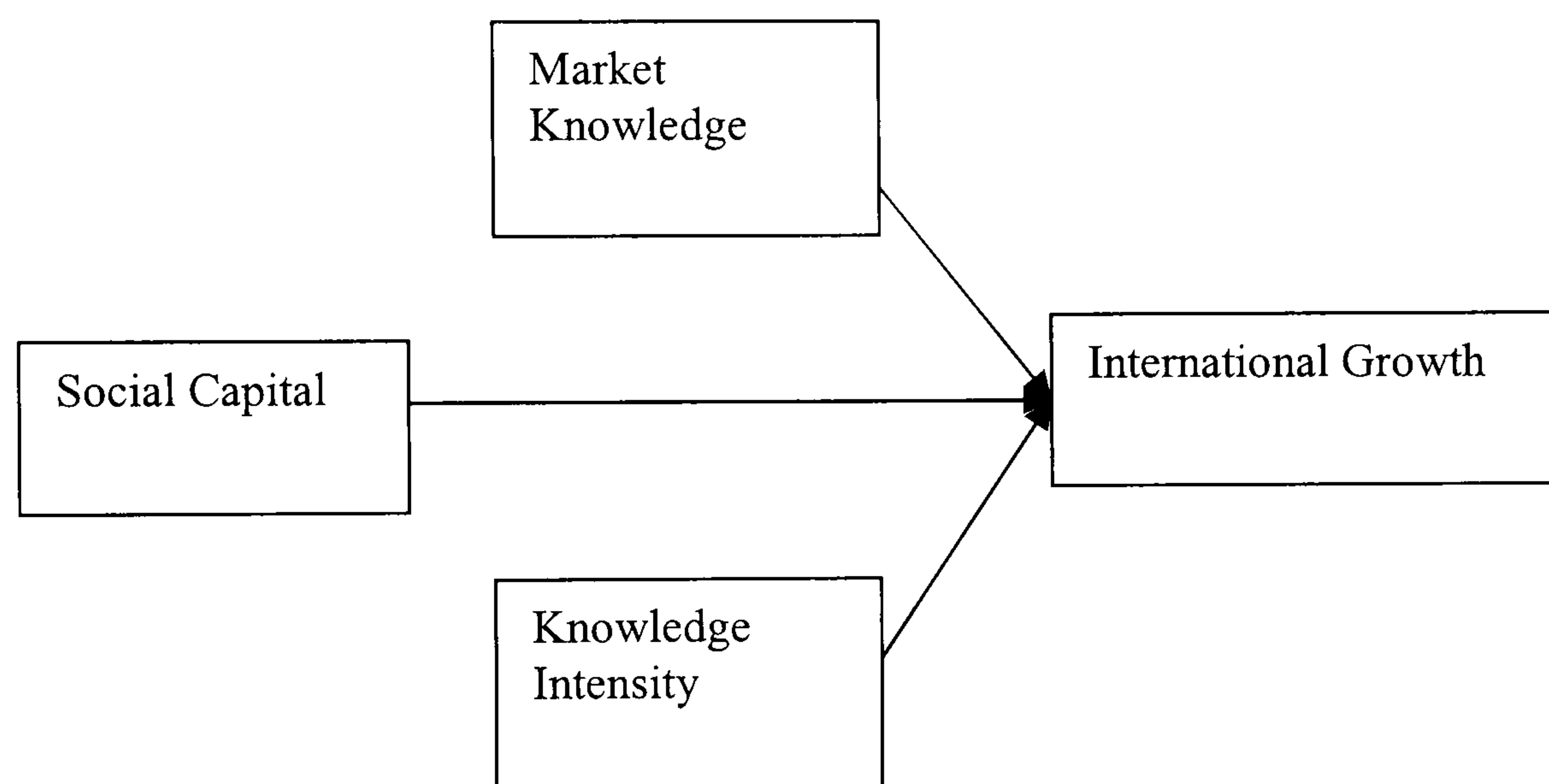
It is clarified that while social capital may be both inter-personal and *inter-organisational*, this study focuses on the latter. The important role that the entrepreneur plays in developing and leveraging social capital in a small firm is acknowledged (McDougall, Shane and Oviatt, 1994), but his or her social capital is conceptualised here as being subsumed within the firm's social capital. As Burt (1992, p.9) has noted, "the social capital of people aggregates into the social capital of the organization".

Combining the above perspectives, an integrative framework of SME internationalisation is adopted in the present study (and depicted in the figure below),

which is consistent with the view of Lee, Lee and Pennings (2001, p.616) who argue that resource-based and social capital theories “ought to be synthesized” given that (resource-constrained) firms “develop firm-specific assets while obtaining complementary external resources through their social networks”. Formally, the following hypothesis is articulated.

Hypothesis 3(a): Social capital is positively associated with international growth.

Figure 2.4: Social Capital, Knowledge and International Growth



Source: The Author

2.4 Scope for Further Research

2.4.1 Gaps in the Literature

Despite the useful prior research discussed above, major gaps remain concerning:

- The importance of mode choice has been underplayed in the literature on SME internationalisation
- Little is known about the differential role of forms of social capital (e.g., bridging versus bonding social capital)

- There is a dearth of literature on SME internationalisation in a developing economy context

The next three sub-sections look at relevant streams of literature corresponding to these gaps.

2.4.2 Modal Commitment and SME Internationalisation

As indicated earlier, with a view to expanding the scope and contribution of this study, a second dependent variable, viz., commitment of mode (termed ‘modal commitment’ in this study), is considered because surprisingly, little is known in this respect in relation to small firms (Burgel and Murray, 2000). The assumption appears to be that such firms engage primarily in exporting, which represents the lowest modal commitment in the range of mode options available to an internationalising firm; greater modal commitment thus occurs only when the firm becomes bigger.

That small firms do progress beyond exporting, particularly in knowledge intensive sectors, is however receiving acknowledgement in the literature. According to Crick and Jones (2000, p.63), knowledge intensive SMEs “have been shown to follow routes other than the export development mode prescribed by much of the internationalisation literature”. Recognising this, Dimitratos et al (2003, p.165) have proposed the concept of the ‘micromultinational’, which they define as “a small- and medium-sized firm that controls and manages value-added activities through constellation and investment modes in more than one country”. Yet, little is known about the determinants of modal commitment in smaller firms – specifically on the choice between being a mere exporter and a micromultinational. The following

discussion (albeit of the large MNC literature) suggests that knowledge and social capital-related variables may be important determinants of the smaller firm's modal commitment.

Root (1987) defines entry mode as "an institutional arrangement that makes possible the entry of a company's products, technology, human skills, management or other resources into a foreign country". A wide range of modes is available for firms to choose from (Anderson and Gatignon, 1986; Young et al, 1989) which broadly fall under four main categories: exporting, licensing, joint ventures and wholly owned subsidiaries. At one end of the spectrum is exporting as an entry mode, where risk (Hill and Kim, 1988), commitment (Hill, Hwang and Kim, 1990) and control (Anderson and Gatignon, 1986) are minimal; at the other end is the wholly-owned subsidiary. Two prominent modes that lie in between are licensing and joint ventures (Young 1987; Young et al, 1989), with the latter involving greater risk, commitment and therefore, control. These are contractual in nature, as opposed to a wholly-owned subsidiary where the control is total and no external party is involved.

Modal choice is an important decision for a firm. As noted by Agarwal and Ramaswami (1992), "...entry mode selection is a very important, if not critical, strategic decision for multinational firms". Among other consequences, it can influence a firm's learning in a foreign market; higher-control modes are generally associated with favourable learning outcomes (Barkema and Vermeulen, 1998; Zahra, Ireland and Hitt, 2000). From the literature (on large MNCs) it can be seen that the determinants of mode choice fall under three broad categories: firm

characteristics such as research and development (R&D) intensity (Hennart, 1991); asset characteristics such as importance of the asset to the firm (Davidson and McFetridge, 1985); and environmental characteristics such as host country's policy (Contractor, 1984).

According to Andersen (1997, p.28), "In the field of international business, the question of international entry mode seems to have attracted most attention by researchers". He suggests that theoretical contribution to the study of mode far exceeds that to any other aspect of internationalisation. He identifies two main theoretical perspectives utilised in the study of mode: (a) transaction cost theory and (b) resource-based theory. It is the former that dominates the mode literature, and the underlying logic is that firms choose the mode that minimises transaction cost, i.e., the cost of establishing and monitoring international operations (Hennart, 2000). Under the transaction cost perspective, the choice of mode is seen as a trade-off between control, resource commitment, risk and return (Agarwal and Ramaswami, 1992; Anderson and Gatignon, 1986; Kim and Hwang, 1992). Transaction cost theory dominates the mode literature and sees the choice of mode as a trade-off between control, resource commitment, risk and return (Agarwal and Ramaswami, 1992; Anderson and Gatignon, 1986; Kim and Hwang, 1992). A recent trend in mode studies is the augmentation of transaction cost determinants' explanatory power with factors from other perspectives such as institutional theory (Brouthers, 2002; Lu, 2002; Yiu and Makino, 2002).

Resource-based explanations of mode choice are associated with scholars such as Johanson and Vahlne (1977), Kogut and Zander (1993), and Madhok (1997). Johanson and Vahlne (1977) see mode choice as a trade-off between growth and risk. They suggested that as firms' experiential market knowledge increases, they will utilise progressively higher-control modes; this may particularly apply to early stage internationalisation (Andersen, 1997). According to Kogut and Zander (1993), it is the tacitness of a firm's know-how that determines the level of control; the lower the codifiability and teachability of knowledge, the higher will be the control. The basis of their views is a notion of firms being social communities that act as repositories of knowledge. Madhok (1997) is associated with the organisational capability perspective, according to which firms' mode choice aims to enhance the value of (or minimise the erosion of) their capabilities; empirical support for this notion has also come from Erramilli, Agarwal and Dev (2000). In other words, firms trade-off value with cost in determining the appropriate mode.

Studies of mode choice have however long focussed on the large firm, with exporting largely seen as the (only) mode of the small firm (Leonidou and Katsikeas, 1996). This may however be a fallacy in contemporary times. Attention has been drawn to the fact that small firms may indeed go beyond exporting (Dimitratos et al., 2003) and often achieve better performance and learning as a consequence (Zahra et al., 2000). The issue here appears to be less one between internalisation and externalisation (which concerns transaction cost explanations), but rather one between lower and higher involvement in terms of pure exporting versus establishing a presence in a foreign market. This issue, it would appear, can be better explained

through resources like *market knowledge* (Johanson and Vahlne, 1977). Also, extending Kogut and Zander's (1993) knowledge-based approach to mode choice, *knowledge intensity* can be argued to be positively associated with modal commitment.

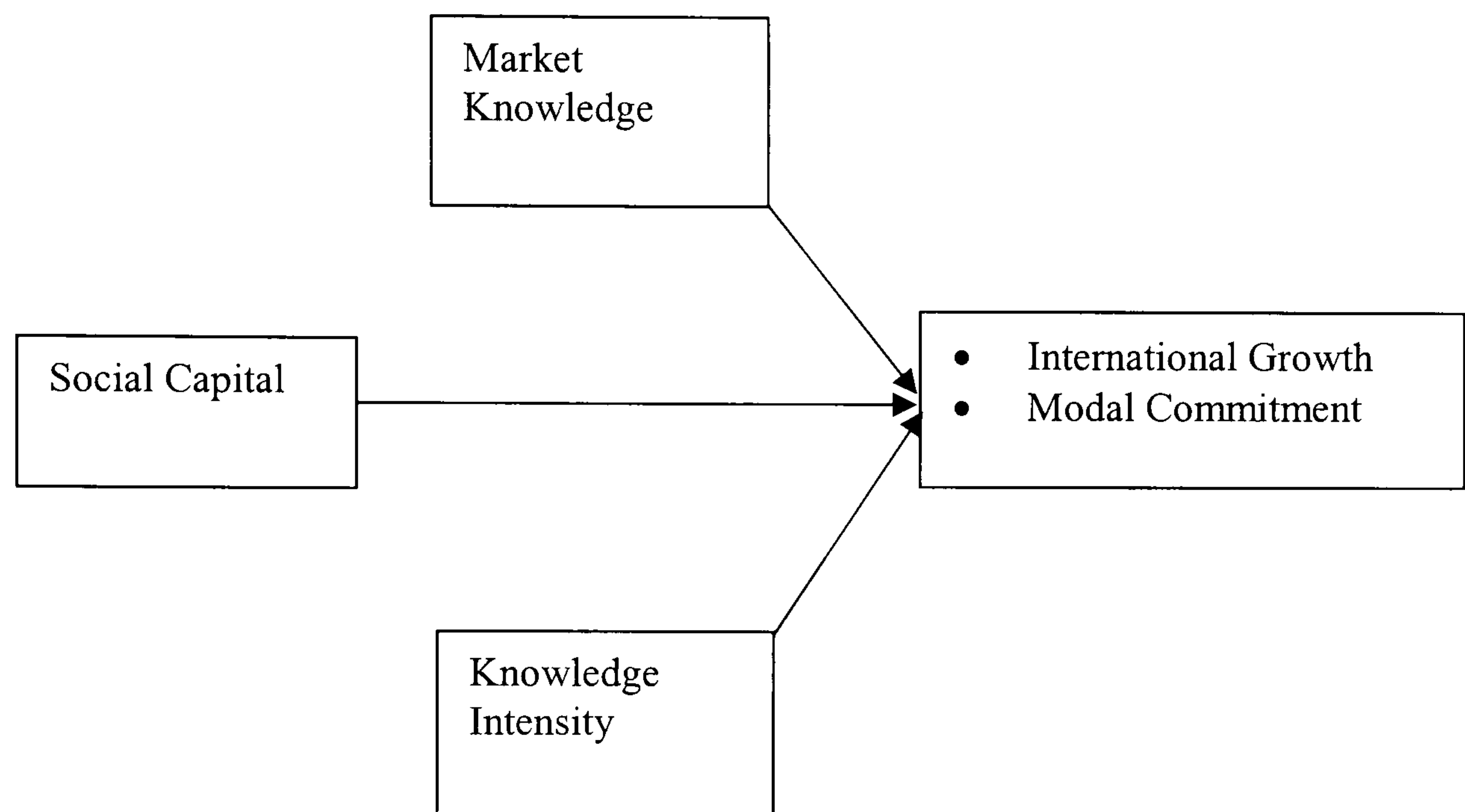
Further, based on Oviatt and McDougall's (1994) identification of "network governance structures", *social capital* could be argued to influence the choice of mode in small firm internationalisation. This notion is strengthened by Shrader's (2001, p.45) assertion, building upon Oviatt and McDougall's (1994) work, that "...anecdotal and case study evidence has strongly suggested that collaboration with foreign partners may be required for resource-constrained young or small firms making their initial forays into foreign markets". This is significant in light of his previous work with Oviatt and McDougall, which clearly indicated that internationalising knowledge intensive SMEs do go beyond exporting, and that modal commitment is traded off with host country risk (Shrader, Oviatt and McDougall, 2000). It could therefore be argued, consistent with the literature (reviewed in Section 2.2.2), that social capital in a foreign market will mitigate the risk factor of that (host) market, thereby enhancing modal commitment. Thus, the same three determinants identified in the case of international growth are relevant in the context of modal commitment of smaller firms, as depicted in the following hypotheses and figure.

Hypothesis 1(b): Market knowledge is positively associated with modal commitment.

Hypothesis 2(b): Knowledge intensity is positively associated with modal commitment.

Hypothesis 3(b): Social capital is positively associated with modal commitment.

Figure 2.5: Social Capital, Knowledge, International Growth and Modal Commitment



Source: The Author

2.4.3 Social Capital Types and SME Internationalisation

A key motivation of the present study is the gap in extant understanding relating to the differential effects of *types* of social capital. In terms of the bridging-bonding distinction discussed earlier, it seems unlikely that bonding and bridging social capital will influence internationalisation in an identical manner; however their differential effects have not been systematically studied. Given that bonding social capital pertains to *trust*, it could be argued that if a high stock of bonding social capital is available to a small firm in a foreign market of interest, then it is likely to demonstrate greater control or commitment in terms of its *mode*. This notion of

course is suggested on the assumption that small firms will not necessarily own the value added activities that they control in foreign markets, but will leverage network relationships to establish a presence in foreign markets (Dimitratos et al, 2003; Oviatt and McDougall, 1994). Bridging social capital, on the other hand, results in *new information*, such as trade leads. Such information should provide firms with a basis to increase sales revenue from a foreign market, resulting in higher *growth*. Thus both types of social capital have their value but it is proposed that bonding social capital is more strongly associated with higher-commitment (or control) modes than is bridging social capital, while bridging social capital is more strongly associated with growth than is bonding social capital.

Given the internationalization context of the present discussion, another dimension that is of relevance pertains to spatial proximity i.e., local vs. foreign social capital. Studies of the role of network relationships in internationalization have predominantly focused on foreign networks, perhaps reflecting the reality of entrepreneurial practice. Recently, however, the role of local social capital in internationalization has been emphasized (Brown and McNaughton, 2003). Small firms based in clusters are known to benefit from the ensuing local social capital that leads to positive externalities such as intra-cluster referrals, credibility and reputation (Brown and Bell, 2001). However local social capital can have its ill-effects by imposing restraint on firms' non-conformist innovative behavior (Westlund and Bolton, 2003) and by leading to "groupthink" (Porter, 1998). This echoes concerns about bonding social capital (Beugelsdijk and Smulders, 2003; Putnam and Goss,

2002), which is perhaps indicative of some (empirical) overlap between bonding and local social capital.

In the context of internationalization, foreign social capital, i.e., social capital arising from overseas network relationships has great utility as well, as seen already. There has been a long-standing strand of internationalization literature focusing upon the role of network relationships, even though the term “social capital” is not always used explicitly. McNaughton and Bell (1999) were among the first such scholars to invoke social capital theory, which they do in the context of policy efforts to facilitate the creation of foreign social capital for internationalizing SMEs. The network approach sits fairly harmoniously with knowledge-based conceptualizations of internationalization, and its importance has been recently reiterated by prominent scholars associated with the latter perspective, as noted.

Combining the above distinctions of bridging/bonding and local/foreign, a four-fold taxonomy of social capital can be derived (see table below). The approach taken here is consistent with that of Davidsson and Honig (2003) in terms of making an a priori estimation of the social capital type likely to be generated by a particular set of network relationships. Below is a brief discussion of each social capital type.

Local Bonding Social Capital

Social capital emanating from other local firms “within the network” (Hitt et al, 2002) can be generally deemed to be bonding in nature, with solidarity (or moral support) being a common outcome. In practical terms, local bonding social capital

would appear to be the most accessible. Local SME networks in particular are well-documented in the literature as a popular policy measure in the contexts of both entrepreneurship and internationalization. An example from New Zealand is the Hard Networks initiative that brokers small firm networks to facilitate internationalization (McNaughton and Bell, 1999). Of course, such networks may emerge relatively spontaneously too, especially within clusters, such as the collaborative efforts seen among smaller knowledge intensive firms in Brown and Bell's (2001) study of internationalizing firms in the electronics cluster in Christchurch, New Zealand.

Local Bridging Social Capital

Smaller firms could derive bridging social capital from local large firms (Etemad et al, 2001) and benefit (mutually) through alliances with large partners (Alvarez and Barney, 2001), including local MNC subsidiaries (Zhou and Xin, 2003). Potential outcomes include innovation, as evident from Sternberg and Tamasy's (1999) study of relationships between firms in Munich, arguably Germany's top technological region. A study within the Zhongguancun IT cluster in Beijing cites the example of a Chinese accounting software firm being able to target an untapped niche in collaboration with Oracle's local subsidiary (Zhou and Xin, 2003, p.133). However such relationships could, in practical terms, prove to be a challenge due to the mismatch of resource-base, systems and organizational culture. There is also the danger (or fear) that the smaller partner will squander the majority of jointly-created value to, or be acquired by, the larger partner (Alvarez and Barney, 2001; Granstrand and Sjolander, 1990). An example of a policy initiative to enhance the internationalization prospect of SMEs by brokering collaboration between them and

MNC subsidiaries comes from Scotland viz., the Scottish Technology and Collaboration initiative (Scottish Executive, 2003).

Foreign Bonding Social Capital

Social capital derived from ethnic ties overseas could result in a useful support system for internationalizing SMEs (Zafarullah et al, 1998). Although ethnic ties are under-researched within the internationalization literature (Hayer, Ibeh and Young, 2003), other studies show that, for instance, Chinese immigrants in Silicon Valley invest substantially in technology-based ventures in their home economy (Dossani, 2002). Firms run by ethnic entrepreneurs have the potential to act as “one of the chief harbingers of transnational movements of capital, productsm services and business knowledge” between the host and home economies (Iyer and Shapiro, 1999, p.84). The Indus Entrepreneurs was formed in 1992 to bring together Indian technologists in Silicon Valley (D’Costa, 2003) and presently has 35 chapters in 10 countries. Such a networking organization could supplement informal social networks as a way by which foreign bonding social capital can, in practical terms, be accessed by internationalizing firms in the home economy.

Foreign Bridging Social Capital

Many internationalisation studies deal with knowledge intensive industries where international customers are likely to be “mainstream” firms, not coethnics of the internationalizing firm. These customers constitute a vital source of foreign bridging social capital through which internationalizing firms may obtain useful trade leads or additional business opportunities (Coviello and Munro, 1997; Yli-Renko et al, 2002);

suppliers may also be useful in this regard (Johanson and Mattsson, 1988; Jones, 1999). Ties yielding this type of social capital tend to be both socio-culturally and geographically distant and therefore the least accessible of the four types discussed here. Yet foreign bridging social capital is perhaps the social capital type of greatest prominence in the literature, and is often a consequence of the entrepreneur/top management team's experience and networks (Arenius, 2002; McDougall, Shane and Oviatt, 1994). Policy measures involving trade missions, popular in many countries, to enable entrepreneurs to visit key international markets and develop connections constitute an example of an effort to foster foreign bridging social capital.

The foregoing discussion suggests the following hypotheses.

H4: Bridging social capital (comprising local bridging social capital and foreign bridging social capital) is more strongly associated with international growth than is bonding social capital (comprising local bonding social capital and foreign bonding social capital).

H5: Bonding social capital (comprising local bonding social capital and foreign bonding social capital) is more strongly associated with modal commitment than is bridging social capital (comprising local bridging social capital and foreign bridging social capital).

A more sophisticated understanding of various types of social capital and their potentially differential role in SME internationalisation will deepen scholarly insight,

and improve practice and policy-making in this very important area. From a practitioner perspective, smaller firms should consider taking a portfolio approach to their network relationships, as illustrated below. This will enable firms to better decide which type of relationships they should consciously cultivate and will also result in more realistic expectations from their extant relationships. This type of approach also has ramifications for policy-makers who are actively facilitating the development of network relationships for small firms (McNaughton and Bell, 1999; Wright and Dana, 2003).

Table 2.5: Portfolio of Network Relationships for Knowledge Intensive SMEs

Social Homogeneity			
		<i>Bonding</i>	<i>Bridging</i>
Geographic Proximity	<i>Local</i>	e.g. other local firms	e.g. local MNC subsidiaries
	<i>Foreign</i>	e.g. ethnic network relationships overseas	e.g. non-ethnic foreign customers

Source: The Author

2.4.4 The Developing Economy Context and SME Internationalisation

In this sub-section two points are made briefly. First, SME internationalisation in developing economies, albeit generally proactive, is challenging owing to heightened resource-constraints. Second, network relationships may be of particular value, since the leverage of social capital is often to compensate for a lack of resources (Gulati, 1999). Ibeh (1999) found the behaviour of internationalising Nigerian SMEs to be primarily internally-driven and proactive. A study of Ghanaian firms found that they responded favourably to export initiatives taken by the government (Kuada and Sorensen 1999). The authors, like Ibeh (1999), found that an unsolicited initial order was of little importance in stimulating internationalisation. Yet, despite such proactiveness and government incentive (Fonts and Coombs, 1995) – given that

internationalisation is seen as being important to economic development (Naidu et al, 1997) – the resource constraints for internationalising SMEs in developing countries are accentuated by unfavourable foreign exchange rates and less benign environments (Das, 1994; Vachani 1997). Calof and Vivier's (1995) study of South African SMEs found that problems that exporters faced pertained to, among other factors, domestic and international politics (including the dismantling of sanctions) and trade policy (including the implications of the General Agreement on Tariffs and Trade i.e. GATT). Other factors that accentuate resource-constraints are elaborate and procedures (Jain and Kapoor, 1996) and complex bureaucracy (Naidu et al, 1997), unstable political climate, low technology level, poor local infrastructure, unstable exchange rate, and inconsistent implementation of government policy (Ibeh and Young, 2001). However developing economy firms – especially those in Asia – are known to resourcefully leverage network resources in their own country and overseas (Hitt et al, 2002; Redding, 1995), including ethnic ties (Zafarullah et al, 1998) and – given the importance of inward FDI in such economies – ties with MNC subsidiaries (Zhou and Xin, 2003). Such a context would thus constitute a suitable setting for the present study. Before moving on to the research questions and hypotheses, ethnic ties and ties with MNC subsidiaries are briefly discussed.

Ethnic Ties

Over the past three decades, sociologists and entrepreneurship researchers in developed countries like the US and UK have directed considerable scholarly attention to the role of ethnic entrepreneurial firms (Iyer and Shapiro, 1999; Morris,

2000; Ram, 1997; Smallbone, Ram, Deakins and Baldock, 2003)², particularly in relation to the role of ethnic communities in their inception and development. There is interest in both ethnic indigenous minorities, such as Eskimos in North America (e.g., Dana, 1995) and ethnic immigrant minorities, such as immigrants from India in North America (e.g., Dana, 1993). As Dana (1997, p.52) points out, “Although many ethnic businesses are owned by immigrants, being an immigrant is not a necessary condition for owning an ethnic enterprise”.

Historically, trade has been conducted more readily within ethnically homogeneous groups (Kotkin, 1992) and indeed, the motivation for some firms to internationalize in the first instance has been to serve ethnic customers overseas (Sternquist, 1997; Tschoegl, 2002). A study of ethnic entrepreneurs and their coethnic customers suggests that there is an easy flow communication and symbolism among coethnics (Dyer and Ross, 2000). Indeed, one of the key features of ethnic entrepreneurship is the potential for networking among coethnics. As Dana (2001, p.57) notes, “Often, networking takes place within ethnic groups”.

² Consistent with the distinctions highlighted by Chaganti and Greene (2002), the following definitions from the literature are utilised in this paper to distinguish between related but distinct concepts:

- “[A]n ethnic group...is a segment of a larger society whose members are thought, by themselves and/or others, to have a common origin and to share important segments of a common culture and who, in addition, participate in shared activities in which the common origin and culture are significant ingredients (Yinger, 1985, p.159).
- Immigrant entrepreneurs are “individuals who, as recent arrivals in the country, start a business as a means of economic survival. This group may involve a migration network linking migrants, former migrants, and non-migrants with a common origin and destination” (Butler and Greene, 1997).
- Ethnic entrepreneurs are “...a set of connections and regular patterns of interaction among people sharing common national background or migration experiences” (Waldinger, Aldrich and Ward, 1990, p.3)

Distinction has been made in the literature between Asian and Western ethnic network relationships; in the former there is greater emphasis on personal rather than systemic trust, as a consequence of a greater collectivistic (rather than individualistic) cultural orientation (Chen, Chen and Meindl, 1998). Furthermore, Asian management norms are not always consistent with Western ideas (Bruton, Ahlstrom and Wan, 2003). While ethnic entrepreneurial firms are generally renowned for leveraging ethnic networks, Asians are especially renowned for this (Redding, 1995). For instance, one study indicated that ethnic social capital enabled Chinese and Sikh entrepreneurs in Canada to overcome their difficulty in obtaining mainstream resources (Filion, Ramangalahy, Brenner and Menzies, 2001). This provides credence to the notion that when marked by trust, ethnic communities can be a valuable source of social capital (Portes and Zhou, 1992) from which useful resources, including finance (Biggs, Raturi and Srivastava, 2002), accrue.

MNC Subsidiary Ties

In relation to SME internationalisation, there has been relatively little consideration given to social capital emanating from ties with larger firms (Etemad, Wright and Dana, 2001), with the focus generally being on networks of SMEs (e.g., Brown and Bell, 2001). However scholarly interest in ties with large firms is warranted given that such relationships constitute a potential source of bridging social capital, as argued earlier. a specific type of relationship with a local large firm that has considerable potential to yield social capital benefits for knowledge intensive SMEs, is that with multinational corporation (MNC) subsidiaries³ embedded in their local

³ A multinational or MNC subsidiary is “any operational unit controlled by the MNC and situated outside the home country” (Birkinshaw, 1997, p.207).

milieu (Andersson, Forsgren and Holm, 2002). While the SME internationalization literature has in general not explored this theme to any great extent, there is a sizeable literature elsewhere in the international business field that suggests that there is a growing perception of the MNC as being a differentiated network that seeks to tap the value creation potential of its globally distributed capabilities (Bartlett and Ghoshal, 1989; Hedlund, 1986; Ghoshal and Nohria, 1997). Therefore, in many cases, multinational subsidiaries tap into rich local networks such as those that locate within *clusters* (Birkinshaw and Hood, 2000), create value through *entrepreneurship* (Birkinshaw, 1997) and disseminate locally assimilated *knowledge* within the wider enterprise (Gupta and Govindarajan, 2000; Moore and Birkinshaw, 1998). These characteristics are especially seen in those MNCs that are so-called ‘metanationals’⁴, which actively leverage local resources for global advantage (Doz, Santos and Williamson, 2001).

It would therefore stand to reason that SMEs, in particular those based within knowledge intensive and entrepreneurial clusters, are in a position to appropriate and leverage bridging social capital from multinational subsidiaries situated locally. Despite a general preoccupation with intraorganisational issues (Andersson et al, 2002), the subsidiary literature does suggest that certain subsidiaries are likely to, over time, engage with local actors. Birkinshaw, Hood and Young (2005, p.228) note that “as subsidiaries develop resources and capabilities of their own, they take on additional responsibilities – tapping into new ideas and opportunities in the local

⁴ Doz et al (2001) suggest that contrary to past efforts to think global and act local, metanationals think local and act global; in other words, their subsidiaries actively engage with and assimilate knowledge/resources from their local milieus.

market, interacting with other actors in the local environment, and building unique capabilities on which the rest of the MNC can draw”.

The main point therefore being made here is the plausibility of ethnic and MNC subsidiary ties yielding valuable social capital for internationalising SMEs. As will be highlighted in the next chapter, the Indian software industry is a useful setting in which to study these aspects.

2.4.5 Research Questions and Hypotheses

Based on the foregoing identification of gaps in the literature, the following are three research questions that the present study will address; in each case one or more literature-derived hypotheses are stated.

Research question 1: Do firms with a higher stock of knowledge (a) achieve greater international growth and (b) utilise higher-commitment modes, compared to firms with a lower stock?

Corresponding to this research question, the following hypotheses are suggested from the literature reviewed in this chapter:

Hypothesis 1: Market knowledge is positively associated with (a) international growth and (b) modal commitment

Hypothesis 2: Knowledge intensity is positively associated with (a) international growth and (b) modal commitment

Research question 2: Do firms with a higher stock of social capital (a) achieve greater international growth and (b) utilise higher-commitment modes, compared to firms with a lower stock?

Corresponding to this research question, the following proposition is suggested from the literature reviewed in this chapter:

Hypothesis 3: Social capital is positively associated with (a) international growth and (b) modal commitment

Research question 3: Do various categories of social capital influence international growth and mode choice differentially?

Corresponding to this research question, the following propositions are suggested from the literature reviewed in this chapter:

Hypothesis 4: Bridging social capital (comprising local bridging social capital and foreign bridging social capital) is more strongly associated with international growth than is bonding social capital (comprising local bonding social capital and foreign bonding social capital).

Hypothesis 5: Bonding social capital (comprising local bonding social capital and foreign bonding social capital) is more strongly associated with modal commitment than is bridging social capital (comprising local bridging social capital and foreign bridging social capital).

2.5 Conclusion

This chapter sought to provide a synthesis of knowledge- and social capital-based perspectives of growth and internationalisation with a view to identifying gaps that could be addressed by, and to formulating a research framework that could be tested in, the present study. It was argued that the SME internationalisation literature has placed an undue emphasis on exporting, and that research on the modal commitment of SMEs – particularly in light of the emerging concept of the micromultinational – was long overdue. Furthermore, it was noted that little is known about the relative role of different forms of social capital in SME internationalisation – in relation to both international growth and modal commitment. Finally, it was suggested that knowledge intensive SMEs in a developing economy would constitute an appropriate setting to address the research questions of interest. The next chapter presents a discussion of this very aspect viz., the study's empirical setting.

CHAPTER THREE

EMPIRICAL SETTING

3.1 Introduction

The previous chapter contained a synthesis of relevant literature to yield a research model with testable hypotheses. Given that knowledge intensity is a key variable in the research framework, it is appropriate that the focus of the present study be upon knowledge intensive SMEs. Moreover, such firms are noted for their propensity to create and leverage social capital (Coviello and Munro, 1997), as will be seen in the literature reviewed in this chapter. It was also highlighted in the previous chapter that there is a dearth of research in this area on a developing economy context. Such a setting would be useful to study because of the accentuated resource-poverty of knowledge intensive SMEs and the collectivistic culture in many (though not all) developing countries (Hofstede, 1980), which may result in a strong propensity to create and leverage social capital.

The purpose of this chapter is three-fold. First, it seeks to justify the appropriateness of choosing a sample of knowledge intensive SMEs; the argument is that their small size and propensity for innovation cause them to actively leverage social capital (and, in the case of the latter, knowledge). Second, this chapter provides some background to the Indian software industry, since the specific choice for the sample is software SMEs in India⁵. The Indian software industry represents one of the most celebrated

⁵ Recently, the Indian software industry, which is dominated by a few very large software firms, has been explicitly paying attention to SMEs, as evident by the establishment of an SME Forum within the apex industry body, viz., the National Association of Software and Service Companies (Nasscom) in 2003 (Nasscom, 2003).

cases of a knowledge intensive industry in a developing country (Kobrin, 1999). It is notable for its international orientation, with the vast majority of revenues being earned from foreign markets (Arora and Athreye, 2002; Correa, 1996). Third, the chapter seeks to illustrate the particular importance of social capital in a developing economy setting such as the one chosen for this study, by highlighting the importance of ethnic ties for Indian software SMEs.

The remainder of the chapter is structured as follows. The next two sections arrive at a definition for the type of firm chosen for the study – viz., the knowledge intensive SME – and consider its appropriateness in light of the study's interest in the role of social capital types in internationalisation. The subsequent section discusses the Indian software industry and the role of social capital emanating from ethnic ties for Indian software SMEs – and thereby argues for the appropriateness of setting the present study in that empirical context.

3.2 Choice of Firm Type: The Knowledge Intensive SME

Small firm internationalisation studies deal with two major categories of SMEs: knowledge intensive firms and traditional firms (Bell, Crick and Young, 2004). In this study the focus is on the former. This section synthesises the literatures on the smaller firm and the knowledge intensive firm to arrive at a definition of a knowledge intensive SME. The next section discusses the propensity for such firms to create and leverage social capital arising from network relationships.

3.2.1 The Smaller Firm

An interesting feature of much of the small business literature is that smaller firms are invariably discussed *in relation to or in comparison with larger firms*. It is almost as if a case must be made for the significance of smaller firms vis-à-vis their larger counterparts! That is perhaps understandable given that most of the focus in various strands of literature – including strategy, marketing and international business – appears to be on large firms, and interest in smaller firms has been a relatively recent phenomenon (Hadjimanolis, 2000b).

SMEs are important because of their efficiency in certain respects, such as knowledge generation in new industries and their dynamics in terms of entrepreneurialism (Almeida, 1999). They complement large firms and therefore could be seen as their collaborators rather than competitors, as seen, for example, in the increased outsourcing of business activities by large to smaller firms (Carlsson, 1999) and their partnering with large firms in global “team competition” (Acs, Morck and Yeung, 1999). Part of the renewed interest in smaller firms pertains to the fact that there is growing recognition of the economic contribution of small firms, such as job creation and facilitation of the integration into mainstream society of minorities and women (Acs, 1999). However another reason for the interest in SMEs is concern over the unsatisfactory performance of many of them (McNamee, Greenan and McFerran, 2000), and that of development agencies whose role is to facilitate small firms’ performance (Roper and Hewitt-Dundas, 2001).

Policy initiatives have sought to empower SMEs (Audretsch, 1999). Also, there has been an emphasis on facilitating enhanced firm performance through strategic decision-making (McNamee, Greenan and McFerran, 2000). Key issues in policy-making pertaining to SMEs include resource-allocation (Del Monte and Scalera, 2001); early identification of potential winners (McNamee, Greenan and McFerran, 2000); provision of a conducive business environment characterised by access to talent, capital, research and development (R&D), infrastructure and favourable policy (Georgiadis, Joseph and Keeling, 2001); and fostering clusters of related small firms (Goetz and Freshwater, 2001) to facilitate sharing of network resources and innovation.

While categorising firms in terms of size, the primary variable utilised appears to be *number of employees* (see, for example, Hadjimanolis, 2000b), rather than other measures such as sales turnover. However there appears to be no consensus on what constitutes a small firm. In certain studies a lower limit is used as well, in for example a study of Cypriot firms where small firms are defined as those with between 10 and 50 employees (Hadjimanolis, 2000b); a similar definition has been used in a study of Irish firms (McNamee et al, 2000). While the US Small Business Administration defines an SME as one with fewer than 500 employees (Carlsson, 1999, p.107), the European Union defines an SME as one with fewer than 250 employees (*Official Journal*, 1996; Wiklund and Shepherd, 2001). The latter definition will be adopted in the present study.

Smaller firms play an important role in innovation (Almeida, 1999), and have been described as agents of change (Audretsch, 1999), creators of radical innovation (Acs, Morck and Yeung, 1999), and carriers of new ideas (Carlsson, 1999). Strategy scholars have echoed this as well, exhorting large companies to be innovative like smaller firms (see for example, Hagel and Singer, 1999; Hamel, 1996). Hamel (1999, p.71) suggests that entrepreneurship forms the “fundamental difference between the mediocre mass and the revolutionary wealth creators”. Entrepreneurial firms, according to him, contain within them “dynamic internal markets for ideas, capital and talent” (Hamel, 1999, p.73).

SME researchers have refuted the long-held view that only large firms can be efficient. They argue that when viewed through an evolutionary lens, it is seen that there are great gains for SMEs in dynamic efficiency that more than offset the losses in production efficiency when considered from a static perspective. Christensen (2000) has questioned, albeit from a strategy perspective, the relevance of economies of scale in present times. While the findings of the large amount of research carried out on the role of firm size on business activities has been, by and large, inconclusive (Almeida, 1999; Lerner, 1999), SMEs are associated with industries characterised by innovation, including the areas of the Internet and biotechnology, which have been pioneered by smaller firms (Lerner, 1999).

Hadjimanolis (2000b) found that strategy-related aspects such as resources (chiefly R&D intensity) and capabilities (such as technical information scanning, strategic planning and networking) enhanced innovation. A hostile environment, such as one

marked by strong rivalry (Athreye, 2001; Zahra, Neubaum and El-Hagrassey, 2002), could lead to greater innovation on the part of SMEs (Hadjimanolis, 2000b; Zahra and Neubaum 1998). SMEs have a tendency to specialise in a niche area, which may even lead to their internationalisation (Acs, Morck and Yeung, 1999). It may however be pointed out that some smaller firms – even new ventures – are not innovative (Zahra and Neubaum, 1998).

Of course it is not as if large firms are not capable or responsible for innovation. It is merely that these two kinds of firms play complementary roles (Almeida, 1999; Hadjimanolis, 2000b); innovation in large firms tends to be *design-driven* while innovation in smaller firms tends to be *discovery-driven* (Carlsson, 1999). According to Almeida (1999) smaller firms tend to innovate successfully in less crowded industries while large firms are more successful in more established fields where innovative activity is highly concentrated. Almeida (1999, p.48) argues that smaller firms “may be superior in the generation of new knowledge in industries characterised by technological opportunities. Larger firms are superior in their ability to appropriate returns from their innovations, either by buying and selling property rights (sometimes through cooperative ventures), acquiring the firms, or benefiting from spillovers. Thus small and large firms play complementary roles in innovation.”

3.2.2 The Knowledge Intensive Firm

The term “knowledge intensive firm” (KIF) has by no means a unique and universally understood meaning, and has been a somewhat ambiguous one

(Robertson and Hammerlsey, 2000). Various definitions and characteristics of knowledge firms are briefly discussed below.

Alvesson (1995, p.6) defined a knowledge intensive firm as “a company where most work can be said to be of an intellectual nature and where well-qualified employees form the major part of the workforce”. In fact, a highly skilled workforce could even attract attention to a knowledge intensive as a potential acquisition target (Ranft and Lord, 2000). In similar vein, Starbuck (1992) suggests that the term “knowledge intensive” can be applied to firms in which knowledge is deemed to be more important than physical or financial capital. This is further reiterated by Elkjaer (2000, p.344) who sees KIFs as “a company of knowledge workers” where “human competencies are the main assets”.

Autio, Sapienza and Almeida (2000, p.913) define knowledge intensity as “the extent to which a firm depends on the knowledge inherent in its activities and outputs as a source of competitive advantage”. According to Robertson and Hammersley (2000, p.241), “KIFs have always been in the business of managing knowledge – knowledge being their primary asset and source of competitive advantage”. They mention law, accountancy, management consulting and advertising firms as examples of KIFs. (They point out, however, that there is much heterogeneity among management consultancies; as such very few of them are truly KIFs.) These examples coincide with those given by Elkjaer (2000) who also adds engineering and computer consultancies, and tend to constitute firms that often create products with a short product life cycle (Nurmi, 1998).

Nurmi (1998), in similar vein, mentions the following as examples of knowledge intensive activities: consulting, training, education, research, auditing, architecture, and planning. He too sees KIFs as being less capital-intensive than more traditional manufacturing entities. According to him, “knowledge intensive firms process what they know into knowledge products and services for their customers” (Nurmi, 1998, p.26), and are “a marketplace of knowledge and learning, where individuals gather to exchange their expertise with other people whom they appreciate inside or outside the firm” (Nurmi, 1998, p.28). KIFs have non-hierarchical structures, a thin dividing line between strategy and operations, creativity rather than automation as a key to the production of knowledge, and personal interactions within and outside the firm that could grow into networks and stimulate ideas (Mehra and Dhawan, 2003; Nurmi, 1998). Knowledge workers are key and often highly independent; an added challenge for KIFs is that their people’s loyalty may be more to the profession than the firm (Nurmi, 1998; Raffa and Zollo, 1994). When KIFs grow in size informal networks tend to acquire formal structures; flexibility, however, can be retained through (non-permanent) alliances among such firms (Ernst, 2000; Nurmi, 1998). Great promise for the global aspirations of small KIFs is seen from Nurmi’s (1998, p.27) comment that “...even a small knowledge intensive firm can operate globally, provided it has the marketing power to reach customers all over the world”.

Although Tenkasi and Boland (1996) do not offer a clear definition of KIF, they imply that it is one that is engaged in knowledge work. “Knowledge work involves the creation of new understandings of nature, organizations or markets and their

application by a firm in valued technologies, products or processes” (Tenkasi and Boland, 1996, p.79). They mention multidisciplinary expertise and collaborative learning as features of knowledge work (also see Boland and Tenkasi, 1995); they suggest that to be successful KIFs require integrating and synergising various domains of expertise through collaborative learning. According to them, “In the age of knowledge intensive firms which we seem to be approaching, a balanced emphasis on both the differentiation of greater varieties of expertise and their integration into collaborative knowledge intensive networks becomes the central challenge for information technologies. Both differentiated knowledge capabilities and collaborative mechanisms are in need of invention, development and enhancement of knowledge intensive firms” (Tenkasi and Boland, 1996, p.88). The impact of technology on KIFs is reiterated by Elkjaer (2000, p.343) according to whom, “...ICT has changed the nature of work by turning it into ‘knowledge work’, which, in turn, has created a demand for new competencies, i.e., for ‘knowledge workers’ who largely work through a computer interface”.

KIFs must cope with uncertainty, particularly in early stages of a product life cycle (Karlsson and Nystrom, 2003) and with ambiguity (Corti and Lo Storto, 2000), a notion that Alvesson (1993) concurs with. He contends that “...significant for KIFs are the ambiguities characterizing (a) their claimed core product (knowledge), (b) what they are doing (working with ‘knowledge’ compared to behaving in ways that are loosely connected to this quality), and (c) the results of their work (and its - mythical - meaning). Knowledge intensive organizations are thus ‘ambiguity-intensive’, i.e., clarity and order are not the best words for providing accounts of the

work and contributions of KIFOWs” (Alvesson, 1993, pp.1006-1007). (KIFOW is the abbreviation for Knowledge Intensive Firms, Organisations and Workers). He also mentions the importance of inter-firm networks that KIFs may be a part of, especially of being seen as keeping the “right” company (such as customers and suppliers); reputation is mainly created in such external relationships.

Certain notions can be seen to be common – explicitly or implicitly – to the various definitions and descriptions of KIF discussed above. These primarily are:

- Knowledge work is the central preoccupation of a knowledge intensive firm; knowledge is inherent in its main activities (Robertson and Hammersley, 2000; Tenkasi and Boland, 1996).
- Such work requires a highly qualified workforce (Alvesson, 1995; Ranft and Lord, 2000)
- Human capital is deemed considerably more important than financial capital or plant/machinery (Elkjaer, 2000; Starbuck, 1992).

