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## Understanding the adoption of clusters by SMEs in Australia using innovation diffusion theory

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# **Understanding the Adoption of Clusters by SMEs in Australia using Innovation Diffusion Theory: A Case Study**

**A thesis submitted in partial fulfilment of the**

**requirement for award of the degree**

**Master of Information and Communication Technology - Research**

**from**

**THE UNIVERSITY OF WOLLONGONG**

**by**

**Ye Ryung (Claire), Kim**

**(MICT, University of Wollongong)**

**School of Information Systems and Technology**

**2007**

## **Thesis Certification**

### **CERTIFICATION**

I, Ye Ryung, Kim declare that this thesis, submitted in fulfilment of the requirements for the award of Master of Research, in the School of Information Systems and Technology, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

Ye Ryung, Kim

6 June 2008

## **Author's Publication Relating to This Research Topic**

‘Understanding the Adoption of Clusters by SMEs ’,  
Presented at the 15<sup>th</sup> *Science and Technology and Economic Progress ( STEP)*  
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presented at *the 3rd IEEE International Conference on Management of Innovation  
and Technology*. Singapore, 21-23 June 2006.  
<http://www.icmit.net/program/>

## **Author's Award Relating to This Research Topic**

The 2006 Annual Research Poster Presentation, Received award “Runner-up (IT) for  
best Research Poster”, 20 October 2005.

*Trust in the LORD with all your heart, and lean not on your own understanding; in  
all your ways acknowledge Him, And He shall direct your paths.  
Do not be wise in your own eyes; Fear the LORD.  
(Proverb 3:5-7)*

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## List of Acronyms

The following are the list of abbreviations used in the text.

Abbreviation	Meaning
ABS	Australian Bureau of Statistics
ISIG	Innovation Summit Implementation Group
KBE	Knowledge-based Economy
OECD	Organisation for Economic Cooperation and Development
R&D	Research and Development
SME	Small to Medium-sized enterprise

## Abstract

SME clustering has attracted much attention to date as it encourages SMEs to achieve competitive advantage through co-operation. Although the Australian government advocates and actively promotes the formation of SME clusters, much academic commentary is dissatisfied with the theory on clusters, in particular its reliance on geographic proximity. The literature primarily addresses the benefits of industry clusters but overlooks the processes of how clusters are formed. This leaves some sections of the SME population underserved particularly those involved in horizontally integrated value chains. This thesis explores the formation process of a horizontal alliance and compares this to Rogers' innovation-diffusion theory. Through a case study of an Australian carpet buying group, SMEs were surveyed to collect data on the characteristics of buying group growth over a 13 year period. Our results show that the S-shaped innovation diffusion pattern of Rogers' theory accurately describes the growth of the buying group over this time. In particular, strong support was found for the opinion leadership theory. The use of Rogers' theory led to a better understanding of the role of networks and ICTs in promoting information sharing. In particular, the research finds that the dominant theory of geographical proximity advanced by Porter (1998a) needs to be qualified in relation to horizontally integrated value chains where SMEs share a high degree of homogeneity.

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