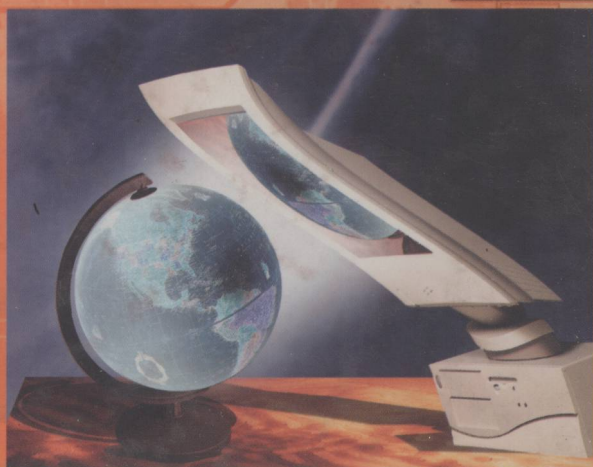


Proceedings of the
First iKMS International Conference
on Knowledge Management



People, Knowledge and Technology:

What Have We Learnt So Far?

Editors

Bruno TREZZINI

Patrick LAMBE

Suliman HAWAMDEH

G302-55
K73
2004

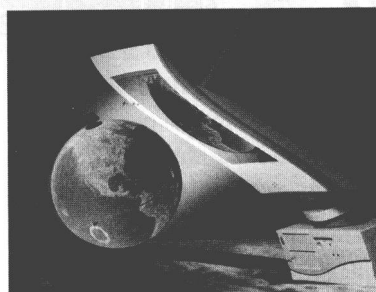
Proceedings of the First iKMS International Conference on Knowledge Management

People, Knowledge and Technology:

What Have We Learnt So Far?

Singapore

13 – 15 December 2004



Editors

Bruno TREZZINI

Nanyang Technological University, Singapore

Patrick LAMBE

Straits Knowledge, Singapore

Suliman HAWAMDEH

University of Oklahoma, USA



E200603697

World Scientific

NEW JERSEY • LONDON • SINGAPORE • BEIJING • SHANGHAI • HONG KONG • TAIPEI • CHENNAI

Published by

World Scientific Publishing Co. Pte. Ltd.

5 Toh Tuck Link, Singapore 596224

USA office: 27 Warren Street, Suite 401-402, Hackensack, NJ 07601

UK office: 57 Shelton Street, Covent Garden, London WC2H 9HE

British Library Cataloguing-in-Publication Data

A catalogue record for this book is available from the British Library.

PEOPLE, KNOWLEDGE AND TECHNOLOGY: WHAT HAVE WE LEARNT SO FAR?
Proceedings of the First iKMS International Conference on Knowledge Management

Copyright © 2004 by World Scientific Publishing Co. Pte. Ltd.

All rights reserved. This book, or parts thereof, may not be reproduced in any form or by any means, electronic or mechanical, including photocopying, recording or any information storage and retrieval system now known or to be invented, without written permission from the Publisher.

For photocopying of material in this volume, please pay a copying fee through the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923, USA. In this case permission to photocopy is not required from the publisher.

ISBN 981-256-149-8

People, Knowledge and Technology:

What Have We Learnt So Far?

PREFACE

This is a volume born out of passion and commitment. You are holding in your hands the proceedings of the *First International Conference on Knowledge Management* (iCKM 2004) organized by the *Information and Knowledge Management Society* (iKMS) and held in Singapore from December 13 to 15, 2004.

iKMS is a non-profit society which started as a knowledge management interest group in Singapore in 1999 with the objectives of promoting awareness of KM research and practice and discussing issues related to the development of knowledge management locally and internationally. The degree of interest and participation grew rapidly, so the founding members decided to register a society. As a result, iKMS was officially born in January 2001. Besides having become a major force in the local KM scene, iKMS created an international presence by publishing the first international refereed journal in knowledge management. The *Journal of Information and Knowledge Management* (JIKM) is the Society's flagship and is currently published by *World Scientific* (www.worldscinet.com/jikm/jikm.shtml). In many ways, iCKM 2004 marks another important step in the coming of age of iKMS.

By choosing the conference theme "People, knowledge and technology: what have we learned so far?" we wanted to elicit contributions that would shed some light on the current state of the art in KM as well as on the future challenges that lie ahead. How much has KM come of age as an academic discipline as well as a professional practice? In particular, we wanted to bridge the too frequent gap that exists between KM research and KM practice, by bringing academics, practitioners and providers into the same space, to discuss their common issues.