Before moving on to synthesising the above literature to arrive at a definition for the knowledge intensive SME, it is worth noting that the literature refers to technology-based or high-technology firms. It is clarified here that these terms can be used interchangeably with the term knowledge intensive firm as defined above, as argued below. This point is a useful one to make as the use of the term knowledge intensive firm is rather recent in the SME internationalisation literature.

Zahra and Neubaum (1998, p.130) note that high technology industries are “characterised by high R&D spending, high representation of scientists and engineers among employees, and frequent technological innovations”. The American Electronics Association has suggested that high-technology companies generally fall under three broad categories: high-technology manufacturing, communications services, and software and computer-related services (Jarvis, 2002). (This study, as elaborated upon later in this chapter, pertains to firms from the third of these categories).

In relation to the term “technology-based firm”, Manimala (1994) highlights three focus areas of technology-based firms based on the literature viz., scientific discovery, innovation and R&D. According to Fontes and Coombs (1995, p.498), “technology-related inputs are likely to be predominant” in a technology-based firm. It therefore seems reasonable to take the terms “high-technology firm” and “technology-based firm” as interchangeable. Further, it seems fair to consider high-technology firms to be knowledge intensive. This is further corroborated by common themes in the literatures on these firm types, as seen below.

Manimala (1994) makes certain points that strongly echo with characteristics of knowledge intensive firms such as the uncertainty faced by high-technology firms, their need for flexibility and the importance of collaboration within and outside the firm. The environmental aspects of high-technology firms are akin to those of KIFs. High-technology firms tend to operate in turbulent environments (Bell, 1995; Francis and Collins-Dodd, 2000; Young, 1987), which are characterised by markets that are

international or global, changing rapidly and highly competitive or underdeveloped (Jones, 1999). Given such uncertainty and often the intangibility of small high-technology firms' assets, funding (as also business advice and contacts) from venture capitalists (VC funding) can greatly facilitate growth (Lerner, 1999). Thus studies on small high-technology firms are highly relevant to the current study of the smaller KIF, particularly as the current study uses a technology-based setting. (Of course, firms in certain non-technology based industries such as legal services and advertising could also rightfully claim to be knowledge intensive).

3.2.3 The Knowledge Intensive SME: Synthesis

A synthesis of the concepts of an SME and knowledge intensive firm from the above literature leads to the following understanding of what a knowledge intensive SME is. *A knowledge intensive SME is one that has fewer than 250 employees, the majority of whom comprise a highly qualified workforce which is its most important resource and is engaged in knowledge work – meaning that knowledge is inherent in the firm's main activities – as its central preoccupation.*

3.3 Knowledge Intensive SMEs and Social Capital

Part of the appropriateness of testing the hypotheses derived in the previous chapter in the context of knowledge intensive SMEs, stems from their propensity to create and leverage social capital. This, in turn, is a consequence of their (a) resource-poverty and (b) propensity to innovate, both of which encourage the utilisation of complementary resources and competencies among firms (Adler and Kwon, 2002; Yli-Renko, Autio and Sapienza, 2001; Zahra and Nielsen, 2002). Smaller firms are

resource-poor (McNamee, Greenan and McFerran, 2000) and their “gaps” include a resource gap and innovation capability gap; further they tend to have low bargaining power in terms of low market power, lower lobbying ability, greater bureaucratic barriers, and limited access to capital markets (Hadjimanolis, 2000a). Resource-rich smaller firms innovate better than resource-poor ones (Hadjimanolis, 2000b) and may follow quite different strategies (Zahra and George, 1999). Furthermore in order to innovate effectively, knowledge intensive SMEs require to, consistent with the knowledge-based view, combine capabilities of skilled professionals both within and outside the firm (Gittelman and Kogut, 2003). This often calls for their establishing good relationships with a variety of entities including universities (Schienstock and Tulkki, 2001) and financial institutions (Johnston, 1997).

External relationships can be vital to an SME’s viability and compensate for resources it lacks in (McNamee, Greenan and McFerran, 2000), as well as facilitate knowledge-building and therefore, innovation and performance (Zahra and Bogner, 2000). These relationships may be available through spatially concentrated regional networks (Almeida, 1999; Niosi and Bas, 2001; Saxenien, 1990), which could help smaller firms compensate for scarcity of resources. According to Almeida (1999), “...given their resource limitations, small firms often rely on regional and knowledge networks for important inputs to the innovative process. While accessing knowledge they also share knowledge with other firms locally. Through this process of accessing and sharing knowledge with geographically proximate firms, small firms help the circulation and building of regional networks. Thus, small firms play the important role of linking firms in regional knowledge networks” (Almeida 1999,

p.44). Clearly, therefore, knowledge intensive SMEs are active users of social capital, which strengthens the choice of empirical setting here.

Based on case studies of regional knowledge networks, Almeida (1999) posits that smaller firms informally build knowledge locally; and, based on recent statistical studies, he states that innovations are strongly regional. Smaller firms have been seen to be more adept at integrating into local regional networks than larger firms. This could be, in part, because of the greater need of the smaller firm to share (and thereby gain) knowledge compared to large firms who are more self-reliant; of course, this integration is good for the larger firms as well. Clusters explain “varying distribution of innovation across countries and regions” (Almeida, 1999, p.48). Even sub-national regions’ climate can be supportive, detrimental or neutral for small firms (Goetz and Freshwater, 2001).

Based on Almeida (1999) the following benefits of resource acquisition for small firms from regional knowledge networks can be identified:

- Opportunity for exploration and exploitation of new knowledge by small firms through the ideas, within and outside the firm that can be further developed through face to face sharing of knowledge and discussion by exploiting professional relationships that are embedded in social networks
- Local sourcing of resources which allows the commercial exploitation through coordination between buyers, suppliers and even competitors
- Job related information flows that allow for inter-firm mobility of labour; indeed a previous study (Almeida and Kogut, 1997) showed that 88% of the founders of

semiconductor firms were employed locally before starting their companies. The entrepreneur brings in his or her own experience and contacts that influence the location and networking potential of the firm. Besides, intra-regional mobility is less expensive to employees than inter-regional movement.

The role of networks acquires significance when high-technology firms – typically smaller ones – specialise (Carlsson, 1999); these networks may include suppliers and customers as well as other actors such as universities. In some cases a large firm may dominate while in others there are a large number of small firms. Strategic alliances may be entered into (Rao and Klein, 1994) or the lead taken from key clients (Bell, 1995; O'Farrell, Wood and Zheng, 1998). Thus there exists the notion that network relationships are significant – both facilitating and constraining – for competitive advantage in general and internationalisation in particular of smaller knowledge-intensive firms (Bell, 1995; Coviello and Munro, 1995).

In the context of internationalisation, Dana, Etemad and Wright (2000, 2001) have highlighted the role of network relationships in SME internationalisation, as an emerging paradigm (Wright and Dana, 2003). This echoes Johanson and Mattson's (1988) argument that network relationships, which may exist across borders (Johanson and Mattsson, 1988), or be spatially bound (Porter, 1990; Enright, 1999), influence internationalisation decisions of firms. Based on the foregoing discussion, this is likely to be especially true for knowledge intensive SMEs, and evidence for this is available in the literature. Indeed, network relationships have been found to

accelerate the internationalisation of SMEs, and specifically knowledge intensive ones (Bell, 1995; Coviello and Munro, 1995, 1997).

Coviello and Munro's (1995, 1997) work, for instance, suggests that networks lead to rapid internationalisation across several markets, new market opportunities, identification of potential partners, restructuring of relationships through power-play by firms including acquisition of some firms, and emergence of dominant players. Key internationalisation issues identified in relation to networks are impact on market selection, relative influence of other firms, evolution of power and control, inter-connectedness, effect on growth, and outsourcing of marketing (given the resource-scarcity of smaller firms). Other impacts of the network were seen on the marketing aspect; these included: the ability of firms to focus on new product development (i.e., their core competency, while other members in the network dealt with marketing), evolution of relationships from distributorships to subsidiaries, and perception of a need for marketing intelligence and planning.

To summarise the foregoing discussion, a definition for the knowledge intensive SME was derived (in section 3.2) and it was noted that it has a propensity to create and leverage social capital (discussed in section 3.3). The main purpose of the above discussion was to argue that a study of knowledge intensive SMEs is very compatible with the focus on the present study, given its interest in social capital and knowledge.

In the next section, the discussion turns to the second aspect of the empirical context, viz., the Indian software industry. The choice of the software industry is consistent

with a good number of the recent studies on the internationalisation of knowledge intensive SMEs that have wholly or partially dealt with the software industry (Bell, 1995, 1997; Brouthers, Brouthers and Werner, 1996; Coviello and Munro, 1995, 1997; Francis and Collins-Dodd, 2000; Kundu and Katz, 2003; Loane, McNaughton and Bell, 2004; McNaughton, 1996, 2001a, 2002; McNaughton and Bell, 2001; Moen, Endresen and Gavlen, 2003; O'Farrell et al, 1998, Reuber and Fischer, 1997; Shrader, Oviatt and McDougall, 2000). The choice of India is consistent with the argument made in the previous chapter about accentuated resource-constraints leading to more active leveraging of social capital in developing economies. Furthermore, as will be seen, the Indian software industry is marked by considerable international activity.

3.4 Choice of Sample: The Indian Software Industry

3.4.1 The Software Industry in General

Before discussing the software industry in India, it may be useful to shed some light on the software industry in general. Rao and Klein (1994, p.30) define software as both “the instructions that direct the operation of computer equipment and information content and data that computers manipulate”. The software industry has attracted attention in recent years due to its rapid growth at a global level (Correa, 1996) and the strategic use of information technology by firms to achieve competitive advantage.

The rapid growth of software has led to greater demands from more sophisticated customers, suggesting that “Successful IT-based service firms must balance a strong

customer focus with leading edge technology and sound people management” (Vlardot, 2000, p.459). This holds for smaller software firms as well (Alajoutsijarvi, Mannermaa and Tikkanen, 2000). Software firms have been found to succeed when there has been sufficient capital and the president has been youthful (Honjo, 2000), suggesting the importance of innovative and entrepreneurial management in a dynamic environment; further, strategic alliances are an important business tool in the software industry (McNaughton, 2001b).

According to Prahalad and Krishnan (1999) there are three basic characteristics of software, viz., specificity (e.g., accounting applications), stability (e.g., order management applications) and evolvability (e.g., e-commerce applications). The way software is built has changed dramatically over the years with the emergence of a “factory approach” (Rao and Klein, 1994) or componentisation of software product development (MacCormack, 2001), with a strong focus on quality standards (McAdam and Fulton, 2002; Issac, Rajendran and Anantharaman, 2004). Further, there is often need for custom-built software (Prahalad and Krishnan, 1999), which offers a case for the off-shore model where bespoke software can be created for clients overseas, with a lower cost structure. Other industry characteristics suggest a typical knowledge intensive scenario: growing specialisation, R&D intensity and competition (Rao and Klein, 1994).

Correa (1996) identifies eight aspects pertaining to the economics of software development. First, software development is skill-intensive. Second, technology for software development is generally widely available. Third, there is considerable

scope for creativity despite the highly formalised process of software development within a given methodology. Fourth, technology pertaining to the development of systems software, as different from application software, may vary significantly. Fifth, quality controls and methodologies applied in software development may vary. Sixth, software may be packaged or customised. Seventh, understanding the users' requirements is essential. Eighth, short product cycles force software companies to invest in R&D.

The next section seeks to throw light on the specific empirical setting for this study of SME internationalisation, viz., the Indian software industry. It is seen that the Indian software industry has a strong international orientation, which authors like Correa (1996) find remarkable since, in general, many barriers to internationalisation – such as inadequate quality standards, manpower and reputation – hamper developing countries' performance in the global software industry. India has however been an exception in this regard, as seen below.

3.4.2 The Software Industry in India

With a population of over one billion people, India is the second most populous world in the world after China, and is situated in South Asia. It is however a developing nation and one that has been described as an under-achiever in the global economy (Business Asia, 1999), particularly in comparison to the rapid growth of China. One sector in which it has however made a global impact is in the area of software (data to illustrate this is discussed presently). India is today acknowledged as a preferred destination for low cost software development (Agrawal and Farrell,

2003) and has been described as the “most successful software exporter among developing nations” (Correa, 1996, p.177). This is further confirmed from the assessment that India is playing “a substantial role in the world software industry, especially in customised software and software services” (Arora, Arunachalam, Asundi and Fernandes, 2001, p.1269). According to Kundu and Katz (2003, p.26), the Indian software industry is “widely regarded as one of the strongest examples of a resource-poor nation that has leveraged its human capital to achieve export gains”.

A useful starting point in considering the development of the Indian software industry is to consider the origins of the software industry in Bangalore, the city that is most strongly associated with the software industry in India (Balasubramanyam and Balasubramanyam, 2000; Saxenian, 2000). Bangalore is also of interest as a knowledge intensive cluster in a developing country, and thus is an exception to the rule that dynamic clusters tend to be a developed country phenomenon (Porter, 1998). Although the present study is not concerned with the issue of clusters, the following factors suggested by Porter (1990) as leading to the development of a cluster, form a useful framework for the following discussion: *inherited factors, geography, climate, entrepreneurship, research and educational institutions, regional economy composition, public sector actions and private sector actions*. This framework underpins the discussion of the Bangalore software industry, below.

Inherited factors: It has been suggested that Bangalore’s software industry emerged quite by accident, facilitated by historical factors (Balasubramanyam and Balasubramanyam, 2000). At the time of national independence (August 1947) a

strategic decision was taken to locate certain key entities away from the nation's capital of New Delhi owing to its proximity to two potentially hostile neighbours – China and Pakistan. Thus Bangalore, a city located centrally within the South Indian peninsula and with an established military presence from the days of British rule, was chosen as the location of such vital public sector undertakings as Hindustan Aeronautical Limited (HAL) and National Aeronautical Limited (NAL). Additionally, the Indian Institute of Science was established in Bangalore and these corporations and educational institutions attracted technical talent from across the country. This pool of talent was arguably the forerunner to the relatively abundant (yet not necessarily sufficient; see Greehan, 2001; Merchant, 2001) supply of software professionals now available in Bangalore, which was tapped into by global players such as Texas Instruments and Motorola when they set up offices in Bangalore during the early 1990s.

Geography: As discussed above, the militarily 'safe' location of Bangalore induced the location of certain strategic defence-related organisations there.

Climate: Bangalore does have a mild climate compared to other major cities in Southern India which is, at best, a mild incentive for software professionals to settle there as well as for international executives to base themselves there when required; climate, in general however, has little bearing on the software industry.

Entrepreneurship: This, arguably, is of vital importance in relation to Bangalore. The greatest impact of the Indian software industry on the rest of the nation is

arguably as an exemplar in terms of how entrepreneurship – and business management in general – can be a success. In a largely risk-averse part of the country, software entrepreneurs have demonstrated great enterprise and won the respect of fellow practitioners, the media, the government and public at large. Doyens of the Indian software-industry – who are mostly Bangalore-based – such as Mr N R Narayana Murthy of Infosys and Mr Azim Premji of Wipro are popular speakers at top industry forums and business school convocations. Their esteem has indeed been hard-earned, through innovatively attracting talent (such as through equity-sharing schemes, a novelty for India) and building processes of the highest quality, as evident from the fact that over half of the world's most stringently followed software quality management systems can be found in India-based companies, the majority of which are Bangalore-based. These success stories have been an inspiration for others to follow suit and has helped somewhat in stemming the perennial problem of 'brain drain', with the best talent flocking to foreign shores.

Research and educational institutions: As discussed, the early establishment of the prestigious and highly capable Indian Institute of Science gave an impetus to technical development in Bangalore. Of vital significance are also two centres of excellence, which, though not purely technical, have fostered the availability of local talent. These are the Indian Institute of Management and the more recently established Indian Institute of Information Technology. These institutions apart, there are numerous engineering colleges in Bangalore, as in the rest of India where, it is estimated, 155,000 English-speaking engineering and science graduates are produced every year (D'Costa and Sridharan, 2004).

Regional economy composition: In terms of regional economy, there has really not been much else preceding the 'software boom' apart from the – almost accidental – location of aeronautical and related organisations in the region, as discussed. As such, the regional economy cannot be said to have greatly influenced the development of the software industry.

Public sector actions: There are some who would argue that the Indian government's greatest contribution to the software industry lies in its benign neglect of it for many years! This apparently uncharitable view suggests that in India, governmental intervention has not been always perceived to be conducive to private enterprise. Further, infrastructure shortcomings act as impediments for the software and other industries, and the benefits of technology have not percolated down to the masses of private citizens (Donald 2001, a, b). It may be noted however that indirect effects of public policy—including an unmistakable element of protectionism and emphasis on self-reliance—have resulted in the development of indigenous software firms. More recently however the government has sought to play a key role by transforming the Department of Electronics (DoE) into the Ministry of Information Technology (MIT) under an able member of the Cabinet. However this is recent and as such it is private—rather than public—sector initiatives that account for the growth of the software industry in Bangalore.

Private sector actions: Some of the most vital private sector actions that facilitated the growth of Bangalore came from foreign players. Texas Instruments and Motorola

are often cited as pioneers in this area. Initially seeking low-end coding work to be handled out of their low-cost Indian bases, more and more multinational companies, encouraged by India's growing liberalisation, have set up development centres with an ever-growing mandate in terms of the quality of work required to tap the locally available pool of talent. One company from Austin, Texas is rumoured to be paying their Indian professionals in Bangalore the same salary as their professionals in the US (source: expert interview with Professor Sadagopan, an academic expert on the Indian software industry; details of expert interviewees are provided in the next chapter). Such examples however are few and far between, and at this stage cost advantage continues to be an attraction.

In addition to the multinationals, Indian firms have also made a significant contribution to developing the software industry. As mentioned already, the most successful firms and their business leaders have emerged as national heroes. Many of them have gained from international networks – primarily involving Indian software professionals and entrepreneurs based in Silicon Valley (Luce, 2001). In fact, it is said that one in every three Silicon Valley start-up was founded or co-founded by an Indian (Murdoch, 2000). A vital aspect of Indian private sector initiative is the National Association for Software and Service Companies (Nasscom), the key industry body that has played a strong role to play both in terms of lobbying with the government and representing the Indian software industry abroad in forums such as trade fairs.

Subsequently, the software 'boom' spread rapidly across India, although the greatest beneficiaries have been the largest cities. The majority of Indian software firms are located in the cities of Bangalore, Chennai, Hyderabad, Mumbai and the National Capital Region. After a slow start to export revenues (Correa, 1996), initial growth of the Indian software industry was significantly reliant on export demand, marked by relatively low sophistication of technology and often entailed the provision of temporary software professionals to foreign customers (Heeks, 1996). Subsequent growth of the Indian software industry's revenues was approximately 50% per year during the second half of the 1990s (D'Costa, 2003), although it remains to be seen whether the high growth rates of the 1990s can be sustained by the Indian software industry (D'Costa, 2002).

India's dominant role in the global software industry is evident by its being categorised as a Tier-1 software exporting nation and consistently described, alongside Ireland and Israel, as being part of the so-called '3Is of Software' as evident from the following two tables. Furthermore, approximately half of the Fortune 500 companies outsource software development to India and it is believed that India has a significant head start over other aspiring nations such as Russia and China (Arora and Athreye, 2002).

Table 3.1: Taxonomy of Software Exporting Nations

	Label	Nations	Maturity	Number of organisations	Export revenues (US\$)
<i>Tier 1</i>	Major software exporting nations	OECD nations, Ireland, Israel, India	>15 years	Hundreds	>\$1 billion
<i>Tier 2</i>	Transition software exporting nations	Russia; China	>10 years	100	>\$200 million
<i>Tier 3</i>	Emerging software exporting nations	Includes Mexico, Philippines, Sri Lanka, Hungary, Chile, South Africa	>5 years	Tens	>\$25 million
<i>Tier 4</i>	Infant stage software exporting nations	Includes Cuba, Egypt, Bangladesh, Indonesia and Vietnam	< 5 years	Very few	<\$25 million
<i>Non-Competing</i>	Non-competing	Most of the smaller, least developed countries	-	-	-

Source: Adapted from Carmel (2003, p.2-3)

Table 3.2: The 3Is of Software

	India	Ireland	Israel
<i>Demand</i>	High external demand; weak domestic demand	High external demand; weak domestic demand	High external demand; strong domestic demand
<i>National Vision and Strategy</i>	Vision and strategy present: software services, then climbing the value chain	Vision and strategy present: product-related services for multinationals, then diversification	Vision and strategy present: home-grown product exports, then innovation and differentiation
<i>International Linkages and Trust</i>	Diaspora and state-funded links; reputation and trust, partly through ISO and anti-piracy	Diaspora and state-funded links; reputation and trust, partly through ISO and anti-piracy	Diaspora and state-funded links; reputation and trust, partly through ISO and anti-piracy
<i>Software Industry Characteristics</i>	Some competition; clustering and collaboration	Some competition; clustering and collaboration	Some competition; clustering and collaboration
<i>Domestic Input Factors/Infrastructure</i>	Strong, low-cost human capital; catching-up in telecoms; access to capital; limited R&D success	Strong human capital; strong telecoms; access to capital; some R&D base	Strong human capital; strong telecoms; access to capital; strong R&D base

Source: Heeks and Nicholson (2002, p.12)

Clearly, a significant success factor of the Indian software industry is the combination of a large base of skilled professionals with a low cost base (Balasubramanyam and Balasubramanyam, 1997; Heeks, 1996), as evident from the following benchmarking exercise undertaken by McKinsey (see the table below). Indeed, it has been suggested that “the needs of software production seem particularly suited to the resource endowments of the Indian economy” (Arora and Athreye, 2002, p.255); scale economies are not a significant barrier and neither is the lack of a robust physical infrastructure (e.g., roads, ports, etc). Correa (1996) identifies well-qualified manpower, ability to communicate in English and competence in other high-technology fields as factors leading to the success that the Indian software industry has enjoyed. Success for the Indian software industry has also been facilitated by “the enlightened ‘hands off’ policies of the government of India” (Arora and Athreye, 2002, p.255); subsequently, of course, the government has played an important role in fostering a climate of liberalisation that has encouraged the development of the Indian software industry (Emde, 1999; Di Lodovico, Lewis, Palmade and Santhe, 2001; Vachani, 1997). Furthermore, the Indian diaspora – often referred to as Non-Resident Indians (NRIs) – in overseas markets, especially the USA (Dossani, 2002) and the role of MNC subsidiaries in, for instance, instilling best practices within the Indian context (Patibandla and Petersen, 2002) have been important factors.

Table 3.3: A Comparison (Ranking) of India and Other Asia Pacific Software Nations

Country	Workforce	Market Access	Local Market	Infrastructure	Cosmopolitan	Cost base
New Zealand	2	2	-	2	3	2
Malaysia	1	2	-	2	2	2
Japan	1	2	1	3	1	3
Hong Kong	1	2	2	2	2	2
India	3	2	2	2	3	1

Source: Nasscom (2003) based on McKinsey data

Broadly, three types of export projects are undertaken by Indian software firms: (a) projects involving on-site work; (b) projects involving offshore software developments; and (c) projects involving some combination of on-site and offshore work. Indeed, the Indian software industry is seen as a prominent worldwide example of offshore contractual arrangements (Gopal, Sivaramakrishnan, Krishnan and Mukhopadhyay, 2003). Nasscom data suggests that export growth is largely indigenous firm-driven, with only about a quarter of the top 20 exporting software firms being MNC subsidiaries or joint ventures. While a variety of projects are undertaken by Indian software firms, as seen from the table below, the majority appear to relate to application solution software, which primarily relates to the provision of bespoke solutions to meet a client's specific software needs. Indeed, it has been suggested that over two-thirds of all software-related activity pertains to the maintenance and enhancement of existing software, as opposed to new software development (Raymond, 1999).

Table 3.4: Nature of Export Projects Undertaken by Indian Software Firms

Service	Number of Firms	Percentage (N=93)
Network designing and engineering	19	20.4
Conversion project	25	26.9
System integration	22	23.7
Application solution software	71	76.3
System/utility software	28	30.1
Application tools	22	23.7
Operation and network management	7	7.5
Help desk operation	12	12.9
Datacentre management	12	12.9

Source: Arora, Arunachalam, Asundi and Fernandes (2001); Carnegie Mellon University dataset

The biggest international market for India is the United States of America. Regional shares of Indian exports in 2000 were as follows: North America - 63%; Western Europe - 24%; and rest of the world - 13% (Nasscom, 2003). While the growth of the American economy in the 1990s fuelled growth in the Indian software industry during that period, D'Costa (2002) expresses concern that such an over-reliance on a single market may lead to the locking-in of innovation.

India's notable successes notwithstanding, there is cause for concern, particularly in relation to the level of technological sophistication of the offerings of most Indian software firms (McKinsey Global Institute, 2001). Arora and Athreye (2002) point out that in general there are few successes from India in the market for packaged software products, and Arora et al (2001) note that "the bulk of the Indian software exports have consisted of fairly mundane services such as low level programming and maintenance". This perhaps stems from the tendency of Indian software firms to be generalists, competing primarily on cost, and failing to specialise in specific technologies or vertical industry domains, although it has been pointed out that

notable exceptions exist and more specialists are emerging (D'Costa, 2001; Sadagopan, 2001).

The following statement sums up rather well the general impression of the Indian software industry from the burgeoning academic and business literature that deals with it: “The picture one gets of the Indian software services industry is a mixed one. On the one hand, there is a great deal of excitement about its rapid growth and its export success. On the other hand, the kind of work being performed is typically mundane” (Arora et al, 2001, p.1285). Its export orientation is a distinct feature of the software industry in India, vis-à-vis other industries in the country. That apart, the significance of the industry lies in its “demonstration effect”. As argued by Arora and Athreye (2002, p.253), “A potentially important and under-appreciated contribution of the software industry is...its exemplar of good entrepreneurship and corporate governance to the rest of India.

Looking ahead to the future, there are clearly ambitious hopes for the Indian software industry, as evident from Nasscom's assessment that the strengths outnumber the weaknesses, and the opportunities outnumber the threats (see table below). A joint Nasscom-McKinsey study has set a target of US\$50 billion of annual IT software and services export by 2008 (Nasscom, 2003). Information technology enabled services (ITES) – such as call centres – are emerging as a vital business opportunity; this aspect is however not covered by this study, the focus of which remains software SMEs. Initiatives being undertaken to achieve the target include further liberalisation of procedures, additional resources for manpower training, development of global

brand equity and marketing channels, and enhancement of infrastructure for software development.

Table 3.5: A SWOT Analysis of the Indian Software Industry

<p>Strengths</p> <p>Strong cost value proposition Vast base of English speaking, skilled manpower High quality-orientation Experience on state-of-the-art technologies Flexibility of Indian software professionals On-time delivery of projects Strong project management skills Strong educational orientation Government incentives and technology parks Focus on software offshoring model Vast base of Fortune 55 companies Support from successful Indians in Silicon Valley</p>	<p>Weaknesses</p> <p>Low presence in global packaged software market Lack of “original technology” orientation Low telephone, PC and Internet penetration Inadequate utilisation of IT budgets by the public sector Lack of localisation (linguistic) of software Telecom infrastructure not world-class Physical infrastructure needs improvement</p>
<p>Opportunities</p> <p>Major demand for IT professionals in Europe Major opportunity in information technology enabled services (ITES) segment Domestic market expected to grow MNCs increasingly setting up R&D facilities Opportunity in the IT training sector</p>	<p>Threats</p> <p>Emergence of other destination such as China Protectionism in export markets Insufficient high quality manpower</p>

Source: Adapted from Nasscom (2003)

To summarise, from the foregoing discussion it can be seen that:

- The Indian software industry developed partly by design and partly through serendipity.
- India is an acknowledged player on the global software stage (Arora et al, 2001; Correa, 1996).
- Success has come from resource endowment, a combination of benign neglect and helpful measures from policymakers, and fortunate timing (Arora and Athreye, 2002)

- A vital challenge includes the enhancement of firms' knowledge intensity (McKinsey Global Institute, 2001). From the perspective of the current study, this suggests a variation in firms' knowledge intensity, which is conducive to the research framework sought to be tested. The literature also confirms the utility of enhancing knowledge intensity as it is associated with higher international growth (Autio et al, 2000).
- Software SMEs are now receiving particular attention from policy-makers and industry leaders so that they contribute significantly to future growth.

3.4.3 The Indian Software Industry and Social Capital

The discussion on the Indian software industry has thus far been factual, in order to provide useful overall background information about the empirical setting. The Indian software industry constitutes a particularly suitable setting for the present study as it affords – potentially – both the special cases of ties that are of interest to this study viz., ethnic ties and MNC subsidiary ties. To further justify the choice of empirical setting, the importance of ethnic ties is highlighted in the following paragraphs by providing an illustration of a networking organisation through which, in theory, foreign bonding (i.e., ethnic) social capital can be leveraged by Indian software firms.

As noted, one contributing factor, among a host of others (such as the large base of skilled professionals), is its diaspora of technologists, most prominently in Silicon Valley (Arora and Athreye, 2002; Balasubramanyam and Balasubramanyam, 1997; D'Costa, 2003; Ramamurti, 2004; Saxenian, 2002). The Indian technology

community is strong and prominent, with useful ethnic social capital emanating from these Indian entrepreneurs (as well as professionals).

The emergence of the Indian diaspora or Non-Resident Indians (NRIs) in the US (IT industry) is a relatively recent phenomenon in comparison with migration of Indians to British colonies. Although some Indians, such as Kanwal Rekhi who was named Entrepreneur of the Year by the Arthur-Young/Venture magazine in 1987, made an impact on Silicon Valley in the 1980s, it was from the following decade onwards that the strong Indian presence was felt. According to Saxenian (2000), in 1998 Indian entrepreneurs were running 775 ventures in Silicon Valley that generated \$3.6 billion in sales revenue and 16,600 jobs. She subsequently reported that by 2000, Indian entrepreneurs were running 972 Silicon Valley-based firms that generated \$5 billion in sales revenue and 25,811 jobs (Saxenian, 2002). Thus, while Indians ran only 3% of Silicon Valley start-ups created between 1980 and 1984 (Saxenian, 1999), they ran 10% of those created between 1995 and 2000 (Saxenian, 2002).

Not surprisingly, the Forbes list of billionaires includes the most successful of these Indian technology entrepreneurs such as Gururaj Deshpande (Sycamore Networks; net worth: \$3.2 billion), Rajendra Singh (Telecom Ventures; net worth: \$1.1 billion) and Vinod Khosla (co-founder of Sun Microsystems and presently a venture capitalist; net worth: \$1 billion). Yet, there are many other individuals who have been very successful, albeit at somewhat less exalted levels; for instance, it has been estimated that there are more than 20,000 Indian millionaires in Silicon Valley (Economic Times, 2004).

Ethnic social capital from the technology diaspora has certainly had an impact on other Indians in the USA as borne out by Dossani's (2002) survey of Silicon Valley-based Indian software engineers, which revealed that 89% of the respondents worked in a firm founded by a coethnic. The probability of gaining (access to) ethnic social capital can be expected to be enhanced through relevant networking organizations.

To explore this further, the case of The IndUS Entrepreneurs (TiE), is discussed below. The appropriateness of this organization as the subject of a case study is evident from the following observation of D'Costa (2003, p.220): "Already, the regional concentration of Indian professionals in Silicon Valley in the United States, in the United Kingdom, and Singapore has linked Indian firms with foreign ones. Many of these Indian techno-entrepreneurs have become angel investors...Other successful Silicon Valley-based Indians have also supported several companies in India. These expatriate Indians are well 'networked' through professional organizations such as the IndUS Entrepreneurs (TiE) which was founded by several successful Indians".

The IndUS Entrepreneurs (TiE), a networking organization, was formed in 1992 in Silicon Valley as a consequence of a serendipitous meeting by technology entrepreneurs of Indian origin, with the mission of fostering and advancing entrepreneurship across the globe; its objectives are to foster networking, mentor entrepreneurs and facilitate integration of members into mainstream society. An ad hoc committee was eventually replaced by a formally structured organization, which

opened two additional branches in 1997, in Boston and Los Angeles. This of course coincided with the great entrepreneurial drive that accompanied the so-called “dot-com bubble”. Over the subsequent five years TiE expanded exponentially with 35 more chapters being added in 10 countries, with about a third of these chapters based in India.

Table 3.6: TiE at a Glance

Origin	Chance meeting of a few Silicon Valley entrepreneurs in 1992; the idea of bringing together high-achievers of Indian origin was born.
Mission	To foster and advance entrepreneurship across the globe.
Objectives	<ul style="list-style-type: none"> • Networking • Mentoring of entrepreneurs • Integration with mainstream society
Core values	<ul style="list-style-type: none"> • Mutual respect • Meritocracy
Philosophy	Silicon Valley culture <u>plus</u> <i>guru-shishya</i> (also referred to as <i>guru-chela</i>) relationship i.e., the student-teacher relationship, an Indian concept.

Source: The author (derived from secondary sources)

In the context of the current discussion on internationalization, the first objective of TiE, viz., networking, is perhaps the most salient. The networking facilitated by TiE can be thought of as being domestic (to the host economy) and international. It currently appears that the former is more structured and active while the latter is emergent but growing. In terms of domestic networking, each chapter generally has monthly networking meetings, often with a guest speaker. On a larger scale, an annual conference called TiECon is conducted; the 2004 conference held in Santa Clara, California attracted 3,000 delegates and was promoted on the TiE Web site as the largest gathering of entrepreneurs in the world.

In terms of international networking, there is growing evidence of linkages being built with the home country, India. Indian officials (e.g., the Head of the Task Force for Information Technology) have been known to seek counsel from senior TiE members on policy-making in India. Furthermore, former US President Bill Clinton invited a 200-member delegation from TiE to accompany him on his official visit to India in 2000, hailed by many as a watershed in Indo-US relations. More recently, it emerged from interviewing the President of the TiE chapter in Bangalore, that visits to India had been organised by TiE chapters in the US (Silicon Valley and Boston) with a view to exposing American venture capitalists to developments in India's software industry.

Networking aside, it is also worthwhile to consider TiE's second objective viz., mentoring. A case in point is the experience of the President of The TiE chapter in Seattle who co-founded click2learn, now merged with Docent to form SumTotal. He states that, "The Seattle chapter was setup by Vijay Vashee [in 1999] almost exactly around the time I departed Microsoft to start my own company (co-founded with a few colleagues). The timing could not have been better, in terms of the excellent support both, from an expertise and financial perspective, that my company received from TiE charter members. At the time, several entrepreneurs were looking for guidance, and TiE was right there to provide the same, simultaneously to various startups" (TiE Seattle, 2004). According to Sridar Iyengar, President of TiE Silicon Valley, the openness to be mentored and willingness to mentor come naturally to Indians. He says, "In our [Indian] culture, the relationship between the guru-chela (teacher-student) is very important. Mentoring, of course, isn't just limited to the

Indus community. But because of our DNA, we are more aware of having somebody who has mentored us and that makes us more amenable to taking the time to mentor others” (TiE Rockies, 2004).

There is no evidence yet of cross-border mentoring. However, given the nascent trend of visits from TiE chapters in the US to India as noted, TiE provides an opportunity, potentially at least, for ethnic social capital to flow across countries, including back to the home country (India). This is however not guaranteed; neither is the motive for networking by US-based Indian entrepreneurs necessarily altruistic as much as prudent on their part (Leclerc, 2004). It should also be noted that latterly TiE in the US has sought to move beyond its Indian roots to portray a more inclusive image, as evident from new interpretations of its acronym as Talent, Ideas and Innovation. Thus, while TiE initially created ethnic social capital in the *host* country, it is now also creating (non-ethnic) social capital across ethnic groups in the host country. Ethnic social capital, however, remains a vital focus for TiE, and an asset that can potentially influence SME internationalization.

3.5 Conclusion

This chapter set out to justify the choice of knowledge intensive SMEs in general, and Indian software SMEs in particular, as the subject for this study, which pertains to the role of social capital in international growth and modal commitment of SMEs. Knowledge intensive SMEs were argued to be suitable given the obvious link between knowledge intensity and the KBV. In addition, a common thread running through the literatures on the SME and the knowledge intensive firm was the role of

social capital emanating from network relationships. The motivations for this propensity to create and leverage social capital, as seen, include resource-dependence and competitive (innovation) considerations. This provides further support for the choice of sample, given the incorporation of social capital theory in the research framework.

Furthermore, a developing economy focus has been adopted as the role of social capital is likely to be strong owing to the accentuated resource-constraint experienced by firms in such a context as also cultural factors (such as collectivism). The choice of the Indian software industry as empirical setting is seen to be appropriate given that it is acknowledged as a notable example of an internationally oriented knowledge intensive industry in a developing country (Arora and Athreye, 2002; Kobrin, 1999). Furthermore, it is likely to be characterised by the active leverage of social capital seen in Asian countries (Hitt et al, 2002) and potential sources of local bridging (i.e., MNC ties) and foreign bonding social capital (ethnic ties), as discussed. The next chapter presents the research design adopted in this study.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Introduction

This chapter concerns the research methodology adopted. Its importance stems from the fundamental character of research, which is “a process of planning, executing and investigating in order to find answers to our specific questions...we need to do this investigation in a systematic manner” (Ghauri and Grønhaug, 2002, p.3). To indicate where the design of research methodology sits within the overall study, an overview of the research process followed in the present study, is depicted below, followed by a list of the hypotheses that the study seeks to test:

Table 4.1: The Research Process

Activity	This Study
<i>Choice of topic</i>	The role of social capital and knowledge in SME internationalisation
<i>Literature review</i>	Key strands of internationalisation literature reviewed and synthesised in light of underlying theoretical perspectives of resource-based and social capital theories; covered in Chapter 2
<i>Identification of research problem</i>	Based on identified gaps in the literature it was determined that the specific research problem that the study would address is: Do bridging and bonding social capital differentially influence the internationalisation (specifically international growth and modal commitment) of knowledge intensive SMEs in a developing economy context (specifically software SMEs in India)?
Research design	Discussed in this chapter
<i>Data Collection</i>	To be undertaken in light of this chapter; covered in Chapters 5-7
<i>Data Analysis</i>	To be undertaken in light of this chapter; covered in Chapters 5-7
<i>Interpretation and Conclusions</i>	To be identified in light of the data analysis; conclusions and implications for further research, practice and policy presented in the final chapter (Chapter 8)

Source: Adapted from the methodology literature (e.g., Ghauri and Grønhaug, 2002)

Table 4.2: Summary of Research Hypotheses

<ul style="list-style-type: none">• Hypothesis 1: Market knowledge is positively associated with (a) international growth and (b) modal commitment.
<ul style="list-style-type: none">• Hypothesis 2: Knowledge intensity is positively associated with (a) international growth and (b) modal commitment.
<ul style="list-style-type: none">• Hypothesis 3: Social capital is positively associated with (a) international growth and (b) modal commitment.
<ul style="list-style-type: none">• Hypothesis 4: Bridging social capital (comprising local bridging social capital and foreign bridging social capital) is more strongly associated with international growth than is bonding social capital (comprising local bonding social capital and foreign bonding social capital).
<ul style="list-style-type: none">• Hypothesis 5: Bonding social capital (comprising local bonding social capital and foreign bonding social capital) is more strongly associated with modal commitment than is bridging social capital (comprising local bridging social capital and foreign bridging social capital).

Source: The author

As indicated, this chapter deals with research design. In the next section, the main choices made in terms of the research's nature and orientation are discussed, followed by a more focused discussion of two methodologies adopted in the study – survey and case study, and thereafter, the process of developing a survey instrument and interview guide is outlined.

4.2 Major Research Choices

Research methodology pertains to the set of choices made whilst determining the manner in which an identified research problem is addressed. Based on a research study's aim, objectives and questions, at least three sets of choices must be made in designing the most appropriate means of achieving the articulated goals. These are categorised as:

- Overall decision regarding the nature of the study (exploratory, descriptive or causal)
- Orientation (inductive/deductive) and therefore data collected (qualitative/quantitative).
- The research method(s) employed to collect and subsequently analyse the data.

These three sets of choices are considered below, and in each case two aspects are examined: (a) an overview of the set of options available to a researcher; and (b) the choice(s) deemed most appropriate for this particular study.

4.2.1 Nature of the Study

Broadly, three types of research studies may be undertaken: exploratory, descriptive or causal (Bryman, 1995; Easterby-Smith et al, 2001, Gay and Diehl, 1992; Ghauri and Grønhaug, 2002; McNeill, 1990; Riley et al, 2000). Exploratory studies are those studies in which little extant knowledge exists and subsequently there is neither a coherent body of theory or empirical data on the basis of which to make any predictions or draw any conclusions. While exploratory research has the advantage of helping to better define a hazy problem or issue, it does not by itself provide causal explanations. Descriptive studies are associated with greater background knowledge but are concerned merely with collective data that describe the characteristics of a population or phenomenon – for example, the proportion of consumers in a city that may be classified as affluent. Thus descriptive research provides answers to the question, “what is?” rather than “why?” or “how”. Causal studies, like descriptive studies, build on extant knowledge but, unlike descriptive

studies, deal with the relationship between variables with a view to identifying cause and effect relationships. Causality is achieved when the cause precedes the effect, cause and effect co-vary, and there is no competing explanation of the causality. Causal research may build on the previous two types of research.

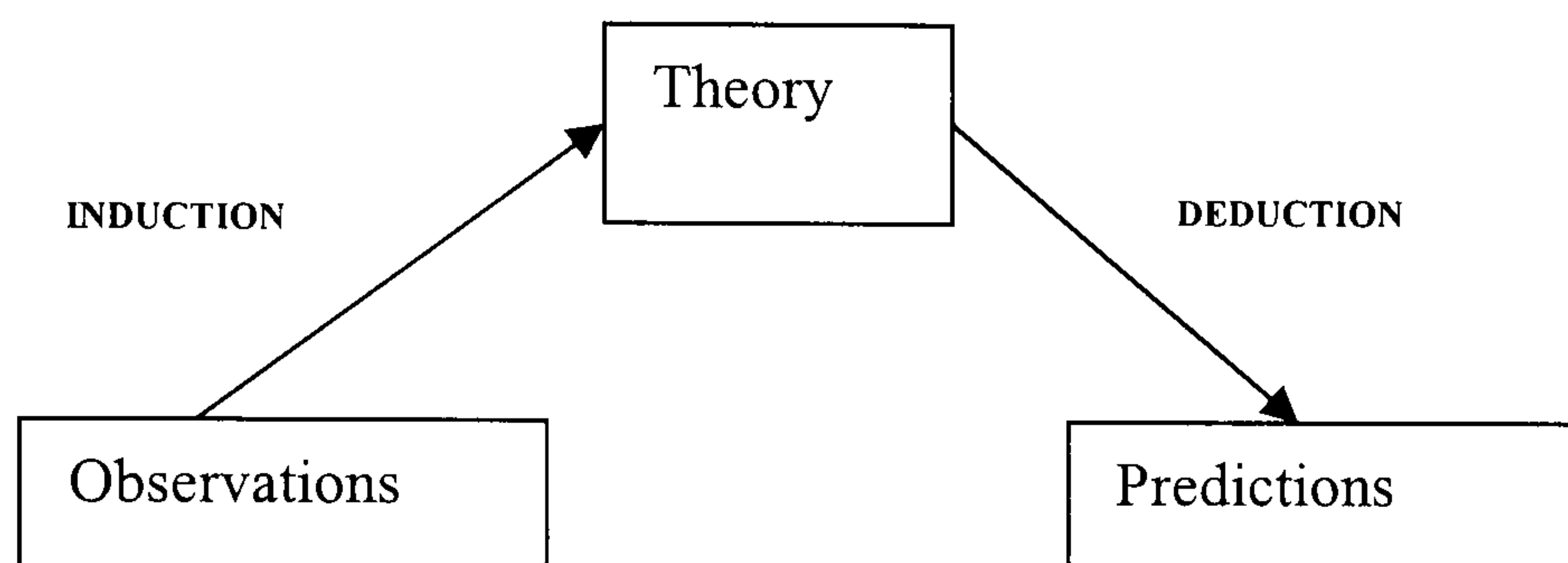
In terms of this study, it is primarily a causal study, with a specific interest in the cause and effect relationship between different types of social capital and internationalisation (specifically mode and growth). Other causal factors are however explicitly identified and incorporated in the study, viz., market knowledge and knowledge intensity. It may be noted however that the types of research noted above are not necessarily mutually exclusive in their application and, as such, an exploratory component exists to this study, viz., four case studies of small software firms in India, as discussed later in this chapter.

4.2.2 Orientation of the Study

There are two major methodological orientations that a study may adopt – an inductive or deductive orientation (Bryman, 1995; Easterby-Smith et al, 2001, Gay and Diehl, 1992; Ghauri and Grønhaug, 2002; McNeill, 1990; Riley et al, 2000). The main difference between these orientations relates to what comes first – theory or data. In an inductive study, the starting point is data or observations from which theory is induced; in a deductive study, the starting point is theory and hypotheses are deduced from it. Methodologies are rooted in philosophical underpinnings (Hirsch, 1985), and the difference between induction and deduction in turn generally stems from two broad research philosophies, viz., the positivist paradigm and the

social constructionist or phenomenological paradigm, as summarised below. Deductive approaches appear to be more prevalent in economics (Caldwell, 1985) than in sociology (Gartrell and Gartrell, 2002), although there are growing calls for inductive and hybrid approaches to fields of business that have traditionally been dominated by economists, including entrepreneurship and small business research (Carson and Coviello, 1996; Gartner and Birley, 2002; Gilmore and Carson, 1996; Hill and Wright, 2001).

