

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

**Absorptive Capacity and Knowledge Transfer:  
An Exploratory Model for University-led Research  
Institutes (RIs) and Small and Medium Enterprises (SMEs)**

A 152.800 thesis presented in partial fulfilment of the requirements of the

degree of

Masters of Business Studies in Management

At Massey University, Auckland,

New Zealand.

Smita Paul

Student ID: 02284618

Word Count: 26,050



## **Abstract**

'Absorptive capacity' is a construct used to define an organisation's ability to exploit knowledge that is available internally and externally. The construct is very popular within management research and has been used to describe the absorptive capacity of a range of strategic Multinational Corporation partners through to whole regions of countries.

SMEs account for over 95% of businesses throughout the world. They provide innovation, productivity and economic growth, but because of their size and resources cannot afford to carry out costly Research and Development (R&D). They therefore need to be able to harness the intellectual property from universities through University-led Research Institutes.

This thesis uses the construct of absorptive capacity to propose a theoretical model to analyse the knowledge transfer from a University-led Research Institute (RI) to an SME, when the SME is commercialising a product or process the RI has developed. The application of absorptive capacity in this context would allow SME researchers and managers to develop understanding of how this knowledge transfer is affected by internal and external factors. The importance of continued government funding to ensure the collaboration between SMEs and RIs is highlighted.

This research design is highly exploratory resulting in a range of future research suggestions for future hypothesis generation. Most important of these are suggestions for determining, defining and developing the organisational determinants of absorptive capacity. This will allow a prescriptive analysis of how knowledge transfer occurs between the SME and RI and how managers can foster organisational absorptive capacity for successful knowledge transfer. Additionally, the temporal aspect of the SME and RI relationship could be explored, such as the impact of the initial experience on the ease and length of future knowledge transfer relationships. Also, researchers could study the change in the SME's knowledge requirements from the RI as the SME's organisational structure grows.

## Acknowledgements

I wish to thank my supervisor Kaye Thorn for her tireless enthusiasm and excellent and constant guidance during the writing of this thesis. I am forever indebted to her for her assistance, supervision and kindness. I would also like to thank my supervisor Prof John Monin for giving up his time to discuss and give useful feedback on major concepts. Their help has been exactly what I imagined successful and enjoyable supervision to be and whole-heartedly wish that I had the opportunity to experience this earlier.

I would also like to thank my fiancé Sam Spink-McCarthy for his cups of 'encouragement coffee' and patient ear. I would also like to thank my father, Prof. Himanghsu Paul for his continual encouragement.

# Table of Contents

Abstract.....	i
Table of Contents.....	ii
List of Figures .....	v
List of Tables .....	v
Chapter 1 Introduction .....	1
Chapter 2 Absorptive Capacity .....	8
2.1 Absorptive Capacity as a Construct.....	8
2.2 The Development of Absorptive Capacity by Cohen and Levinthal.....	14
2.3 Reification of Absorptive Capacity .....	26
Chapter Three Small to Medium Enterprises and Research Institutions .....	43
3.1 The Definition of a SME.....	43
3.2 Operational differences of SMEs .....	46
3.3 The Role of SMEs.....	47
3.4 Research on SMEs .....	49
3.5 Research Institutes.....	50
3.6 RIs and SMEs .....	52
Chapter Four The Exploratory Model .....	55
4.1 Introduction.....	55
4.2 Advantages of using ACAP .....	57
4.3 The Five Limiting Assumptions of the Construct .....	59
4.4 The Development of the Model.....	62

Chapter Five Conclusions and Recommendations for Future Research.....83

5.1 Development of the Model .....84

5.2 Management Implications .....89

5.3 Future Research .....93

References .....97

Appendix 1 .....103

Appendix 2 .....105

## List of Figures

Figure 1. Cohen and Levinthal (1990) Model of Absorptive Capacity and R&D Spending.....	22
Figure 2. Cohen and Levinthal (1990) Model of Sources of a Firm's Technological Knowledge .....	23
Figure 3 Cohen and Levinthal's (1989, 1990) Implied Model of 'Absorptive Capacity'.....	35
Figure 4 Lane et al.'s (2006, p. 856) Process Model of 'Absorptive Capacity' .....	39
Figure 5 Todorova & Durisin's (2007, p.776) Refined Model of Absorptive Capacity.....	42
Figure 6. The RI to SME Knowledge Transfer Model using Relative Absorptive Capacity .....	72

## List of Tables

Table 1. Summary of the Development of Absorptive Capacity through Seminal Papers.....	29
--	----