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Knowledge management styles and performance: a knowledge space model from both theoretical and empirical perspectives

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**Knowledge Management Styles and Performance: a
Knowledge Space Model from both Theoretical and
Empirical Perspectives**

**A thesis submitted in fulfilment of the
requirements for the award of the degree of**

DOCTOR OF PHILOSOPHY

from

THE UNIVERSITY OF WOLLONGONG

by

MAEN AL-HAWARI

**MIS
High. Dip IS
BSc**

INFORMATION SYSTEMS

2004

CERTIFICATION

I, Maen Al-hawari, declare that this dissertation, submitted in fulfilment of the requirements for the award of Doctor of Philosophy in Information Systems, 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.

Maen Al-hawari

August 2004

ABSTRACT

This thesis describes post-positivist research in the field of information systems, more specifically, in knowledge management. For company managers, deploying large-scale information systems such as knowledge management systems, the selection of an appropriate style for knowledge management initiatives are recognised as a dilemma. The study aims at helping to improve information systems applications for knowledge management in complex, technology-oriented organisations. The research addresses this dilemma by studying the relationships between organisational performance, knowledge availability, knowledge codification, knowledge application and knowledge management styles.

From an extensive study of the literature, an innovative knowledge space (K-space) model of organisational knowledge is developed as the first stage of the research. This leads to the identification of four knowledge management styles and a framework that relates these styles to knowledge creation and improved organisational performance.

The K-space model is adapted from the I-space framework (Boisot, 1995, 1998) with its three dimensions of diffusion, codification and abstraction, to bring into play three corresponding knowledge dimensions of availability, codification, and application. Knowledge is viewed as an object in K-space so that knowledge processes are forces that act to move the knowledge objects within the three dimensions of K-space. The four traditional knowledge conversion processes of Nonaka and Takeuchi, (1995) socialisation, combination, internalisation and externalisation (SECI), map onto two-dimensional planes in K-space. Taking advantage of the three dimensions of K-space, four new dynamic knowledge conversion process are identified, namely Adoption, Standardisation, Systemisation and Articulation. These are used to define the four knowledge management styles.

The research framework suggests that knowledge creation, in terms of knowledge availability and codifiability, mediates the relationship between the four knowledge management styles and organisational performance. In addition knowledge application moderates the relationship between these knowledge creation processes. A set of hypotheses is generated from the framework and a survey instrument constructed to empirically test the hypotheses.

A pilot study involving 45 managers was used to check the reliability and validity of the constructs in the questionnaire. The resulting questionnaire was mailed to 338 organisations around Australia in different industries. Confirmatory analyses were used to check the constructs and multiple linear regression, simple linear regression and MANOVA analysis were used to test the set of hypotheses.

The results confirm that an organisation can improve its performance through better management of its knowledge capabilities. There is a particular benefit of deploying a balanced of knowledge management styles combining the human and technology perspectives. Knowledge management styles are shown to contribute positively to both knowledge codification and availability. Knowledge applicability is confirmed as a moderator factor between knowledge availability, as well as knowledge codification, and organisational performance. Using a MANOVA analysis, the four knowledge management styles are found to be deployed in significantly different ways by organisations in different industry types.

The findings demonstrate that the K-space model provides the basis for a new way of conceptualising knowledge creation processes within organisations. They underline the importance of continuing research that adds to the understanding of knowledge management capabilities in an organisation. Therefore, this study makes a significant

contribution to a burgeoning topic that is of increasing importance to both the academic literature and the organisational practice of knowledge management.

PUBLICATION FROM THE RESEARCH

The following papers and publications have been produced from the research reported in this thesis.

1. Al-hawari, M., and Hasan, H. (2004). Knowledge Creation Processes as Management styles for Organisational Performance. *Proceeding of CISTM Conference. Transforming Business Performance through Knowledge Management. Alexandria, Egypt, 2004*
2. Al-hawari, M., and Hasan, H. (2004). Organisational Culture and Knowledge Creation Processes. *Proceeding of the 2004 International Business Information Management Conference. Amman, Jordan, 2004*
3. Al-hawari, M., and Hasan, H. (2004). Knowledge Creation Processes and the Effect of the Culture. *Accepted for the Fourth International Conference on Knowledge, Culture and Change in Organisations. University of Greenwich , London, 2004*
4. Al-hawari, M., and Hasan, H (2004). Knowledge Management Styles and Organisational Performance: An empirical study in a K-Space Framework. *Journal of Information and Knowledge Management (JIKM). Submitted*
5. Al-hawari, M., and Hasan, H (2004). An integrated Framework for the Study of Knowledge Management: An Exploratory Study. *Unpublished manuscript. Wollongong, Australia: University of Wollongong.*
6. Al-hawari, M., and Hasan, H. (2004). The Importance of the Four Knowledge Management Styles to the industry: Using HSD. Post Hoc Test. *Unpublished manuscript. Wollongong, Australia: University of Wollongong.*
7. Hasan H., Al-hawari M. (2003). Management styles and performance: A Knowledge Space Framework. *Journal of Knowledge Management*, Vol. 7 No. 4, pp. 15-28
8. Al-hawari, M., and Hasan, H. (2002). Evaluating the Knowledge Assets of Innovative Companies. *Australian Journal of Information Systems*, Vol. 10 No. 1, pp.88-99
9. Al-hawari, M., and Hasan, H. (2002). Evaluating the Knowledge Assets of Innovative Companies. *Proceeding of SME in global economy conference Wollongong university, Australia*
10. Al-hawari, M. (2002). The Development and Evaluation of a K-Space Framework for the Study of Knowledge Management. *PhD Proposal Presented in Consortium Doctoral day at ACIS 2002, and Published in the Proceedings of the Conference, Melbourne, Australia.*

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ACRONYMS

AC	Absorptive capacity
CKO	Chief Knowledge Officer
CRCC	Create the Right Context Cycle
GLKC	Globalise Local Knowledge Cycle
IKVC	Instill Knowledge Vision Cycle
I-Space	Information Space
KC	Knowledge creation
KM	Knowledge management
KMS	Knowledge Management Style
K-Space	Knowledge Space
MANOVA	Multiple Analysis of Variance
MCC	Manage Conversations Cycle
MKAC	Mobilise Knowledge Activists Cycle
OECD	Organisation for Economic Co-operation and Development
R&D	Research and development
SECI	Nonaka's SECI Model
SME	Small and Medium Enterprise