Figure 4.1: Induction Versus Deduction



Source: Easterby-Smith et al (2001)

Table 4.3: Positivist versus Phenomenological Paradigms

Paradigm Characteristics	Positivist Paradigm	Social Constructionist or Phenomenological Paradigm
Ontology: (What is the nature of reality?)	Reality is objective and singular	Reality is subjective and multiple
Epistemology: (Relationship between researcher and researched)	The researcher is independent	The researcher and researched interact
Axiology: (Values)	The research is value free; objective	The research is value laden; subjective
Rhetoric: (Language)	Formal and removed	Informal and evolves
Methodology: (Process of research)	Deductive, categorises and isolates, reality is context free, generalisation leads to prediction, looks to validation	Inductive, mutual shaping of factors, research design emerges, research is contextual and historically bound, patterns emerge, looks to verification

Source: The author, derived from the literature.

According to Easterby-Smith et al (2001, p.28), “The key idea of positivism is that the social world exists externally, and that its properties should be measured through objective methods, rather than being inferred subjectively through sensation, reflection or intuition”. Social constructionism, on the other hand, leads researchers to “try to understand and explain why people have different experiences, rather than search for external causes and fundamental laws to explain their behaviour”. This is a vital difference in research philosophy and can be the basis of sharp intellectual conflict among researchers (cf., Bryant, 2002; Dugger, 1983; Lee, 1999), although some others have called for reconciliation (Heath, 1992), pragmatism (Wicks and Freeman, 1998) and critical pluralism (Hunt, 1991), where appropriate and feasible. The two broad perspectives thus result in rather different research processes in terms of the sequencing of activities in inductive (phenomenological) and deductive (positivist) studies, as depicted below.

Table 4.4: Research Activities in Inductive Research Versus Deductive Research

Induction	Deduction
A theory is suggested by observation.	A theory is created.
Further observations are made.	The premises that underlie the theory are identified.
If these observations are in accordance with the predictions of the theory, its validity is accepted. If they are not, the theory is rejected at this point.	Observations are made in an attempt to falsify these premises.
Further ‘positive’ results increasingly strengthen the validity of the theory.	One or more of these premises is (eventually) falsified.
Acceptance of the theory allows further theories to suggest themselves by observation.	Revision of the original theory in light of this falsification creates a theory with greater predictive power

Source: Adapted from Easterby-Smith et al (2001)

Corresponding to the inductive and deductive orientations is another key distinction between two types of data that may be collected in a research study – that between qualitative and quantitative data. Inductive research predominantly involves qualitative data and deductive research, quantitative data (Easterby-Smith et al, 2001), although some researchers advocate a pragmatic view to be taken based on the research question addressed (Hurmerinta-Peltomäki and Nummela, 2004). In qualitative research, a hypothesis is not needed to begin research. However, all quantitative research generally requires the identification of hypotheses prior to data-collection (Easterby-Smith et al, 2001). Another difference between qualitative and quantitative research pertains to the role of the researcher. In quantitative research, the researcher is deemed to be an objective observer while in qualitative research, the researcher is seen as (and encouraged to be) being simultaneously a participant and observer. While some researchers maintain that qualitative and quantitative methodologies cannot be combined owing to their divergent underlying assumptions, others encourage a “mixed methodology” that combines both approaches where appropriate in the research design.

This study adopts a *hybrid approach* where both qualitative and quantitative research is used (Jick, 1979). The rationale for this, as alluded to earlier, is that little research has been done in the empirical setting of the study. As Hurmerinta-Peltomäki and Nummela (2004, p.162) note, “the aim of mixing methods is to capture a complete, holistic picture of the subject matter...with a view to uncovering something that might have been missed with a simpler research design”. Hence an initial exploratory

study, with a view to refining the research model derived from the literature was deemed as a useful exercise preceding the research exercise that would test the hypotheses depicted in the research model. Such a “mixed” methodology is not uncommon in similar PhD studies in the area of small firm internationalisation (cf. Brock, 2000; Johnson, 2001). Furthermore, such a qualitative research study can also provide useful pointers for the formulation of the instrument used in the quantitative research study that tests the hypotheses. This approach finds support in the literature; for instance, Romano (1989, p.41) stresses “the need to adopt a mixed methodological approach in understanding small business”. In relation to international business research, Birkinshaw (2004, p.571) advocates “a deliberate strategy of collecting both qualitative and quantitative data and writing up the study using both”; he goes on to add: “we need both case studies and large-sample data to fully inform our understanding of a phenomenon”.

4.2.3 Research Methods

A range of research methods, under both the inductive and deductive orientations, are available to the researcher and must be chosen carefully on the basis of the study’s goals, the researcher’s capabilities and the constraints of time and monetary resource (Ghauri and Grønhaug, 2002). Another aspect involves the extent to which the researcher is involved with the subject of the research; thus, certain methods involve the researcher being detached from the situation under study while others may involve participative observation (Easterby-Smith et al, 2001). The following tables capture some of the major options available to a researcher.

Table 4.5: Major Options for Research Design

	Research Paradigm / Philosophy		
		<i>Positivist</i>	<i>Phenomenological</i>
Extent of Involvement of Researcher	<i>Detached</i>	Survey research Quasi-experimental design	Case study method (Yin) Ethnography
	<i>Involved</i>	Experimental design Action research	Grounded theory Cooperative inquiry

Source: Adapted from Easterby-Smith et al (2001)

Table 4.6: Merits and Demerits of the Major Options for Research Design

Method	Brief Description	Merits	Demerits
<i>Survey</i>	A quantitative research design where data is recorded through questionnaires or interviews for recording respondents' stated behaviour, intentions, characteristics, etc (Greer et al, 2000; Dennis, 2003; Dillman, 2002; Jobber, 1986).	<ul style="list-style-type: none"> • Large samples can be studied • Primarily useful for hypothesis-testing • Cost-effective • Anonymity possible 	<ul style="list-style-type: none"> • Limited information captured • Obtaining reliable databases difficult • Low response rate
<i>Quasi-experiment</i>	Research undertaken when a "true" experiment is not possible; generally, lacks the 'randomisation' or complete control of variables of a true experiment (Moorman, 1996).	<ul style="list-style-type: none"> • More practical and feasible than a pure experiment • Causality can be generally established 	<ul style="list-style-type: none"> • High cost in terms of time and money • Recruiting subjects is not easy
<i>Case study</i>	Involves the collection, analysis and presentation of detailed information about an entity (such as a firm), often based on the accounts provided by the subjects themselves (Eisenhardt, 1989; Yin, 1994).	<ul style="list-style-type: none"> • Provides in-depth and holistic insight into phenomena • Can be used both for exploratory and explanatory ends 	<ul style="list-style-type: none"> • Generalisability of case study findings questionable • Obtaining access to firms is not easy
<i>Ethnography</i>	A naturalistic qualitative methodology to study people in their natural settings (<i>in situ</i>); developed by anthropologists (Dey, 2002; Gille and Riain, 2002).	<ul style="list-style-type: none"> • Provides rich and deep description • Brings to light the 'real world' of the subject 	<ul style="list-style-type: none"> • Time-consuming • Stressful • Liable to subjective interpretation.
<i>Experiment</i>	A type of quantitative research design undertaken to explain causality, generally comparing an experimental group and a control group (Smith, 2002).	<ul style="list-style-type: none"> • Robust control of variables possible • Causality can be established 	<ul style="list-style-type: none"> • High cost in terms of time and money • Recruiting subjects is not easy • Legal and ethical constraints

Action research	Focuses on research <i>in</i> (rather than about) action where knowledge is produced in the context of application; generally undertaken by practitioners to improve activities and performance (Coughlan and Coughlan, 2002; Eden and Huxham, 1996).	<ul style="list-style-type: none"> • Findings have directly practical implications • Provides unique insights into activities under study 	<ul style="list-style-type: none"> • Access to data (the situation) difficult. • Perceived as improving practitioner, not academic, knowledge
Grounded theory	Refers to the inductive development of theory from data without need for any reference to extant theory; it involves analysing data to discover variables and their inter-relationships (Glaser and Strauss, 1967).	<ul style="list-style-type: none"> • Potentially leads to new theoretical insights • The theory perfectly fits at least one dataset 	<ul style="list-style-type: none"> • Generalisability of theories is questionable • Performing the research is highly skill-intensive
Cooperative Inquiry	A participative form of research where those involved are co-researchers and co-subjects (Reason, 1999).	<ul style="list-style-type: none"> • Collaboration may lead to accountability • Findings have highly practical implications 	<ul style="list-style-type: none"> • Access to data (the situation) difficult. • Primarily practitioner-oriented

Source: Author.

In evaluating the range of options indicated in the table above, it should be readily evident that the most appropriate methods for the present study, bearing in mind the research objectives and practical considerations, would be the survey and case study designs. The survey would be the ideal way of testing the hypotheses, and can be achieved within the time and monetary constraints of the present research endeavour. The case studies have the potential for greatly enhancing understanding of the sample prior to the survey and to deepen insight into the role of social capital in internationalisation, after the survey. The next section further discusses these two methods.

4.3 Research Methods Adopted in this Study

In the current study, a survey is proposed to be conducted with a view to testing the hypotheses identified in Chapter Two. Additionally, however, case studies are proposed to be undertaken before and after the survey to provide further insight into the research model and survey instrument. The two methods (viz., survey and case study) are discussed below.

4.3.1 Survey

Given the deductive orientation of this study, survey methodology is identified as an appropriate means of testing the hypotheses generated from a synthesis of the literature. Indeed, despite the clear challenge involved in surveying an industrial population, the survey is the most applied method in strategic and international management studies and is considered to be the most efficient means of data collection in small firm research (Newby, Watson and Woodliff, 2003); as such, there is a substantial increase in the number and importance of surveys in both business and non-business contexts (Dillman, 2002). The chief advantages of a survey, which is most commonly (although not exclusively) implemented through the mail, are the relative low cost, large amount of information that can be collected, large samples that can be studied, the time available to respondents to complete the questionnaire, anonymity of the respondents, minimisation of interviewer bias, and geographic flexibility (Greer, Chuchinprakarn and Seshadri, 2000). A vital concern is non-response bias, given the low response rate in many surveys, as business populations are increasingly over-researched (Jobber, 1986). In this regard it is therefore useful that the present study focuses on Indian software SMEs as currently large Indian software firms appear to constitute an over-researched population.

From the survey literature three points are made in the ensuing discussion. First, there are several key differences between industrial and consumer populations, which could lead to certain benefits and challenges in conducting a survey of an industrial population (as is the case in this study). Second, the literature suggests certain success factors for a survey that are highlighted. Third, on account of constraints of financial resources and time, it is increasingly necessary (and legitimate) for researchers to utilise mixed modes while conducting a survey; for example, using a postal survey in combination with a telephone survey. In this particular study, questionnaires are administered through a combination of e-mail and drop-and-collect technique, both of which are briefly discussed. The above three points are elaborated upon below.

First, in terms of key differences between industrial and consumer populations, Jobber (1986) identifies the following, viz., the response environment (work versus home); sensitivity to interruptions (high versus low); nature of information requested (professional versus personal); and scope for delegation (exists versus does not exist). To these differences, Diamantopoulos, Schlegelmilch and Webb (1991) add two more: the potential for a non-participation corporate policy to be adopted and negative attitudes towards surveys from prior experience or excessive requests for participation. These characteristics thus suggest that an industrial population is not easy to survey. This is certainly the view of Greer et al (2000, p.99) according to whom “Because of factors such as their preoccupation with work, confidentiality of information, or company rules and policies, industrial populations are less likely to

respond to survey questionnaires than consumer populations”. Thus, a vital challenge for researchers using the survey method pertains to response rates, which are increasingly low in industrial surveys (Dillman, 2002).

Second, a key aspect to be considered, then, is the factors that lead to success (i.e., an acceptably high response rate) in carrying out a survey of an industrial or business population. Applying communication theory to the conduct of surveys, Diamantopoulos et al (1991) identify three “source effects” that influence the perception of prospective respondents to a survey; these are credibility, attractiveness and power. Of these, *credibility*, which arises from the perceived status, role and credentials of the researcher and/or sponsor, is of particular importance. Additionally, the *content* of the questionnaire is a key success factor. Greer et al (2000) conclude that the content of the study is the most important factor in stimulating response rates; also, shorter questionnaires are likely to be more effective than longer ones. As they state, “...short questionnaires are more likely to generate higher response rates because less effort and energy are required to complete the questionnaires” (Greer et al, 2000, p. 106). For a target of a 30% response rate, they recommend that the questionnaire be no longer than four pages and contain 30 questions.

A vital aspect in designing a survey is its alignment to the psyche and situation of the prospective respondent, which can assist greatly in developing appropriate, yet rigorous, multi-item scales, which are critical for successful survey research (Lindell and Drexler, 1979). Commenting on the guidelines available to survey researchers,

Diamantopoulos et al (1991, p.331) conclude that “[t]ranslated into practical terms, all of these guidelines emphasize the importance of designing and implementing an industrial mail survey in a way that is congruent with the prospective respondent’s perceptions and dispositions”. This is of course strong justification for the approach adopted in this study of preceding the survey with exploratory case studies that provide insight into prospective respondents’ “perceptions and dispositions”.

Painstaking research (cf., Jobber, 1986; Jobber and O’Reilly, 1998) has explored elements of survey design, including preliminary notification and post-survey follow-up; incentives (monetary and non-monetary); types of postage; types of question; colour of the questionnaire; and appeal (altruistic versus egotistic). Findings are tenuous and often contradictory in studies. However it does appear that the use of incentives, close-ended questions and post-survey follow-up assist in improving a survey’s response rate, albeit with a trade-off between the number of responses and cost per response (Erdogen and O’Keefe, 2002; O’Keefe and Homer, 1987). The incentives and follow-up activities may be collectively deemed to demonstrate *commitment* of the researcher to the survey, while the nature of the questions pertains to content, the importance of which has been considered. Thus the success factors in implementing an effective survey may be summarised as pertaining to credibility, content and commitment.

Third, the discussion now turns to the approach of using mixed modes in a survey. Dillman (2002), a noted researcher on survey methods, revised his notions that a single mode must be utilised in surveys and identifies five modes that are currently

used in varying combinations or individually: face-to-face; telephone; mail; Internet (or email); and touch-tone entry. One of the chief drivers of the use of mixed modes is cost effectiveness, which is certainly a consideration in a study like this with a tight financial constraint. In this study, two modes are particularly pragmatic and relevant to the empirical context: email and face-to-face, albeit in terms of the variant that is referred to as drop-and-collect surveys. These two methods are briefly examined below.

The proliferation of Internet technology in the latter half of the 1990s created optimism in terms of its potential for facilitating large scale surveys (Taylor, 2000). The adoption of email as a means of conducting surveys is thus only to be expected, notwithstanding certain drawbacks such as a lack of anonymity, formal usage, incentive and cosmetic “design” features (Ranchhod and Zhou, 2001). The findings on the effectiveness of email-based surveys are mixed. In addition to their cost-effectiveness, email-based surveys have been found to be speedier than conventional postal surveys but less successful in terms of the response rate (Mehta and Sivadas, 1995; Tse, 1998). However, another study found that a higher response rate could be achieved through electronic questionnaires when compared to faxed or mailed questionnaires (Cobanoglu, Warde and Moreo, 2001). Such mixed signals would suggest that caution is required while utilising e-mail for conducting a survey. For instance, it may be prudent to combine this approach with another mode.

One mode that is appropriate for surveys of small firms and firms in high-technology sectors, which is a variant of the face-to-face mode, is the drop-and-collect survey

(DCS) method (Ibeh, Brock and Zhou, 2004). The DCS method “involves the researcher(s) and/or properly trained field assistants in personally delivering – and later collecting – the survey instrument (the questionnaire) either directly to the target respondent or indirectly via a gatekeeper (e.g., a secretary)” (Ibeh et al., 2004, p.156). Despite being identified as a useful method in relation to consumer surveys (Lovelock, Stiff, Cundiff and Kaufman, 1976), the DCS method has been advocated as well suited for industrial populations. As Ibeh et al (2004, p.161) note, “the DCS, with its greater channel capacity (or media richness) and social presence, appears better suited to the generally high perceived need, among organisational actors, for uncertainty/ambiguity reduction in communication situations”. It thus seems reasonable to suggest that an appropriate combination of modes to be employed for the survey in the present study comprise an email-based and drop-and-collect survey.

4.3.2 Case Study

Despite the deductive orientation of this study, judiciously utilised qualitative research techniques can greatly enrich the insight achieved through a questionnaire in at least two ways. First, a qualitative study can provide useful understanding of the empirical context (which is desirable as seen above) that leads to refinement of a literature-derived model and also more effective crafting of a survey instrument (Birkinshaw, 2004). Second, following a survey, a qualitative study can help to deepen understanding of or clarify issues that emerge from the survey findings (Brock, 2000; Hurmerinta-Peltomäki and Nummela, 2004). In both instances, a useful method available to the researcher particularly in a small business context, which has been selected for this study, is case study methodology (Perren and Ram,

2004). From the literature, three aspects of case study research are identified and briefly discussed, viz. the advantages of utilising a case study methodology; the choice to be made between a single-case and multiple-cases approach; and issues to be considered whilst implementing case study research.

This study draws heavily on Yin's (1994) perspective of the case study, which is an example of an inductive methodology where the researcher is detached (see end of section 2.3), as distinct from Stake (1995) where the researcher may get involved in the situation under study. Yin (1994) points out that while case studies are traditionally considered appropriate for exploratory research only, some of the better-known case studies have been both descriptive and explanatory. He thus stresses the difference between exploratory case studies and explanatory case studies. In so doing, he is arguing for the generalisability of case study findings, thus refuting one of the major criticisms levelled against the case study approach, particularly by positivists (Easterby-Smith et al., 2001). He states that "case studies, like experiments, are generalisable to theoretical propositions and not to populations or universes" (Yin, 1989, p.21), and distinguishes between analytic generalisation (the role of case studies) and statistical generalisation (the role of surveys). Exploratory case studies are helpful to understand the phenomenon under study better (Birkinshaw, 2004) while explanatory case studies can clarify the nature of relationships between factors (Yin, 1994).

The richness of data that case studies can provide is acknowledged, and is the rationale for the incorporation of pre- and post-survey case studies. This approach

thus acknowledges the validity of Yin's (1994) observation that a major strength of the case study approach is that it measures and records behaviour, whereas a survey focuses on verbal information alone. Such a view is echoed by Rickwood, Coates and Stacey (1987, p.319), according to whom, "the adoption of a case study approach provides opportunities for overcoming the restrictions of response imposed by the questionnaire in investigating the heterogeneity of procedures and their relationship with the context in which they are adopted". It has been further pointed out that the strengths of the case study approach outweigh the weaknesses, especially in empirical contexts where the sample base is small, as this overcomes problems of over-researched samples (Chetty, 1996).

Although refuted by authors such as Dyer and Wilkins (1991), single cases are generally less preferable than multiple case studies owing to the potential for cross-case comparison. Miles and Huberman (1985, p.151) advocate the use of multiple cases when they state, "By comparing sites or cases one can establish the range of generality of a finding or explanation and at the same time pin down the conditions under which that finding will occur...There is much potential for both greater explanatory power and greater generalisability than a single case can deliver". Eisenhardt (1989) suggested that multiple cases are an effective means of theory-building as replication and extension among individual cases become possible. Indeed, while countering the views of Dyer and Wilkins (1991), she points out that many classic case studies are essentially multiple case studies where replication and extension are applied in the development of theory. Multiple cases provide scope for accumulating valuable organisational insight (Jensen and Rodgers, 2001) and theory

building (Nieto and Perez, 2000). In this study, multiple cases are studied; a standard approach appears to be between four and ten cases (Eisenhardt, 1989; Yin, 1994).

In terms of implementing case study research, researchers emphasise the importance of the application of a rigorous and systematic approach (Eisenhardt 1989, 1991). Another issue pertains to “boundary-setting” (Miles and Huberman, 1994), i.e., the extent to which the case-firm should be investigated using a fixed, as opposed to open, agenda. Views on this matter vary. While Stake (1995) appears to favour the setting of well-defined boundaries early on in the process, Ragin and Becker (1992) are concerned that strongly held beliefs (and therefore a well-defined agenda) may restrict conceptual development as the case study progresses. This study adopts Miles and Huberman’s (1994, p.27) suggestion that a researcher should “think intuitively of the focus or “heart” and build outward” at an early stage of the process. Finally, in determining the number of interviews per case-firm, while multiple interviews are encouraged, certain practical considerations must be taken into account. For instance, Perry (1998, p.794) points out that “more than one interview in a small business or in any Asian organisation is difficult”. Ultimately, this study adopts Patton’s (1990, p.185) advice that “rules should not be slavishly followed”.

4.4 Design of the Case Studies and Survey

4.4.1 Design of the Exploratory Case Studies

Prior to the design of the survey instrument, a set of exploratory case studies was undertaken. This is discussed below in terms of sampling, issues reviewed, instrument development and implementation.

In terms of the sample, four small Bangalore-based software firms were selected purposively using the researcher's contacts to ensure a spread in terms of age, with 'young' being taken as fewer than six years in existence (Zahra et al, 2000) and international intensity i.e. proportion of revenues accruing from international business, taken as 'high' when this was 50% or more. The two young firms were chosen such that they would still meet the age criterion (<6 years) after three years, when it was intended to undertake a follow-up study. Furthermore, in addition to being consistent with prior research, firms with at least 6 years' existence were likely to be quite different from younger ones, given the impetus – particularly around 1998-1999 – for new venture creation in the Indian software industry to leverage business opportunities arising from requirements in developed economies relating to Y2K and euro conversion (Balasubramanyam and Balasubramanyam, 2000; D'Costa, 2003; Ramamurthi, 2004).

The sample was confined to Bangalore partly for logistical reasons. However, the choice of city was highly appropriate owing to its prominence within the Indian industry (Balasubramanyam and Balasubramanyam, 2000; Saxenian, 2000). In terms of timing, the researcher originally planned to travel to Bangalore in September 2001, but the intervention of unforeseen terror attacks in the US led to a decision to postpone the interviews by six months. Firms were identified through a snow-balling technique (Easterby-Smith et al, 2001) by initially approaching a member of the IT Task Force of Indian industry's apex body, the Confederation of Indian Industry (CII), who was known to the researcher. All four CEOs approached agreed to be

interviewed and for their firms to be identified by name. The four case-firms that were studied are indicated below:

Table 4.7: The Four Case-Firms

	Young (<6 years)	Old (>6 years)
High internationalisation ($\geq 50\%$ of revenues accrue from international business)	New Creation Established: 2000 Employees: 8 International revenues: 100%	Ekomate Established: 1996 Employees: 30 International revenues: 90%
Low internationalisation ($< 50\%$ of revenues accrue from international business)	Mitoken Established: 2000 Employees: 40 International revenues: 0%	Vikas Established: 1995 Employees: 70 International revenues: 20%

Source: The author

With regard to the sample it may be noted that, as seen earlier, that case studies involving Asian and small firms invariably utilise single (rather than multiple) interviews (Perry, 1998). It seldom is feasible or necessary to conduct more interviews owing, respectively, to cultural reasons (greater power distance resulting in reluctance of any one but the CEO to respond to an interview) and to business reasons (most of the knowledge about a small firm's activities resides within the mind of the owner-manager). The present study involves firms that are *both* Asian and small; consequently, single interviews are used for the exploratory case studies (with the exception of Mitoken, where a second co-founder was interviewed). The list of interviewees is provided below:

Case Study Interviews (5)

1. *Ekomate*: Tom Thomas, CEO
2. *Mitoken*: Srinivas Pannala, CEO

3. *Mitoken*: Seshadiri Iyer, VP
4. *New Creation*: Ashish Raichur, CEO
5. *Vikas Global*: Venkata Chalapathy, CEO

Perry (1998) does however suggest that such interviews can be supplemented with interviews of other actors within or associated with the empirical context – such as with industry association leaders and academic experts. Accordingly, a set of additional expert interviews was conducted. The list of interviewees is below.

6. Phil Britton, Mastek
7. Jayesh Chakaravarthy, MindTree Consulting
8. Jayesh Gandhi, Sun Microsystems
9. S Ganesan, Microland
10. Srividya Gopalakrishnan, Barings/VisualWeb
11. Manish Gupta, Boston Consulting Group
12. Professor S Krishna, Indian Institute of Management
13. R Krishnan, McKinsey
14. Ashish Mote, NeoIT
15. Dr Balajai Parthasarathy, Indian Institute of Information Technology
16. Ajith Peiris, Sun Microsystems
17. Ewen Peters, Scottish Enterprise
18. Polly Purvis, ScotlandIS
19. Rostow Ramanan, MindTree Consulting
20. Professor S Sadagopan, Indian Institute of Information Technology

In terms of the issues, these were developed with a view to unearthing the history of the firm and its internationalisation activities. The focus was however the firm's network relationships and the influence of the resultant social capital on its business activities, with special reference to its internationalisation. Also discussed was the extent to which Internet technology emboldened the case-firms to target international markets.

In terms of the instrument, it was designed around central questions with various probes identified in order to gain a detailed perspective of the case-firm's activities (a copy is attached in Appendix One). With a view to ensuring relevance and clarity of understanding, the instrument was whetted by a manager within a software firm in Bangalore (*not* one of the four case-firms). In addition, helpful comments were similarly obtained from a Bangalore-based qualitative market research professional in order to confirm clarity of phrasing and cultural appropriateness.

4.4.2 Design of the Survey

A questionnaire-based survey was carried out with a view to testing the hypotheses generated from the synthesis of the literature in Chapter Two. In terms of the sampling, 351 software SMEs (<250 employees) from the five main centres for software in India (viz., Bangalore, Chennai, Hyderabad, Mumbai and National Capital Region i.e., Delhi and its suburbs), were identified from the 2002 and 2003 editions of the Nasscom Directory. These five centres account for 80% of Nasscom's members. As mentioned earlier, Nasscom is the apex industry association in India. They claim that their members, who are listed in the directory, account for 98% of

the Indian software industry's revenues. Thus, it is the most authentic and comprehensive database of Indian software firms that is available (Vissa, 2004). Owing to the modest size of the population, it was decided that it would be appropriate to target it in its entirety.

In terms of the measures, Likert-type scales were adapted from prior studies for the three main independent variables viz., market knowledge (Eriksson et al, 1997), knowledge intensity (Autio et al, 2000) and social capital (Koka and Prescott, 2002). For the two dependent variables viz., international growth and modal commitment, different approaches were taken. For international growth two measures were identified: an objective measure, which is the proportionate change in international revenues over a 3-year period (Autio et al, 2000) and a subjective measure, the extent to which the respondent determined that growth performance achieved has fulfilled expectations (Johnson, 2001).

For modal commitment, two sets of lists were created listing modes (Root, 1987; Young et al, 1989); in one case the respondent is asked to choose as many as apply; in the other, the respondent is asked to choose just the most appropriate. The reason for taking a dual approach to both dependent variables is as a precaution in case one measure fails to capture the desired information. It may be noted that questions pertaining to international markets have been framed with respect to the largest foreign market; such selectivity is helpful in allowing the respondent to give focused answers and is a common practice in such studies (cf. Yli-Renko et al, 2002).

Consistent with similar suggestions in related studies (Zahra and George, 2002), two control variables were identified: size (in terms of number of employees) and age (number of years of operations).

Table 4.8: Summary of Measures and their Sources

Independent Variables	Items	Sources
Social Capital [Used four times, in each instance with respect to a specified set of relationships; see Appendix Two]	6 items; 1=completely disagree...7=completely agree) <ul style="list-style-type: none"> • We have extensive relationships with such companies • We actively utilise these relationships in our business • These relationships are characterised by close interactions • These relationships are characterised by mutual trust • These relationships are characterised by high reciprocity • These relationships have 'opened new doors' for us 	Adapted from sources including Kale, Singh and Perlmutter, (2000); Yli-Renko, Autio and Sapienza, (2001).
Market Knowledge	13 items (4 or 5 for each dimension); 1=completely disagree...7=completely agree) Business Knowledge <ul style="list-style-type: none"> • We are knowledgeable about the needs of foreign customers • We are knowledgeable about our foreign competitors • We are knowledgeable about channels of distribution • We are aware of potential alliance partners Institutional Knowledge <ul style="list-style-type: none"> • We have a good understanding of the business laws • We have a good understanding of the cultural norms • We have a good understanding of the regulatory standards • We have adequate foreign language skills Internationalisation Knowledge <ul style="list-style-type: none"> • We have considerable experience in international operations • We are knowledgeable about international business strategy • Our senior management has much international experience • We are competent at identifying business opportunities • We are competent at international marketing 	Based on Eriksson, Johanson, Måjkgard and Sharma, (1997), which were updated in Hadley and Wilson (2003).

Knowledge intensity	4 items; 1=completely disagree...7=completely agree) <ul style="list-style-type: none"> We have a strong reputation for technological excellence Technological innovation is a primary goal for us There is a strong knowledge component in our products/services Most of our employees have strong technical skills 	Autio, Sapienza and Almedia (2000); Yli-Renko, Autio and Tontti (2002).
Dependent Variables	Items	Sources
International Growth	1 objective measure % growth in international revenue over a 3-year period	Autio, Sapienza and Almeida (2000)
	1 subjective measure Please rate the extent to which your company was successful in achieving its objectives for growth in sales revenue and profit during the three-year period from April 2000 to March 2003. (1=highly unsuccessful; 7=highly successful) <ul style="list-style-type: none"> Growth in total sales revenues Growth in international sales revenues Growth in total profit Growth in international profit 	Johnson (2001)
Mode	5 - We have a large sales office <u>and</u> carry out software activities 4 - We have a large sales office in that country (e.g., with 10 or more employees) 3 - We have a small sales office in that country (e.g., with fewer than 10 employees) 2 - We have a sales office in that country involving a business associate overseas 1 - We have no physical presence at all and operate exclusively from India via the Internet	Based on Root (1987); Young et al (1989) - scale created to measure concept of Dimitratos et al, (2003) (If choice 1 selected then the firm is an exporter, else a micromultinational)
Control Variables	Items	Sources
Age	Years since inception	
Size	Number of employees	

Source: The author

In terms of the development of the survey instrument, there were two aspects to it. After identification of the above measures, a draft questionnaire was formulated under academic supervision. The questionnaire contained 31 questions and, consistent with Greer et al's (2000) advice, was only four pages long.

The instrument was then (a) peer-reviewed and (b) subsequently pilot-tested. The peer review process involved sending the questionnaire to six acknowledged scholars in the field of strategic and international management (Julian Birkinshaw, Marian Jones, Rod McNaughton, Harry Sapienza, K Sivakumar, Ivo Zander), and their views obtained. This helped greatly in refining some of the phrasing and updating some of the scales.

Subsequently the questionnaire was pilot-tested on a sample of 50 software SMEs in Scotland via email resulting in a 20% response rate, which is acceptable for this type of research. These firms comprise the entire population of software SMEs located in the Glasgow and Edinburgh regions in Scotland, as listed in the publicly available (i.e., via Web site) of the Scottish software industry body, ScotlandIS. Ten completed questionnaires were received. Upon contacting the respondents thereafter, the questionnaire was unanimously found to be characterised by clarity (in terms of phrasing) and brevity (requiring no more than 15 minutes to complete). A copy of the questionnaire is included in Appendix Two.

In terms of the implementation, the survey was carried out in three phases. The first phase was conducted in January 2004 via email; this is because the expert interviews

revealed that software firms in India tend not to reply to postal questionnaires, but prefer email-based surveys. A personalised email was sent to the individual listed as CEO in the Nasscom database. In addition to the attached questionnaire, a letter of endorsement from Professor Abraham Koshy of the Indian Institute of Management in Ahmedabad was attached, as this business school is the most highly reputed in India.

The second phase was undertaken, also by email, in April 2004. This time a different endorsement was used – from Mr Pawan Kumar, CEO of vMoksha an Indian software firm and also Chair of the Nasscom SME Forum in Bangalore. This was the result of serendipity; upon receiving a copy of the questionnaire, Mr Kumar emailed the researcher evincing interest in the study and offered to endorse the study to facilitate getting more completed questionnaires. The reason for delaying the second phase till April was because firms were likely to be preoccupied in March with financial year-ending activities.

Finally, a third phase was undertaken in May 2004. By this stage, it appeared that the email route had achieved its maximum potential. Therefore in this phase, professional field researchers were hired to undertake a drop and collect survey.

Details of the survey in terms of response rate and descriptive statistics are provided in the chapter on the survey findings (i.e., Chapter Six). A summary of this discussion is provided below. The first phase of the survey yielded 24 completed questionnaires and the second phase, a further 15. This resulted in a total of 39

questionnaires (approximately 11% response rate, matching the conservative expectations from the expert interviews). This was however not an acceptable response rate and furthermore, approximately one-third of the emails did not get delivered, suggesting changes in the email addresses provided in the Nasscom directory. The third phase (drop-and-collect) proved to be more effective than the email with an additional 63 responses being obtained, for a total of 102 questionnaires (response rate of 29%). Upon closer examination of the data, it was seen that, as predicted by the experts, 20% of the respondents declined to provide data on the proportionate increase in international growth over a three-year period. It was therefore decided that the perceptual measure of international growth would be used. Six observations had to be deleted due to incomplete data (on measures other than international growth), leaving 96 usable questionnaires. Also, 16 companies were not contactable due to reasons of cessation of trading and changed/untraceable addresses. Thus the effective response rate was 28.74%.

Non-response bias was tested in terms of *age* and *size* and there were no significant differences from independent-samples t-tests with the exception of average size (91 for respondents and 76.8 employees for non-respondents). This however is probably reflective of the greater resources in slightly bigger firms to attend to surveys and does not seem to be a cause for concern, especially given their highly similar average ages (8.88 and 8.36 years, respectively). The only other concern was that from the perspective of geographic spread, there was higher response from the southern cities (Bangalore, Chennai and Hyderabad) compared to the northern cities (Mumbai and National Capital Region). However this was found in other studies in India (such as

Vissa, 2004) and seems primarily reflective of less cooperative behaviour in large industrial cities compared to smaller and more vibrant ones; as such, there seems no reason to doubt the validity of the findings as a consequence. Information on this aspect and additional descriptive statistics are provided in Chapter Six.

4.4.3 Design of the Explanatory Case Studies

With a view to shedding further light on the findings of the survey, it was deemed appropriate to conduct a set of explanatory case studies. It was also felt that ideally the sample for the exploratory research should be retained, thus providing an opportunity to examine changes in social capital and its role in internationalisation over an approximately three-year period (March 2002-February 2005), which corresponds to the operationalisation of international growth – both objective and subjective measures refer to growth over a three-year period. In the event, all the four original case-firms were solvent and were run by the same CEO, each of whom agreed to be interviewed. As noted before, the age of the younger two firms were such that they had not yet completed six years of operation at the time of the compilation of the explanatory interviews in February 2005. Furthermore, by coincidence, their international intensity (in terms of broad categories) was not dissimilar to what it had been three years before. In other words, when the explanatory interviews were conducted, all four firms retained identical places in the matrix depicting the sample for the exploratory interviews. Retaining the sample provides a valuable temporal dimension to the case studies and answers several calls in the literature for such a research approach (e.g., Coviello and Munro, 1997; Dimitratos et al, 2003).

Greater success was possible in obtaining multiple interviews in two of the four case-firms. As in the case of the exploratory work, a set of supplementary interviews was conducted. In this instance, the interviewees included an executive of Microsoft India (to explore the role of MNC subsidiaries in SME internationalisation), the President of the Bangalore chapter of The Indus Entrepreneurs (TiE), a networking organisation founded by Silicon Valley-based Indians (to explore the role of ethnic network relationships in SME internationalisation), the Chair of the Bangalore Chapter of the Nasscom SME Forum and a total of five CEOs or managers of local software SMEs. The interviewees were:

Case Study Interviews (10)

1. *Ekomate*: Tom Thomas, CEO
2. *Ekomate*: C M Thomas, Chairman
3. *Ekomate*: A V Sastry, Chief Mentor
4. *Mitoken*: Srinivas Pannala, CEO
5. *Mitoken*: Bhoopalan Badua, Chief Marketing Officer
6. *Mitoken*: Shailesh Bhat, Senior Manager
7. *Mitoken*: Lasse Westh-Nielsen, Former trainee from Denmark
8. *Mitoken*: Laura Shearer, Former trainee from the UK
9. *New Creation*: Ashish Raichur, CEO
10. *Vikas Global*: Venkata Chalapathy, CEO

Supplementary Expert Interviews (10)

11. Padma Balaji, Nasscom
12. Phil Britton, Offshore Connections
13. Srividya Gopalakrishnan, Grant Thornton
14. Ashwini Kumar, Medicom Solutions
15. Pawan Kumar, vMoksha
16. Jubin Mishra, First Apex
17. Dilip Mistry, Microsoft
18. Dr Sridhar Mitta, The Indus Entrepreneurs
19. Dr Balaji Parthasarathy, Indian Institute of Information Technology
20. Sarah Stone, Scottish Enterprise

Fewer expert interviewees were deemed necessary in the second set of interviews owing to greater success in obtaining multiple informants (at least for two SMEs) from the case-firms. Of the experts, there are only three (Britton, Gopalakrishnan and Parthasarathy) who are common to both lists. The former two had changed jobs in the interim, and their inclusion was on the basis that their new work environments would have provided additional insights that they could offer. The latter is a Bangalore-based academic who closely follows developments in the Indian software industry, and his input seemed likely to be useful. The wider range of expertise covered by the expert interviewees was deliberately sought, to maximise the light that they shed on the broader context of the case-firms. In terms of the issues covered, it was decided that the focus would remain the case-firms' social capital and internationalisation activities (especially changes over time). In terms of the instrument, in order to

facilitate analysis using software such as Nu*dist, the questions were few and highly open-ended. The interview guide was developed under academic supervision and whetted by a colleague with expertise in qualitative research. The design of the case studies and survey is summarised below.

Table 4.9: Summary of Design of Case Studies and Survey

	Exploratory Case Studies	Survey	Explanatory Case Studies
<i>Sampling</i>	Highly purposive with a single-city focus (Bangalore). Four software SMEs chosen through local contacts on two variables: age and international intensity.	351 software SMEs in India's top 5 cities identified from the 2002 and 2003 editions of the Nasscom directory; owing to its modest size, the entire population was targeted for the survey.	With a view to achieving a temporal aspect to the case study component of the present study, the sample used for the exploratory case studies was retained; all four CEOs remained at the helm and were willing to be interviewed.
<i>Content (Measures/ Issues)</i>	The key variable of interest at this stage was social capital emanating from SMEs' network relationships; therefore this constituted the main thrust of the discussion. Also of interest was their international activity.	Likert-type scales, derived from previous studies, were used to capture the main independent variables of interest. Growth % figures and choice from a list of international modes were used for the dependent variables.	The focus was again the role of social capital, albeit from the perspective of changes (if any) over a three-year period. To facilitate explanatory power and also computer-aided analysis, questions were fewer and more open-ended.
<i>Instrument Development</i>	Interview guide developed in consultation with academic supervisor; whetted in Bangalore by a manager in a software firm and a qualitative researcher. Data were analysed using Nu*dist software.	Peer review process undertaken with 6 scholars. A pilot exercise carried out among 50 Scottish software SMEs; 10 participated. No difficulty with phrasing reported. Average time of completion: 15 minutes.	Interview guide developed in consultation with academic supervisor; whetted in Glasgow by a colleague specialising in qualitative research (and its analysis using Nu*dist software).
<i>Nature and Timing of Implementation</i>	Carried out in March 2002.	Phase 1 (email): Jan 2004 Phase 2 (email): Apr 2004 Phase 3 (DCS): May 2004	Carried out in February 2005

Source: The Author

4.5 Conclusion

This chapter outlined the research process, which entails choices of research orientation and method. In this study, a deductive orientation is adopted in light of its stated aim. Nonetheless, in keeping with best practice in small firm internationalisation research, a “mixed” methodology is utilised, with a survey being preceded and followed by case studies. These methods, viz., (a) exploratory case studies, (b) survey and (c) explanatory case studies have been discussed in this chapter in terms of their design and implementation. This design has been formulated with the clear belief that such a hybrid approach greatly enhances the chances of obtaining insight than can be gleaned from purely qualitative and quantitative research; the longitudinal aspect of the case studies, in particular, is deemed to be a strength of the present study. The next three chapters present, respectively, the findings of these three aspects of empirical work.

CHAPTER FIVE

FINDINGS OF THE EXPLORATORY CASE STUDIES

5.1 Introduction

It was noted in the previous chapter that a three-phase design is adopted in the study. The first phase involved undertaking four *exploratory* case studies of software SMEs in Bangalore, India with the following objectives in mind:

- To gauge the appropriateness of the research model (and refine it if required).
- To ascertain the appropriateness of specific network relationships that could be used to operationalise the four types of social capital.
- To provide some insight into the empirical context, and thereby into how questions could be effectively framed in the questionnaire.

The findings from the four explanatory case studies (supplemented by expert interviews) are presented in this chapter, which is structured in the following way. An overview of each of the four case-firms (outlining their origin, internationalisation and future goals) is provided in the next section. Subsequently, drawing on the case studies, a synthesis with the research framework derived from the literature (in chapter two) is attempted. Thereafter, implications for the subsequent phase of research, i.e., the survey, are drawn out. Finally, the chapter closes with a concluding summary.

5.2 Exploratory Case Studies (March 2002)

The four case studies are discussed below, in each case under three sub-heads: (a) origin, (b) internationalisation (with special reference to growth and mode), and (c) future goals. The sequence of the cases follows in alphabetic order.

5.2.1 Exploratory Case Study of Ekomate

Origin: Ekomate was founded in 1996 by Tom Thomas, a computer engineer who obtained an MS at the University of Texas in Austin upon his return to his hometown of Bangalore. The son of an entrepreneur, Thomas felt that starting a business would be considerably more remunerative in comparison to employment. Moreover, he had acquired some work experience in Intel, while in the US, and was acutely aware of the great potential of the Internet.

He was therefore keen to start a company that would “enable [client] companies to get on the Web”. According to him, when utilising Internet technology, companies “not only have the public side [i.e., a Web site] that any visitor would come in and see but also a private side where their customers, suppliers and vendors also interact through the Web”. His company, Ekomate, works in this area as a software services company.

One of his main dilemmas, however, has been the choice between focusing on a few core areas of competence and diversifying the portfolio of technologies on the basis of client needs. With a view to keeping customer loyalty, he has chosen the latter option:

“Probably we maybe could have looked at some particular domain, like healthcare, whereas we have always been working for client requirements. I guess that’s the thing: do you want to be a generalist or a specialist? We are a generalist – I wonder if I should have specialised in one particular core domain. But surviving would have been difficult in that case... The client will be working on one technology, and then they say we are exploring this, and then you actually pick up that technology. You are actually shifting based on his needs. That is my point about generalists and specialists. If you are a specialist you will say I am doing only this thing for you, if you want that go to someone else. But I am willing to do that. That’s the point.”

Internationalisation: While Ekomate initially got business from domestic clients, Thomas was actively seeking business in the US through his professional contacts in that market. He secured his first US contract in 1998. However, just before this (in January 1998), he unexpectedly won a contract to develop software for a client in another foreign market, viz., the UK. This transpired when a British entrepreneur running a software SME in the UK learned of the emerging software industry in India through a documentary, and proceeded to identify prospective software firms in India through an Internet search engine. He subsequently short-listed some of these companies after having engaged in email correspondence initially, and visited each of them in India. Ekomate was selected; apparently the British entrepreneur was particularly impressed by Thomas’ speed of email replies. As of the date of interview (March 2002), fully 90% of Ekomate’s revenues came from overseas.

The international clients that Ekomate serves tend to be SMEs in the software arena who outsource some or all of their software programming to Ekomate:

“[Our clients are] basically small to medium firms – IT firms, essentially. We have one of their tech people interact with us and we develop to their specifications. We have seen that working with the end-user is very difficult, as a small firm. We cannot afford to send people there and get specs.”

Thomas pointed out that he was aware of his high dependence on the US, which he sees as his most important market, and wanted to diversify his market portfolio.

However in this regard he felt that language was often a barrier; thus the UK was an obvious second choice, whereas other large markets such as Germany and (especially) Japan were seen as difficult to penetrate. He talked of his targeted markets in the following way:

“Definitely the US market because they adopt technology very fast. And all the trends are being driven from there. Followed closely by Europe, I would say – especially the UK because it is English-speaking and easier to break into. We have done some work for Germany also. It has not been the level we wanted to achieve. We wanted to do much more...I think Japan is a lucrative market from what I’ve seen, but those I have seen who have succeeded in Bangalore are only people who are married to Japanese, or have lived there, or something or the other. I think it is very hard for a company to just go in and break into Japan. It takes years.”

Future Goals: In light of the slowing down of the US economy in 2001, compounded by the terror attacks, Thomas felt it imperative (as noted above) to diversify his portfolio of markets and not rely heavily on the US, the most lucrative market for Indian software firms and also the market where he has the most network ties. He made a visit to New Zealand in 1999 (albeit without managing to actually sign up any business) and had plans to visit Britain, and especially Scotland, during the following year (i.e., 2003). Thomas is very clear that international growth is synonymous with the growth of his firm. He says, “If I have only Indian customers, then I cannot make payroll”.

Furthermore, Thomas alluded to the importance of network relationships, including those that he gained access to through networking organisations such as The Indus Entrepreneurs (TiE)⁶:

“Because I think today it’s more about “coopetition”. Lot of companies similar to us, lot of entrepreneur-driven companies, I know. I am a member of TiE, the Indus Entrepreneurs, started in the Bay Area, and it has come here to Bangalore. And there you are a member as an entrepreneur, not as a company – as an individual. So you find that lot of us individuals come together and network and we get very good speakers.

⁶ Discussed in Chapter Three (Section 3.4.3)

Our president this year was Nandan Nilekani⁷. It's quite a good forum. You know, we always come across these situations where we exchange ideas with our fellow-entrepreneurs and say, "Oh, I am in this space and so if anything comes up and I cannot do it I will pass it on to you or we can work together". We meet once a month – networking meeting...when you go to these TiE meetings or STPI [i.e., Software Technology Parks of India] meetings they are always trying to increase the exports, they are always trying to get us to look on the positive side. We can always be discouraged and say, "We will cut back, we won't expand, etc". And they say, "Hey, you know it's a happening thing. People are going to need technology sooner or later". Very encouraging I would say, very encouraging."

He also believed that there was potential for more joint activity among firms:

"Well, there can be more of a bunching together of businesses like ours, as a kind of cooperative network on the Net. Let's say small service firms in this space from Bangalore [bunch together] and there is a site, and a company from the UK gives a project, we can actually work on different parts and do it together. Today there are big players in this space probably like NeoIT and eLance, that are doing it on a global level for different types of businesses. They are all in the Bay Area, and what these companies do is on a global level. But may be if you had a geographically differentiated service, like one for Bangalore, then may be you would see lot more projects getting done. It will help you in marketing."

Ekomate came across as a 'typical' Indian software SME (based on expectations from the literature on the Indian software industry), run by an entrepreneur with an exposure to the American market, ambitious for further growth and keen to leverage network relationships to achieve such growth. From observations made at the company's offices (situated within the entrepreneur's house, although he was seeking new office space elsewhere), it appeared that Ekomate portrayed the image of a professional, yet down-to-earth firm.

5.2.2 Exploratory Case Study of Mitoken

Origin: Mitoken was founded in May 2000 by a team of four engineer-managers, three of whom worked previously in the Indian (Bangalore-based) subsidiary of

⁷ Nandan Nilekani is CEO of Infosys, one of India's best-known and respected software firms (Khanna and Palepu, 2004).

Motorola. The leader of the team, Srinivas Pannala, assumed the role of CEO; the other three co-founders were designated, and responsibilities assigned, as follows:

Table 5.1: Designations/Responsibilities of Mitoken's Top Management Team

Individual	Designation	Responsibilities
Srinivas Pannala	Chief Executive Officer	Responsible for the overall vision and goals
Shishir Pathak	Chief Operating Officer	Leads business in the UK/ Europe
Seshadri Iyer	Vice President	Responsible for the firm's US office
Boopalan Padua	Chief Marketing Officer	Responsible for marketing and sales

Source: Company Web site

The founding team of Mitoken appears to be distinctive among the four case-firms in at least three ways. First, all four team members have a very strong 'pedigree' in terms of their educational background, which is highly prized in the Indian context; their postgraduate qualifications are from premier Indian and foreign universities, as indicated below:

Table 5.2: Postgraduate Qualifications of Mitoken's Top Management Team

Individual	Postgraduate Qualification
Srinivas Pannala*	MBA, Indian Institute of Management, Bangalore
Shishir Pathak	MBA, Indian Institute of Management, Ahmedabad
Seshadri Iyer	MS in Software Engineering, Carnegie Mellon University; MBA, Northwestern University (Kellogg)
Boopalan Padua	MBA, Indian Institute of Management, Bangalore

*Also holds a BTech (Hons) in Computer Science from the Indian Institute of Technology, Kharagpur

Source: Company Web site

Second, the connection to a multinational subsidiary is unique; part of the intellectual property (IP) that the firm was founded to exploit commercially was developed within Motorola's Indian subsidiary, which is also a corporate sponsor of Mitoken. In effect, this firm was thus 'incubated' by Motorola India.

"...companies like Motorola are quite interesting. What they have done is enabling people like us. They are saying, "Fine, it doesn't fit into the mainstream of the kind of software we do, but we understand that you have an interesting idea. Let me back you to a certain distance, and I want to take a stake in your company. Motorola is another company which has really encouraged us quite a bit on this."

Third, and related to the previous point, this is a company that focuses exclusively on software *products* rather than on services, and is thus part of a minority of software firms in India. Mitoken's products are targeted at the software industry and seek to help companies to better manage their own software projects.

“Actually we found that most software companies, not just in India, worldwide are poor users of software. It's part of the evolution of the industry. We believe now the industry curve worldwide is from nascent to growth stage. In some stages it is advanced stage of growth. It is at these times that productivity enhancement tools, business processes, automation tools are absorbed by the industry. If you look at any other productivity...other verticals like manufacturing or processing industries it's when the industries are relatively stabilised that's when the next yard of competitive advantage is going to come from productivity enhancement. Because gross inventions are almost not there anymore, right, so one has to manage the bottom-line and there's a fight for market share.”

In this regard, one source of frustration comes from a difficulty to attract the ideal calibre of employees.

“It's really hard to find good people. Those who understand the context of developing a product out of India. Because this is make or break for us. Because if I have a good product I can even co-brand my product with some other established name. And another thing is that our customers are very discerning customers. They are themselves software people. You don't go and sell to them...you kind of go and work with them.”

Internationalisation: As of the date of the interview (March 2002), Mitoken had no business from overseas. However they were in the process of concluding a six-month sales cycle with a prospective client in the US. Since inception, Mitoken had gained seven Indian customers. Mitoken's approach was to treat these customer relationships as learning relationships whereby product-related feedback could be obtained and the technology fine-tuned before the firm actively sought business from abroad. One corporate adviser of Mitoken had even voiced his opinion that, based on his knowledge of the Korean market, there would be a market in South Korea for their software products. However, Pannala and his team desisted from entering that market

as they felt it would be premature to do so before setting up overseas distribution and service support.

Nonetheless, the international intent of the company was very evident from the fact that it had conducted a feasibility study in Chicago and was using AIESEC⁸ trainees to gain prospective customer feedback. To this end, the role of network relationships are vital, especially for obtaining advice; often this entails leveraging his contacts' contacts as well as his own.

“Let’s say I talk to some of our corporate finance advisors. Now they put us touch with this person in the Bay Area. He has been involved in starting IT companies. He’s been a serial entrepreneur, he knows a few things. We get into an email dialogue with him. Then we see the situation: can he step in as an advisor? Or does he want to remain as a friend, philosopher and guide? So the dialogue develops. And then there are some of our own people, for example, one of my friends is the Deputy CFO of a company in the Bay Area that has raised \$35 million venture funding. So I get into a dialogue with him on what’s the best time to approach certain kinds of VCs. What’s the best time to step into the market? So it’s an informed opinion that I am getting from people who are stationed at various places.”

Future Goals: Internationalisation during the remainder of 2002 was seemingly the immediate concern of Mitoken. One of the four co-founders, Seshadiri Iyer (who, along with Pannala, was interviewed), was going to move to the Chicago area, where he had connections through his education at Northwestern University, to develop business for Mitoken. Pannala envisaged a ‘cluster-by-cluster’ approach to software markets worldwide, beginning with Chicago, New Jersey and Boston and eventually the Bay Area (San Francisco). The relative urgency in the CEO’s mind with regard to internationalisation is evident from the following comment of his:

“As I said, starting June or May fourth week we will be attacking the US market. We are hoping to close 6-8 customers in the US by this calendar year, December. We have a few targets from the venture capitalists for the years ahead...From May third week

⁸ AIESEC is the French acronym for Association of International Students in Economics and Management, which provides opportunities for its undergraduate student-members to gain hands-on experience of management, notably through short-term ‘traineeships’ in companies based overseas.

onwards it's all about internationalisation. We are using the customers in India to dictate the road map, to ensure the product is scalable to meet the needs of global customers and necessarily because of this, local customers get a very attractive package. Because they are our growth/role partners, so to say. In terms of pure sales, [it] will happen only June onwards with international customers.”

Ultimately international success was linked to the ‘bigger picture’, the CEO’s vision to achieve global success. He said:

“The Internet is a chance where we can become a global product company. I am confident, our vision is to be a global product company. We are not just fighting for getting customers out of India or US. We have to be a world leader in our work. Now unless we believed that we could do this out of Bangalore using [the] Internet we would not have done it. A good place would have been Bay Area – sit somewhere in the Bay Area and develop the products. Because it gets us so much recognition. So if a small company out of Bangalore does not use Internet, it’s losing a quick way of scaling up very fast in terms of product development, getting customer feedback, reaching out. See, a person sitting in Bangalore can give 10 demonstrations using the Internet in one day, and it’s impossible to do that if you go on a client by client basis. We are thinking of increasing the number of demos – live, parallel demonstrations that can go on. So I need not be there to guide it; it’s there, available.”

In many ways, Mitoken conveyed the impression of a promising company poised for international success. It appeared to be endowed with a unique mix of resources, in terms of intellectual capability (knowledge intensity) and pedigree (social capital), not to mention great ambition. From observations made at the firm’s offices (which were well-appointed and had a roof-top cafeteria), it appeared that Mitoken had the image of a start-up at the cutting edge of technology.

5.2.3 Exploratory Case Study of New Creation

Origins: New Creation was founded in January 2001 by Ashish Raichur, a software engineer who decided to move back to India after spending a decade in the US. As he recounts:

“...we were planning to move back to India in due course; we had this long term plan to come back to India. In fact, we had set January 2000 as a target, so we were in that process. In fact I was applying for jobs to various companies here. I went to interviews and so on. So I really never thought of setting up a company, having to deal with

employees. I never even thought of having to do it, immediately at least. There were no expectations set...So I came back.”

However, Raichur, who was exploring employment options in Bangalore, was given the opportunity to carry out a software project by a former client in the US and used that as a basis to start his firm. He says:

“I had two options – either to work for people I interviewed for or was going to interview for, or to start the company, and I decided: let’s go this way.”

By the time of the interview, a total of six software developers had been hired and a second project undertaken. Raichur has been frustrated by his difficulty to find high quality developers, which he feels is partly hampered by his inability, as a new and small player, to attract higher calibre professionals, a problem perhaps accentuated by his unusually limited local networks.

Another source of frustration has been the bureaucracy of India as evident, for instance, in dealings with the Software Technology Parks of India (STPI), an entity established to facilitate market-seeking internationalisation on the part of Indian software firms. Raichur does acknowledge, however, that STPI does make genuine efforts and does have its benefits.

“One thing that I find very difficult over here is trying to get things in place. Now we are about to move into the new office. To move things out of this office (i.e. STPI clearance) to two blocks down the road to new office space will probably take us a month...Because of all the formalities, we have to send a piece of paper to STPI for them to approve it. It takes a week. Then we need to get customs approval, which can take another week. What can be a one-step process has been broken into 3 steps... STPI definitely tries and encourage the member companies to interact and invite them to these various conferences and trade shows.”

Internationalisation: It is not possible to discuss the development of New Creation in isolation from its internationalisation, since both the key software projects (a

second project had been secured from the US, in addition to the original one) that the firm was working on at the time of the interview (March 2002) accrued from Raichur's contacts in the US.

Raichur believed that the future growth of the firm depended on his continuing to get business from abroad. To that end, Raichur was actively seeking new business opportunities primarily through Internet-based 'hub' sites such as one run by the *Economist* magazine and another by a company called NeoIT. He said of his experience with the Internet:

"We've been at least able to identify potential customers, at least have a presence on their table. At least they get to know our name. We can try and market ourselves without having an office anywhere else. I don't need an office in the United States to market to US customers."

Another means being utilised was the use of a new business development contractor, who would represent non-conflicting businesses on a trip overseas (in this case, the US) with a view to getting new business for them on a commission basis. The following is Raichur's description of the arrangement.

"He is going to be mainly in the New Jersey-New York area. So he is going to try to get as many clients as he can through his own network, his own contacts. And depending on who they are, he will try to represent the appropriate company for them. For example, if that company is involved in embedded technology, and he already has another business he is representing whose core focus is embedded technology, whereas embedded technology in our case is more of a wish-list – we want to get into embedded technology. He would then represent that company instead of us. Whereas if there was a client needing ecommerce type of work, then he would represent us because that is our primary strength, an area where we already have existing work. So that's what he's going to do, and we don't lose anything."

In sum, it can be seen that internationalisation is an integral part of New Creations means to achieving growth; at the time of the interview this was being sought without having to establish a 'presence' in any foreign market.

Future Plans: Raichur's priority was to actively seek projects from overseas, as indicated earlier. Furthermore, he stated his openness to eventually exploring the local market for high-end Java⁹ training; this was partially a reflection, he said, of his concern about the quality of manpower. As he says:

“There's nobody who's doing the kind of training that we need for a person to have to come in and start working, to build real systems. They can write some little code, but that's not how you build a real system. A big gap between what training institutes are delivering at the moment and what is required to come in and start building an industry-strength application.”

Additionally, Raichur indicated that he was (passively) exploring the possibility of leveraging projects to create products; i.e., using software code generated from bespoke software development for a client. He, of course, pointed out that copyright arrangements for the software code would have to be appropriately worked out with the client at the outset for this to be feasible. This, however, did not at all seem to be a priority, in comparison with the international growth-seeking objective. In his own words:

“We will be continuing as a services company. So we will build that services area. And again, this is all things being equal...At this moment I don't see us putting money into going into the product development genre. If some opportunity comes where we can build a product for a particular customer, which we can make eventually into a product, we get paid as we build it and we can also use it as a product.”

Equally, however, Raichur was clear that he would be taking a cautious approach, unlike the ‘big bang’ approach that he had observed in some other US-returned Indian entrepreneurs; for instance, a contemporary of his had sunk \$100,000 in office space and was bankrupt within 12 months, as recounted below:

“I have heard of another contemporary of mine, who studied in the US, came back at the same time as I did. He put 40 lakhs [i.e., 4 million rupees] in setting up an office.

⁹ Java is a programming language, described by Sun Microsystems – the company that created Java – as allowing software developers to “write powerful, enterprise-worthy programs that run in the browser, from the desktop, on a server, or on a consumer device” (Source: <http://java.sun.com/overview.html#1>).

The same time, I started in a garage. At the end of the year, his business is out – no more business. He has invested all this money in setting up an office space. I guess he started pretty big...But here our approach has been a garage...it's a cautious approach to build for the future.”

New Creation was clearly at a very early stage of its existence, but once again an interesting example of a venture founded by a ‘returnee’ from the US, with predictably strong ties to the American market but noticeably deficient in terms of local ties; to an extent it represents, like Ekomate, a somewhat ‘typical’ case of an Indian software SME with a clear international vision from inception. From observations made at the company’s offices (located in a garage adjacent the entrepreneur’s house, although it was shortly moving to new premises), it seemed that this was a simple start-up with a ‘no-nonsense’ attitude.

5.2.4 Exploratory Case Study of Vikas Global

Origins: Vikas Global was founded in 1995 by Venkata Chalapthy, an engineering graduate. He attributes his action to “the fire in [his] belly”. Neither keen to study further nor take up employment for anyone else, Chalapathi started Vikas. Unlike the other three entrepreneurs, Chalapathi is not a graduate of either a foreign or elite Indian university. Despite the firm’s name, only 20% of Vikas Global’s revenues accrued from overseas at the time of the interview (March 2002).

Chalapathy believes that much has changed in terms of the business environment since the founding of his company. He stated, “Every month I am witnessing many changes.” He refers to “the constant innovation of technology” that has enhanced possibilities for firms to engage in business from a distance; equally the challenge for technological companies to thrive in a volatile environment. This leads to a paradox;

on the other hand, he argues for the need of remaining consistent at the core. As he says, “Very few stick to their knitting and say, this is what they’re all about.” On the one hand, however, he speaks of needing to adapt to change:

“I can’t be keeping my business as a constant model. I have to change my business model...I can’t be hanging to a banyan tree that my father has sown the seed of.”

Compounding the challenge is governmental bureaucracy. Like some of the other entrepreneurs, he has complained of his frustration from dealing with the government. He says: “It’s more of the mindset of the people, of a bureaucracy. Even whatever the rights we are supposed to have, it won’t come easily. You have to fight for it. That’s life.” Furthermore, he adds:

“Government agencies – you know India, how it works. It’s a very tedious process, and very maddening, especially for the entrepreneurs in India – I do not know about other countries – it’s only a rough passage. I can’t be saying at any given point in time, it’s a smooth sail passage. It’s really a rough ride.”

Internationalisation: Vikas Global’s first international business contract materialised in 1998, through unsolicited business from Australia (in a remarkably similar manner to Ekomate’s initial business contract from the UK). Thereafter, Vikas Global has apparently been able to leverage the Australian client to obtain enough business to lead him to start a one-person office – which he referred to as a “one-man marketing army” – in Australia a month before the interview was conducted (in March 2002). Chalapathi stated the view that he would be a “fish out of water” in highly competitive markets such as the US and wished to therefore consolidate his position in the Australian market, with a subsequent interest in New Zealand, South Africa and Zimbabwe. In his words, “When everyone looked in one direction (i.e., at the US market), I looked in another”. This is consistent with his

overall approach: “I look at [the world] very unconventionally, most of the time. Whether it is right or wrong I do not know [laughs].”

Chalapathy’s reaction to his first international business order is not ecstatic:

“I felt the same, because three gruelling years I had gone through in India [laughs]. So it didn’t make much [difference]. May be money wise it was quite good but not [as far as] the order was concerned, because anywhere, any part of the world, you see the business structure or business model. It has to be the same. Just because I have a foreign contract I can’t be jumping around. Just because the Indian orders, money-wise, aren’t good, I cannot be doing an injustice to them.”

However, he is very vocal about the great difference he perceives in the professionalism of Indian (client) firms compared to their foreign counterparts. He said:

“The local firms have, as such, no commitments. There are no standards. People don’t have standard structures, still. We are very, very, very far, far behind international standards [from] what I see...there is no standardisation. [But] with the majority of [overseas] clients, what they are talking about is well documented. Well documented, I repeat. And they know what is required.”

Thus while only 20% of Vikas’ business at the time of the interview (March 2002) emanated from abroad, it could be speculated that he would be keen to enhance that proportion with a view to dealing with more professional (and presumably therefore less stress-inducing, as well as more lucrative) clients from overseas.

Future Goals: Chalapathy did not directly or vocally evince interest in enhancing international growth but however alluded to it by stating that a key thrust over the next three years would be the development of IP to target the biometric device market (e.g., security devices currently used by American immigration authorities to check an individual’s fingerprints). Clearly, this indicates a desire to tap into sophisticated Western markets through highly knowledge intensive offerings given

the highly limited scope to profit from such offerings within the domestic Indian market.

This was clearly an ambitious goal, calling for a significant change on the part of Vikas. For the first time, a research and development budget amounting to 8-9% of the total revenue would be allotted toward this effort. Furthermore, it was clear that Chalapathy was hoping to gain more revenue from the Australian market, including through the future plans (for the biometric market), as evident from the one-man office that had just been opened in Australia.

It appeared that a vital element would be alliances that Chalapathy could forge to achieve his stated goals. Toward this end, he emphasised the need for achieving synergy. As he observed:

“Depends on what you [i.e., the alliance partner] are, what I am, whether we can synchronise between [us]. Suppose I go to your company; you have a marketing capability and I have a technology capability, for example. You may be the henchman to drive the whole business model. I may be a background implementer. I am having some strengths, you have some strengths. What you have, you will try to hire it out to me, right? [What matters is] whether we can synergise there, [in a way] that makes sense.”

On the whole, the company portrayed a rather ‘local’ flavour with limited exposure to international markets, albeit with a clear vision to transform itself (at least partially) over the next few years. From observations made at the company’s offices (very spacious but away from the business district, bustling with activity on a Saturday morning; even Chalapathy’s cellphone rang more than once), the firm conveyed a rather busy but less sophisticated image, in contrast to Mitoken.

5.2.5 Synthesis of Case Studies and Supplementary Expert Interviews

Given the limitations of multiple interviews being generally neither feasible nor (culturally) appropriate in the case of the four case studies discussed above, supplementary expert interviews were conducted as suggested by Perry (1998). Consequently, 15 interviews were conducted, with similar objectives as for the four case-studies viz., to refine the research framework if appropriate, to facilitate the operationalisation of the social capital variables, and to obtain insight into the empirical setting in order to guide the formulation of the survey instrument.

As these interviews were undertaken to illuminate better the context within which the four case-firms operate (based on Perry, 1998) the analysis of the interviews was not fine-grained and observations are made in aggregate form. One important benefit of these interviews was in terms of gaining understanding of the rise and development of the software industry in India, which has informed the relevant sections of Chapter Three on the study's empirical setting. In addition, the following five observations have been extracted from the experts' comments.

The first observation pertains to inter-organisational linkages within the Indian software industry. Little sub-contracting activity by large firms to SMEs was believed to take place. This is in contrast with, for instance, the automotive industry in Detroit where a large number of SMEs have emerged that serve one or more of the large automotive companies.

The second observation pertains to knowledge intensity of Indian software SMEs. Concern was expressed that many of these firms do not engage in high-level software programming. Nonetheless, the point was made that a few software SMEs *do* have niche areas of advanced expertise; these are however exceptions rather than the norm. (It would appear that Mitoken is one of them).

The third observation, somewhat related to the first, pertains to the paradoxical difficulty for Indian software SMEs to achieve high growth, in comparison to their much larger counterparts. Contrary to conventional wisdom that states that larger firms grow more slowly in comparison to SMEs, it was pointed out that the larger firms were enjoying healthier growth rates in general owing to their credibility and consequent trustworthiness that was attracting growing revenue from abroad. By contrast, SMEs struggle to obtain business due to their relative anonymity.

The fourth observation, on a more positive note, is that India's major strength *is* its pool of skilled manpower; there is a large amount of talent available. This, however, contradicts comments made by the CEOs of Mitoken and New Creation, who expressed difficulty in attracting suitable talent. It must be realised, however, that both are young firms that perhaps suffer from a "liability of newness" (Zahra, 2005), and struggle to compete with better established firms in the labour market. This may in fact apply to SMEs more generally who are hence in a somewhat vulnerable position vis-à-vis the dominant large players.

The fifth observation pertains directly to the empirical setting in terms of the proposed survey. With regard to a database of companies, it was suggested that the most reliable resource was the annual directory produced by the apex industry body, Nasscom. With regard to the survey instrument, the academics interviews said that (a) postal surveys would not be well received; instead, email and/or face-to-face administration would be more effective; and (b) the questionnaire would have to be brief (2-4 pages) in order to increase the chances of response. Furthermore, it was mentioned that recent surveys among Indian software firms had resulted in a response rate of approximately 10%; however in the case of a survey endorsed by the STPI, the response rate was 20%. Thus endorsement from a credible local individual or entity was likely to be advantageous. Overall, a rather pessimistic picture was painted by the interviewees; SMEs were said to be secretive, wary of research especially when carried out by scholars based overseas and of the view that academic research generally had little value to them.

Synthesising the foregoing discussion of the four case studies with the expert interviews, a set of five salient themes are identified below:

First, international growth was considered to be a prime means of expansion. Perhaps, international growth is more acutely required for firms in developing countries when the domestic market – as in the case of the software industry in India (Arora and Athreye, 2002) – is rather small. As for modal commitment, two firms were in the process of setting up a presence or had just established a presence in their lead markets (Mitoken – USA; Vikas Global – Australia); another firm was also

seeking to establish a presence with a view to limiting its reliance on the US (Ekomate – UK). As such, internationalisation was seen to be important for Indian software SMEs. However it was pointed out by the experts that this desirable international growth and expansion of presence was more difficult for small firms than for the large established players.

Second, Indian software SMEs appeared optimistic about their internationalisation prospects. Despite palpable frustration with bureaucracy on the part of the government (for instance, in relation to infrastructure) and governmental entities such as the STPI, India's success in software exports was seen as a significant accomplishment and a source of great confidence for firms. Furthermore, the emergence of information technologies such as the Internet has given firms the confidence of possessing global reach, resulting in a strong endeavour to internationalise. Once again, however, the long term prospects of these firms must be tempered somewhat by expert observations, which indeed enhance the importance for Indian software SMEs to enhance their internationalisation.

Third, networks appeared to be of paramount importance, with reference being made to the importance of obtaining referrals through relationships (Ekomate, Mitoken, New Creation, Vikas); learning through customer relationships (Mitoken); and advice, including about timing (Mitoken). When there is interaction “at the same wavelength”, firms develop network relationships that are mutually beneficial (Vikas). Of course, in this regard, serendipity could also play a fairly important role in the internationalisation process as evident from the unsolicited business from the

UK for Ekomate and from Australia for Vikas, or indeed the very opportunity to start a firm that resulted in the founding of New Creation. Nonetheless, such ‘good fortune’ could always be capitalised upon to enhance networks in foreign markets, as in the case of both of these firms. Also, firms were conscious of differences between types of relationships, particularly on the basis of geography; local firms were seen to be quite different from foreign firms and possibly of less potential benefit vis-à-vis internationalisation, with the exception of Mitoken’s ties to Motorola India, a local MNC subsidiary.

Fourth, strong distinction was made between services and product firms; the latter were seen to be more knowledge intensive and very much in the minority in India. In this regard, Mitoken was a relatively unusual case, in that its focus was exclusively on products. There was evidence of some shifts in knowledge intensity in another firm viz., Vikas Global, which was setting up a separate division to develop more knowledge intensive offerings for the biometric market; also, New Creation was open to product development, albeit more passively, if an opportunity arose to leverage a bespoke project. These developments suggest a gradual change in the experts’ observations that Indian software SMEs tend to be largely unsophisticated and need to therefore “move up the value chain”, which would be difficult for all except the largest companies on the one hand, and most focussed SMEs on the other.

Fifth, and counterbalancing the second point (as already alluded to), there are liabilities of being young and small for firms; they are particularly hard pressed to attract the calibre of human resources that they seek, and to cope with bureaucratic

red tape. The vulnerability of Indian software SMEs seems to be compounded by the competition from, and poor linkages with, large Indian firms, as gleaned from the expert interviews. Thus it would be even harder – but perhaps therefore even more imperative – for Indian software SMEs to effectively leverage their market knowledge, knowledge intensity and social capital to enhance their international growth and, where appropriate, modal commitment. The four case studies have provided evidence that despite experts’ pessimism, there was reason to believe that SMEs are managing to internationalise with reasonable success; their long term effectiveness will however be characterised by the challenge of being resourceful in light of competitive and other environmental pressures. The role of market knowledge, knowledge intensity and social capital are vital in this regard, as evident from the following section, prior to which the following table summarises the foregoing discussion.

Table 5.3: Summary of Exploratory Case Studies

	Ekamate	Mitoken	New Creation	Vikas Global	Synthesis
<i>Market Knowledge</i>	In general high with respect to USA	In general high with respect to USA, although no experience	In general high with respect to USA	Moderate in case of Australia	Provides confidence in achieving growth; motivation to set up a 'presence'
<i>Knowledge Intensity</i>	In general low, as primarily services-oriented	Distinctively high through product-orientation	In general low, as primarily services-oriented	In general low, as primarily services-oriented	Growth becomes an objective and modal commitment a consequence
<i>Local Bonding Social Capital</i>	Moderate; no significant international impact	High; but primarily technical impact	Negligible local connections	Moderate; no international impact however	In practice, local ties seem less influential than foreign ties in internationalisation (although potentially they too could play a role)
<i>Local Bridging Social Capital</i>	Low; little evidence of MNC ties	Distinctively high through unique link to Motorola	Negligible local connections	Low; little evidence of MNC ties	
<i>Foreign Bonding Social Capital</i>	Moderate to high; ethnic ties actively sought; potential access through TiE	Moderate to high; e.g., alumni ties in Silicon Valley	Moderate; ethnic ties influenced one international project	Low; no leverage of ethnic ties indicated	Bridging social capital seems to be more influential in relation to growth, bonding social capital in relation to modal commitment.
<i>Foreign Bridging Social Capital</i>	Moderate; through, for example, UK's unsolicited business	Low (not apparent)	High; strongly leveraged for international business	Moderate; through, for example, clients in Australia	

Source: The Author

5.3 Linkages to the Research Framework

The first stated objective of the four case studies was the refinement of the research framework. In this section, each of the main variables in the research framework are discussed in turn, in relation to the four firms' experiences. The next section (section 5.4) deals with the other two objectives, both of which pertain to implications for the next stage of primary research, viz., the survey.

5.3.1 Exploratory Case Study Findings on Market Knowledge

Eriksson et al (1997) have identified three dimensions of market knowledge viz., business knowledge, institutional knowledge and internationalisation knowledge. Business knowledge pertains to knowledge about the micro external environment of a foreign market(s) i.e., knowledge about such as aspects as that market's customers, competitors and distributors. Institutional knowledge pertains to knowledge about such as aspects as business laws, cultural norms, regulatory standards and language skills; in other words, those facets of a market that typically lead to psychic distance (Johanson and Vahlne, 2003). Internationalisation knowledge refers to knowledge that leads to an ability to develop and implement an internationalisation strategy.

The first two types of knowledge are thus market-specific, i.e., a firm may have a large stock of such knowledge in relation to some markets but not others. With respect to the four cases:

- Ekomate appears to have high a high level of knowledge on business and institutional knowledge in relation to the US and on internationalisation knowledge, in general.

- Mitoken appears to be very similar; in some ways its internationalisation knowledge appears very high, at least in terms of strategy, given the careful thought that has gone into its internationalisation strategy (e.g., the ‘cluster-by-cluster’ approach). It of course had no experience in implementing the strategy at the time of the interview.
- New Creation is once again similar to Ekomate; however, in all of the three cases (i.e., Ekomate, Mitoken and New Creation), given the vast size of the US market, their business knowledge may be *narrow* in terms of pertaining to a sub-national region (e.g., the Texas region for Ekomate; the Chicago area for Mitoken and the New Jersey area for New Creation). Given the recent origin of the firm, it is difficult to gauge its internationalisation knowledge, but there is some evidence from its attempted leverage of the Internet to enhance international growth.
- Vikas seems to have noticeably less business and institutional knowledge in terms of its main market, viz., Australia given the lack of the entrepreneur’s *personal* international experience, although its stock of such knowledge can be expected to rise following the establishment of the Australian office. While there is generally little evidence of the firm’s internationalisation knowledge, it has been shrewd to avoid intense competition.

From the above discussion, it appears that, consistent with the literature, market knowledge influences international growth by moderating resource allocation/commitment. Furthermore, it seems to increase *confidence* and/or *motivation* to set up an entry mode that goes beyond mere exporting (i.e., one which

gives the firm a ‘presence’ in the foreign market) and subsequently, potentially, triggers a *virtuous cycle* whereby enhanced modal commitment enhances the extant stock of market knowledge over time. Perhaps, therefore, there is some *threshold* level of market knowledge beyond which a firm evolves from being a pure exporter to a micromultinational (mMNE).

5.3.2 Exploratory Case Study Findings on Knowledge Intensity

The point has been made that while some industries (e.g., software, biotechnology) may be more knowledge intensive than others, within these industries, the knowledge intensity of individual firms – as evident from technological reputation, focus on innovation and qualification of employees – can vary within a knowledge intensive industry (Autio et al, 2000). This study is concerned with such firm-level knowledge intensity, in relation to its effect on growth and mode. Evidence from the case studies suggests the following:

- Ekomate has operated primarily as a *service* firm, which may be generally deemed to be less knowledge intensive than a product firm; furthermore, it has opted to take an ‘emergent’ approach to technologies based on client needs, and consequently sees itself as a generalist, rather than a specialist.
- Mitoken clearly stands out in terms of its level of knowledge intensity by virtue of being a product player; also, clearly, it sees its knowledge intensity as making it possible to achieve global success and therefore achieve substantial profitable growth; thus, consistent with the literature, knowledge intensity is an enabling resource of the firm. It also appears that greater knowledge intensity makes it *desirable and/or necessary* for the company to go beyond exporting and set up a

sales office with some *presence* in lead markets (Berry, Dimitratos and McDermott, 2002). Thus growth seems to be an ‘objective’ *enabled* by knowledge intensity and mode, a ‘consequence’ of knowledge intensity.

- New Creation, like Ekomate, cannot be deemed to be highly knowledge intensive, given its service focus. It stated a moderate, and apparently ‘laidback’ openness to create a product if feasible through a client project and there was no indication of this being a near-term priority. However it supports the notion that higher knowledge intensity is associated with growth (and is hence desirable) and also with higher modal commitment, which is *required* at higher levels of knowledge intensity. This may well in fact be a deterrent to a firm like New Creation from graduating into mMNE status as it may feel under-resourced and/or disinclined/reluctant for such a shift.
- Interestingly, in the case of Vikas Global, although it is currently no different from Ekomate or New Creation, a separate effort was planned for the near-term to develop IP for the international biometric market, which once again demonstrates the enabling nature of knowledge intensity in relation to growth and the importance of higher modal commitment, given that the Australian market remains its focus. However it is rather difficult to comprehend whether the higher modal commitment has encouraged a shift to a higher level of knowledge intensity or vice versa.

It has already been noted that the case studies and expert interviews revealed the strong perception of a dichotomy between service and product firms, with the latter involving a higher level of knowledge intensity. Thus Mitoken was clearly the most

knowledge intensive firm, as suggested above. It is worth noting at this stage, as briefly alluded to earlier on, that different kinds of ‘*shifts* in knowledge intensity’ could be observed among the case firms. In the case of Ekomate, there was no indication of an inclination to shift to a more productised offering; the main focus seemed to be their willingness and ability to adapt to new technologies that their clients may adopt. In the case of Mitoken, the focus was unwaveringly on product development; thus the focus on products was from inception, as seen. In the case of New Creation, a passive inclination to shift to product development was perceived; *if* the opportunity arose to convert a software project into a product then they would consider it; this passiveness was perhaps indicative of the firm’s (realistic) appreciation of their limitations at this stage in terms of marketing and human resources. In terms of Vikas Global, an active effort was made to focus, at least partially (through one division), on a higher knowledge intensive offering for the biometric market.

5.3.3 Exploratory Case Study Findings on Social Capital

It was noted in the literature review that scholars like Putnam (2000) regard the dichotomy between bonding and bridging social capital to be the most significant typology of social capital. Given the internationalisation-related context of the present study, it was argued in Chapter Two that this typology can be usefully extended to include the dimension of geography, by distinguishing between local (domestic) and foreign (abroad/overseas) social capital. Thus the following four categories of social capital are of interest to this study.

- Local bonding social capital (e.g., from other local IT firms)

- Local bridging social capital (e.g., from MNC subsidiaries)
- Foreign bonding social capital (e.g., from ethnic ties overseas)
- Foreign bridging social capital (e.g., from foreign non-ethnic customers)

In general, from the four case studies, the importance of networks comes through quite clearly, in terms of referrals (Ekomate, New Creation), customer-led learning relationships (Mitoken), advice (Mitoken) and the importance of interacting at a similar wavelength (Vikas).

The following discussion considers each category of social capital in turn, in light of the experience of the four case-firms.

Local Bonding Social Capital

- Ekomate indicated that there were ties emerging through local networking at the Bangalore chapter of The Indus Entrepreneurs (TiE) although nothing concrete had appeared to materialise as yet in relation to its internationalisation.
- Mitoken indicated considerable interaction with local software firms as clients; their role however was primarily technology-refining and did not have any direct link to its (aspired) internationalisation process.
- New Creation had virtually no interactions with local firms.
- Vikas Global mentioned its connections with local software firms, which could potentially supply leads for international business but clearly there had been no such impact on its international expansion hitherto. Thus, on the whole, local

bonding social capital seemed to have no significant influence on internationalisation.

Local Bridging Social Capital

- In Ekomate's case there is relatively little evidence in terms of ties to local MNC subsidiaries.
- Mitoken is perhaps the most striking example in relation to a firm utilising local bridging social capital, owing to its unique origin i.e., of being 'spun off' from Motorola's India subsidiary. The potential impact of this form of social capital is highly evident in terms of being a source of financial capital, technological innovation and international business contacts (and therefore, potential opportunities).
- As noted, New Creation has negligible local connections.
- Vikas Global, like Ekomate and New Creation, appeared to have no significant ties with local MNC subsidiaries.

Foreign Bonding Social Capital

- Ekomate is a striking example of a case-firm utilising such social capital (although it is not the only one to do so), which is evident from both its (a) intended strategy for new markets, where they seek to utilise ethnic ties – in other words, to partner with Non-Resident Indians (NRIs) – suggesting that foreign bonding social capital will have the strongest impact on modal commitment, and (b) from its utilisation of The Indus Entrepreneur (TiE) network, which is a potential link to NRIs in Western countries.

- Mitoken also clearly leverages ethnic ties overseas, such as alumni networks in Silicon Valley; also, the Director going to the Chicago office is effectively an NRI now, with growing links in that region through, among other sources, his association with Northwestern University.
- New Creation indicated that an ethnic tie was instrumental in getting one of the two projects, although neither client is an Indian-run company suggesting that the issue of foreign bonding social capital is rather complex, including ethnic ties within non-ethnic companies; however in this study's survey, for simplicity sake, the focus is upon 'Indian-run companies' as perceived by respondents.
- Vikas Global indicated no leverage of non-resident Indians (NRIs) i.e., ethnic ties, due to a relative lack of such network relationships overseas.

Foreign Bridging Social Capital

- In Ekomate's case, the British client is a clear example of foreign bridging social capital.
- Mitoken did not appear to have such social capital at the time of the interview, although that is what they were precisely seeking as part of forthcoming internationalisation efforts.
- New Creation is a striking example of this form of social capital, as both their clients fall under the category of foreign non-ethnic firm and it appears that *foreign bridging social capital is likely to have its strongest impact on growth.*
- In Vikas' case, their Australian client provides such social capital, although its impact is less profoundly felt (given the low proportion of Vikas Global's revenues from the Australian market) compared to New Creation.

Overall, the very tentative suggestion is that *foreign* social capital is more influential in an SME's internationalisation than local social capital and that bridging social capital is more influential in relation to *growth* while bonding social capital is more influential in relation to *mode*.

Thus, on the whole, the four case studies have been affirming of the research model (which relates to the first objective for the exploratory case studies), and no modification appears necessary. The next section deals with the other two objectives, which have implications for the second phase of research i.e., the survey. Before proceeding to that discussion, some observations are offered in light of the sampling of the case-firms, which was based on age and international intensity. The main differences on the basis of age were twofold. First, the older firms (Ekomate and Vikas Global) recounted instances of unsolicited international business, which the younger firms did not; this however does not seem to be highly significant, but rather reflective of the situation prevailing in 1995-1998 when the Indian software industry was attracting international interest and competition was less intensive. Second, the younger firms (Mitoken and New Creation) expressed difficulty in attracting high-calibre human resources, which again does not seem unusual in the light of the liabilities of newness whilst competing in factor markets.

Differences on the basis of international intensity appear to be of greater interest. In relation to growth, the highly internationalised firms (Ekomate and New Creation) were run by entrepreneurs with educational and professional experience in the US,

which seemed to provide them with both market knowledge and social capital that contributed to growth. The less internationalised firms (Mitoken and Vikas Global) were clearly also seeking international growth in the future, albeit through higher knowledge intensity, thus strengthening that part of the research framework. In relation to mode, similarly it was these firms (with higher knowledge intensive offerings) that had established or sought to establish a presence in their lead markets; moreover Ekomate was keen to do so in the UK, as its market knowledge and social capital in that market increased. Thus the research framework has received some support from the exploratory case studies.

5.4 Implications for Survey Research

One potential benefit of the exploratory case studies was the identification of sets of relationships that could be utilised in the survey instrument whilst operationalising the four social capital types. The case studies have provided some credence to the illustrations for each type expressed in Table 2.5, particularly in relation to the notion that MNC subsidiary ties and ethnic ties represent local bridging and foreign bonding social capital, respectively.

The value of MNC subsidiary ties could be seen quite starkly in the atypical case of Mitoken, which in fact effectively spun out of Motorola's Indian subsidiary. Although an extreme manifestation of social capital arising from ties with local MNC subsidiaries it is clearly indicative of the "bridging" nature of such social capital – in terms of linkages provided to other networks, both in India and overseas. Thus, the Mitoken case in particular appears to justify the focus on MNC subsidiaries

as a potential source of local bridging social capital. This seems to be especially pertinent in light of the observation from the expert interviews that large Indian companies (such as Infosys, Wipro and Tata Consultancy Services) have not made a regular practice of sub-contracting assignments to Indian SMEs. It was of course noted that the local representatives for overseas trade bodies (such as Scottish Development International) could also yield bridging social capital and it was certainly seen that Ekomate in particular, was seeking to build ties with such bodies. However there are more numerous opportunities, potentially, for ties with the MNC subsidiaries, which clearly command considerable resources as seen in the case of Mitoken.

As for ethnic ties, it could be seen that these are extensively utilised and indeed, sought after. Organisations such as The Indus Entrepreneurs could be especially facilitative of the creation and utilisation of ‘ethnic social capital’, which is thus certainly a potential source of foreign bridging social capital. As indicated earlier, such social capital is likely to be especially vital in encouraging Indian software SMEs to establish a ‘presence’ in a foreign market (and thus elevating them to the status of ‘micromultinationals’), by leveraging ethnic ties through joint ventures with varying degrees of formality. Nonetheless, such presence will enhance the opportunity of the SME to cater to the market effectively, gain more knowledge about it and work closely with customers, thus learning from their customer relationships in the process. Thus, the case studies suggest that it is reasonable to regard ethnic ties as a source of foreign bonding social capital.

Finally, in terms of the survey instrument (questionnaire), it became clear from the case studies that respondents will have no difficulty in answering questions in English or questions based on Western scale items, given their linguistic abilities and high level of intellect and education. It however was evident that the entrepreneurs in software SMEs are extremely busy and that, as reiterated in the expert interviews, the ideal questionnaire would be characterised by brevity. This suggestion was subsequently adopted and the questionnaire confined to four pages. Furthermore, there were some direct suggestions from the expert interviews that were adopted for the survey phase of research – viz., utilising the Nasscom directory as a database of companies, administering the questionnaires by email and/or in person, and obtaining endorsement by a local individual or entity with credibility (from a professor at India's premier business school who has ties with the research unit where the present study is based). These details are covered more extensively in the methodology (Chapter Three) and survey findings (Chapter Six) chapters.

5.5 Conclusion

This chapter has reported the findings from the first phase of the three-phase research design discussed in the previous chapter viz., the exploratory case studies. These case studies sought to achieve three objectives viz., to evaluate the research framework, to facilitate the operationalisation of the social capital variables in the second phase (survey), and to gain insight into the empirical setting in terms of carrying out the survey effectively. To summarise, the case studies were undertaken in Bangalore, for both strategic and logistical reasons, among four case-firms varying on the dimensions of age and international intensity. As such, the four entrepreneurs were

highly cooperative and forthcoming about the origin, progress (including internationalisation) and goals of their firms. While in general these firms presented a positive outlook it was noteworthy that expert interviews revealed a more pessimistic view of the prospects of Indian software SMEs owing to the dominance of large firms, which did not have well developed inter-linkages with SMEs.

From the perspective of the present research study, the exploratory case studies have been on the whole affirming of the conceptual work undertaken hitherto and instructive in relation to the subsequent survey work. In relation to the framework, the case studies have shown that market knowledge facilitates international growth (as seen in New Creation's business from the US market); by extension, a lack of market knowledge impedes growth within a market (as seen in Ekomate's experience in Germany). With respect to modal commitment as well, greater market knowledge seems to result in the establishment of a 'presence' overseas, which is characteristic of micromultinationals (as seen in Vikas Global's approach to the Australian market). Similarly higher knowledge intensity leads to, or is expected to lead to, international growth (as seen in Mitoken's optimism and Vikas Global's desire to 'move up the value chain' into the biometric market). Furthermore, higher knowledge intensity seemed to encourage the establishment of a presence overseas (as in the case of Mitoken's approach to the US market). Finally, there were clear signs that network relationships (and the resultant social capital) result in enhanced growth through referrals, advice and opportunities; furthermore, networks could be utilised to establish a 'presence' in a foreign market (as seen from Ekomate's intended strategy for the UK).

Further affirmation for the research framework has stemmed from the indication that MNC subsidiary ties are indeed a potential source of local bridging social capital (as seen from the case of Mitoken's association with Motorola India) and that ethnic ties are a potential source of foreign bonding social capital (as seen from Ekomate's association with The Indus Entrepreneurs and preference to partner with a Non-Resident Indian in the British market). These findings also have a bearing on the second objective of the case studies, which was to inform the operationalisation of the social capital variables where a specific set of relationships would be utilised, such as MNC subsidiary ties and ethnic ties for local bridging and foreign bonding social capital, respectively. In relation to the third objective of the case studies, the implementation of the survey phase has been informed in at least three ways. First, there was clear indication that the most credible database of Indian software companies was the Nasscom directory. Second, it was evident that a brief questionnaire would be appropriate; furthermore, the survey would be best administered electronically and/or in person. Third, the demonstration of credibility (through endorsement) and potential usefulness of the survey would enhance the response. These insights were acted upon in the subsequent survey research, the findings of which are presented in the next chapter.

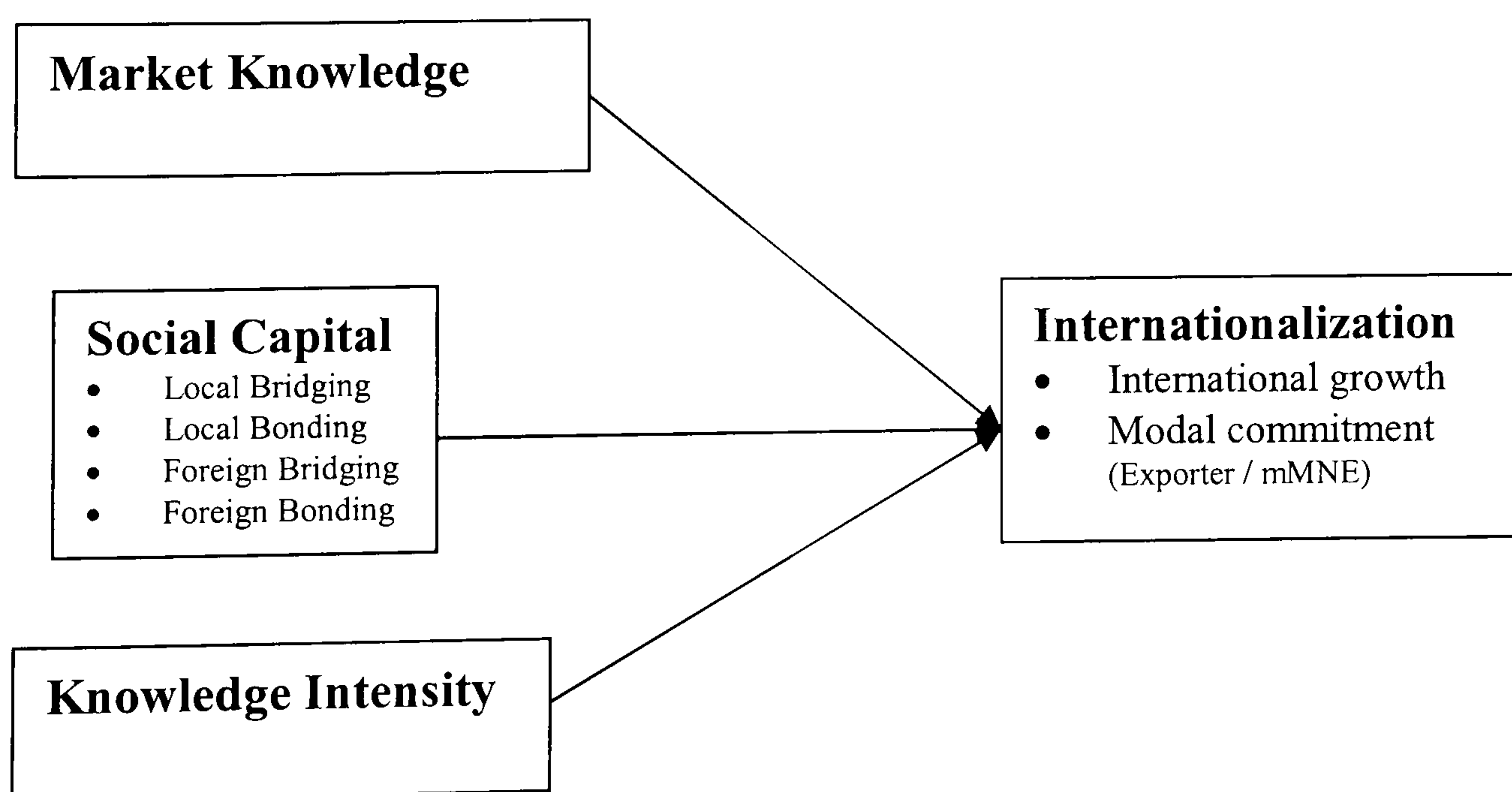
CHAPTER SIX

FINDINGS OF THE QUANTITATIVE SURVEY

6.1 Introduction

This chapter is concerned with findings from the second phase (viz., the questionnaire-based survey) of the three-phase research design adopted in this study; the first phase involved exploratory case studies (discussed in the previous chapter) and the third phase, explanatory case studies (discussed in the next chapter). The review of the literature undertaken in Chapter Two led to the development of a research framework that encapsulated certain hypotheses involving knowledge and social capital variables (as independent variables) and internationalisation variables, specifically international growth and modal commitment (as dependent variables) as depicted below.

Figure 6.1: Research Framework



Source: The Author

The following are the hypotheses tested through the survey:

- Hypothesis 1: Market knowledge is positively associated with (a) international growth and (b) modal commitment
- Hypothesis 2: Knowledge intensity is positively associated with (a) international growth and (b) modal commitment
- Hypothesis 3: Social capital is positively associated with (a) international growth and (b) modal commitment
- Hypothesis 4: Bridging social capital (comprising local bridging social capital and foreign bridging social capital) is more strongly associated with international growth than is bonding social capital (comprising local bonding social capital and foreign bonding social capital).
- Hypothesis 5: Bonding social capital (comprising local bonding social capital and foreign bonding social capital) is more strongly associated with modal commitment than is bridging social capital (comprising local bridging social capital and foreign bridging social capital).

The successful testing of the identified hypotheses calls for the utilisation of multivariate data analysis, chiefly linear regression (for international growth as dependent variable) and logistical regression (for modal commitment as dependent variable given its dichotomous nature wherein an observation is categorised as *either* an exporter *or* a micromultinational). These analyses are preceded by factor analysis of the independent variables (Hair et al, 1998).

The multivariate data analysis techniques utilised in this study call for meticulous adherence to the procedures prescribed in the research methodology literature (e.g., Hair et al, 1998). In this chapter, the manner in which these procedures were carried out is discussed, along with the findings from data analysis that indicate the extent to which propositions found empirical support (or not, as the case may be). Where results did not match expectations, possible explanations are proffered; these are however considered in greater detail in the next chapter on the post-survey explanatory case studies. The chapter is organised in the following way: the next section describes the sample characteristics and response rate of the survey. This is followed by a discussion of the measures used for the various variables, including their factor loadings and internal consistency. Thereafter, the regression analysis is presented with a view to testing the hypotheses predicted from the literature. Finally, a concluding section provides implications for the final phase of the three-phase research design, viz., the explanatory case studies.

6.2 Sample Response Rate and Descriptives

The definition of a small- and medium-sized enterprise (SME) adopted in this study, as discussed earlier, is a firm with fewer than 250 employees. Based on the expert interviews, a directory from Nasscom, India's apex industry body for software was utilised as the database of Indian software SMEs. This database information included the main domain of the firm (e.g., software development, transcription, etc); name for the Chief Executive; postal address, telephone numbers and an email address; and the number of employees. Thus, *software firms with fewer than 250 employees* could be identified. It was however decided to confine the sample, as discussed earlier, to

the five main cities of India that account for 80% of the total number of firms listed in the Nasscom directory viz., Bangalore, Chennai (formerly Madras), Hyderabad, Mumbai (formerly Bombay) and the National Capital Region (Delhi and surrounding suburbs). This resulted in a population of 351 firms; owing to its modest size, the entire population was surveyed (cf. Ibeh and Young, 2001).

The first phase of the survey began in January/February 2004 through an email exercise. 24 completed questionnaires were received. Owing to financial year-ending in March 2004, a second phase of emailing was delayed until April 2004; a further 15 questionnaires were obtained yielding a total of 39 questionnaires (approximately 11% response rate, matching the conservative expectations from the expert interviews). This was however not an acceptable response rate and furthermore, approximately one-third of the emails did not get delivered, suggesting changes in the email addresses provided in the Nasscom directory. Therefore a third phase of the survey was undertaken during May/June 2004 where professional field researchers were hired in each of the five cities to personally meet and administer the questionnaires. This proved to be more effective than the email with an additional 63 responses being obtained, for a total of 102 questionnaires (response rate of 29%).

Upon closer examination of the data, six observations had to be deleted due to incomplete data, leaving 96 usable questionnaires (based on perceptual measures of international growth). From the database, 11 companies were not contactable due to changed/untraceable addresses and 5 companies declined to participate in the survey as they had exited the software industry. Thus the effective response rate (i.e., 96

respondents from an effective sample size of 335) was 28.7%. This response rate is deemed to be satisfactory as it compares favourably with previous studies of Indian software SMEs such as Kundu and Katz (2003) where the response rate was 11%. Their study however relied purely on a postal survey, and the results, consistent with the observations made by experts as noted in the previous chapter, were not highly satisfactory. The use of a drop-and-collect survey through field agents, as advised by the experts interviewed in the first phase, certainly helped to improve the response rate to the level achieved. While the original database would ideally have comprised of a larger list, given the exploratory nature of the study, the number of observations and response rate are deemed to be satisfactory.

Care must be taken to ascertain the generalisability of the findings from the sample to its population. In this regard, the potential for bias in terms of the non-respondents must be considered and examined. The nature of the database was such that the number of employees and year of inception were provided for all the firms in the list, allowing for comparison of these metric data (i.e., *age* and *size*) between respondents and non-respondents. No significant differences were found in terms of age (8.88 and 8.36 years, respectively; $t=-.79$, $p=.43$) from the independent-samples t-tests. There was however a significant difference in terms of size (91 and 76.8 employees, respectively; $t=-1.83$, $p=.07$). This is probably reflective of the greater resources in slightly bigger firms to attend to surveys and does not seem to be a cause for concern, especially given the highly similar average ages of the respondents and non-respondents. Similarly, comparison was made between the respondents in terms of their mode of responding to the survey (i.e., those completing the questionnaire via

email versus face-to-face). No significant differences were found in terms of age ($t=.15$, $p=.88$) and size ($t=-1.1$, $p=.27$). The only other concern was that from the perspective of geographic spread, there was higher response from the southern cities (Bangalore, Chennai and Hyderabad) compared to the northern cities (Mumbai and National Capital Region). However this was found in other studies in India (such as Vissa, 2004) and seems primarily reflective of less cooperative behaviour in large industrial cities compared to smaller and more vibrant ones; as such, there seems no reason to doubt the validity of the findings.

Prior to examining the measures of the specific variables in detail, it is worthwhile to consider, at the outset, some descriptive aspects of the data-set that provide an indication of its composition. It can be seen, for instance, that the average age of the firms is approximately 9 years, with a range of 3 to 24 years; the average however seems to indicate that many software firms came into existence since the liberalisation of the Indian economy in 1991; indeed, there are only 17 firms (i.e., less than 20% of the sample) founded before that year. In terms of size, the average number of employees is approximately 125, which is half the cut-off definitional limit of 250 employees, with the median being approximately 100 employees. It is noteworthy that, as suggested by the literature on the Indian software industry and the exploratory case studies, the sample of Indian software SMEs exhibits a high international orientation. On average, firms gain their first international business contract within two years of their existence and about 60% of their business is from abroad (which further justifies the 50% cut-off used in sampling for the exploratory case studies). Consistent with secondary data on the Indian software industry, the US

is the largest market for 58% of the sample followed by the UK (12%). It can be inferred that the size of these markets combined with linguistic accessibility make these vital markets for Indian software firms.

Table 6.1 (a): Descriptive Statistics of the Sample - Geographic Spread

City	Frequency	Percent
Bangalore	26	25.7
Chennai	36	34.7
Hyderabad	17	16.8
Mumbai	8	7.9
National Capital Region	15	14.9
<i>Total</i>	<i>102</i>	<i>100.0</i>

Table 6.1 (b): Descriptive Statistics of the Sample - Age, Size, International Intensity and Age at Internationalisation

Variable	Minimum	Maximum	Mean	Standard Deviation
Age (years)	3	44	9.33	6.28
Employees	10	249	126.49	90.96
International intensity (%)	0	100	62.20	32.60
Age at internationalisation (years)	0	20	1.96	3.32

Table 6.1 (c): Descriptive Statistics of the Sample - Largest International Market

Country/Region	Percent
United States of America	58
United Kingdom	12
Rest of Europe	10
Japan	3
Rest of the world	17
<i>Total</i>	<i>100</i>

6.3 Measures of the Variables

The various variables involved in the study are listed below, with an indication of their measures; in the case of the majority of variables, notably the main independent variables (market knowledge, knowledge intensity and social capital), Likert-type

scales were used, drawing upon published research as discussed in Chapter Four (Sec 4.4.2).

6.3.1 Measures of the Dependent Variables

There are two dependent variables of interest. The first is *international growth*. This was measured in two ways – objectively and subjectively. An objective measure comprises the absolute or proportionate growth rate between two points in time; in this study the latter was used, consistent with previous studies (e.g., Autio et al, 2000; Yli-Renko et al, 2002). However based on the expert interviews reported in the previous chapter where it emerged that SMEs in the Indian software industry may be secretive, it was thought prudent to also include a subjective measure – i.e., a measure of *perceived* growth, typically, the perception of how successful the firm is in achieving its growth goals (e.g., Johnson, 2001). In addition to having the advantage of greater likelihood of disclosure, such a measure also has the advantage of taking into account the context of a firm’s strategic objectives. In the survey instrument, the following was the objective measure of international growth that was utilised: “By what proportion (%) did your **international sales revenue** in the financial year 2002-2003 increase compared to three years ago (1999-2000)?”

In the survey instrument, the subjective measure was combined with similar measures pertaining to international and total growth and profit, as follows: “Please rate the extent to which your company was successful in achieving its objectives for growth in sales revenue and profit during the three-year period from April 2000 to March 2003”. The rationale in using such an approach was the perception from the

exploratory case studies that international growth was vital for the overall performance of Indian SMEs. By capturing perceptive measures for all of the four facets of (a) international sales growth, (b) international profit growth, (c) total sales growth, and (d) total profit growth, it was possible to see the extent to which these measures deal with the same underlying aspect of growth performance. In the event, factor analysis revealed that all four measures loaded onto a single factor and there was very high internal reliability ($\alpha = 0.93$) suggesting that they could be used collectively as a composite measure. More importantly, this confirms the finding from the exploratory case studies that for Indian SMEs, international growth is tantamount to overall growth performance.

Table 6.2: Component Matrix for International Growth Items

	Component 1
PERF 1	.887
PERF 2	.935
PERF 3	.914
PERF 4	.894

Extraction Method: Principal Component Analysis.

(Perf 1=Perceptual satisfaction with increase in total revenues; Perf 2=Perceptual satisfaction with increase in international revenues; Perf 3= Perceptual satisfaction with increase in total profit; Perf 4=Perceptual satisfaction with increase in international profit)

In terms of the second dependent variable viz., *mode*, a dichotomous approach is taken with firms being considered to be either exporters (exclusively) or micromultinationals (definition provided in Sec 2.4.2), if they utilise higher commitment modes. For the sake of operationalisation, however, a wider range of entry modes were mentioned and respondents were asked to choose the mode being predominantly utilised with respect to the firm's largest market; any respondent choosing the exporting option would be deemed an exporter, and all others as a micromultinational. This was done for the sake of manageability; the rationale is that

behaviour in the firm's largest market is likely to be most reflective of its intention to establish a 'presence' of some kind, which is the distinguishing characteristic of a micromultinational. The following was the manner in which the mode dependent variable was sought to be measured in the survey instrument:

With respect to your company's largest foreign market, how would you describe the presence established there? (Select one option).

- We have a large sales office and carry out software activities
- We have a large sales office in that country (e.g., with 10 or more employees)
- We have a small sales office in that country (e.g., with fewer than 10 employees)
- We have a sales office in that country involving a business associate overseas
- We have no physical presence at all and operate exclusively from India

6.3.2 Measures of the Independent Variables

6.3.2.1 Market Knowledge Scale Items

The operationalisation of the market knowledge constructs was primarily based on the work of Eriksson et al (1997); the scales used in that study were subsequently updated in Hadlee and Wilson (2003). Three dimensions for market knowledge were identified, viz., business knowledge, institutional knowledge and internationalisation knowledge.

- Business knowledge pertains to knowledge about the micro external environment of a foreign market(s) i.e., knowledge about such as aspects as that market's customers, competitors and distributors.

- Institutional knowledge pertains to knowledge about such as aspects as business laws, cultural norms, regulatory standards and language skills; in other words, those facets of a market that typically lead to psychic distance (Johanson and Vahlne, 2003).
- Internationalisation knowledge refers to knowledge that leads to an ability to develop and implement an internationalisation strategy

The following are the scale items used for each of these three dimensions of market knowledge, based on Eriksson et al (1997) and Hadley and Wilson (2003); a modification had to be made in the wording to reverse the negative phrasing of the original items as they sought to capture *lack of* market knowledge.

“Please indicate using the scale provided below the extent to which the following statements are true about your company, with respect to the software industry in its largest foreign market. The scales range from 1 if you completely disagree to 7 if you completely agree.”

Business knowledge

- We are knowledgeable about the needs of foreign customers
- We are knowledgeable about our foreign competitors
- We are knowledgeable about channels of distribution
- We are aware of potential alliance partners

Institutional knowledge

- We have a good understanding of the business laws
- We have a good understanding of the cultural norms
- We have a good understanding of the regulatory standards
- We have adequate foreign language skills

Internationalization knowledge

- We have considerable experience in international operations
- We are knowledgeable about international business strategy
- Our senior management has much international experience
- We are competent at identifying business opportunities
- We are competent at international marketing

As a starting point it is generally helpful to conduct a factor analysis to check the extent to which the collected data ‘loads’ onto factors anticipated by the theoretical constructs. Carrying out factor analysis was justified from an inspection of the correlation data matrix for the 14 items listed above, wherein over 90% of the correlations were significantly positive. Furthermore, the Bartlett test of sphericity, which represents that probability that significant correlations exist among variables, was significant at .000, and the Kaiser-Mayer-Olkin Measure of Sampling Adequacy (MSA) had a score of 0.90, which is above the ‘meritorious’ level of 0.80 (Kaiser, 1970, 1974).

Table 6.3: Suitability of Factor Analysis for Market Knowledge Items**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.902
Bartlett's Test of Sphericity	Approx. Chi-Square	1050.812
	Df	91
	Sig.	.000

Therefore the 14 items of the three scales shown above were factor analysed. It emerged that 13 of these loaded highly onto a single factor, with the exception being the fourth item of the institutionalisation knowledge scale viz., the item about foreign language skills. It is not uncommon in such cases, for an item to be dropped. Accordingly, this item was excluded, and a factor analysis carried out once again. The results are shown below; it can be seen that all the 13 items have loaded onto a single factor and rotation techniques cannot be conducted.

Table 6.4(a): Factor Analysis of Market Knowledge Items - Communalities

	Initial	Extraction
BIZK1	1.000	.458
BIZK2	1.000	.550
BIZK3	1.000	.677
BIZK4	1.000	.620
INSK1	1.000	.720
INSK2	1.000	.668
INSK3	1.000	.696
INTK1	1.000	.568
INTK2	1.000	.695
INTK3	1.000	.624
INTK4	1.000	.612
INTK5	1.000	.666

Extraction Method: Principal Component Analysis.

(Bizk=Business knowledge; Insk=Institutional knowledge; Intk=Internationalisation knowledge)

Table 6.4(b): Factor Analysis of Market Knowledge Items - Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.553	62.940	62.940	7.553	62.940	62.940
2	.979	8.155	71.095			
3	.818	6.816	77.911			
4	.665	5.543	83.454			
5	.445	3.710	87.164			
6	.319	2.656	89.819			
7	.294	2.448	92.267			
8	.270	2.251	94.518			
9	.202	1.684	96.202			
10	.177	1.472	97.674			
11	.154	1.281	98.954			
12	.125	1.046	100.000			

Extraction Method: Principal Component Analysis.

Table 6.4(c): Factor Analysis of Market Knowledge Items - Component Matrix(a)

	Component
	1
BIZK1	.677
BIZK2	.742
BIZK3	.823
BIZK4	.787
INSK1	.848
INSK2	.817
INSK3	.834
INTK1	.754
INTK2	.833
INTK3	.790
INTK4	.782
INTK5	.816

Extraction Method: Principal Component Analysis

(Bizk=Business knowledge; Insk=Institutional knowledge; Intk=Internationalisation knowledge)

This is a significant result in that it allows data reduction, and reduces the number of independent variables, which is particularly useful as it allows for a 10:1 ratio between observations and variables, which is desirable (Hair et al, 1998). A test of reliability, as determined by internal consistency, revealed a Cronbach's alpha of

0.94, which well exceeds the generally targeted value of 0.80. Based on findings from the exploratory case studies which indicate that Indian software SMEs are generally internationally oriented, it can be speculated that such firms are therefore likely to uniformly develop all three aspects of market knowledge identified by Eriksson et al (1997). It is however noteworthy that the item that had to be dropped pertained to foreign language skills suggesting, normatively, that this is one area in which Indian software SMEs have not developed sufficient knowledge relying, perhaps, on their English-speaking skills that allow them to target the key market of the US, and also the British market.

6.3.2.2 Knowledge Intensity Scale Items

The scale for knowledge intensity was based upon the 3-item scale used in Autio et al (2000) and replicated in further studies such as Yli-Renko et al (2002). However one of the items used the words ‘knowledge intensity’ in it, and based upon personal communication with Professor Harry Sapienza (one of the co-authors of the Autio et al, 2000 paper), it was deemed prudent to replace this item without the explicit use of these words, and to also include an extra item in case any failed to load sufficiently. In consultation with Professor Sapienza, two further items were developed; the question used in the survey instrument and all four items are shown below:

“Please indicate the extent to which the following statements are true about your company. (1=completely disagree; 7=completely agree).

Knowledge intensity

- We have a strong reputation for technological excellence

- Technological innovation is a primary goal for us
- There is a strong knowledge component in our products/services
- Most of our employees have strong technical skills

Factor analysis of the above-mentioned items was justified by an examination of the correlation data matrix wherein all correlations were positively significant; moreover Bartlett's test of sphericity was significant at .000 and the Kaiser-Meyer-Olkin MSA of 0.81 exceeded the 'meritorious' level.

Table 6.5: Suitability of Factor Analysis for Knowledge Intensity Items

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.814
Bartlett's Test of Sphericity	Approx. Chi-Square	171.354
	Df	6
	Sig.	.000

Source: The Author

Factor analysis of these four items indicated that they load onto a single factor as evident below. The test of reliability, as determined by internal consistency, revealed a Cronbach's alpha of 0.85, which exceeds the generally targeted value of 0.80.

Table 6.6 (a): Factor Analysis of Knowledge Intensity Items - Communalities

	Initial	Extraction
KINT1	1.000	.726
KINT2	1.000	.725
KINT3	1.000	.586
KINT4	1.000	.757

Extraction Method: Principal Component Analysis.
(Kint=Knowledge intensity)

Table 6.6(b): Factor Analysis of Knowledge Intensity Items - Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.794	69.858	69.858	2.794	69.858	69.858
2	.526	13.158	83.015			
3	.380	9.505	92.521			
4	.299	7.479	100.000			

Extraction Method: Principal Component Analysis.

Table 6.6(c): Factor Analysis of Market Knowledge Items - Component Matrix

	Component 1
KINT1	.852
KINT2	.851
KINT3	.766
KINT4	.870

Extraction Method: Principal Component Analysis
(Kint=Knowledge intensity)

6.3.2.3 Social Capital Scale Items

The operationalisation of social capital, given the focus on the relational (as opposed to structural and cognitive) aspect in the present study, draws on the work of Kale et al (2000) and Yli-Renko et al (2002), based on which a 6-item scale was derived. This scale was utilised four times, each time referring to a different set of relationships, identified from the literature and exploratory cases, that theoretically yield each of the four categories of social capital that the study is interested in.

The question in the survey instrument was asked in the following manner:

“In questions 20-31, we are interested in understanding how your company relates to four categories of companies, which may interact with you as customers, suppliers, distributors or strategic partners. Questions 20-25 pertain to the Indian market; questions 26-31 pertain to your largest foreign market. Please indicate the extent to

which the following statements are true (1=completely disagree; 7=completely agree).”

Social Capital

- We have extensive relationships with such companies
- We actively utilise these relationships in our business
- These relationships are characterised by close interactions
- These relationships are characterised by mutual trust
- These relationships are highly reciprocal
- These relationships have ‘opened new doors’ for us

Corresponding to each category of social capital, the following set of relationships was indicated:

- Local bonding social capital: Other local (Indian) software/infotech companies
- Local bridging social capital: MNC Subsidiaries in India (e.g., Microsoft India)
- Foreign bonding social capital (Companies run/managed by fellow-Indians)
- Foreign bridging social capital (Companies not run/managed by fellow-Indians)

Factor analysis is warranted as examination of the correlation data matrix reveals that over 65% of correlations are positively significant; also, Bartlett’s test of sphericity is positive at .000 and the Kaiser-Meyer-Olkin MSA is 0.838 and exceeds the ‘meritorious’ level.

Table 6.7: Suitability of Factor Analysis for Social Capital Items

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.838
Bartlett's Test of Sphericity	Approx. Chi-Square	3812.612
	Df	276
	Sig.	.000

Factor analysis conducted for the 24 items for social capital revealed four factors as per expectations, with high loadings for all items, as seen below. The test of reliability, as determined by internal consistency, revealed a Cronbach's alpha of over 0.95, which well exceeds the generally targeted value of 0.80:

- Local bonding social capital (alpha= 0.96)
- Local bridging social capital (alpha=0.98)
- Foreign bonding social capital (alpha=0.97)
- Foreign bridging social capital (alpha=0.97)

Table 6.8(a): Factor Analysis of Social Capital Items - Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.161	38.172	38.172	9.161	38.172	38.172	5.479	22.829	22.829
2	5.585	23.270	61.442	5.585	23.270	61.442	5.403	22.511	45.340
3	3.744	15.600	77.042	3.744	15.600	77.042	5.285	22.020	67.360
4	2.732	11.384	88.426	2.732	11.384	88.426	5.056	21.066	88.426
5	.681	2.836	91.262						
.									
.									
24	.017	.069	100.000						

Extraction Method: Principal Component Analysis.

Table 6.8(b): Factor Analysis of Social Capital Items - Rotated Component Matrix

	Component			
	1	2	3	4
LOBO1	.145	.062	.102	.871
LOBO2	.122	-.033	.146	.897
LOBO3	.207	-.072	.170	.913
LOBO4	.214	-.074	.093	.882
LOBO5	.260	-.028	.071	.884
LOBO6	.242	-.085	.088	.864
LOBR1	.933	.029	.080	.196
LOBR2	.924	.091	.148	.206
LOBR3	.930	.117	.125	.232
LOBR4	.921	.054	.131	.209
LOBR5	.914	.127	.163	.192
LOBR6	.890	.109	.213	.214
FOBO1	.175	.126	.901	.079
FOBO2	.153	.125	.920	.061
FOBO3	.196	.069	.942	.129
FOBO4	.143	.108	.923	.163
FOBO5	.099	.073	.911	.083
FOBO6	.043	.045	.888	.154
FOBR1	.088	.952	.072	-.044
FOBR2	.071	.949	.138	-.014
FOBR3	.062	.964	.067	-.020
FOBR4	.075	.934	.052	-.031
FOBR5	.110	.922	.111	-.047
FOBR6	.058	.900	.086	-.046

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization; rotation converged in 5 iterations.

(Lobo=Local bonding social capital; Lobr=Local bridging social capital; Fobo=Foreign bonding social capital; Fobr=Foreign bridging social capital).

It may be noted in passing that factor analysis was separately conducted for all the independent variables taken together, to observe initial behaviour of the data; after dropping the problematic item (regarding foreign language skills) identified earlier, the factor analysis produced similar results as seen above. In other words, the variables used in the regression analyses have exhibited convergent and divergent validity.

6.3.3 Measures of the Control Variables

Two control variables were identified and incorporated in the regressions (discussed in the next section); these were age and size. Age and size are commonly used control variables in studies of this nature (e.g., Autio et al, 2000; Brock, 2000; Dimitratos et al, 2003); these were measured in years and number of employees, respectively. The average values for the sample on these two variables, as already discussed under descriptive statistics, is approximately 9 years and 125 employees, respectively. As per convention (Hair et al, 1998), the logarithm values of these control variables are used in the regression analyses, discussed below.

6.4 Regression Analyses

6.4.1 Data Considerations for Multivariate Regression Analysis

Prior to discussing the two main sets of regression (i.e., linear regression for international growth and logistic regression for modal commitment) carried out in this study, due consideration is given to relevant aspects of the data. At the outset, it had to be ascertained that the survey data is metric, which is essentially the case (i.e., data is interval or ratio data); in the case of modal commitment, respondents' choices are converted into a metric dichotomous measure indicating a micromultinational (value=0) or a pure exporter (value=1). Also, the nature and extent of missing data was examined using a missing data analysis on SPSS; this was minimal, and dealt with by omitting observations with incomplete data (Hair et al, 1998). Furthermore, detrimental outliers had to be investigated, and as such there were no problems in this regard primarily due to the use of Likert-type scales.

Additionally, three assumptions had to be addressed. First, with regard to normality it was seen that most variables reasonably approximated normal distributions whereas others indicated a more noticeable departure from histograms, normality probability plots and Kolmogorov-Smirnov tests. However it was found that data transformations (inverse, logarithms, square roots) did not substantially affect regression results and since regression is fairly robust in relation to normality (Hair et al, 1998), the original values were retained. Second, with regard to homoscedasticity (i.e., each dependent variable exhibits equal levels of variance across the values of independent variables), scatterplots of residuals did not reveal the absence of it. Third, with regard to linearity, residual patterns for the independent variables exhibited no non-linear relationships with the dependent variables. As such, therefore, the data was deemed to be suitable for multivariate regression analysis.

Finally, the issues of validity (i.e., the measure accurately reflects the intended construct) and reliability (i.e., consistency of measures) had to be considered. These were strengthened through careful scrutiny of data entry to avoid inputting errors, rigorous review of the survey instrument by academic experts following exploratory case studies and pilot-testing of the the instrument, and the use of summated scales which reduces both the measurement and specification errors. The following section discusses the regression analyses.

Table 6.9: Correlations

	Lobo	Lobr	Fobo	Fobr	Mktk	Kint	Age	Employee
Lobo	1							
Lobr	.421(**)	1						
Fobo	.266(**)	.313(**)	1					
Fobr	-.051	.177	.192	1				
Mktk	.033	.318(**)	.199(*)	.452(**)	1			
Kint	.065	.134	-.048	.064	.358(**)	1		
Age	-.023	-.074	.044	.008	.261(**)	-.014	1	
Employee	.168	.207(*)	.305(**)	.090	.183	.075	.139	1

(Lobo=Local bonding social capital; Lobr=Local bridging social capital; Fobo=Foreign bonding social capital; Fobr=Foreign bridging social capital; Mktk=Market Knowledge; Kint=Knowledge Intensity; Age=Log of number of years of operations; Employee=Log of number of employees)

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 6.10: Descriptive Statistics

	Minimum	Maximum	Mean	Standard Deviation
Lobo	1.00	7.00	3.4851	1.70067
Lobr	1.00	7.00	3.2607	1.85808
Fobo	1.00	7.00	3.0842	1.81148
Fobr	1.00	7.00	3.6320	1.84862
Mktk	1.00	7.00	4.6408	1.07114
Kint	2.50	7.00	5.7222	.96090
Age	3	44	9.33	6.276
Employee	10	250	126.49	90.957

(Lobo=Local bonding social capital; Lobr=Local bridging social capital; Fobo=Foreign bonding social capital; Fobr=Foreign bridging social capital; Mktk=Market Knowledge; Kint=Knowledge Intensity; Age=Number of years of operations; Employee=Number of employees)

6.4.2 International Growth (Linear Regression)

The appropriate regression technique in relation to international growth, measured perceptually through a Likert-type scale item was linear regression. As noted in Chapter Four, the perceptual measure of international growth was used in the

regressions reported here. (Incidentally, near-identical results were obtained for the single-item measure and the summated scale discussed in Section 6.3.1, indicating that international growth is integral to overall growth for the sample; the summated 4-item scale is used in the regressions presented below). The propositions that are tested in this regression analysis are propositions 1a, 2a, 3a and 4 (see Sec 6.1). As seen below, the R-squared value indicates that approximately 40% of the variation is explained by the regression, which is highly satisfactory; the Anova table indicates that the regression was significant (.000).

Table 6.11(a): Linear Regression for International Growth - Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.658(a)	.432	.380	4.17766

Predictors: (Constant), EMPLOYEE, KI, AGE, LOBO, FOBR, FOBO, LOBR, MKTK
(Lobo=Local bonding social capital; Lobr=Local bridging social capital; Fobo=Foreign bonding social capital; Fobr=Foreign bridging social capital; Mktk=Market Knowledge; Kint=Knowledge Intensity; Age=Log of number of years of operations; Employee=Log of number of employees)

Table 6.11(b): Linear Regression for International Growth - ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1157.096	8	144.637	8.287	.000(a)
	Residual	1518.394	87	17.453		
	Total	2675.490	95			

Predictors: (Constant), EMPLOYEE, KI, AGE, LOBO, FOBR, FOBO, LOBR, MKTK
(Lobo=Local bonding social capital; Lobr=Local bridging social capital; Fobo=Foreign bonding social capital; Fobr=Foreign bridging social capital; Mktk=Market Knowledge; Kint=Knowledge Intensity; Age=Log of number of years of operations; Employee=Log of number of employees)

Table 6.11(c): Linear Regression for International Growth - Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.309	3.078		.101	.920
	LOBO	-.051	.048	-.100	-1.079	.284
	LOBR	-.015	.046	-.032	-.335	.739
	FOBO	.053	.046	.108	1.157	.250
	FOBR	-.059	.044	-.122	-1.326	.188
	MKTK	.176	.039	.473	4.549	.000
	KI	.325	.120	.238	2.696	.008
	AGE	-.098	.073	-.115	-1.342	.183
	EMPLOYEE	.005	.003	.178	2.074	.041

(Lobo=Local bonding social capital; Lobr=Local bridging social capital; Fobo=Foreign bonding social capital; Fobr=Foreign bridging social capital; Mktk=Market Knowledge; Kint=Knowledge Intensity; Age=Log of number of years of operations; Employee=Log of number of employees)

From the regression coefficients shown above, a number of interesting – and in some cases, unexpected results – can be seen. Hypothesis 1a (i.e., market knowledge is positively associated with international growth) finds support; there is a positive and significant relationship between market knowledge and international growth (beta=.473; $p<.000$). Similarly, Hypothesis 2a (i.e., knowledge intensity is positively associated with international growth) finds support; there is a positive and significant relationship between knowledge intensity and international growth (beta=.238; $p<.008$). These two hypotheses collectively reflect the influence of firm-level knowledge-based resources that are related at a broad level to the resource-based view of the firm (e.g., Barney, 1991; Penrose, 1959) and at a more specific level to the work of Johanson and Vahlne (1977) on market knowledge and of Oviatt and McDougall (1994) on knowledge intensity, as discussed in Chapter Two. It was argued that these two dominant perspectives of internationalisation can indeed be fruitfully combined, given their common knowledge-orientation, and the empirical

findings from the study provide further support for the notion that the views are indeed complementary.

The results with respect to Hypotheses 3a (social capital is positively associated with international growth) and 4 (bridging social capital is more strongly associated with international growth than is bonding social capital) are however inconsistent. None of the four categories of social capital have a significant impact on international growth and in fact with the exception of foreign bonding social capital, the sign is negative. Given this result, Hypothesis 4 (which predicted a stronger influence on the part of bridging social capital) is not supported either. It thus emerges that while the knowledge-based component of the research framework in relation to international growth is supported, the social capital-based component is not. This is perplexing in the light of the strong recommendations made in the literature to combine resource/knowledge-based and social capital-based perspectives both generally in relation to strategy research (e.g., Lee, Lee and Pennings, 2001) and specifically in relation to internationalisation research (e.g., Johanson and Vahlne, 2003; McDougall and Oviatt, 2003) of resource-constrained firms. However the Lee et al (2001) study of Korean technology-based startups also found support only for the effect of the firm-specific (e.g., knowledge) variables on performance, not for the external/network variables. At this stage, possible reasons for the unexpected findings are not delved into; these are deferred for consideration in the concluding section of the chapter (Section 4.5). The next sub-section addresses the findings on Hypotheses 1b, 2b, 3b and 5.

6.4.3 Modal Commitment (Logistical Regression)

The appropriate regression technique in relation to modal commitment, measured dichotomously (as discussed in Section 6.3.1) i.e., distinguishing between micromultinationals and pure exporters, was logistic regression. Apart from the dichotomous nature of the dependent variable warranting such an approach, logistic regression also has the advantage of being robust in relation to the characteristics of data (such as normality) (Hair et al, 1998). The hypotheses that are tested in this regression analysis are Hypotheses 1b, 2b, 3b and 5 (see Sec 6.1). As seen below, the R-squared value conservatively indicates that approximately 40% of the variation is explained by the regression, which is highly satisfactory; the Omnibus tests of model coefficients provide a test of the joint predictive ability of all the covariates in the model, indicates that the regression was significant (.000). The regression coefficients are shown below. Once again, a number of interesting – and in some cases, unexpected results – can be seen.

Table 6.12(a) Logistic Regression for Modal Commitment - Variables in the Equation

Block 0: Beginning Block

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 0 Constant	-1.030	.233	19.528	1	.000	.357

Table 6.12(b) Logistic Regression for Modal Commitment - Variables not in the Equation

Step 0	Variables	Score	df	Sig.
	AGE	1.600	1	.206
	EMPLOYEE	13.947	1	.000
	LOBO	4.627	1	.031
	LOBR	1.862	1	.172
	FOBO	14.508	1	.000
	FOBR	6.720	1	.010
	MKTK	5.263	1	.022
	KINT	.024	1	.877
	Overall Statistics	29.540	8	.000

(Lobo=Local bonding social capital; Lobr=Local bridging social capital; Fobo=Foreign bonding social capital; Fobr=Foreign bridging social capital; Mktk=Market Knowledge; Kint=Knowledge Intensity; Age=Log of number of years of operations; Employee=Log of number of employees)

Table 6.12(c) Logistic Regression for Modal Commitment - Omnibus Tests of Model Coefficients

Block 1: Method = Enter

		Chi-square	df	Sig.
Step 1	Step	44.246	8	.000
	Block	44.246	8	.000
	Model	44.246	8	.000

Table 6.12(d) Logistic Regression for Modal Commitment - Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	65.257	.372	.544

Table 6.12(e) Logistic Regression for Modal Commitment - Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 1(a) AGE	-.045	.064	.497	1	.481	.956
EMPLOYEE	-.016	.005	9.447	1	.002	.984
LOBO	-.060	.035	2.929	1	.087	.942
LOBR	.024	.033	.536	1	.464	1.025
FOBO	-.073	.037	3.943	1	.047	.929
FOBR	-.043	.031	1.878	1	.171	.958
MKTK	-.021	.032	.412	1	.521	.979
KINT	.112	.107	1.078	1	.299	1.118
Constant	2.491	2.453	1.031	1	.310	12.074

Variable(s) entered on step 1: AGE, EMPLOYEE, LOBO, LOBR, FOBO, FOBR, MKTK, KINT. (Lobo=Local bonding social capital; Lobr=Local bridging social capital; Fobo=Foreign bonding social capital; Fobr=Foreign bridging social capital; Mktk=Market Knowledge; Kint=Knowledge Intensity; Age=Log of number of years of operations; Employee=Log of number of employees)

Hypotheses 1b (market knowledge is positively associated with modal commitment) and 2b (knowledge intensity is positively associated with modal commitment) have failed to find support; it is seen that neither market knowledge nor knowledge intensity have any impact on whether or not a firm in the sample is a micromultinational or not (i.e., a pure exporter). The logic in the literature predicting the first outcome pertained to Johanson and colleagues' establishment chain wherein higher market knowledge would lead to greater modal commitment; this is however not supported from the present analysis and it is noteworthy therefore that these authors have recently de-emphasised the impact of their notions on mode but have rather focussed on growth (Johanson and Vahlne, 2003), in relation to which support has been found in the previous regression. The logic in the literature pertaining to the second prediction, was derived from work such as Kogut and Zander (1993) which, drawing on the resource-based perspective, depicted multinational enterprises as repositories of knowledge that sought to transfer and protect knowledge assets by the use of higher-commitment modes. Perhaps, in light of the above findings, such a logic is less meaningful in the case of resource-constrained SMEs; in any case, such speculations are deferred until the next section.

Support has been found for hypotheses 3b (social capital is positively associated with modal commitment) and 5 (bonding social capital is more strongly associated with modal commitment than is bridging social capital). Partially consistent with Hypothesis 3b, two of the four categories of social capital viz., local bonding social capital (Sig .087) and foreign bonding social capital (Sig 0.047) are both significant in explaining the incidence of micromultinationality; furthermore, consistent with

Hypothesis 5, it is the bonding social capital variables that are (in fact, exclusively) dominant with foreign bonding social capital being the most significant. Thus, the very opposite of the case with linear regression is seen in relation to logistic regression. This relational perspective of micromultinationals can be very influential in taking forward the fledgling research base on this concept and, given the present operationalisation using ethnic social capital, has significant managerial and policy implications as discussed in the final chapter of the thesis.

Before moving on to the final section of the chapter that examines possible explanations for the unexpected findings from the survey, it is worth considering the issue of multicollinearity (when independent variables are highly correlated with each other), with a view to ascertaining the validity of the findings (Hair et al, 1998). It can however be seen below that in no case is the Variable Inflation Factor (VIF) in excess of 10; furthermore in the case of the condition indices, there are none above the general threshold level of 30; even at a conservative threshold of 15 the proportion of coefficient variance exceeds .9 in the case of one independent variable only; thus multicollinearity is not deemed to be a problem here.

Table 6.13: Tolerance and VIF Coefficients

	Collinearity Statistics	
	Tolerance	VIF
LOBO	.749	1.335
LOBR	.686	1.457
FOBO	.723	1.383
FOBR	.733	1.364
MKTK	.570	1.754
KINT	.819	1.221
AGE	.824	1.214

(Lobo=Local bonding social capital; Lobr=Local bridging social capital; Fobo=Foreign bonding social capital; Fobr=Foreign bridging social capital; Mktk=Market Knowledge; Kint=Knowledge Intensity; Age=Log of number of years of operations; Employee=Log of number of employees)

Table 6.14: Collinearity Diagnostics

	Eigen value	Condition Index	Variance Proportions								
			Const.	LOBO	LOBR	FOBO	FOBR	MKTK	KINT	AGE	EMP
1	8.351	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.449	4.313	.00	.00	.00	.04	.01	.00	.00	.01	.09
3	.344	4.931	.00	.03	.09	.02	.00	.00	.00	.55	.00
4	.263	5.640	.00	.02	.00	.00	.20	.01	.00	.01	.47
5	.208	6.339	.00	.12	.07	.11	.07	.01	.00	.18	.38
6	.146	7.557	.00	.01	.41	.66	.00	.00	.00	.07	.02
7	.121	8.316	.00	.62	.36	.12	.00	.00	.01	.01	.00
8	.088	9.737	.02	.17	.02	.00	.63	.04	.05	.00	.03
9	.018	21.290	.06	.02	.03	.00	.08	.91	.35	.13	.01
10	.012	25.951	.91	.01	.02	.04	.01	.03	.58	.04	.00

(Const.ant; Lobo=Local bonding social capital; Lobr=Local bridging social capital; Fobo=Foreign bonding social capital; Fobr=Foreign bridging social capital; Mktk=Market Knowledge; Kint=Knowledge Intensity; Age=Log of number of years of operations; Emp=Log of number of employees)

6.5 Conclusions and Implications

It was seen in the previous section that the hypotheses pertaining to international growth and to modal commitment received partial support from the survey data. In the case of international growth, the knowledge variables (market knowledge and knowledge intensity) had significantly positive relationships, while the social capital variables had no such effect. On the other hand, in the case of modal commitment, the bonding social capital variables that were expected to be more influential than the bridging social capital variables did have a significantly positive relationship with modal commitment; however the knowledge variables had no such significant relationship. In common parlance, it seems that *what you know (rather than whom you know) matters for growth, while whom you know (rather than what you know) matters for modal commitment as defined by a firm being a micromultinational rather than merely a pure exporter.*

Thus in each of the dependent variable's case there is a part of the findings which is unexpected. At least three reasons could be considered, by way of speculation, as to why these unforeseen results emerged. First, the scales used in the survey instrument were based upon academic research conducted in Western economies (such as the US and UK) and therefore these scales failed to capture relevant data among the Indian respondents due to cultural and economic differences. This however seems highly unlikely given the care taken to explore the empirical setting through exploratory case studies, from which it seemed amply evident that Indian software SMEs were run by individuals who were highly conversant with Western concepts and the English language. Furthermore, Indian software firms, including SMEs, have been the subject of numerous studies by Western-based academics – which in fact caused concerns about response rates, but surely not about the comprehension of items in a survey instrument. Therefore, this line of thinking does not merit further consideration.

Second, a managerial (or somewhat normative) approach could be taken – particularly in relation to international growth – to suggest that the reason for the unexpected findings is in the *failure* of Indian software SMEs to adequately leverage their social capital for growth. This is difficult to gauge from the extant data. However, certain data was additionally captured from the respondents that may throw some light on the validity of this notion. For each of the four sets of relationships used to operationalise the social capital variables, respondents were asked to respond to a set of six questions pertaining to the relevant information obtained from each. These were Likert-types scales, as in the case of social capital;

thus average scores (ranging potentially from 1 to 7) could be computed for the four corresponding measures of information obtained from those sets of relationships.

Taking average scores of 4 and above as 'high' and the remainder as 'low', four matrices are shown below to indicate the spread of firms in terms of their social capital and perceived information benefits. From the matrices below it can be seen that in the case of local bonding social capital, local bridging social capital and foreign bonding social capital, roughly 40-45% of the respondents claim to have high social capital; about one-third of them however do not perceive high information benefits. In the case of foreign bridging social capital, just over half the respondents perceived to have high social capital and just over a quarter do not perceive high information benefits.

Table 6.15(a): Leverage of Social Capital - Local Bonding Social Capital

		Information	
		<i>High</i>	<i>Low</i>
Social Capital	<i>High</i>	27	17
	<i>Low</i>	2	54

Table 6.15(b): Leverage of Social Capital - Local Bridging Social Capital

		Information	
		<i>High</i>	<i>Low</i>
Social Capital	<i>High</i>	27	17
	<i>Low</i>	1	55

Table 6.15(c): Leverage of Social Capital - Foreign Bonding Social Capital

		Information	
		<i>High</i>	<i>Low</i>
Social Capital	<i>High</i>	25	15
	<i>Low</i>	2	58

Table 6.15(d): Leverage of Social Capital - Foreign Bridging Social Capital

		Information	
		<i>High</i>	<i>Low</i>
Social Capital	<i>High</i>	37	14
	<i>Low</i>	6	43

While a managerial implication of this finding is that those respondents with high social capital but low information gains *should* consider if they are proactive enough in leveraging their relationships, it is clear that the greater majority of firms with high social capital do enjoy high information benefits; and they outnumber those firms with high information gains despite having low social capital stocks. Thus this is an important argument but cannot be considered as definitive. This therefore leads to a final line of reasoning.

Third – and perhaps most importantly, theoretical reasoning could be applied to consider the relative role of knowledge and social capital in relation international growth and mode. It appears from the findings that there is strong support for a Penrosian perspective of growth wherein a firm's knowledge-based resources are the key determinants of growth; thus the resource-based view of the firm may be more directly relevant to growth than social capital.

Furthermore, it is possible that the role of social capital in growth is far more complex than conveyed in the research framework; for instance social capital's effects may be mediated by knowledge and/or as a moderator of the relationship between knowledge and growth. Such effects are however beyond the scope of the research study, as defined, given the interest in the direct relationships between the independent and dependent variables, and the mixed methodology adopted wherein case study findings are being combined with the survey findings discussed in this chapter.

By a similar logic, it would appear that the emerging notion of micromultinationals is well supported by a more relational approach wherein it is the benefits of social capital such as information, influence and solidarity that influence SMEs' progress beyond pure exporting into modes, often involving network governance structures, that allow a 'presence' to be established (Dimitratos et al, 2003; Oviatt and McDougall, 1994). Knowledge, on the other hand, may moderate this effect rather than contribute to it directly, since the key to higher modal commitment appears to be trust-worthy bonding relationships.

Recent internationalisation literature has called for the integration of resource-based and network approaches as adopted in this study. However it may be vital to delineate between the relative strengths of these theories with respect to diverse aspects of internationalisation. If so, then the findings make a theoretical contribution to the area of small firm internationalisation. To further explore these ideas, post-survey explanatory case studies were undertaken as discussed in the next chapter.

CHAPTER SEVEN

FINDINGS OF THE EXPLANATORY CASE STUDIES

7.1 Introduction

Following the survey-based quantitative study (discussed in the previous chapter), and in light of its findings, the third and final empirical phase involving further qualitative research was undertaken with the following objectives:

- To reinforce and validate the findings of the quantitative study
- To clarify unexplained findings from the quantitative study
- To identify additional issues of relevance to the present study

The manner in which these explanatory case studies were hoped to be conducted (and which eventually became possible to do), was to carry out case-study research on the *same* four firms studied prior to the survey. The rationale for this approach – which is novel and intended to be a methodological innovation – was that often survey findings are difficult to interpret beyond a point owing to the intrinsically cross-sectional nature of such empirical work. However when supplemented by qualitative research that examines changes over a period of time, more insight is likely to be gleaned (Birkinshaw, 2004; Hurmerinta-Peltomäki and Nummela, 2004).

Analysis of the survey findings was completed in late August 2004 and an executive summary of the findings sent to survey respondents, as promised, in September 2004 (see Appendix Four). The post-survey explanatory case studies were compiled thereafter in February 2005. In two of the four cases, multiple respondents could be

used – five in the case of Mitoken and three in the case of Ekomate. In the other two cases (New Creation and Vikas Global) there was no scope for additional respondents (for instance, a request to interview international clients was turned down), but this is not seen as a problem as both CEOs were the primary drivers of their firms' internationalisation. As with the exploratory cases, supplementary expert interviews were conducted.

The remainder of the chapter is structured in the following way. The next section contains the four explanatory case studies i.e., an account of developments – both anticipated (in March 2002) and unanticipated – for the four case-firms. This is followed by an analysis of the main constructs of the study (knowledge, social capital and internationalisation) and their inter-relationships in light of the explanatory case studies. Thereafter, key findings are summarised.

7.2 Explanatory Case Studies (February 2005)

7.2.1 Explanatory Case Study of Ekomate

Anticipated Developments

New Markets: From the US to UK, India

As noted in Chapter Five, Ekomate was founded in 1996 by Tom Thomas, a US-trained computer engineer (with some work experience in Intel) as a company that would “enable [client] companies to get on the Web”. In terms of its internationalisation, Ekomate had engaged in international business time for first time in 1998, having undertaken business with a British client (unexpectedly) and an American client. 90% of Ekomate's revenues came from overseas business. In terms

of goals for the future, Thomas wanted to diversify his market portfolio and reduce dependence on the US. Thomas was also very clear that international growth is synonymous with the growth of his firm.

It should therefore come as no surprise that in February 2005, compared to March 2002, Ekomate had, or was actively seeking, business from a more diverse set of countries that included the UK (both England and Scotland), Australia, New Zealand, Finland, Italy – and even India. In March 2002 Thomas had articulated a concern that his company was overly reliant on the US (which is where he had the most contacts and of which, the most knowledge) and he was determined even at that stage to increase the number of markets in which he did business. The adoption of two main strategies to achieve this was evident. First, Ekomate actively created network relationships with representatives in India of trade promotion bodies from foreign markets such as Finland and Scotland.

“We have definitely realised strategy-wise that just looking at the US alone is not a good strategy, so we’re looking at parallel markets in Europe, and we have been successful in working through the trade organisations and identifying other medium and small companies that want work done. So we’ve really successfully built good relationships with trade organisation representatives of different countries. As a matter of fact, I have a good relationship with the Scotland country manager Shivendra Singh...The point is just to get exposed so that whenever Scottish companies visit India – I am giving that as just one example – that we are invited for events, we know what they are looking for.”

Second, Thomas was actively seeking non-Resident Indians (NRIs) with whom he could “partner” in foreign markets. The importance of NRIs to Thomas’ strategy is evident from the following quote:

“...definitely for someone coming from India, or someone having an Indian perspective, who is referred to us in some way or the other, it’s very easy for them to talk to us. For example, the visitor we had from Chicago two days ago is a friend of my best friend at college’s friend...For us it has been a powerful source of business – the NRI connection, so to say, wherever it is, because they finally know our working conditions. If you say Republic Day is a holiday or some other day is a holiday, they’ll know why

[chuckles]. It is difficult to explain to an American client how many holidays we have in India or why we have to work on Saturdays. So basically that helps us a lot...they just need the trust factor [that] this guy will not screw up, they'll deliver when they say; otherwise it is their neck on the line there. So I think the NRIs definitely play a very important role and it's a role that we have consciously been cultivating."

The model he sought to utilise entailed the NRI's organisation constituting the "front-end" presence for Ekomate. In other words, Thomas was seeking to utilise a "network governance" mechanism (Oviatt and McDougall, 1994) by leveraging ethnic social capital, which is categorised in this study as foreign bonding social capital. This is also relevant because such enhanced presence in a market (even when achieved through a network partner rather than a wholly-owned entity) would elevate Ekomate to the status of a "micromultinational" (Dimitratos et al, 2003) from being merely an exporter. As indicated in the review of the literature, advantages associated with micromultinationals include a greater propensity for learning in foreign markets (Zahra et al., 2000).

Additionally, Thomas has also been looking at the domestic market, specifically seeking to target the Indian subsidiaries of multinational corporations, and provide them with (internal) IT services particularly in the Web-based domain. As Thomas says,

"...as you know, Bangalore is development centre of the world. Most of the Fortune 500 have their development centres here. ...we see a relationship with them is also very important. Because once you are in, and once you've proven you can deliver on time, you're in for life basically. There has been one case where we've had a breakthrough with one of the leading US MNCs in Bangalore where our competition – or the other people that they [also] work with – are companies like Infosys and Hughes, so it definitely does bring in a lot of value to work with them also...one thing it gives you is brand equity. If people know that you are working with one of these companies, then they look at you in a different light. Also, once you work with these companies, they typically sign very long term contracts, so you are sure of this much revenue coming in. And your [human] resource gets a chance to work in a good environment, exposed to good practices, things like that...And for us it also counters the turbulence of the international market place, if you can call it that. If you can grow this pipeline, then you have two channels, and I think this is the way to go forward actually."

In the context of Ekomate's broader market portfolio, it is worth noting a few observations. First, Thomas was consciously targeting – and he attributed this to Dr Sastry's mentoring –what he called “sustaining work”, i.e., software projects that were likely to lead to continuous repeat business (e.g., maintenance service contracts) as opposed to merely one-off contracts to build some software for a client.

Thomas notes the following in this regard:

“I would say the important thing for the contracts that we got last year or so have been what we call sustaining work. It's not a project that ends, you know. And the other thing, as per Doctor's guidance, we have to [continue to] look for those kinds of projects we can build the company on. Because if you take a [short-term] project and then after 3-4 months once again you have to look for another project; rather, it is good to look at a pipeline.”

Second, in early 2004, Thomas signed an agreement with the New Zealand-based software company, Jade to act as a software development partner. This is interesting as this development occurred nearly half-a-decade after Ekomate had first established contact with Jade. In 1999 Thomas had met with Jade executives during to a business trip to New Zealand, and following intermittent email correspondence for three years, his father who is the Chairman of Ekomate had made a follow-up visit to Jade in 2002. However nothing tangible had accrued from this relationship – until 2004 – suggesting that social capital, in some cases, may have a considerable *gestation* period before tangible results can be seen.

Third, Thomas expressed some reservations about the Bangalore chapter of The Indus Entrepreneurs (TiE)¹⁰. This however seemed to be a reflection of the way the chapter was being managed in recent times whereby he felt he was only gaining new

¹⁰ It was, in fact, Thomas who had first mentioned the existence of TiE in March 2002.

information (through guest talks) rather than genuine networking opportunities with fellow-members of TiE. However, Thomas' faith in NRIs as a potential source of bridging benefits appears undiminished, as seen above.

Unanticipated Developments

New Mentor

When asked what was the most significant development in the company since the first set of interviews (March, 2002), CEO Tom Thomas indicated that it was the appointment of Dr VA Sastry, a senior professional in the Indian software industry, as Chief Mentor of the company in November 2002. Dr Sastry was known socially to Thomas and his father by virtue of playing tennis¹¹ together at a local (elite) club. This decision was prompted by Thomas' perception in the six months following March 2002 that his company was having to operate in an economic "downturn". Consequently, he felt that he needed advice and assistance in making sound decisions in a difficult environment. In Thomas' words:

"I think, as they say, providence brought us together. Basically we play tennis together at the Indiranagar Club. So he has seen me for many years and he's quite close to my dad also. I knew that he was a very great person in the field of IT and I also knew when the downturn came that I needed guidance. When I make a decision, is this the right decision or is this the wrong decision? So I went to him and asked him for his guidance...I think it was a point of confusion or helplessness, when I went to him and said, "Doctor, look, I need guidance. I have run this company for so many years, but things are now changing very fast. I needed guidance." And I think probably at that time he must have seen that I was genuinely asking for help, genuinely needed help. And I also think at the first 2-3 meetings he really did suggest things to also see whether I was implementing them; was I serious about them? For example, one of the first things he told me was de-link home from office, in my earlier setup...Second was to get more professional managers – things like that. We acted on everything he said. And many times when we were having these discussions I would wonder, why is Dr Sastry saying this but afterwards we would find out when we do it, there's always a basis, and the results speak for itself. So I think it's more or less the right timing. And that's really what helped us out."

¹¹ It is interesting that Putnam (2000) highlights sport as a useful means of creating bridging ties in society.

Dr Sastry, a PhD in engineering from Waterloo University in Canada, is a former director of quality at Infosys, arguably India's best-known and most-respected software firm (Khanna and Palepu, 2004). His reputation in Indian IT circles and his contacts are considerable (this was confirmed through interviews with other industry experts). Additionally he is an expert in quality systems and processes as evident from the fact that when he enabled Infosys to become the first Indian company to gain ISO-certification at the first attempt. When contacted separately, Dr Sastry had this to say about his involvement with Ekomate:

“The Chairman of Ekomate (Tom Thomas' father) is a long-time friend and we play tennis together. He suggested that I should get involved with Ekomate. I agreed because it gives me great pleasure to see companies stabilize and grow. I believe everybody who is honest can grow in the business they are in. I have come out of Infosys on to share my knowledge and experience to make them grow. [As mentor] I brought [to the table] processes, discipline and right strategy. Quality and attitude are most important things for sustainability and growth – would bring in a change to the way you do things.”

When asked what the chief contribution of Dr Sastry had been, Thomas identified the “customer-focus” that the Mentor had instilled in him. He also mentioned having gained valuable, practical advice on matters that were blindspots to Tom such as, as noted above, the utility of separating his office from his home (which is where the first interview in March 2002 was conducted) and the benefit of circulating a summary of discussion following a client meeting or teleconference, to ensure clarity of communication. Thomas believes that a vital difference that Dr Sastry has made for him is in providing him with a sense of direction. As Thomas says,

“[When I think] of my life before and after Dr Sastry, my life is now more or less like a kite – flying high but always guided by a string. You know it's going in a certain direction. You can be like a kite without a string if you don't have a mentor. So for me, Dr Sastry has helped me to identify what is my focus, what are our strong points, how should we move forward toward definite business plans. I think definitely that has been key to our transformation since we met [in March 2002].”

Furthermore, when asked about Dr Sastry's most important contribution to Thomas and Ekomare, this is what he had to say:

[Pauses/thinks] "I think the single most important thing is he has helped put me in the customer's shoes. What does the customer want? When he gives you a project, how do you communicate with the customer during the project?...[Clients] would like to see a process and a framework. I think he has helped us establish that. He has established the quality processes, which is very important for effective delivery. He has given us the confidence; yes, we can go after bigger business. We can build sustaining relationships."

However Thomas was clear that although Dr Sastry spent an average of half-a-day every week with Ekomate and readily discussed on the phone any pressing matters, it was he as the entrepreneur and CEO (and not Dr Sastry) who was solely responsible for bringing in new business, as evident from the following comment he made:

"Dr Sastry told me clearly – and I don't expect it – [that] he cannot go out and get business for us; we have to do it, you know. He has specifically taught me how to fish, if I can use that analogy; if he gives me fish then I will eat the fish, and tomorrow I will be hungry again. But if I know how to fish – which I am learning – then the process will be more long-lasting or sustaining."

In terms of the issues of interest to the present study, the phenomenon of Ekomate's mentor is fascinating as an unanticipated development that has led to a valuable source of social capital (i.e., through the mentor, Dr Sastry).

Personal Circumstances

It seems relevant to also mention a non-trivial personal circumstance for Tom Thomas since March 2002, which was the passing away of his father-in-law about a year later, in March 2003. It fell to Thomas to, aside from running Ekomate, take over his late father-in-law's automotive business. Within a year (i.e. by March 2004), Thomas had ensured, to his great satisfaction, that the automotive business has "done

as much business in one year as in the last *two* years”¹². However it has clearly put additional strain on Thomas, although he has tried to cope with the dual challenges by monitoring the automotive company’s production and accounting systems through computers at his software office. Thomas believes that his additional responsibility has made him more disciplined, as seen below:

“I think it has brought more discipline to me. It has brought more discipline to me because I know that there are two organisations, two sets of different staff who need time and attention on a daily basis even though there are good managers in both places...It is interesting – sometimes it’s like riding two galloping horses, one at a different speed [chuckles]. After a while you learn to stay on at least.”

In sum, it can be seen that two unexpected developments occurred – the gain of an additional source of strength (moral support) and wisdom through the mentor and a tougher set of personal circumstances through the passing of Thomas’ father-in-law, who also was an entrepreneur. A more anticipated development – given Thomas’ keenness to reduce dependence on the US market in March 2002 – was the evolution in Ekomate’s portfolio of foreign markets from merely focusing on the US and the UK (specifically England) in March 2002 to a more diverse portfolio that excluded the US by February 2005. Additionally, India acquired some importance as a market for Ekomate, with a focus on IT services for Indian multinational subsidiaries.

7.2.2 Explanatory Case Study of Mitoken

Anticipated Developments

Efforts Made for Internationalisation

As noted in Chapter Five, Mitoken was founded in May 2000 by a team of four engineer-managers, from the Indian subsidiary of Motorola. It is relatively unusual

¹² According to Thomas this was as indicative of the favourable conditions for the automotive industry in India as much as of Thomas’ competent management.

owing to its focus on software products and strong MNC ties. In terms of its internationalisation, Mitoken had no business from overseas (March 2002) but the international intent of the company was very evident from the fact that it had conducted a feasibility study in Chicago. In terms of its goals for the future, internationalisation was the immediate concern. A co-founder was moving to Chicago, where he had connections. The CEO's vision was therefore to achieve global success.

In Chapter Five, it was suggested that Mitoken represented “a promising company poised for international success” since, based on the first set of interviews (March, 2002), Mitoken gave the impression of a firm likely to enjoy international success that it sought. Indeed, others associated with the company seemed similarly favourably disposed to it. For instance, Lasse Westh-Nielsen, a Danish computer science graduate and Laura Shearer, a Scottish marketing graduate who spent about six months (February-July 2001 and July-December 2001, respectively) as AIESEC¹³ trainees in Bangalore with Mitoken, had the following to say about their impression of the company:

Lasse Westh-Nielsen: “I was amazed at the quality of the personnel at Mitoken, especially the management team. The environment was a high-pressure one, since they were competing for the first-to-market position, but I think they managed very well, with good structure. Their strengths lay in their choices of technology, and in their strong personnel. Their weakness might be their very high ambitions. But I left with a feeling that this company would have a good future.”

Laura Shearer: “I think they were optimistic that they would expand internationally...My personal impression of Mitoken was that they had an extremely

¹³ As reported in Chapter Five (Section 5.2.2) Mitoken had used trainees from Western countries through the international student organisation, AIESEC. AIESEC is the French acronym for International Association for Students in Economics and Management. Lasse Westh-Nielsen, was a technical trainee, and worked as a software developer on implementing a subsystem for Mitoken's product suite. Laura Shearer was a marketing trainee who worked on developing content for the Mitoken Web site and profiling competitors.

strong leadership team who were extremely committed to taking the business forward. There was a very strong feeling of ownership among the employees as they genuinely felt involved and felt they could make a difference in growing the company.”

As of February 2005, it was evident that, as anticipated, considerable effort had been put into internationalising the company. The results of these efforts were however inconsistent with the CEO’s targets – i.e., internationalisation had not been achieved as targeted. Hence, the bulk of the discussion on Mitoken is confined to the next subsection on unanticipated developments, which includes a discussion of the (mostly futile) internationalisation efforts made by Mitoken.

Unanticipated Developments

Unexpected Lack of Success with Internationalisation

By February 2005, Mitoken had had a string of setbacks in relation to its effort to internationalise, which were not foreseen in March 2002, three years before. First, international product sales did not materialise as anticipated (with the exception of internal use within the Motorola network as discussed separately). In March 2002, Mitoken (which, it was noted, was one of a rare breed of software product, as opposed to service, companies in India) had had initial product sales in India, with a view to fine-tuning the technology with domestic clients, and internationalization was meant to be the next main thrust for the company. To this end (and as anticipated in March 2002), a co-founder moved to Chicago in June 2002. However, to Mitoken’s disappointment, he only managed three product demonstrations to prospective clients over a six-month period, with none of them culminating in a sale. The sorry state of affairs is evident from the following comments made by Mitoken CEO Srinivas Pannala:

“We felt that although we were sending a one-person team to the US, we should cut down on travelling costs and look at only Chicago, Boston and New York – that triangle. [We decided not to] look at the Bay Area, which is a washout. Boston is completely driven by Ronald Radice¹⁴, New York/New Jersey is the common contacts that we all share, and Chicago entirely [managed] by Seshadiri Iyer¹⁵, hence we minimised the travel cost...Another basis for our positive feeling at that time was that Seshadiri had talked to a few companies in Chicago before he came to India, and they showed very positive interest...Now, what went wrong in our conclusions? Primarily two things. One, the US market further went down, and during the entire 2003 it was on the downward slope further. No one was willing to take even a buy-in decision on any product, let alone buying from an India-US company. They were just not interested in buying – just in conserving and avoiding attrition; cutting IT budget. We should have anticipated it – but I don’t know, we did not read the signals correctly. No one was willing to give Seshadiri time to come and give a demonstration – it was that bad. We could not do even four demonstrations in six months after he went [to Chicago], not even four. That was a major hit to us. The other hit was we expected a lot more help from Software Technology Transitions [i.e., Ronald Radice]. He could not give us even two leads – two qualified leads. Not to mistake him, I think he in turn was affected and the market was also telling on him.”

Second, and as a consequence, the company’s expenditure considerably exceeded its revenues. Despite moving to less expensive (and prestigious) premises and letting go of all but the core set of employees (who were paid half-salaries; the co-founders stopped drawing a salary), as of February 2005 breakeven had not been achieved. A year after the first set of interviews, the target had been to achieve breakeven by September 2003. Third, by about the end of 2003, the company had exhausted its stock of venture capital and in February 2005, the prospect of obtaining additional venture capital – in the absence of a profitable financial performance – appeared remote. This was another setback for Mitoken which had originally anticipated being profitable enough to not have to rely on a second round of venture capital funding.

¹⁴ Ronald Radice, CEO of a Boston-based process consulting firm called Software Technology Transitions is a member of Mitoken’s Board of Advisers. Mitoken had expected him to be of great help in Mitoken’s efforts to gain business in the US.

¹⁵ The co-founder of Mitoken, designated Vice President (see also Table 5.2), who re-located to Chicago as anticipated in Chapter Five.

Business from Motorola

It was noted earlier that a single international business order had materialised for Mitoken through the Motorola network. The business contract was awarded by Motorola's software division in Chicago, based on the recommendation of Motorola's Indian subsidiary in Bangalore. This is highly significant in the context of the present study given that Motorola in India was the organisation from which Mitoken was spun off, suggesting that it would be a vital source of social capital, as noted in Chapter Five. The contract was signed in May 2002. (However at the time of the first set of interviews in March 2002 the prospect of this business was not mentioned, presumably for reasons of confidentiality).

The work for Motorola in Chicago resulted in Mitoken's products being used by the entire set of Motorola's subsidiaries engaged in software development, which are spread over 20 countries. This opportunity was created by the mentor of the founders, Mr Mohan Kumar (Vice President, Global Software Group, Motorola) who sits on Mitoken's Board of Directors. This implies that it represents a case of *social capital leading to international growth*. Such social capital is evident in terms of the *trust* that Mr Mohan Kumar had in Mitoken and the *influence* and *solidarity* that he brought to the table, as evident from the following observation of Pannala:

“In May 2002 we got a very good contract [from Motorola in the US]...The reference to that was given by Mohan Kumar who is on our Board of Directors. Since he is an influential person and known to be very strong on software, and he is considered to be the father Mitoken...people said, let us give a chance to these guys...Did they have confidence in us? The US guys did not have so much confidence in us, whether we can deliver the roadmap. So they sent in some guy here. He spoke to Mohan Kumar [and asked], “Do you trust Srinivas and his team?” Mohan Kumar said, “If anyone can deliver, Srinivas can deliver. Do not worry about the delivery aspects. Just give reasonable roadmap time, and be specific and clear about the requirements; he will deliver.” And fortunately, I think our team stood up [to the challenge]”.

Mr Mohan Kumar was responsible for an additional source of business, in response to Mitoken's diversification into services, as noted earlier. He agreed to allow Mitoken to work on the "productisation" of a particular in-house quality management software tool, IQmen. Pannala is conscious that Motorola did not perhaps have a strong need in this regard and were seeking to be supportive, as seen below:

"The second thing that Motorola has done is to help us with this IQmen; they said, take this IP [i.e., intellectual property]. I am going to pay you money, and you convert this into a product, and you sell it, keep the money and give me a royalty back. Of course this proposal went from us but they were gracious enough to look at it as a supportive measure for this company. They still do not need a productised version of IQmen; it's serving their purposes well in whatever shape it is. But they understand that they owe a certain responsibility and want to guide Mitoken and help us. So that's the second source of help that they have given."

However he was keen to be able to move beyond a dependence upon the social capital derived from Motorola as can be seen from the following comments of Pannala:

"We have been getting Motorola's support but my desire is that we should not take their support beyond a point. I should grow as an independent company and that's what would please the Motorola folks much more. "Yes, we have spun it off, we supported them; now these guys are standing on their own feet. I can give them more contracts but you know what, they really aren't that dependent upon us any longer." That's the message and the feeling that I want to [convey]."

The support from Motorola has been considerable and the vast majority of revenues for Mitoken accrue from Motorola in the US and Motorola in India (for the work on IQmen). As a consequence of the former, international business accounts for approximately half of its total revenues, which was the cut-off point while identifying a sample of four case-firms (as noted in Chapter Four). However the total revenues have been so much lower than expectation, and the "regular" internationalisation efforts so unsuccessful, that it would be premature to conclude that Mitoken had become, by February 2005, a highly internationalised firm.

Adjustments and Changes in Strategy

Consequent to the unexpected difficulties outlined above, the CEO Srinivas Pannala attempted various strategic shifts to counter these problems. First, in terms of *geography* it became apparent by December 2002 (i.e., six months after a co-founder moved to Chicago) that it would be exceedingly difficult to achieve sales in the US owing to intense competition and the economic downturn. As noted above from Pannala's comments, another setback was the perceived lack of support from Ronald Radice, an adviser to the company. Therefore in January 2003, a brief visit was made to the UK by Pannala and his Chief Marketing Officer, Padua Boopalan which made them optimistic about their prospects in the UK.

“The moment we said the US is not our market, then what are you left with? That's when we started looking at what the other sources of money were. Boopalan [the Chief Marketing Officer] and I did a limited exploration of the UK market around the beginning of 2003. And then we talked to one of my friends who heads the marketing of MindTree [another Indian software company] in the UK and...[the British market is] a niche market that is untapped – that is the information we got.”

This led to the decision to send another co-founder, Shishir Pathak (Chief Operating Officer) to the UK in May 2003, to explore product sales in that market. In addition, a British company was retained (at considerable cost, when translated into Indian rupees) for a three-month period to act as Mitoken's value-added reseller. However no sales were achieved during that period. In a sense, this came as less of a surprise to Mitoken (initially at least) than had the lack of success in the US, because they were mentally prepared for a longer gestation period in the British market. As Pannala noted,

“...everyone was saying that this [i.e., dealing with the British market] is a relationship game. You have to really be patient and only then you will get results. Now, we knew that being patient we could not be for a long period of time – so what could we do now? So we took a call in May 2003 saying that we'll play this game for about a year. If we don't get results we'll come back. But let us at least have had the experience of trying to tap the UK market.”

However, after sales in the UK failed to materialise despite a year's efforts, Mitoken's sentiments about the British market changed considerably and interest in the US was re-kindled. Shishir Phatak was re-called to India and re-located to the US. In the meantime, Seshadiri Iyer (the co-founder who originally moved to Chicago) left the company. By February 2005, Pannala had the following to say of the UK market:

“[The UK has yielded] zero sales. We have decided not to pursue UK market for now. Shishir [the co-founder who had spent a year in the UK] has taken up consulting on behalf of MitoKen in the USA. [We were making] very slow progress in UK market, whereas US market is much bigger, has established need [for our offerings] and costs are lower compared to UK.”

Additionally, efforts were made to seek business from Australia especially when it so transpired that Boopalan's (Chief Marketing Officer) marriage to an Australian citizen of Indian origin (i.e., an Australian NRI) was arranged in February 2004. Through his network of contacts in Australia (his father-in-law is an immigration attorney and presumably well-connected in Australian NRI circles), Boopalan has explored business opportunities in Australia. As of February 2005, no sales had materialised. Boopalan expressed disappointment with the NRI community and believes that the benefits of ethnic social capital may be over-rated. As he said:

“NRIs are a peculiar breed. We are speaking to a number of fellow-Indians overseas. They should help us, but they don't always help. We have the saying that a Bengali does not help a fellow-Bengali. I don't know why. Maybe they are jealous...NRIs should expect less from us, but such “healthy trade-offs” don't happen. Even our friends who are [Silicon] Valley entrepreneurs have not helped us very much”.

One of the problems Mitoken reported was with gaining the support of value-added resellers. They were unable to sign up any in the US and felt that the ones they did in the UK, Singapore and India did not actively promote Mitoken. They attributed this

to their lack of credibility as new players and their financial limitations that allowed smaller incentives than the resellers seemed to desire. Another interesting comment pertained to the lack of support from large Indian players such as Infosys and Wipro.

As Boopalan commented,

“One thing I hate about the large Indian firms is that they are not helping the “ancillarisation”¹⁶ of the software industry. Wipro and Infosys do not outsource anything – they do everything in-house. Where are they developing an eco-system?”

Second, it was felt that perhaps the focus on the software “vertical” i.e., the software industry as target-customers was inappropriate as the demand for product sales was non-existent even after three years of efforts. However this would entail certain modifications to the products particularly to make them more user-friendly for less technology-oriented customers (e.g., the construction industry).

Third, a great sense of frustration was experienced by Mitoken in relation to its effort to succeed as a world-class product company, which was rather contrary to the norm in the Indian software industry which is *service*-oriented. Thus it sought to, by early 2004, diversify into services as well. From the perspective of the present study, this constitutes an unexpected case of diversification where a new offering was less knowledge intensive than the original. However it seemed that Mitoken were feeling that they were being overly ambitious in hoping to succeed as a pure-play product company. Pannala discussed the change in thinking about the company’s offering in the following way:

“...a commonsensical perspective has crept in and said that, while it is good to be a products company because it shows you can conceptualise and are actually playing the kind of game that Bay Area companies play, we should get into the services game

¹⁶ This is a reference to industries such as the automotive industry where suppliers of ancillary parts to large players such as General Motors and Ford have spawned a global industry of SME players as component-suppliers.

because that's what the world recognises India for. And the whole Indian software industry is based on that, and they are shining a lot. And we are not being part of that game. So there is a thinking now that we should look at software services...that we must build on the brand values of India – what is already there. *Why fight the bigger pattern?*" [emphasis added].

The two co-founders stationed abroad – one each in the US and the UK (which was the case as of early 2004) – were urged to spread the word that Mitoken sought to combine its own expertise in product development (which they felt was relatively rare in India) with a software services offering, which India was renowned for. As of February 2005, Mitoken had achieved modest success on this front with small services contracts having been signed with GE Medical Systems and Hewlett Packard in Bangalore. Additionally they had been awarded a business contract by a New Jersey-based IT firm. Pannala was however hopeful of getting repeat (and more lucrative) business from one or more of these clients in the future. In addition, Motorola in India offered Mitoken some business related to this service offering, as noted.

In sum, over a three-year period Mitoken appears to have had fewer successes than failures, and has failed to live up to its potential. Three observations can be made. First, the economic downturn affected this company rather severely. Second, Mitoken benefited greatly from its social capital emanating from Motorola, which has acted, in colloquial terms, virtually as a “godfather” for the company. Third, perhaps Mitoken overestimated the market conditions and its own capabilities ending up with a situation which may be described – once again colloquially – as their having “bitten off more than they could chew”. It was noted in Chapter Five that of the four case-firms, Mitoken seemed the most atypical; that view persists in the

discussion in this chapter (i.e. Chapter Seven) based upon its behaviour and experiences over a three-year period as seen above.

7.2.3 Explanatory Case Study of New Creation

Anticipated Developments

Continued Emphasis on International Revenues

As noted in Chapter Five, New Creation was founded in January 2001 by Ashish Raichur, a software engineer who decided to move back to India after a decade in the US. Entrepreneurship was chosen over employment. In terms of internationalisation, both of New Creation's key software projects accrued from Raichur's contacts (former colleagues/clients) in the US. Raichur believed that the future growth of the firm depended on his continuing to get business from abroad. Therefore, in terms of the goals for the future, Raichur's priority was to actively seek projects from overseas, as indicated earlier. Furthermore, he stated his openness to eventually exploring the local market for high-end Java training.

As of February 2005, consistent with Raichur's primary goal stated in March 2002, New Creation continued to rely almost exclusively on international revenues. However, what was considerably different in February 2005 was, however, that virtually no business emanated from the US market and instead, 100% of business revenues came from non-US markets viz., Ireland, Spain and Sweden. This is discussed further in the sub-section on unanticipated developments, after briefly touching upon a more anticipated development, viz. diversification into Java training.

Training in the Indian Market

As of February 2005, New Creation had made a foray into Java training targeting the local Bangalore market, as anticipated in March 2002. However while at that stage this interest to stem primarily from his frustration at attracting high-calibre software programmers (to a new and non-established company), by February 2005 the intent was rather different. Raichur's strategic intent, as a consequence of realising that New Creation possessed technical but not marketing skills, was to target sub-contracted work from larger software companies in Bangalore. Thus the training offering was seen as means of establishing relationships with such companies.

New Creation's offering was distinguished from that of the market-leader Sun Microsystems (which is also the company responsible for Java technology) by making the training programmes more customised to individual companies and flexible in terms of the time involved. It appeared that as of February 2005, New Creation had made a modest beginning in terms of training. No sub-contracted work had yet materialised as a result. It remains to be seen how effective this strategy will be in light of the assertion of Mitoken's Padua Boopalan that larger Indian software firms do not sub-contract work to small firms.

Unanticipated Developments

From a US- to a Europe-Oriented

As noted above, a development that was not anticipated in March 2002, was the change in geographic orientation by February 2005 of New Creation's markets away from the US to Europe. Two reasons seem attributable to this noticeable change in

geographic focus for New Creation by Raichur. The first may be termed “the limits of social capital”, and the second, intense competition (in the US market). As for the former, Raichur realised about a year after the first set of interviews (March 2002) that he would need to widen his client base. However continued efforts to tap contacts (former colleagues/clients) in the US did not result in any new business. Raichur found that these contacts either had no business requirement at that stage or (as in at least one case) they had had a bad experience with outsourcing to India and were hence reluctant to do so in the future.

The other issue, viz., the intense competition in the US market became evident to Raichur when he made additional efforts to obtain business in the US, through advertised requirements (i.e., from companies that he was unfamiliar with). He found the newness and smallness of his company to be liabilities whilst bidding for international business in this manner as, often, the first questions he would be asked by prospective clients were: “How many employees does your company have?” and “What is the financial history of the company (i.e., how old is it?)”. His answers (viz., about ten employees and three years of trading experience, respectively) often resulted in the termination of interest from the prospective client at that stage.

Thus Raichur felt that he had reached a “roadblock” for growth and began to consider alternative markets to the US that would be comparably remunerative but more accommodating of a small and new firm. His next option was the UK but he soon came to the conclusion that it too “was as saturated as the US”. This then led him to consider Ireland and continental Europe as potential markets. As he says,

“I think [our shift in focus toward Europe] was just a natural reaction in the sense initially we started in the US, we had our old contacts. But we have only so many contacts, not all of them are ready to give us work. So what do we do? Try to get more contacts. To get more contacts in the US it was just very difficult. So then one started thinking where else will be able to pay similar rates in the US? Europe. So I said OK, let’s just turn our attention to Europe. Because they are able to pay similar to the US and they may not be as saturated as the US.”

It may be recalled that, as noted in Chapter Five, Raichur had placed much hope in Internet-based “hub” sites through which he hoped to gain international business. However he found most such sites ceasing to operate. Another avenue that he had mentioned in March 2002 entailed the use of “marketing representatives” who would, if paid a retainer fee, represent a group of companies and visit foreign markets seeking business. However this did not bear any fruit for Raichur who insisted on paying a commission *after* any business was gained, and refused to pay a retainer in anticipation of business orders. He however feels that though he signed agreements with over 20 such agents, nothing materialised because of his inability to provide a strong enough incentive and a lack of credibility, due to the newness of New Creation.

Given the lack of success with the Internet and intermediaries, the approach Raichur then took in the course of 2003 was to hire two employees for the primary purpose of identifying prospective European clients through the Internet, and thereafter sending them an email introducing New Creation and soliciting business. Any positive response(s) would be forwarded to Raichur who would then seek to establish preliminary telephonic contact. While his objective was to sign up clients without the need to incur travel expenditure, in reality Raichur has had to make personal trip after establishing a viable set of prospective clients through his efforts on the

telephone. He has made three such visits to Europe as of February 2005. He has found these visits to be highly effective and has been able to sign up clients in Sweden, Spain and Ireland, as mentioned. With the growth in business, the number of New Creation's had increased to 15. Raichur has found his European clients to be unperturbed about the small size and young age of his firm, as evident from the following comment:

“The US we found very difficult simply because there are a large number of players. We are a very small company. The first thing they ask is: how many people do you have? And we say, 7-8 people. It doesn't go beyond that, especially for the US. In Europe, it's OK. They don't mind – at least that's what my experience has been. The number of people doesn't matter so long as you can get the job done. In the US I think they are more familiar with the bigger companies, so a small company like ours would not be of much interest.”

When asked whether dealing with European clients had been different from his prior experience with American clients, Raichur answered in the affirmative. He has found the process of working with his new European clients to be a more time-consuming process as he now takes a much more cautious approach in the initial stages of a project when expectations are set and (therefore) is also careful about the language used in written documents. This is particularly so in relation to the clients in Spain, who sometimes send requirements in Spanish¹⁷. Furthermore, he states that as of February 2005, he is much more rigid in his process with European clients in terms of getting each “milestone” approved by them, before moving on to the next. It is however possible that these changes are necessitated at least as much due to lack of familiarity (and hence trust-inducing social capital) among the parties involved, as the cultural differences between American and European firms.

¹⁷ Within Raichur's company there is no knowledge of continental European languages, which strengthens the survey finding about a lack of language skills in Indian software SMEs. However Raichur seems to manage to deal with the situation pragmatically, by using a Calcutta-based Spanish translator.

It seems noteworthy that Raichur was asked by some prospective clients in Europe whether he had a European office, which indicates the importance that some clients attach to a supplier's local "presence". This would suggest virtue in a firm being a micromultinational in terms of the reassurance that this provides, it would appear, to prospective clientele. In this regard, Raichur seems to adopt a pragmatic perspective by recognising the cost associated with setting up an office but would rather work with "partner" organisations, which once again echoes the notion of network governance.

7.2.4 Explanatory Case Study of Vikas Global

Anticipated Developments

Progress on Product Development

As noted in Chapter Five, Vikas Global was founded in 1995 by Venkata Chalapathy, an engineering graduate from neither a foreign nor elite Indian university. Only 20% of revenues accrued from overseas at the time of the first set of interviews (March 2002). In terms of internationalisation, Vikas Global's first international business contract materialised in 1998, through unsolicited business from Australia. Vikas started a one-person office in Australia (Feb 2002). In terms of goals for the future, a key thrust over the next three years was foreseen by Chalapathy as being the development of IP (biometric/GPS), an ambitious goal, calling for a significant change (e.g., R&D budget). This suggests a desire to tap sophisticated Western markets.

As of February 2005, it emerged that most of the requisite work had been completed. One international business contract had been obtained for the GPS solution in Malaysia. The biometric solution was yet to be promoted internationally and instead the initial focus was on the domestic market. This appears similar to Mitoken's original approach with its own products i.e., of catering to Indian customers first, with a view to fine-tuning the technology before seeking international business.

This constitutes perhaps the most significant development for Vikas Global during the three-year period between March 2002 and February 2005. From the perspective of the present study, it represents a concerted effort to enhance knowledge intensity. Chalopathy sees this effort as part of his constant striving for higher standards and frequently mentioned the need to keep attaining the "next level", as seen from his comment below:

"You might ask me whether all this is required. See, all this is required probably not to all companies. I could have kept doing development job [i.e., software services] – it's a good option. Everybody is doing front-end work, everybody is doing body shopping [i.e., sending software professionals abroad to undertake on-site activity]. But how many Indian companies are working on new technology or some niche product? So even though it is very difficult for smaller companies like us to even dream about it, somehow I thought, some risk element we have to take. That risk, either it might pay or may not pay. But if we don't take that risk, what will we have achieved [at] the next level? See, that's how I decided two years back to look at new technologies."

Also of considerable interest in this regard is the reference made to collaboration within the Indian market, with other companies as well as individuals such as academics in the prestigious Bangalore-based Indian Institute of Science, as seen from the comments below.

In relation to the former, it is significant that Vikas was collaborating with a much larger firm and reflects an innate self-confidence, despite its small size. As for the

latter, the collaboration with academics is also noteworthy as it seems to represent a determined effort to tap local resources and is, in a sense, reminiscent of Ekomate's utilisation of renowned industry expert as a mentor (although in Vikas' case there seems to be no such formal arrangement). In any case, such collaboration is likely to yield valuable social capital and illustrates the usefulness of resources within a local milieu (Brown and Bell, 2001), which experts interviewed in March 2002 were concerned that most Indian software SMEs were failing to actively utilise (as noted in Chapter Five).

“Vikas serves a financial institution in India along with four “biggies” [i.e., large Indian IT companies]. All are fiercely competitive. So what has happened is suddenly they have realised that I am strong in that account [i.e., in relation to that client]. So one of the biggies approached me [and said], why can't we work together? I should have negated him, right, if they know I'm strong. But I didn't negate because I didn't look at it as one single order. Tomorrow [on] another large account, maybe he'll be stronger – definitely he will be stronger. In one of the cases I am stronger but in ten other cases they'll be stronger. In one of the cases I am stronger, but in 10 other cases they'll be stronger. So I've realised I don't mind sharing something with a biggie, probably that coexist[ence] can take me to the next level...They [i.e., companies like this “biggie”] know that as a company I am small, but as a [repository of] knowledge, I am not small. I think that is a key point, which I am trying to leverage.”

“I closely interact with the Indian Institute of Science. Some of the professors I discuss our new technologies [with]. I have done this from day one...I look at them as advisors. See, for me most of the company's advisors are people who are well-known in the industry.”

Unanticipated Developments

Delay in Internationalization

Another notable development over a three-year period is the delays experienced in Vikas' international plans. It may be recalled that just a month prior to the first set of interviews (March 2002), Vikas had opened a one-man sales office in Australia, which also the market from which it had received, unsolicited, its first international business contract. However no business had materialised from Australia as of

February 2005, which Chalapathy attributes to the economic downturn for about 18 months between April 2002 and September 2003.

Also, Chalapathy had originally (i.e., in March 2002) indicated a desire to target what he called “virgin territories” such as South Africa and Zimbabwe, where he expected the competition to be less intense. However this too he chose not to pursue owing to unfavourable economic conditions. He reckons that otherwise he would have opened “two or three” offices in foreign markets by now which is indicative of a serious intention to internationalise further and his perception of the importance of “presence” in a market i.e., of transforming into a micromultinational. This, as also the significance of the economic slowdown for Vikas, is evident from the quote below:

“I am still having those thoughts. But what has happened, as I said, my entire R&D has started in the downturn scenario. So if everything was alright we should have been opening offices in two or three locations. So what has happened is the downturn plus a severe cash crunch. Getting out of the downturn was a great story, you know. I think 60% of the Indian IT companies, like us companies, have closed down – straightway. They were not able to manage. Now business is looking [up]. Perhaps one year down the line if you ask me I may have one office somewhere there [i.e., in his target markets]. It’s possible. It’s possible [repeats]. And now the product lines have also come to a shape; we have some deliverable products. So what do I do now? I have to look at those markets. Naturally I have to [look for business] somewhere apart from India, where anyway I am. So I will look at some other places, where there are some opportunities. May be down the line one year you can hear me [report] something.”

Despite such difficulties (i.e., owing to the downturn), Vikas grew from having 70 to 110 employees and continued its minor foray into computer education having signed up a second university as a customer. Vikas’ involvement with education is primarily motivated, it would appear, by altruistic rather than commercial considerations. Nonetheless, Chalapathy felt that as of February 2005, Vikas was enjoying the benefit of what he termed “backend brand equity” – and which in the terminology of

the present study would refer to social capital – through former students now employed in a host of Indian software firms. Like Ekomate, Vikas was keen on developing a “sustainable revenue model” i.e., of generating long-term (as opposed to one-off) revenue streams. As referred to, Chalapathy has useful connections at the Indian Institute of Science through which he was referred to a technology incubation scheme at the Indian Institute of Management (in Bangalore). Although this possibility did not become a reality, it is evidence of Vikas’ growing respectability as a technology company and of its adeptness at leveraging influential local resources and social capital.

7.2.5 Synthesis of Case Studies and Supplementary Expert Interviews

Comparison in terms of Age

In comparing the experiences of the four case-firms over a period of three years, a useful starting point is the two variables used at the stage of sampling, as reported in Chapter Four on the study’s research design, viz., age (less than six versus six or more years of existence) and extent of internationalisation (less than 50% versus 50% or more international revenues). In terms of age, a commonality can be observed within each pair of case-firms i.e., between Mitoken and New Creation (the younger firms) on the one hand, and between Ekomate and Vikas Global (the older firms) on the other.

As for the younger firms, both recounted difficulties in engaging marketing intermediaries. In Ekomate’s case, little had been achieved through value-added resellers appointed in India, the UK and Singapore, while in New Creation’s case

similarly no benefit had been derived from the appointment of so-called “marketing representatives” who sought international business on behalf of a set of clients. In both cases, difficulty was found in providing such intermediaries with the incentive to “push” these companies’ offerings in the international marketplace. For example, New Creation insisted upon paying a commission on any international business obtained, but not a retainer (i.e., a monthly fee, irrespective of business obtained) as demanded by most marketing representatives. Another issue appears to be the “liability of newness” in that intermediaries often sought a longer history of trading in order to be convinced themselves or to persuade more effectively prospective clients.

As for the older firms, both Ekomate and Vikas Global articulated a strong desire for “sustainable” long-term revenue streams. This translated into efforts to undertake such business contracts (entailing long-term maintenance service, for instance) as would lead to long-term revenues. In other words, economies of scope were sought from their business relationships. This seems easily explained by the phase of the life-cycle that these older firms were in, having completed nearly a decade of existence as of February 2005. Thus when viewed from the lens of age, the experiences of the four case-firms over a three-year period seem normal and unsurprising.

Comparison in terms of Extent of Internationalisation

A perhaps more interesting picture emerges, however, when the four case-firms are viewed through the other lens viz., the extent of internationalisation. When the less

internationalised firms (Mitoken and Vikas Global) are compared with the more internationalised firms (Ekomate and New Creation), rather striking changes can be seen. As for the former, both Mitoken and Vikas have taken significant efforts in altering the configuration of their offerings, albeit in contrasting ways. Mitoken has sought to move away from being a pure-product company to incorporating the dimension of services in order to generate an additional revenue stream. Vikas, on the other hand, has sought to transform itself from being an exclusively services-oriented company to one that also offered products in the specific areas of biometric security and GPS. It could be said that Mitoken's diversification has entailed a decline in knowledge intensity and Vikas', an increase. Interestingly, (and perhaps ironically), in both cases, this transformation was undertaken to enhance international revenues.

As for the more internationalised firms, both Ekomate and New Creation have witnessed a transformation in their portfolio of foreign markets, with a discernable two-fold shift from a US-orientation toward (a) a focus on European markets and (b) attention (at least partially) being given to the domestic market (quite specifically, within Bangalore). Within this broad similarity however there are some interesting differences. First, Ekomate's diversified portfolio of foreign markets was anticipated in March 2002 given CEO Thomas' inclination to reduce dependence on the US market, but it had appeared that New Creation's was CEO Raichur expected to continue to focus on the US market. Second, the two companies have adopted different internationalisation strategies in that Ekomate has sought to build relationships with trade organisations and rely on the guidance of a mentor, while

New Creation has approached foreign markets more directly. Third, Ekomate's local dealings have been in the area of software services (targeted at local multinational subsidiaries) while New Creation's have been training-related.

In making sense of the latter set of differences discussed above (i.e., between the more and less internationalised firms), it may be worthwhile to consider Ansoff's (1965) classic distinction between products and markets. The less internationalised firms made perceptible changes to their *products* and the more internationalised firms, to their *markets*. Also noteworthy is the fact that the less internationalised firms do not appear to remain as such and indeed, the product changes are seemingly undertaken to enhance their international revenues. Furthermore, Mitoken, whose international revenues did increase during the three-year year period through business from Motorola in the US demonstrated, like Ekomate and New Creation, an inclination to consider new markets (other than the US) as evident from its (failed) entry into the British market.

Effect of the Economic Downturn

One of the striking similarities across all four case studies is that all four CEOs made reference to an economic downturn or slowdown during an eighteen-month period between April 2002 and September 2003 – in fact this began shortly after the first set of interviews (March 2002). This of course implies that the subsequent eighteen-month period (i.e., as of February 2005) was more favourable. Although such a scenario was not anticipated or planned for (as it can never be!), it would appear that there is much virtue in this happenstance as it accentuated the urgency for (and

challenge of) internationalisation and has sharpened the focus on the manner in which the four case-firms utilised their resources, particularly knowledge and social capital. From the perspective of the present study, this has been beneficial and allowed for useful observations to be made.

Equally, it is recognised that the entities (firms or individuals) with which the case-firms had relationships may have also been adversely affected by the economic conditions and therefore less helpful than they might have been in more favourable circumstances. While this may lead to a certain amount of artificiality in the situations under study as a limitation of this piece of research, it could also be argued that actually a serendipitous finding has been made viz., the limits of social capital, particularly in a hostile or turbulent environment.

Perhaps the emphasis of the older firms on more “sustainable revenues”, noted earlier, indicates a desire to be more self-reliant (on their own knowledge) and less dependent on social capital, which might imply the volatility or predictability of the latter. For instance, it took a full five years of building a relationship with Jade in New Zealand before any tangible benefit accrued to Ekomate – such unpredictability offers an unstable basis on which to plan on or anticipate revenue streams for the future. This is perhaps all the more true whilst in the midst of an economic downturn, which seems to accentuate the need for self-reliance.

Supplementary Expert Interviews

Expert interviews carried out to supplement the interviews with case-firms resulted in interesting revelations about the two special cases of ties (viz., MNC ties and ethnic ties) that this study focuses on. In terms of the MNC ties, it emerged from discussions with the Director (Developer and Platform Evangelism) of Microsoft India that MNCs like Microsoft *are* keenly building ties with Indian IT firms *but* that they are at present focusing on the large well-established firms such as Infosys. In terms of the ethnic ties, it emerged from discussions with the President of TiE Bangalore that Non-Resident Indians (NRIs) interact with Indian businesses not from altruistic motives, as is commonly perceived in India, but for commercial reasons. The former point suggests that the smaller firm will therefore have to make an effort to engage with MNC subsidiaries and the latter point that engaging with NRIs will have to be for mutual benefit. Neither point substantially contradicts the literature or research findings considered thus far.

Interviews with other Indian software entrepreneurs – as experts – revealed that *collaboration* among SMEs as important in that it was potentially a means of overcoming resource constraints but equally, a rare occurrence and very challenging to put into practice. There appeared to be no “culture” of collaboration at the local level, presumably partly due to the penchant for secrecy suggested in the exploratory expert interviews (although the context in that case was a bit different viz., the willingness to participate in a survey). As for the issue of collaborating with MNC subsidiaries, some entrepreneurs conveyed an impression of being defensive, suggesting a lack of trust, which is a hallmark of social capital (Adler and Kwon,

2002; Coleman, 1988; Portes, 1998). That is, they felt that such collaboration would be an indication of some weakness or shortcoming; alternatively, there was a sense that it would warrant some level of deference to a clearly more resource-endowed entity (i.e., a MNC subsidiary). These are interesting observations in light of the first set of expert interviews which suggested that Indian software SMEs were not actively leveraging local networks. However the four explanatory case studies presented in this chapter do indicate that varying levels of collaboration do take place. Nonetheless, this issue remains a concern with significant managerial and policy implications.

Finally, attention is drawn to the fact that the survey findings were shared with the CEOs of the case-firms and as such their expectations had been consistent with those of the hypotheses. In other words, they also expressed surprise that there had been no significant positive relationship between knowledge and modal commitment (or presence in a foreign market), and between social capital and growth. Clearly therefore these findings are counterintuitive and the explanatory case studies were planned precisely to address such inconsistent findings. The remainder of the chapter seeks to resolve these issues in light of the explanatory case studies.

7.3 Linkages to the Research Framework

In light of the accounts of how the four case-firms' internationalising and related activities evolved over a three-year period and based on the above discussion of product/market changes, consideration is now given to the key constructs of interest

to this study viz., knowledge, social capital and internationalisation (growth and mode), and their inter-relationships.

7.3.1 The Relationship between Knowledge and Internationalisation

International Growth

The survey findings, consistent with expectations, revealed that knowledge – both market and technological – constituted a key driver of international growth. This appears to receive further support from the explanatory case studies. Both New Creation and Ekomate enjoyed international growth due to, it would appear, their overall market knowledge – particularly internationalisation knowledge¹⁸ i.e., knowledge about developing and implementing an internationalisation strategy (Eriksson et al, 1997). These firms demonstrated an ability to screen markets in a strategic manner (Young et al, 1989) and effectively negotiate (in the case of New Creation) or build relationships (in the case of Ekomate) with relevant international players. Further support comes from the *lack* of international growth on the part of Mitoken, which, with the benefit of hindsight, seemed to *lack* genuine market knowledge, in the case of the British market. In relation to knowledge intensity, developments in the case of Vikas – which are admittedly at a nascent stage where

¹⁸ As discussed in Chapter Two (literature review), market knowledge encompasses three dimensions, identified by Eriksson et al (1997) viz., business knowledge, institutional knowledge and internationalisation knowledge:

- Business knowledge pertains to knowledge about the micro external environment of a foreign market(s) i.e., knowledge about such as aspects as that market's customers, competitors and distributors.
- Institutional knowledge pertains to knowledge about such as aspects as business laws, cultural norms, regulatory standards and language skills; in other words, those facets of a market that typically lead to psychic distance (Johanson and Vahlne, 2003).
- Internationalisation knowledge refers to knowledge that leads to an ability to develop and implement an internationalisation strategy; one may conceive of this as international business 'how-to'.

In the survey, all three knowledge types had loaded onto a single factor and hence distinction between them was not made in the previous chapter that presented the survey findings.

international business from the Malaysian market has been obtained – support the view that greater knowledge intensity leads to higher international growth.

Modal Commitment

The survey findings, contrary to expectations, revealed no significant relationship between knowledge and modal commitment. Mixed support is perceived from the behaviour of Mitoken which established a semblance of a physical “presence” by sending a co-founder to each of its two most important markets, the US and the UK. Given the firms’ relatively high knowledge intensity, this may be construed – as was the case in Chapter Five – as support for the hypothesis that knowledge intensity is positively associated with modal commitment.

Yet this is a curious situation as this very behaviour also contradicts the proposed relationship between market knowledge and modal presence, particularly in the case of the UK where the firm’s presence was precisely due to a *lack* of market knowledge. Thus the cofounder situated in the UK had the task of both generating sales and (perhaps more importantly) *learning* i.e., gaining market knowledge. However, since little changed in the overseas presence of the other three case-firms (presumably owing, in part, to the economic slowdown) caution is required here and it is not suggested that the knowledge-mode relationship be rejected outright but rather that, based on the explanatory case studies, knowledge does not guarantee modal commitment. Further research is required to explore this relationship further.

Furthermore it should be recognised that given the dearth of literature on mode in the context of small firms, ideas had been drawn (in Chapter Two) from literature pertaining primarily to large firms (e.g., Kogut and Zander, 1993). This is a clear indication that more attention must be paid to theory-building with respect to resource-constrained firms such as SMEs.

7.3.2 The Relationship between Social Capital and Internationalisation

International Growth

The survey findings, contrary to expectations, revealed no significant relationships between (any category of) social capital and international growth. This contradicts the Mitoken case study since whatever international growth was achieved (i.e., through business from Motorola in the US) was quite evidently a consequence of the firm's strong (local bridging) social capital in Motorola India. However another source of (foreign bridging) social capital – pertaining to their adviser, Ronald Radice in the Boston area – failed to result in growth as expected by Mitoken, as noted earlier, indicating that social capital is no guarantee of growth. There was also a distinct lack of success in leveraging foreign bonding (i.e., ethnic) social capital for international growth leading to, it would seem, some disappointment and bitterness (as seen earlier from Mitoken's Chief Marketing Officer, Boopalan's comments).

Furthermore, the perspective provided by the cases of Ekomate and New Creation, is consistent with the survey finding, as both of these firms failed to obtain additional business from the market in which they had the most social capital, viz., the US. Instead, as observed, they appeared to leverage their *knowledge* base as they sought

to enter other (and new) markets. As New Creation's CEO Ashish Raichur had noted, "We have only so many contacts, not all of them are ready to give us work." In other words, he seemed to feel that he might have "exhausted" his social capital.

The aforesaid examples, then, suggest a different interpretation to the Mitoken situation. It appears that (especially bridging) social capital *can* lead to international growth, but this is primarily so in the *early* stages of a firm's life-cycle. Thus it was seen in the explanatory case studies (March 2002) that Ekomate and New Creation too had enjoyed growth through their social capital – which at that stage seemed to validate the literature-derived hypothesis that suggested a positive relationship between social capital and growth. The average age of the sample of SMEs surveyed was nine years suggesting, by that stage, social capital had ceased being a driver of *growth*. If this is so, then this is a contribution to the literature as it provides a more nuanced understanding of the social capital-growth relationship.

Other aspects to be taken into consideration include the active (as opposed to passive) leverage of social capital – in other words, did Mitoken (as an illustration) proactively entreat Radice for help or did it wait passively for him to take the first move? If the latter, then this may also imply cross-cultural issues such as Asians being reluctant to be seen as "pushy", particularly with elders. Alternatively, cross-cultural barriers may have also led to inconsistent expectations – an Indian advisor (such as Ekomate's Dr Sastry) may play a far more "hands-on" role than an American one. This is mere speculation and there is nothing to indicate that Mitoken were anything but proactive and clear in their communication. Another point worth

noting is that disappointment with the Radice connection notwithstanding, the positive role of Motorola suggests that when social capital leads to growth (which apparently is at a firm's early stages) then *bridging* social capital is especially vital.

Modal Commitment

The survey findings, consistent with expectations, revealed that social capital was positively associated with modal commitment. More specifically, and as also predicted, bonding (rather than bridging) social capital was associated with a presence in the largest foreign market of the respondent. This was so in the case of foreign bonding social capital, operationalised in this study as social capital emanating from fellow-Indians abroad (i.e., ethnic social capital). This is seen especially in the case of Ekomate, which has consistently targeted NRIs as prospective strategic partners, through whom to establish a presence in foreign markets. Thus in the case of Australia he reported being in an advanced stage of discussions with an Australian NRI, a prospective strategic partner. In the case of Scotland, he used the social capital of an NRI there (who did not himself operate within the Scottish software industry but did have a few useful contacts therein) to establish a strategic partnership with a Scottish firm, which is now Ekomate's "presence" in that market. This is a particularly helpful example since Ekomate did not have much market knowledge about Scotland; rather, the strategic partnership (and therefore presence) was the result of network connections (i.e., social capital).

In continuance of a spirit of speculative discussion with a view to enhancing extant theory, it is further suggested that the apparent emphasis on trust (as a priority) in

establishing presence may be the consequence of *cultural* factors. It is well known that Asian firms may have a more relational focus and Western firms, a more transactional outlook. As Hitt et al (2002, p.354) note, “In the West (i.e., North America, Western Europe), business dealings have been largely based on the concept of transactions. However, in most Asian societies, they are based on relationships. For example, when an executive is regarded as successful in Western societies, s/he is often described as wealthy. However, an executive of similar success in China is referred to as well connected.”

They go on to state, “While, social capital has become an important concept in recent management literature...relational capital [has] been important in the culture, business dealings and academic writings in Asian countries for many centuries” (Hitt et al, 2002, p.354). While Hitt et al (2002) make these comments in the context of Chinese (“guanxi”), Japanese (“kankei”) and Korean (“inmak”) notions of social capital, it is perhaps reasonable to similarly suggest – tentatively, of course, at this stage – that an Indian equivalent is at play here, and is worthy of further investigation as recommended in the next (concluding) chapter.

7.3.3 The Relationship between Social Capital and Knowledge

Before moving on to synthesise the explanatory case study findings on the unexpected survey results, it seems worthwhile to consider one other inter-relationship among the constructs of interest, albeit one not tested through the survey, viz., that between knowledge and social capital. This relationship was deliberately not included in the hypotheses in part due to logistical considerations as

testing these hypotheses simultaneously with the others would have ideally called for procedures such as structural equation modelling, which was infeasible in light of the size of the sample population¹⁹. However interesting observations can be made from the explanatory case studies that suggest that this is an important relationship (Nahapiet and Ghoshal, 1998).

In at least three cases it seemed that social capital led to knowledge. First, Ekomate's relationship with its mentor increased its market knowledge, especially in terms of an overall internationalisation knowledge (which is one of the three dimensions of market knowledge). Second, Mitoken's relationship with its international customer (Motorola USA) increased its knowledge intensity, resulting in superior technical "architecture" for its products. Third, Vikas Global's relationship with academics at the local Indian Institute of Science (reportedly) improved the knowledge intensity of its offering. In all three cases, the form social capital resulting in knowledge seems to be bridging rather than bonding, which would be consistent with calls for social units to consciously develop that form of social capital (Putnam, 2000).

Another point of interest, arising from the explanatory case studies, is that the relation between social capital and knowledge may be bi-directional. For instance, in the case of Ekomate, it proactively established relationships and built social capital with representatives of trade bodies (e.g., that of Finland and Scotland) in India. This *resulted* from the firm's market knowledge i.e., its knowledge of how to engage with

¹⁹ This was mainly due to a problem characteristic of much research in developing countries viz., that of obtaining a reliable database of firms. The most reliable source, the Nasscom directory, listed 350 firms of interest to this study and it seemed highly unlikely that 200 questionnaires – the recommended number for structural equation modelling – could be obtained. Hence linear regression techniques were adopted and the analysis was confined to less complex, first-order relationships.

foreign business entities. In this case, therefore, it would appear that (market) knowledge led to social capital. At this stage this is a matter of speculation and one that will hopefully be addressed by future research.

Finally, the point is made that evident in Johanson and Vahlne's (1977) theory was the learning process that occurs in internationalising firms. Oviatt and McDougall (1994) pointed out, among other things, that such learning takes place much faster than some may have thought. This acceleration was attributed to the prior international experience (learning) on the part of the entrepreneur, a point made some years before as well (Wiedersheim-Paul et al, 1978). If collaboration (e.g., with a mentor, academics or a customer) results in knowledge, as evident from the explanatory case studies, then learning can be said to have taken place. Indeed there would seem to be a virtuous cycle between internationalisation and learning. That is, firms that learn better internationalise more (Autio et al, 2000) and firms that internationalise more learn better (Zahra et al, 2000). To state the same point differently, internationalisation can be characterised by both capability-leverage and capability-building (Tallman and Fladmoe-Lindquist, 2002).

7.4 Summary of Key Findings from the Explanatory Case Studies

This chapter has thus far presented explanatory case studies in an attempt to shed light upon and, to the extent possible, reconcile the inconsistencies between the literature-derived hypotheses and survey findings viz., that knowledge was not positively associated with modal commitment or "presence" and that social capital was not positively associated with international growth. The present section seeks to

tie together the foregoing discussion to explain these unexpected findings from the survey.

The basic (speculative) argument presented here is that growth and mode involve *very different* decisions or phenomena. It appears that to achieve growth or presence, an SME needs to have a certain amount of *confidence* – to pursue international business opportunities and establish a presence (typically through network governance), respectively. However the bases of such confidence appear to differ considerably. In the case of growth, it would appear to stem from the firm's *competence* in terms of both business and technology aspects. This competence, in turn, is a consequence of the firm's *knowledge* – both market and technological (i.e., knowledge intensity). Thus, to illustrate, New Creation, which perceives itself to be a competent entity has confidently (and successfully) pursued international business in Europe. Furthermore, it would appear that such knowledge will be applied to diversify in terms of products initially to enhance international revenues (if unsatisfactorily low) and then in terms of markets, to sustain and enhance international revenues.

In the case of mode however, based on the sample of case-firms, it would appear that confidence stems from *trust*, a well-known consequence of social capital (Adler and Kwon, 2002). Less emphasis seems to be placed on competence. Hence, continuing with the example of New Creation, it did not wish to establish presence in Europe as of February 2005 despite its competence, but might chose to do so at a later point in time by when trust-worthy relationships may have been built. Ekamate's affinity for

NRI further illustrates the importance of trust, and is consistent with the survey finding that foreign bonding (i.e., ethnic) social capital was positively associated with modal commitment/presence. The potential cultural influence is acknowledged and it is hoped further research will shed further light on this aspect. For the present however it can be seen that modal commitment in smaller firms appears to be influenced strongly by relational considerations.

Thus, to summarise:

- Social capital may lead to growth in the initial stages;
- but it is knowledge (of which social capital is an important source) that is a more *enduring* driver of growth; and
- social capital – especially bonding – has an important role to play in firms establishing *presence* in foreign markets.

In sum, it is seen that while both convergence with and divergence from the survey findings were found in the explanatory case studies the former generally exceeded the latter. The table below summarises the evolution of thinking, which the longitudinal nature of the explanatory case studies has permitted, on the two relationships (knowledge-mode and social capital-growth) that exhibited unexpected survey results.

Table 7.1: Explaining the Unexpected Findings

Relationship	Insights from Exploratory Cases (March 2002)	Insights from Explanatory Cases (February 2005)	Revisionist Comments
<i>Knowledge-Mode</i>	Appeared to support the literature-derived hypotheses especially from the plans (i.e., of establishing presence in the US) of Mitoken, which was clearly the most knowledge intensive of the four case-firms.	A surprising picture emerged. While Mitoken went on to establish presence in another market (UK) it appeared to be partly motivated by a <u>lack</u> of market knowledge (contradicting hypothesis 2b) and supports the survey finding.	A relational view seems influential in terms of the modal decision of establishing a “presence” overseas. As such, knowledge did not appear to guarantee such presence. The extent to which this is influenced by national culture needs to be addressed in future research.
<i>Social Capital-Growth</i>	Again, this relationship appeared to be supported. For instance, New Creation’s international growth was wholly the result of the entrepreneur’s social capital in the US market.	A very different situation had developed for New Creation which had seemed to have “exhausted” its social capital in the US. Its international growth now came from Europe, clearly resulting from its market knowledge, not social capital. However Mitoken did achieve some international growth through (bridging) social capital from Motorola India.	In hindsight, it would appear that the distinction between (market) knowledge and social capital was obscured during the initial set of interviewees (March 2002), and easier to identify, with the passage of time. In the early stage a firm can conceivably leverage social capital for growth but later have to rely on its (knowledge) resources for growth.

Source: The author

7.5 Conclusion

The chapter has presented the findings of the explanatory case studies, which entailed an examination of changes over three years in the internationalisation of the same four case-firms studied in the exploratory case studies. The explanatory case studies have helped greatly in providing insight into understanding the findings from the survey that were inconsistent with the hypotheses. The next chapter concludes this doctoral thesis by summarising the objectives and findings of the study and drawing out implications for future research, managerial practice and policy-making.

CHAPTER EIGHT

CONCLUSIONS AND IMPLICATIONS

8.1 Introduction

The concluding chapter of this doctoral thesis offers a summary of the approach taken in this study and of the findings. Thereafter implications for further research, practice and policy are discussed.

8.2 Summary of Approach

It was noted at the outset that international business scholars are increasingly turning their attention to the internationalisation of resource-constrained firms²⁰ – such as SMEs, which is the focus of the present study. Consistent with calls in the literature for an integrative approach to internationalisation, the studies combined well-known knowledge-based approaches (Johanson and Vahlne, 1977; Oviatt and McDougall, 1994) with more recent network perspectives (Johanson and Vahlne, 2003; McDougall and Oviatt, 2003) by invoking social capital theory (Yli-Renko et al, 2002).

As a logical extension, this study sought to provide a more nuanced understanding of the differential role of forms or *types* of social capital, especially bonding and bridging social capital, in small firm internationalisation. Also noted was the fact that relatively little was known about the modal choice of smaller firms, with the

²⁰ It is notable that in recent months two indications could be seen that the “mainstream” international business community has accepted such research as being of significance. The first is the publication of an article on born globals in the *Journal of International Business Studies* (Knight and Cavusgil, 2004). The second is the success of the Oviatt and McDougall’s (1994) paper in winning 2004 JIBS Decade Award.

assumption apparently having been made by scholars that such firms are unlikely to engage in modes other than exporting (Dimitratos et al, 2003). Three research questions were consequently addressed in this study:

1. Do firms with a higher stock of knowledge (a) achieve greater international growth and (b) utilise higher-commitment modes, compared to firms with a lower stock?
2. Do firms with a higher stock of social capital (a) achieve greater international growth and (b) utilise higher-commitment modes, compared to firms with a lower stock?
3. Do various categories of social capital influence international growth and mode choice differentially?

A corresponding set of hypotheses were also identified, as follows:

Research question 1

Hypothesis 1: Market knowledge is positively associated with (a) international growth and (b) modal commitment

Hypothesis 2: Knowledge intensity is positively associated with (a) international growth and (b) modal commitment

Research question 2

Hypothesis 3: Social capital is positively associated with (a) international growth and (b) modal commitment

Research question 3

Hypothesis 4: Bridging (comprising local bridging social capital and foreign bridging social capital) social capital is more strongly associated with international growth than is bonding social capital (comprising local bonding social capital and foreign bonding social capital).

Hypothesis 5: Bonding social capital (comprising local bonding social capital and foreign bonding social capital) is more strongly associated with modal commitment than is bridging social capital (comprising local bridging social capital and foreign bridging social capital).

It was noted that an empirical gap in the literature pertained to small firm internationalisation in a developing economy context, where resource constraints are accentuated and which might therefore constitute a useful setting in which to test the above hypotheses. It was also clear from the literature that a suitable type of firm to study would be the knowledge intensive SME. Combining these two ideas, it was decided to test the hypotheses on a sample of Indian software SMEs.

It was however decided to not confine the methodology to a quantitative study, but to instead innovatively combine qualitative and quantitative research in order to exploit the advantages of each. Therefore a set of four exploratory case studies were conducted among SMEs in Bangalore – the city most prominently associated with the software industry in India – with a view to establishing the appropriateness of the research framework. Thereafter a survey was conducted among Indian software

SMEs in the five cities with the most number of software firms – accounting for 80% of the firms listed in the database, resulting in 96 usable responses (from a sample of 351, with an effective response rate of approximately 29%, which is deemed satisfactory). Thereafter four explanatory case studies were conducted, which entailed an examination in the progress of the *same* four case-firms studied prior to the survey, over a three-year timeframe.

8.3 Summary of Findings

8.3.1 Findings

Do firms with a higher stock of knowledge (a) achieve greater international growth and (b) utilise higher-commitment modes, compared to firms with a lower stock?

The exploratory case studies, carried out in March 2002, appeared to indicate that the answer would be in the affirmative in both cases (i.e., pertaining to both growth and mode), based on such experiences as that, for instance, of Ekomate which had clearly greater market knowledge than did Vikas Global and was also much more successful in internationalisation. Furthermore, the firm with the highest knowledge intensity, Mitoken was on the verge of establishing a presence in the US market.

The answer from the survey, conducted in January-June 2004, was however affirmative only in the first case (i.e. pertaining to growth) but not in the second case (i.e. pertaining to mode). The latter was particularly surprising and this issue was explored further through explanatory case studies. The suggestion from the explanatory case studies, conducted in February 2005, indicated that knowledge does not guarantee increased modal commitment. A less transactional but more relational

perspective whilst determining modal commitment appeared to be true of the Indian software case-firms, which is consistent with the behaviour of Asian firms (Hitt et al, 2002). Perhaps firms need to attain a certain level of resources before knowledge-based factors affect their modal decision substantially and this underlines the need for further research on the modal selection of resource-constrained firms.

Do firms with a higher stock of social capital (a) achieve greater international growth and (b) utilise higher-commitment modes, compared to firms with a lower stock?

The exploratory case studies appeared to indicate that the answer would be in the affirmative in both cases (i.e., pertaining to both growth and mode), based on such experiences as that, for instance, of New Creation whose international growth was entirely accounted for by social capital in the US market and of Vikas Global which has established a presence in Australia – the only foreign market where it had social capital at the time – through a one-person sales office.

Social capital was positively related to internationalisation only in the second case (i.e., pertaining to mode) but not in the first case. The latter was particularly surprising and this issue was explored further through explanatory case studies.

It can be inferred from the explanatory case studies that social capital has a greater likelihood to lead to growth per se in early stages of its life-cycle (i.e., social capital may be “exhausted after a period of time”). Over time, it seemed that firms sought to be “self-reliant” on their knowledge base, which was a clear driver of growth. Given

that the three-year period under study also included an 18-month economic downturn, it could well indicate a certain volatility or unpredictability in the utility of social capital (i.e., the network connections may themselves be under economic pressure and unable to offer assistance as in more favourable times).

Do various categories of social capital influence international growth and mode choice differentially?

There was support for an affirmative answer to this question from the exploratory case studies although there was some divergence as well. In terms of growth, both bridging (e.g., Ekomate's British customer) and bonding ties (e.g., Mitoken's NRI connections in the US) appeared to be potential drivers of growth, although in terms of reality it seemed that the former (i.e., bridging social capital) was more important. Similarly in terms of mode, while Ekomate was clearly targeting NRI partners (bonding social capital), Vikas Global's social capital in Australia (where it had a presence) seemed to be more bridging in nature. In general however, convergence was deemed to exceed the divergence and the corresponding hypotheses seemed valid.

The survey provided an affirmative answer in the second case where bonding social capital clearly played a more important role in determining mode (as expected) than did bridging social capital. However in the case of growth, no form of social capital significantly influenced it (although it was expected that bridging social capital would). Of course it can be speculated that bridging social capital was not being

actively leveraged. This unexpected finding was further examined through the explanatory case studies.

The explanatory case studies, as mentioned, revealed that the answer to the first part of the question is perhaps affirmative primarily at early stages of firm's life-cycle – but in such cases it was *bridging* social capital (as hypothesised) that played the more crucial role. That bonding social capital should be more important for modal commitment (as confirmed by the survey) was further seen as natural from the explanatory case studies since trust, as seen in Ekomate's preference for NRI partners and Mitoken's disappointment with bridging ties in the US, would be vital in establishing a presence through network governance, which seemed the preferred mode for firms to do so, thus indicating that bonding ties do have their virtue.

8.3.2 Contributions

This study sought to make a contribution to the small firm internationalisation literature by (a) considering modal commitment as an outcome of a (small) firm's knowledge and social capital; (b) deepening extant understanding of types of social capital and their differential influence on international growth; and (c) empirically studying a developing economy setting, on which there is a dearth of literature. It is contended here that an empirical contribution has been on all three fronts as seen from the foregoing discussion.

First, this study has sought to make a contribution to the sparse SME internationalisation literature pertaining to mode choice. It has sought to build upon

the fledgling concept of the micromultinational (Dimitratos et al, 2003), whose importance stems from the potential for greater modal commitment to lead to positive financial and non-financial (e.g., learning) outcomes (Zahra et al, 2000). One constraint in this regard is the inevitable definitional flux that may exist in relation to a new concept such as this. Furthermore, the present study examined a non-Western (i.e., a non-conventional) setting, and future research must consider the role of national culture because relational approaches (e.g., a focus on trust) may be greater in collectivist settings. Nonetheless, the findings of this study suggest the case for applying a relational view of micromultinationals, which builds upon the insight of Oviatt and McDougall (1994), and reiterated by Johanson and Vahlne (2003), that resource-constrained firms may leverage networks and thereby not have to own assets that they utilise to build a presence in international markets (Zahra, 2005). It is hoped that studies like this will encourage IB researchers to bring back the aspect of mode firmly into the agenda of SME internationalisation (Dimitratos et al, 2003).

Second, the study has sought to shed light on the differential effects of social capital types on SME internationalisation, to further extend previous studies (e.g., Arenius, 2002; Yli-Renko et al, 2002). It has succeeded in demonstrating the stronger role that foreign bonding social capital may play in the matter of modal choice. Although it failed to derive similar results in the matter of growth, the study has provided useful insight into the relative role of social capital and knowledge in internationalisation. Thus, knowledge is more critical for growth and social capital is perhaps more crucial in mode choice, leading to the suggestion that *whom you know matters for*

mode choice; what you know matters for growth. The study, particularly through the longitudinal aspect, brought out the important interplay between social capital and knowledge, which corroborated the received wisdom that social capital can lead to the creation and acquisition of knowledge (Inkpen and Tsai, 2005; Nahapiet and Ghoshal, 1998; Yli-Renko et al, 2001, 2002; Zahra et al, 2000). Also, this research has pointed out that, as expected, bridging social capital can lead to growth, although this is likely to be more pronounced at the early stages of a firm's existence (Florin et al, 2003; Yli-Renko et al, 2002), and that thereafter firms may evolve such that they are more "self-reliant" on their own knowledge. This would strengthen the virtue of social capital as a facilitator of knowledge creation, relative to its ability to directly yield business opportunities. These empirical contributions apart, it is hoped that a conceptual contribution was made in highlighting different social capital types and by identifying two cases of ties (viz., ethnic ties and MNC subsidiary ties) that are potential sources of valuable social capital. Thus in these various ways, the present study has sought to creatively apply social capital theory to internationalisation, thereby enhancing extant understanding of the latter phenomenon.

Third, although this study was not interested, per se, in the contrasts between developing and developed economies, it certainly represents a welcome addition to the scarce literature on SME internationalisation in developing countries. Consistent with the findings of Das (1994) and Ibeh (2003), the firms studied have showed a considerable inclination to engage with international markets, particularly in light of limited market opportunities domestically. Furthermore, the empirical setting of the present study represents a case where public policy support is considerable. While

this is not the norm in the developing world, policy efforts to facilitate internationalisation are being made (Kuada and Sorensen, 1999), and the present study provides some evidence of the value of these. More pertinently, given the present study's focus, it was seen, as expected that social capital did play a role in internationalisation, albeit not to the extent expected. In this regard, an important contribution pertains to the potential likelihood for developing economy firms to rely upon bonding social capital. While acknowledging the virtues of bonding social capital (Davidsson and Honig, 2003; Edelman et al, 2004), such firms need to broaden out their base of networks on a global basis in order to achieve competitiveness in the longer term (Hitt et al, 2002).

Furthermore, an important methodological contribution has been made, it is argued, by providing an element of continuity in the pre- and post-survey qualitative research, thus providing a rich insight that would not have been possible by an exclusive use of cross-sectional survey data (or one-off case studies). There were several advantages to examining the *same* set of firms before and after the quantitative study, thereby introducing a longitudinal aspect, as encouraged by some scholars (e.g., Zahra and George, 2002). For instance, it became much easier to distinguish between a firm's market knowledge and social capital while undertaking the post-survey case studies – for instance, in the case of New Creation it became apparent over time that it was knowledge (not social capital) at work, in relation to their shift from the US to the European market. This design also allowed the study to match the time periods over which growth was viewed in both the quantitative and qualitative aspects of this study (viz., a three-year period). This innovative method

resulted in a rare opportunity to understand to some extent, the impact of an economic downturn on the internationalisation behaviour of SMEs.

8.3.3 Limitations

Noting the limitations of this study may help in extending and improving the ideas it represents through future research and in interpreting its findings. They are discussed below as limitations that are (a) general, (b) pertaining to qualitative research and (c) pertaining to quantitative research.

First, at a general level, it is recognised that the methodology of using the same four case-firms in both phases of qualitative research, while potentially beneficial (as it was indeed), carried the inherent risk of being infeasible, if for instance any of the case-firms ceased operations or declined permission for a second round of investigation. However a contingency plan was in place in such a scenario, and the post-survey qualitative research would have relied more heavily on expert interviews (which is the normally used approach). Furthermore, at a general level, it is accepted that this – like most studies of social capital – approached the subject in a one-sided manner. That is, only the respondents' perspective of social capital was studied and not that of the firms that they claimed to relate with. This is an inherent limitation in most such research owing to the complexity of the logistics involved. However future research could take this into account, particularly in in-depth small-sample studies. Finally, the nascent stage of the micromultinational concept is acknowledged and therefore, for instance, the definition of the concept is not yet well established or accepted in the literature.

Second, in terms of the qualitative research, a limitation of such a subjective approach is that much depends upon the specific abilities and interpretation of the individual researcher(s) involved and it could be that the present author made errors of judgement, which can never be compensated for even by the use of computer software such as Nu*dist. However this was sought to be minimised by studying firms where the author had no prior knowledge or stake in, and by feeding back interpretations to the case-firms involved. As such, it is deemed that there was no undue bias. The limitation that multiple informants could not be identified in two of the case-firms was sought to be mitigated through supplementary expert interviews (Perry, 1998). One other limitation – and one that cannot truly be “planned” for – is the relative artificiality of the three-year period given that 18 of those months were characterised by an economic downturn. However, upon reflection, this actually would appear to be a fortunate occurrence as it revealed *the fragility of social capital and resilience of knowledge in economically challenging times*.

Third, in terms of the quantitative study, while the sample size (96) is comparable to and the effective response rate (29%) favourably comparable to other similar studies (e.g. Kundu and Katz, 2003), it is acknowledged that ideally the sample population (and therefore the number of respondents) should have ideally been bigger. This also led to a further limitation in that the multivariate relationships were confined to first-order effects and limited in number. However given the dearth of research in the setting studied it is hoped that the extant findings nevertheless represent a major contribution. While focusing upon a single industry and country controlled for

extraneous influences, this approach represents a limitation in terms of generalisability of the findings. Finally, it is also recognised that the manner of operationalising variables – especially the four forms of social capital – utilised in the survey could be generically deemed as “artificial” and “arbitrary” in that some vital sources of social capital were ignored. However it would seem based on the qualitative research that the case of social capital incorporated were are all relevant and important. At any rate, it was precisely to compensate for such limitations of survey research that a substantial qualitative component was included.

8.4 Implications for Theory, Practice and Public Policy

Theory

Numerous avenues for future research can be suggested in light of the present study. In continuation of the theme of exploring potentially *differential* effects of the bonding and bridging social capital on international growth, there is scope to similarly explore the effects of firms’ social capital portfolios – for instance, in terms of varying *combinations* of bridging and bonding social capital (Woolcock, 1998) – on their international growth. Four possible combinations exist, as depicted below.

Table 8.1: Potential Combinations of Social Capital

		Bonding social capital	
		<i>High</i>	<i>Low</i>
Bridging social capital	<i>High</i>	Firms with both bridging and bonding social capital	Firms with primarily bridging social capital
	<i>Low</i>	Firms with primarily bonding social capital	Firmws with neither bridging nor bonding social capital

Source: The author, drawing from Woolcock (1998)

Additionally, it is speculated that a longer time-frame for case-study-based research may lead to further interesting revelations about forms of social capital and how they evolve over time. For instance, it seems plausible that there is a temporal aspect to the distinction between bonding and bridging social capital i.e., over time, bridging ties may lose their “bridging” character as the focal social units contacts begin to overlap with that of the tie’s over a period of time. This may therefore be another phenomenon, akin to the “exhausting” of social capital that was unearthed in the study.

Another aspect of social capital that would be worth integrating into the present study would be the dimension of strong and weak ties. Some studies tend to equate bridging and bonding social capital with strong and weak ties, respectively, but upon further research and reflection, this does not seem appropriate. Part of the confusion may be due to the work of Robert Putnam, arguably the best-known expert on social capital. As discussed in the section on bridging and bonding social capital in Chapter Two, he appears to initially suggest that these two typologies are synonymous (Putnam, 2000) but subsequently delineates these typologies more clearly (Putnam and Goss, 2002). Indeed, this would be more logical since in both bonding and bridging cases one might conceive of strong and weak ties. Therefore the point being made here is that further distinction can be made among bonding and bridging ties on the basis of their strength (i.e., strong versus weak), with a view to achieving an even further fine-grained understanding of the differential effects of social capital types on internationalisation.

The discussion now turns to a re-specification of the original research framework used in this study, on the basis of the more nuanced understanding that has resulted from it, which could be tested through future research. It was acknowledged in the literature review (Chapter Two) that in the interest of parsimony, the research framework used in the present study has been partial. Based on the findings of the study this model can be extended. Researchers who are disposed to applying broader research models could develop this further and/or employ it as the basis of empirical work. In addition to distinguishing between the greater likelihood of bridging social capital to influence international growth and of bonding social capital to influence modal commitment, the extensions are three-fold: (a) incorporating the link between social capital and knowledge, (b) identifying moderators of the relationship between social capital and internationalisation, and (c) identifying moderators of the relationship between social capital and knowledge.

First, the relationship between social capital and knowledge is important (Nahapiet and Ghoshal, 1998). Although this relationship was not measured through the quantitative analysis, there was some evidence of this from the qualitative research, as discussed in the previous chapter (Sec 7.3.3). It was pointed out that social capital arising from business advisers (e.g., in the case of Ekomate) or key customers (e.g., Mitoken) resulted in greater market knowledge and knowledge intensity, respectively. This would imply that a good use of social capital would be the acquisition and creation of knowledge. An interesting suggestion is that this relationship may be bi-directional, at least in the case of market knowledge. In other words, as market knowledge increases, so could the firm's ability to gain social

capital in international markets as seen from Ekomate's success in developing ties with foreign trade bodies as their market knowledge increased.

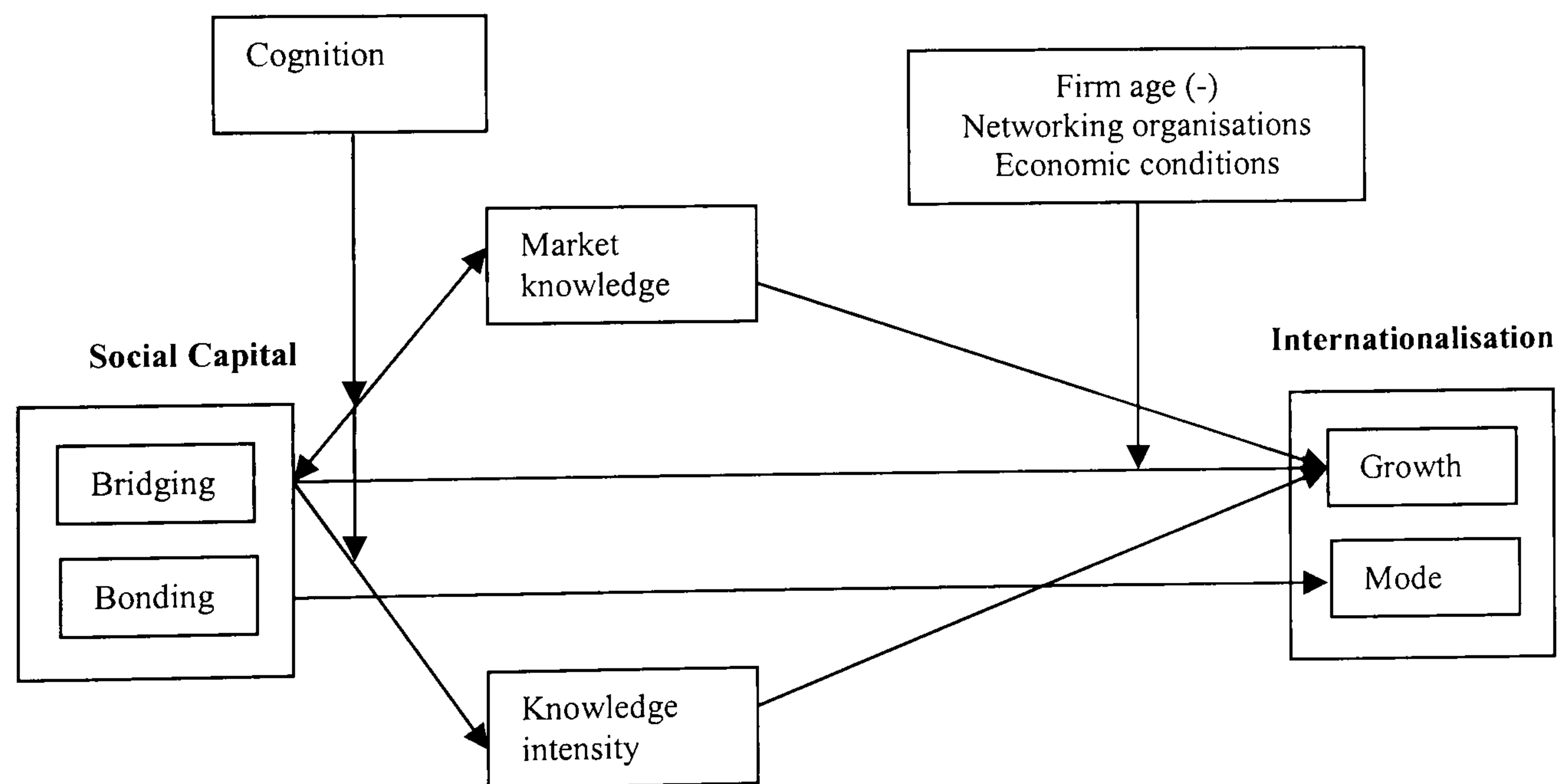
Second, it was seen that certain variables moderate (i.e., facilitate or retard) the relationship between social capital and internationalisation. For instance, younger firms are more likely to achieve international growth through social capital (i.e., at early stages of their life-cycle). This implies that social capital, as a source of growth per se, may have a "shelf life" or, more likely, that when the entrepreneur is the chief source of social capital, there are likely to be "limits" to their social capital, even when proactively leveraged. This suggests that over time social capital is not likely to have a direct bearing on growth, as seen in the survey; in other words, firm age negatively moderates the relationship between social capital and international growth. Membership of networking organisations, such as The Indus Entrepreneurs (TiE), will likely have the opposite effect. At a more macro level, the state of the economy is also likely to have a positive moderating effect, based on the observation that recessionary conditions appeared to retard the impact of social capital on international growth (especially in the case of Mitoken's experience of the US).

Third, the extent to which social capital yields knowledge may vary (i.e., be moderated by) at least two variables. One pertains to cognition of the top management team (TMT) in general and the entrepreneur, in particular; attention has been recently drawn to this factor in the context of internationalisation (Zahra et al, 2005). It would also be worth incorporating the notion of cognition in light of the cognitive dimension of social capital conceptualised by Nahapiet and Ghoshal

(1998), which was not explored in the present study. Nonetheless, the explanatory case studies suggest that entrepreneurs – such as Tom Thomas of Ekomate – are able to extract desirable knowledge outcomes owing to a cognitive frame that facilitates opportunity recognition on their part.

It should be noted that the re-specified model, depicted below, is not only broader but also entails multi-level research as it includes firm-level (e.g., absorptive capacity), top management team or TMT-level (e.g., cognitive capacity) and environmental (e.g., state of the economy) variables. Future research informed by this model should take this into consideration in terms of research design and implementation.

Figure 8.1: A Re-Specified Model to Guide Future Research



Source: The author

It is hoped that this more complex model with a larger sample as would be required, for instance, to carry out structural equation modelling (Hair et al, 1998). In this context it is reiterated that more research focusing upon the modal choice of resource-constrained firms is required. For instance, further distinction can be made between virtual mMNEs (those primarily relying on network governance) and physical mMNEs (those primarily relying on self-owned offices overseas). Furthermore, it has been pointed out that national culture may affect the propensity to utilise a relational perspective (such as placing a high priority on trust). Thus further research would do well to compare samples with differing national cultures. Finally, links between internationalisation and learning outcomes as well as performance (in terms of profitability, not merely growth) could be included to the framework and explored.

As referred to in the previous chapter, there is perhaps potential for conceiving of and investigating an Indian counterpart to Asian relational concepts such as “guanxi” in China. Informal inquiries among experts in the Hindi language reveal that the Hindi word “biradiri” is used to refer to one’s community. For instance, in a close-knit (typically rural) community, one would not be expected to marry outside one’s “biradiri”. This is interesting in that it strongly resembles bonding ties, which are known to be characterised by trust but may not be effective in relaying novel ideas or information (Putnam, 2000). It is speculated that social units with a higher propensity for such bonding social capital are more concerned with affective factors (e.g., likeability and cultural commonality) rather than transactional factors (e.g., influence and power).

The survey result indicating bonding social capital's significant association with an SME's presence overseas – a notion that also finds support from the explanatory case studies – does however indicate the *virtue in bonding social capital*. This seems significant given the (understandable) normative and policy emphasis on bridging social capital (Putnam, 2000). Of course, the research findings of this study do not in any way discredit bridging social capital. Rather the point being made is that bonding social capital ought not to be underestimated. Furthermore, Indian firms should also be conscious that an excessive “biradiri”²¹-orientation could, in the absence of bridging ties, be inadequate or even detrimental in the long term.

That social capital is likely to yield growth at early stages for a firm has implications for furthering research on the internationalisation of resource-constrained firms. As noted at the outset, such studies relate to small and new firms with international business studies (including this one) focusing on the former, and entrepreneurship studies on the latter. However since not all firms are new (as seen from the average age of the SMEs surveyed in the present study which was nine years) and not all new firms are small (there are notable cases of firms that have grown into 1000-employee entities in under six years in the Indian software industry). Therefore a more nuanced

²¹ However “biradiri” is a very restrictive conceptualisation of networks and as such does not seem a suitable counterpart to “guanxi”. While further research is needed to conceptualise more specifically the nature of an Indian equivalent to “guanxi”, it is also suggested that a different term is required to better capture the notion of social capital. One suggestion has been made via personal communication (email) by Anand Halve, a well-respected advertising professional in India, viz., that of “samooH-poonji”. To quote Halve, “SAMOOH is used to describe a group of people who have something in common i.e. who form a network. POONJI is used to mean resources, savings, capital and so on. [SAMOOH-POONJI] would mean the 'resources available to the group. This then means that there is a shared resource - or capital - which the group can draw upon.” Perhaps this will be a concept worth exploring further under such a label.

understanding across these categories is called for on the part of both international business and entrepreneurship scholars.

Practice

The primary managerial value that the present study has pertains to its theoretical objective of offering a more *nuanced* understanding of the role of knowledge and social capital – and especially different forms of social capital – in SME internationalisation. Translating this into a practitioner’s context, entrepreneurs and managers in internationalising SMEs are encouraged to evaluate their portfolio of network relationships and assess the extent to which they are bridging and bonding ties. Accordingly realistic expectations ought to be set depending on the nature of the tie. It would be pointless, for example, to expect the sort of trusting relationship and timely information from a bridging tie that a bonding tie would normally afford. In fact this is perhaps partly the reason for Mitoken’s disappointment with its predominantly bridging tie in Boston as Mitoken seemed to have expected the sort of commitment that could have been more legitimately expected from a bonding tie.

Related to this point is the issue of addressing deficiencies in a firm’s portfolio of network relationships, which has implications for entrepreneurs and managers particularly as they seek to acquire new network ties. Direct implications from the findings of the present study include the utility of acquiring and/or leveraging bridging social capital when growth is being sought, and of acquiring and/or leveraging bonding social capital when a “presence” is being sought to be established overseas through a network governance mechanism. Of course it is important that

entrepreneurs and managers objectively assess the nature of extant ties difficult though this, and even though some ties have elements of both bridging and bonding. However from the perspective of the firm's internationalisation, entrepreneurs and managers should be able to judge the *predominant* nature of the tie.

Of particular emphasis in the present study were two forms of ties – ethnic ties and MNC subsidiary ties. The impact of the former was clearly seen and a mechanism to potentially facilitate greater flows of ethnic social capital in the Indian context – viz., The Indus Entrepreneurs – was examined. Indian SMEs would do well to continue to leverage such social capital proactively and leverage the activities of organisations such as TiE. However it should be noted that ethnic social capital – and indeed any form of social capital – is no *guarantor* of success or positive outcomes, and so a sense of realism in this regard is required. However it would seem, based on the research findings (especially the qualitative studies), that proactive efforts to leverage social capital have positive outcomes – even if the gestation period in some cases (e.g., Ekomate's experience with New Zealand-based Jade software company) is rather lengthy. It is noted also that other developing countries (e.g., Pakistan and Sri Lanka) that also have ethnic networks in the West, may want to leverage or replicate networking organisations such as TiE.

In relation to the MNC ties, little evidence was found of collaboration or a healthy exchange of information between MNC subsidiaries and local SMEs. It emerged from expert interviews that the MNC subsidiaries in India are more likely to relate with the large established players like Wipro and Infosys. The implication for SMEs

is therefore that access to such ties will not be easy. However it would seem ill-advised to ignore this form of local bridging social capital. The key to building relationships with MNC subsidiaries may lie in developing propositions for joint activity where the benefit to the subsidiary is clear and appealing, and this will call for a fair amount of creativity and enterprise on the part of SMEs. However the contention of this study remains that if leveraged, MNC ties can indeed be a valuable source of social capital.

The explanatory case studies highlighted that social capital can lead to the creation of knowledge (and possibly vice versa). This has an important implication for the objective(s) that SMEs seek from their network ties. It would perhaps be prudent for internationalising SMEs to, in addition to tangible growth-drivers such as trade leads and referrals, actively seek knowledge – both market and technological – from their social capital. Useful examples from the case studies include mentoring or advisory relationships with highly experienced professionals as also customer relationships that are characterised by an attitude of learning on the part of SMEs. An extension of this point pertains to the value in local networks. For both Ekomate and Vikas Global, valuable learning (i.e., knowledge) accrued from relationships with professionals (e.g., Ekomate’s mentor) who were based *locally*.

Another managerial implication is that if social capital leads to international growth primarily at early stages then SMEs’ attitude to social capital needs to evolve appropriately over time. They will need to shift toward a more “self-reliant” approach whilst remaining open to networks and collaboration. Most of all, their

mindset needs to change in terms of being open to understanding what is required for success at later stages which is bound to quite different from what initially gave success. This was seen most clearly in the case of New Creation whose success factor (social capital) in 2002 was in sharp contrast to that in 2004 (market knowledge).

Public Policy

It was noted in the brief discussion on SME internationalisation in developing economies in Chapter Two (Section 2.4.4) that internationalisation is seen as a source of economic development and therefore policy-makers in developing countries would do well to understand the above-stated managerial implications and consider how their implementation may be facilitated through policy measures. Certain ideas in this regard are suggested here.

One implication pertains to the enhancement and management of knowledge, which was found to be an important driver of international growth. Policy-makers ought to facilitate the enhancement of both market knowledge through measures such as the provision of access to information and consulting services, and knowledge intensity through, for instance, developing state-of-the-art technology parks and facilitating technology transfer into the local milieu.

In addition, the role of social capital should not be underplayed, and policy-makers must continue efforts to foster the development of networks, both locally and overseas. Given that social capital may be “exhausted” over time, of particular

benefit will be recurrent efforts to help firms to acquire new network ties over time. More specifically, another crucial implication has to do with the more nuanced understanding of social capital types that this study has sought to engender. Three points, building upon the preceding discussion of managerial implications, are made. First, knowledge intensive SMEs should be helped to recognise the differential effects of bonding and bridging social capital. Second, such firms should be encouraged and enabled to diagnose and address deficiencies in their portfolio of social capital. Third, network-oriented policy measures should strongly incorporate a focus on knowledge-acquisition.

The Indus Entrepreneurs (TiE), albeit a private sector initiative, provides useful insight in terms of the structure (viz. globally dispersed “chapters”) and activities (viz. active networking and mentoring) of public policy measures that help foster foreign bonding social capital. While such measures can be found in different parts of the world, a useful illustration of such efforts is found within Scotland viz. the GlobalScot initiative whose stated intent is to establish a “global network of influential individuals who have an affiliation with Scotland and who can contribute to and share in Scotland’s economic success” (MacRae, 2005, p.5). According to MacRae (2005), a membership of 800 expatriate Scots has been attracted and efforts to facilitate the leverage of these connections by Scottish firms, especially for advice on international business, are underway.

Another interesting Scottish example, this time relating to local bridging social capital, pertains to the Scottish Technology and Collaboration (STAC) initiative.

Launched in November 2003, STAC seeks to enable collaboration between large and small firms in the software industry (Scottish Executive, 2003). While founded and managed by ScotlandIS (the trade association i.e., the Scottish equivalent of Nasscom) and Scottish Enterprise (the agency responsible for economic development in Scotland), it is interesting to note that the idea for this project came from the (Scottish) manager of Sun Microsystems's subsidiary in Scotland. It is noteworthy that the first two collaborative initiatives have both been pioneered by Sun, in each case with two Scottish SMEs. This seems to support the notion that MNC subsidiaries, when effectively tapped, can be beneficial to local SMEs – and that the latter can add value to the former. In sum, the main policy implication of the present study entails the creation of a *culture of collaboration* for internationalising SMEs. It may not be easy, but it would certainly appear that when successful, the outcomes can be of considerable benefit.

8.5 Conclusion

It is noted in conclusion that this study has sought to, through an innovative combination of qualitative and quantitative research in a setting about which relatively little is known (at least in terms of academic research), answer research questions pertaining to the role of knowledge, social capital and – particularly different forms of social capital – in the internationalisation of knowledge intensive SMEs. In so doing, this thesis has facilitated a more sophisticated theoretical understanding of the importance of the interplay between knowledge and social capital in internationalisation. It is hoped that this more nuanced understanding will lead to increasingly effective internationalisation on the part of SMEs.

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Appendix One
Interview Guide for the Exploratory Case Studies (March 2002)

Appendix One: Interview Guide for Exploratory Case Studies (March 2002)

- Introduction of self/PhD/Strathclyde
- No right/wrong answers – only opinions/experiences
- Audio recording to save time
- Offer of paper via email

Section 1: Origin of the Firm (also, a Warm Up)

- When was this firm started? What led to its being started?
- What changes have you witnessed over the past years/months?
- What are the things you are happy about? What are you not happy about?
- What about your current state of affairs would wish you could change?
- What are your plans for the next three to five years for the firm?

Section 2: Internationalisation of the Firm

- How did you get your first break for international business?
- From whom? What was the contract/business?
- Did you get any unsolicited business? How?

PROBE:

- Unsolicited offer
- Psychological closeness of foreign serviced
- Impact of the software industry/location of software markets
- Role of network relationships with
 - Suppliers
 - Customers
 - Government agencies
 - Industry bodies
 - Competitors
 - NRI friends/relatives

Section 3: Nature of Network Relationships

- How would you describe your relationship with firms that you do business with? With other firms?

PROBE

- Competitors
- Suppliers
- Government agencies
- Industry bodies

- Competitors
- NRI friends/relatives
- How different is it to interact with local firms as opposed to foreign ones?

PROBE

- Impact of the Bangalore software cluster
- Government-related or other cluster initiatives
- Impact of foreign firms with a presence in Bangalore
- Perception of Bangalore's software industry as a cluster
- Impact of international business networks
- Impact of large foreign player(s) from overseas
- Perception of being part of an international business network

Have their relationships that we have been talking about impacted on your business decisions? If so, how? What aspects?

Specifically, have any of these relationships impacted on your international business?

PROBE

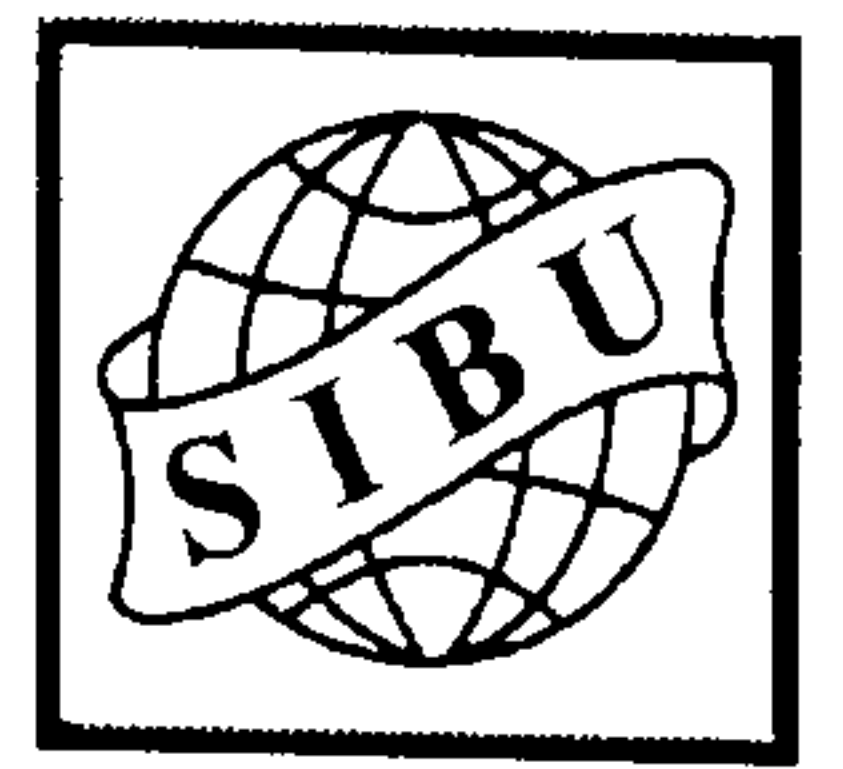
- Client followership
- Trade leads
- Greater geographic coverage
- More international business
- Reduced international marketing budget
- Ease of international marketing

THANK AND TERMINATE.

NOTE DOWN IMMEDIATE FEELING AND IMPRESSIONS AFTER THE INTERVIEW.

Appendix Two
Survey Questionnaire

Appendix Two: Survey Questionnaire



Strathclyde International Business Unit, University of Strathclyde.

Research on the Internationalisation of Small Software Firms in India: General Instructions

1. Your cooperation is requested in filling out this questionnaire, which is part of a research study on the internationalisation of small software firms in India, being conducted at one of Europe's premier business schools by Mr Shameen Prashantham (s.prashantham@strath.ac.uk), under the supervision of Professor Stephen Young (stephen.young@strath.ac.uk). This study seeks to benefit the Indian software industry by shedding light on the network relationships that are particularly useful in facilitating international business for smaller companies. If you have any queries about this study, please feel free to email either of the researchers.
2. Given the focus of this study, it would be greatly appreciated if the person who fills this questionnaire were the CEO, Director of International Business or some other responsible person who is aware of the company's international business activities.
3. Your responses will be kept **strictly confidential**. The report of findings will not include the names of individuals or companies.
4. Please try to answer all the questions. If no response choices exactly fits your company situation, please select the choice *closest* to your ideal response.

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Section 1: Your Company's Background

1. What is your position in the company? (Please select the most suitable option)

- CEO
Director
 Manager
- President
- Managing Director
- Other (please specify) _____

2. In what year was your company started? _____

3. How many employees does your company have? _____

4. Is your company headquartered in India? Yes No

5. In which Indian city is your headquarters or main presence in India?

- Bangalore Chennai Hyderabad Mumbai
 National Capital Region (Delhi area) Other (please specify)

6. How would you describe the company's ownership? (Please select one option)

- Wholly India-owned Joint venture between Indian and foreign companies
 Wholly Foreign-owned

7. Is your company a member of the following bodies? (Select all that apply).

- National Association of Software and Service Companies (NASSCOM)
 Confederation of Indian Industry (CII) The Indus Entrepreneurs (TiE)
 Software Technology Park of India (STPI) Other (please specify) _____

8. Please indicate which of the following **software-related** activities your company engages in (please select all that apply)

- Overall problem definition
 Conceptual design
 Physical system design
 Programming
 Testing and reviewing
 Maintenance and support
 Documentation

Section 2: Your Company's International Business

9. In what year did your company get its first international customer? _____

10. What proportion of your company's sales revenues during the financial year 2002-2003 came from international business? _____%

11. By what proportion (%) did your **total sales revenues** in the financial year 2002-2003 increase compared to 3 years ago (1999-2000)? _____%

12. By what proportion (%) did your **international sales revenues** in the financial year 2002-2003 increase compared to 3 years ago (1999-2000)?
_____%

13. During the financial year 2002-2003, from which of the following countries or regions did you receive business? (Select all options that apply)

- USA Canada UK Germany Other EU countries
 Japan Rest of the world

14. During the financial year 2002-2003, which was your company's largest foreign market i.e., from which of the following countries or regions did you receive your highest international sales revenue? (Select one option)

- USA Canada UK Germany Other EU countries
 Japan Rest of the world

15. Please indicate using the scale provided below the extent to which the following statements are true about your company, with respect to the software industry in its largest foreign market, identified in the previous question. The scale ranges from 1 if you completely disagree, to 7 if you completely agree.

	Totally Disagree				Totally Agree		
	1	2	3	4	5	6	7
• We are knowledgeable about the needs of foreign customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• We are knowledgeable about our foreign competitors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• We are knowledgeable about channels of distribution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• We are aware of potential alliance partners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• We have a good understanding of the business laws	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• We have a good understanding of the cultural norms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• We have a good understanding of the regulatory standards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• We have adequate foreign language skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• We have considerable experience in international operations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• We are knowledgeable about international business strategy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Our senior management has much international experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• We are competent at identifying business opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• We are competent at international marketing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. Which of the following modes of business operations does your company utilise in its largest foreign market? (Select all options that apply)

- Wholly owned subsidiary (i.e., handling both sales and software development)
 Sales subsidiary or office (i.e., handling only sales but not software development)
 Joint venture (equity-basis)
 Strategic alliance (non-equity basis)
 Licensing
 Exporting via an intermediary or agent
 Exporting directly from India via the Internet

17. With respect to your company's largest foreign market, how would you describe the presence you have established there? (Select one option)

- We have a large sales office and carry out software activities
 We have a large sales office in that country (e.g., with 10 or more employees)
 We have a small sales office in that country (e.g., with fewer than 10 employees)
 We have a sales office in that country involving a business associate overseas
 We have no physical presence at all and operate exclusively from India via the Internet

18. Please rate the extent to which your company was successful in achieving its objectives for growth in sales revenue and profit during the three-year period from April 2000 to March 2003. (1=highly unsuccessful; 7= highly successful)

	Highly Unsuccessful				Highly Successful		
	1	2	3	4	5	6	7
• Growth in total sales revenues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Growth in international sales revenues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Growth in total profit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Growth in international profit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19. Please indicate below the extent to which the following statements are true about your company. (1= completely disagree; 7= completely agree)

	Totally Disagree				Totally Agree		
	1	2	3	4	5	6	7
• We have a strong reputation for technological excellence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Technological innovation is a primary goal for us	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• There is a strong knowledge component in our products/services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Most of our employees have strong technical skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 3: Your Company's Network Relationships

In questions 20-31, we are interested in understanding how your company relates to four categories of companies, which may interact with you as customers, suppliers, distributors or strategic partners. Questions 20-25 pertain to the Indian market; questions 26-31 pertain to your largest foreign market. Please indicate the extent to which the following statements are true (1= completely disagree; 7= completely agree).

In The Indian Market

20. Other local (Indian) software/infotech companies in India

	Totally Disagree				Totally Agree		
	1	2	3	4	5	6	7
• We have extensive relationships with such companies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• We actively utilise these relationships in our business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• These relationships are characterised by close interactions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• These relationships are characterised by mutual trust	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• These relationships are highly reciprocal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• These relationships have 'opened new doors' for us	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

21. Because of our relationships with other software/IT companies in India, we obtain...

	Totally Disagree				Totally Agree		
	1	2	3	4	5	6	7
... a large amount of useful international business information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... a great variety of useful international business information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... in-depth international business information that is useful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... access to many international business information sources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... international business information in a timely fashion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... referrals potentially leading to new international business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

22. We obtain international business information from software/IT companies in India...

(Select NA if not applicable)

- ... which are customers of our company
- ... which are suppliers of our company
- ... which are distributors/marketing partners of our company

	No information				Much information		
NA	1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

23. **MNC subsidiaries in India** (e.g., Microsoft India or Sun Microsystems India)

- We have extensive relationships with such companies
- We actively utilise these relationships in our business
- These relationships are characterised by close interactions
- These relationships are characterised by mutual trust
- These relationships are highly reciprocal
- These relationships have 'opened new doors' for us

	Totally Disagree				Totally Agree		
	1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

24. Because of our relationships with local subsidiaries of MNCs, we obtain...

- ... a large amount of useful international business information
- ... a great variety of useful international business information
- ... in-depth international business information that is useful
- ... access to many international business information sources
- ... international business information in a timely fashion
- ... referrals potentially leading to new international business

	Totally Disagree				Totally Agree		
	1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

25. We obtain international business information from local subsidiaries of MNCs...

(Select NA if not applicable)

- ... which are customers of our company
- ... which are suppliers of our company
- ... which are distributors/marketing partners of our company

	No information				Much information		
NA	1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

In Your Company's Largest Foreign Market

26. **Companies run or managed by fellow-Indians in that country**

- We have extensive relationships with such companies
- We actively utilise these relationships in our business
- These relationships are characterised by close interactions
- These relationships are characterised by mutual trust
- These relationships are highly reciprocal
- These relationships have 'opened new doors' for us

	Totally Disagree				Totally Agree		
	1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

27. Because of our relationships with Indian companies in that country, we obtain...

	Totally Disagree				Totally Agree		
	1	2	3	4	5	6	7
... a large amount of useful international business information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... a great variety of useful international business information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... in-depth international business information that is useful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... access to many international business information sources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... international business information in a timely fashion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... referrals potentially leading to new international business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

28. We obtain international business information from Indian companies in that country...

(Select NA if not applicable)

	No information				Much information			
	NA	1	2	3	4	5	6	7
... which are customers of our company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... which are suppliers of our company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... which are distributors/marketing partners of our company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

29. Companies not run or managed by fellow-Indians in that country

	Totally Disagree				Totally Agree		
	1	2	3	4	5	6	7
• We have extensive relationships with such companies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• We actively utilise these relationships in our business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• These relationships are characterised by close interactions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• These relationships are characterised by mutual trust	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• These relationships are highly reciprocal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• These relationships have 'opened new doors' for us	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

30. Because of our relationships with non-Indian companies in that country, we obtain...

	Totally Disagree				Totally Agree		
	1	2	3	4	5	6	7
... a large amount of useful international business information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... a great variety of useful international business information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... in-depth international business information that is useful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... access to many international business information sources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... international business information in a timely fashion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... referrals potentially leading to new international business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

31. We obtain international business information from non-Indian companies in that country...

(Select NA if not applicable)

	No information				Much information			
	NA	1	2	3	4	5	6	7
... which are customers of our company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... which are suppliers of our company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... which are distributors/marketing partners of our company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thank you very much for participating in this survey!

Appendix Three
Interview Guide for the Explanatory Case Studies (February 2005)

Appendix Three: Interview Guide for Explanatory Case Studies (February 2005)

Section 1: Changes/progress since the last meeting

1. It is nearly three years now since we first met. Could you please share with me developments that have taken place with respect to your company since then.

PROBE: (Have there been any changes in...)

Internal environment

- Entrepreneurial vision
- Personal goals
- Strategic thinking
- Firm-level capabilities

External environment

- Market-related opportunities (e.g., business process outsourcing 'boom' in India)
- Market-related threats (e.g., lower cost software countries e.g., China)
- Policy measures (e.g., incentives, if any, to enhance knowledge intensity)
- Economic conditions (e.g., recessions or recoveries in key markets)

2. How have you fared against the short- and medium-term goals that you had set for your company as of March 2002?

PROBE:

Short-term (>3 years) goals

(Mention specific ones from transcript of original interview; e.g., at the time of the first interview, one firm was considering entry into the 'virgin territory' of the South African software market while eschewing the competitive US market; another was going to send a director to Chicago with a view to establishing a presence for the company in the US)

Medium-term (3-5 years) goals

(Each of the four respondents had been asked to outline their plans for the forthcoming 3-5 years in the original interview)

Current long-term strategic thinking

Long term plans, if any, at this stage (Feb 2005) in light of performance against short- and medium-term goals

Section 2: Portfolio of Network Relationships

3. What would you say are the most important relationships that you have with other companies today?

PROBE:

- Local bridging (i.e., local MNC subsidiaries); explore differences between IT (e.g., Motorola India) vs non-IT (e.g., Citibank India) subsidiaries
- Local bonding (i.e., other local infotech companies); explore differences between fellow-SMEs and large Indian corporations
- Foreign bridging (i.e., foreign non-ethnic customers); explore differences between domestic firms and MNCs

- Foreign bonding (i.e., ethnic companies); explore differences between companies and individuals
- Efforts to *actively* leverage local network relationships within Bangalore **cluster**
- Efforts to build foreign network relationships in markets other than the US

4. How does this set of inter-firm relationships compare with that of March 2002? (Answers can be verified against transcript of original interview where network relationships were explored)

5. How does this set of inter-firm relationships compare with when you started your company? (Answers can be verified against transcript of original interview where network relationships were explored)

6. Have you used these relationships in your business? How?

PROBE for each of these three periods (i.e., at inception; 3 years ago; today)

Section 3: Effects of Social Capital (on Knowledge, Internationalisation)

7. Have your interactions with these various relationships over the past couple of years resulted in any changes or new developments for your company? If so, what are they?

PROBE

- Interactions with customers (local and overseas)
- Interactions with suppliers (local and overseas)
- Interactions with distributors/marketing partners (local and overseas)
- Strategic alliances or ties (local and overseas)

With respect to

- Foreign business knowledge (customers, competitors, channels, etc)
- Institutional knowledge (norms, laws, language, etc.)
- Internationalisation knowledge (international strategy and operations)
- Technological innovation
- Technical activities (in terms of the value chain)
- International business opportunities (e.g., client followership)
- Information
- Advice

8. I am aware from our meeting 3 years ago of how you initially internationalised. What have your international business activities since then been?

PROBE

- Mode utilised in key market(s) and the role of mode in learning outcomes
- Growth achieved and profitability

Appendix Four
Executive Summary of Survey Findings



Knowledge, Social Capital & International Expansion

A Survey of Indian Software SMEs:
Executive Summary

Shameen Prashantham
University of Strathclyde



This document reports findings from a survey of Indian software SMEs²², the objective of which was to examine the extent to which two types of 'resources' – knowledge and social capital (networks) – affect their international expansion.

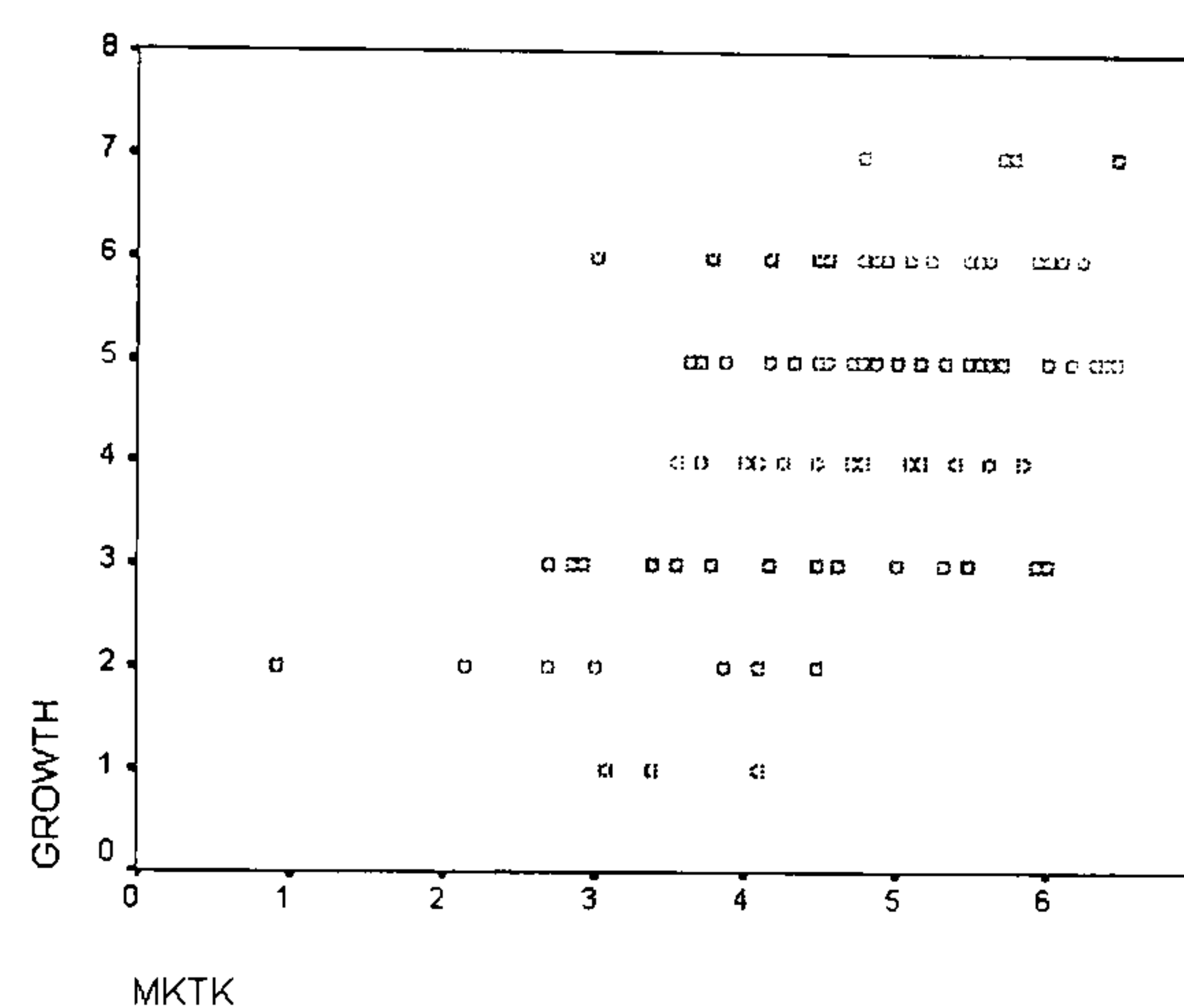
Knowledge and International Expansion

In industries such as biotechnology and software, the importance of knowledge is unmistakably paramount. Knowledge is one of the most crucial resources of a firm and influences its development and growth; many scholars in the field of strategic management have contributed to what is known as the 'knowledge-based view of the firm'. A similar emphasis is also found in international business studies related to the international expansion of firms, including resource-constrained ones such as SMEs.

Consistent with such research, in this survey of over 100 Indian software SMEs, knowledge – both *market* and *technological* – was found to be the most significant driver of international growth. This was especially so in the case of market knowledge (see figure below).

Three types of market knowledge were measured through the survey – business knowledge (of key players in foreign markets), institutional knowledge (regarding laws, norms, languages, etc) and internationalisation knowledge (about developing and implementing international strategies); by and large, a near-identical pattern was seen in all three cases, as depicted in Figure 1.

Fig 1: Knowledge & International Growth



The message is clear: firms' prospects of international growth are greatly enhanced as their stock of market knowledge grows. However in relation to market knowledge, one clear area of concern for firms pertains to foreign language skills, which did not follow the general pattern of the other aspects of market knowledge. There was no significant statistical relationship between the firms' linguistic skills and international growth. This is perhaps indicative of some deficiency, and the need for more attention to be paid to acquiring skills in other major languages, including through strategic alliances; such knowledge could lead to such benefits as a more diversified (hence less risk-intensive) market portfolio and higher growth.

In relation to technological knowledge, a significant effect on international growth was similarly seen; in other words, Indian software SMEs that rated themselves as having a higher emphasis on innovation and technical skills enjoyed greater success in relation to achieving their international growth objectives. However the effect of such knowledge was statistically less strong in comparison to market knowledge. More pertinently however, additional research involving expert interviews in India and the UK, revealed that Indian software SMEs (with certain exceptions) are not perceived to be highly knowledge intensive; thus, enhancing such knowledge – and perception of the same – will be important to foster further international growth.

²² The study used the European Union definition of an SME i.e., a firm with fewer than 250 employees.

Social Capital and International Expansion

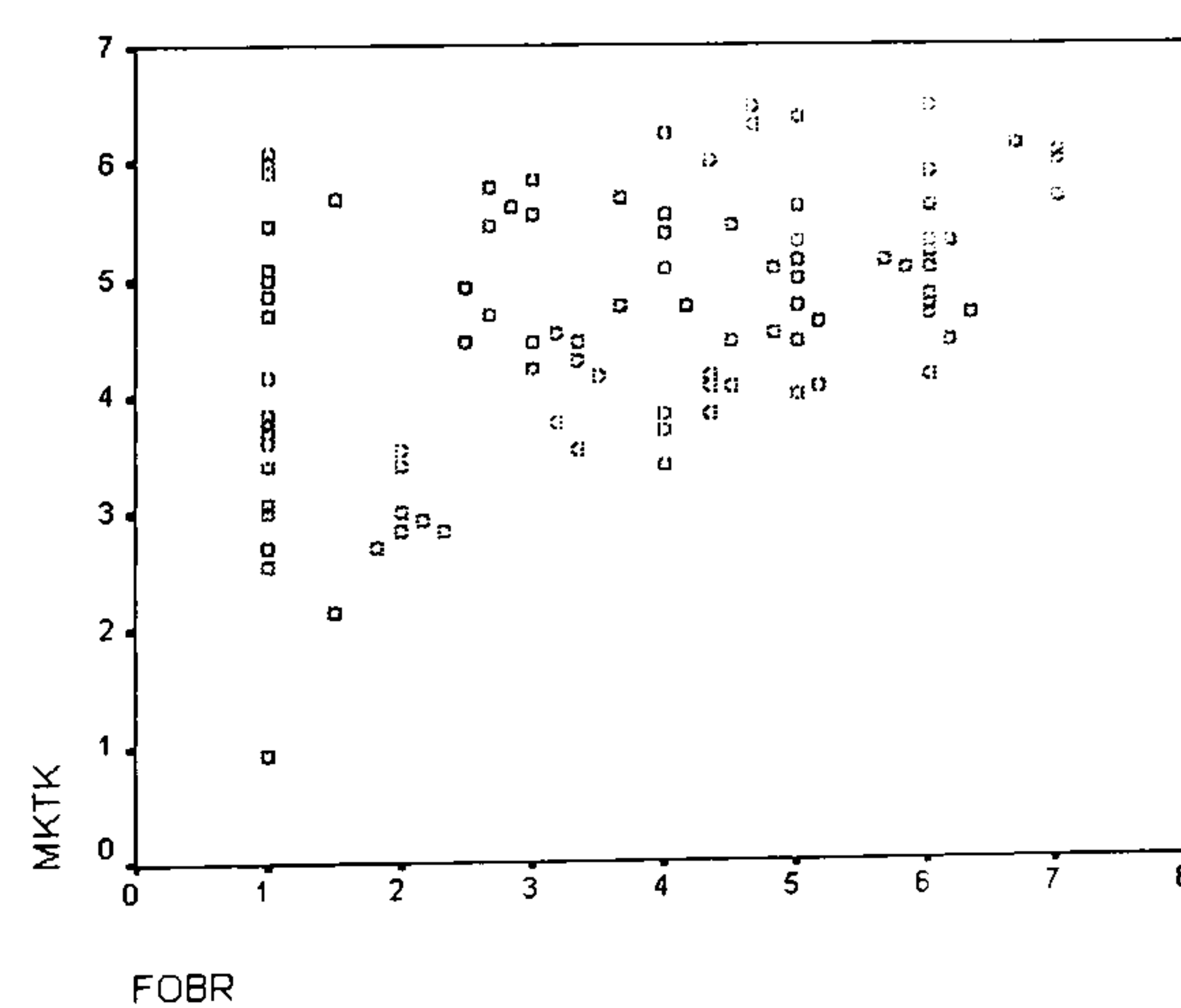
Knowledge apart, industries such as biotechnology and software, are characterised by a strong emphasis on networks, with a view to both managing resource constraints and enhancing innovation outcomes. Networks yield social capital²³. Recent research has implied the importance of social capital for international expansion, through vital 'network resources' such as information. In this study, distinction is made between *bridging* (socially heterogeneous) and *bonding* (socially homogeneous) social capital, which in each case may be *local* or *foreign*. Surprisingly, however, none of the four categories of social capital studied – viz., local bonding social capital, local bridging social capital, foreign bonding social capital and foreign bridging social capital – had a significant effect on international growth.

This raises two vital concerns. The first issue is: why do some Indian software SMEs have low stocks of social capital domestically and internationally? For instance about 55% of the respondents rated themselves as having low stocks of local social capital (i.e., within India). The second, and perhaps more important, concern is: are those Indian software SMEs that do have high stocks of social capital leveraging their networks effectively for global success? About 40% of the respondents with high levels of social capital felt that they were not experiencing information benefits from their networks. Thus a certain amount of introspection may be called for on the part of Indian software SMEs to consider their sources of social capital, and the extent to which these are being utilised in a strategically appropriate manner.

However the survey did reveal that social capital *does* affect other aspects of international expansion. There was a statistically significant relationship between social capital arising from fellow-Indians abroad (referred to in this study as foreign bonding social capital) and the establishment of a 'presence' in the largest foreign market, which is useful, according to academic research, in gaining technological learning. Additionally, a statistically significant relationship was found between social capital arising from non-Indian foreign firms (i.e., foreign bridging social capital) and SMEs' proportion of international revenues. Thus social capital was seen to influence international expansion (although not growth per se), with bridging and bonding social capital having different effects, which are important to note so that SMEs can have more balanced portfolios of social capital and realistic expectations.

It is similarly interesting that although no category of social capital directly influenced growth, foreign bridging social capital had a significant impact on market knowledge suggesting that one of the most crucial outcomes of social capital (especially from foreign bridging ties), is the creation and acquisition of market knowledge, which was found to be a key driver of international growth.

Fig 2: Social Capital and Market Knowledge



²³ Sumantra Ghoshal and a colleague defined social capital as "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit". Source: Nahapiet, J. and Ghoshal, S. (1998), "Social capital, intellectual capital, and the organizational advantage", *Academy of Management Review*, 23 (2), 242-266.

Appendix: About the Study

This survey was carried out as part of the author's doctoral research based within Strathclyde International Business Unit, under the guidance of Professor Stephen Young, one of Britain's most eminent international business scholars.

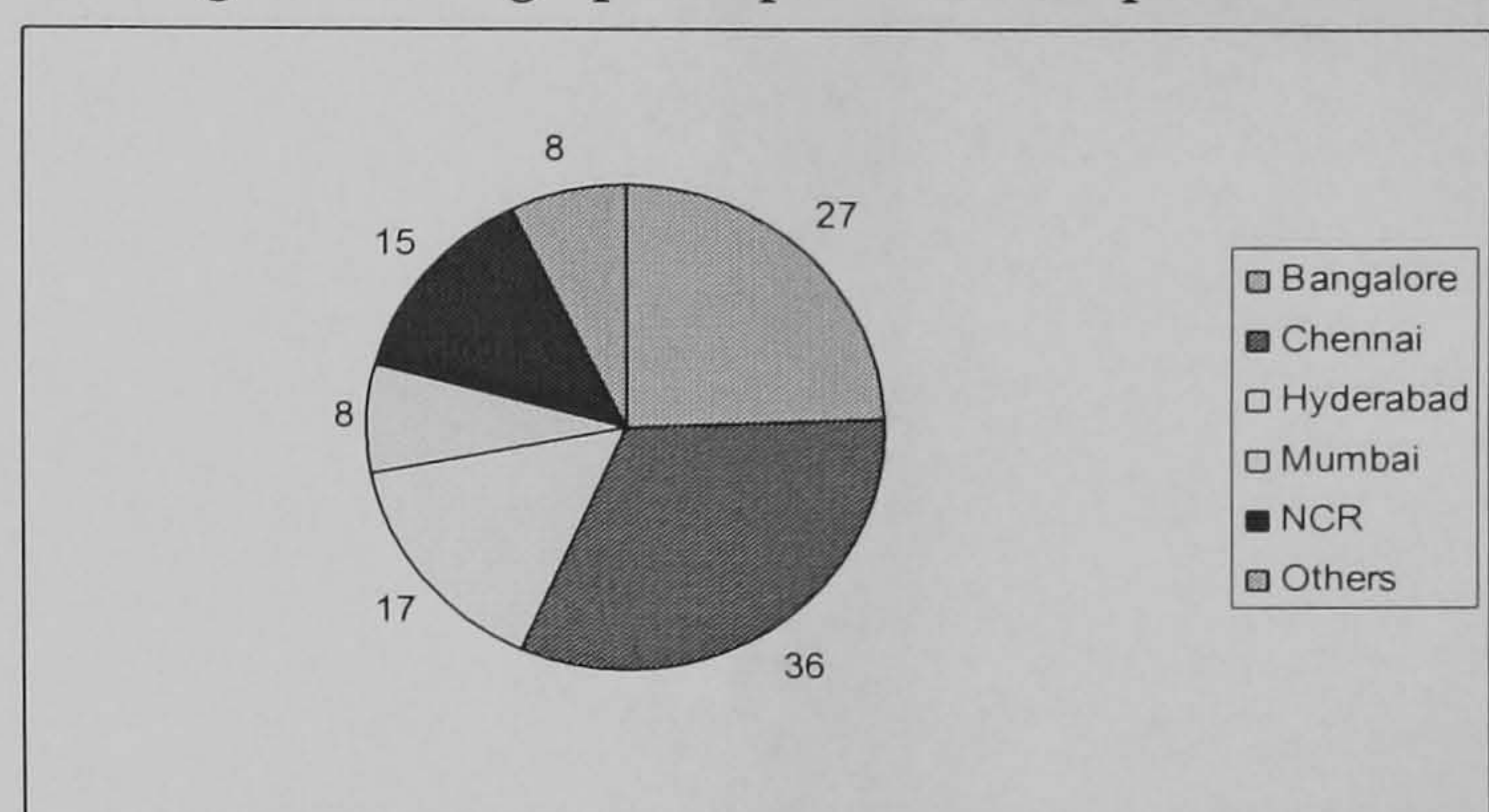
The survey was preceded by a phase of qualitative research (comprising four case studies) in Bangalore. The survey instrument (questionnaire) was carefully formulated based on relevant journal articles, meticulously reviewed by a set of academic experts and pilot-tested on a sample of 50 British software SMEs.

Out of about 400 Indian software SMEs contacted for the survey, 111 responded; see figure below. Data were collected through two waves of emailing (January/February and April 2004) followed by face-to-face interviews through field researchers (May/June 2004).

The following are some averages of the respondents:

- Age: 9 years
- Size: 125 employees
- Age at first international contract: 2 years
- % of international revenues: 60%
- Largest market: US (58%); UK (12%)

Figure 3: Geographic Spread the Respondents



The data from the survey were analysed using standard multivariate regression techniques. Findings indicated the extent to which hypotheses were supported (e.g., knowledge and social capital are positively associated with international growth) and, as evident from the foregoing discussion, have useful managerial implications.

Acknowledgements

The author thanks the respondents from over 100 Indian software SMEs for taking part in the survey. He is particularly grateful to Mr Pawan Kumar, CEO of vMoksha and Chair of the Nasscom SME Forum in Bangalore for his encouragement and endorsement of this study. The support of Professor Abraham Koshy of the Indian Institute of Management, Ahmedabad is also appreciated.

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