It is not especially easy to strike a balance between the particular needs and interests of academics, practitioners and solution providers in a conference program. However, we hope that in the end we managed to devise a flexible and productive program that allowed for maximal cross-fertilization between the different constituencies within the KM arena. The first and second conference days focused on insights and cases from KM research. On the second day country reports were also scheduled, offering insights into the state of KM adoption and practice in the Asian-Pacific region, the natural geographical focus of this year's conference. The focus of the last day shifted to the specifics of KM practice in Singapore, with case studies from Singaporean organisations. The final afternoon of the conference was devoted to knowledge sharing between speakers and delegates in a forum facilitated according to the principles of open space technology.

We are particularly pleased to have secured the support of four eminent personalities in the field of knowledge management as keynote speakers for iCKM 2004. In their addresses they shared their ideas on the power of social networks (Rob Cross),

knowledge strategies for innovation (Josef Hofer-Alfeis), the future of KM (Dave Snowden), and metadata and taxonomies (David Weinberger).

This volume contains 32 oral presentations as well as the abstracts of the four keynote addresses and 37 poster presentations. The papers were grouped into six major themes, reflecting common concerns addressed by the authors: (1) communities and collaboration; (2) knowledge sharing; (3) culture as context; (4) knowledge management strategies; (5) knowledge creation; and (6) knowledge discovery. Many of these papers reflect the growing interest in non-technological aspects of KM. The insight that information technology is no panacea has become somewhat of a truism in the KM field. Technology continues to play an enabling role, but it is often subsidiary to social and cultural success factors.

Organizing an international conference is no mean feat for such a young organization, and it would certainly not have been possible without the dedication and active support of all iKMS executive committee members in a period of planning that spanned two years. We are also particularly grateful to our reviewers and the members of the international program committee for their advice and support in preparing the program. To these contributors, who freely gave of their time and insight, we offer our deepest thanks.

We would also like to thank Max Phua from *World Scientific* as well as Jane Lim and Khoo Cheng Hoon from *Meeting Matters International* for their logistic and administrative help in organizing this conference. Last but not least, our thanks go to all speakers and conference participants who made this event a worthwhile one.

Preparations for the second and third iCKM are well under way, and we hope that we will see many of you again in Tulsa (Oklahoma, USA) in 2005 and in London (University of Greenwich) in 2006.

Bruno Trezzini
Patrick Lambe
Suliman Hawamdeh

ACKNOWLEDGEMENTS

We would like to thank the following people who served as members of the international program committee and/or as anonymous reviewers (the latter are marked with a *):

ABRAHAM Ajith *
 ALLAN Neill
 ALQUDSI Taghreed
 BARACHINI Franz
 BARTH Steve
 BARUCH Lev
 BHANDAR Mamata *
 BOCK Gee Woo *
 BOISOT Max
 BONTIS Nick
 BURSTEIN Frada *
 CALABRESE Carmen *
 CALLAHAN Shawn *
 CHAI Kah-Hin *
 CHANG Meng Lai Calvin *
 CHANG Yun-Ke *
 CHATTERJEE Jayanta *
 CHAUDHRY Abdus Sattar *
 CHEN Hsueh-hua
 COLEMAN David *
 COLLIS Betty A.
 DANESHGAR Farhad *
 DAVIS Charles
 DAWSON Ross
 ELLIS Steve
 GILBERT A. Lee *
 GOH Su Nee *
 GURTEEN David
 HANDZIC Meliha
 HARRISON Alan
 HART Thomas
 HASAN Helen
 HOFER-ALFEIS Josef *
 HSIAO Ruey-Lin
 KAN Siew Ning *
 KANKANHALLI Atreyi *
 KONG Wei Chang *
 KUMAR Prem *
 LANG Josephine *
 LAYCOCK Martyn *
 LEE Chu Keong *
 LEE W. B.
 LEE Wai Peng *
 LEE-PARTRIDGE Joo Eng *
 LEMOULT Diane
 LESTER June

LIM Ah Seng
 LIM Thou Tin *
 MANSOR Yushiana
 MAYSAMI Ramin *
 MENKHOFF Thomas
 METAXIOTIS Kostas *
 MORALES ARROYO Miguel A. *
 MYBURGH Sue
 NICHANI Maish
 ORDOÑEZ DE PABLOS Patricia *
 PAN Shan Ling *
 PATTERSON Lotsee F. *
 PERVAN Graham
 PHANG Chee Wei *
 POWERS Clair *
 PROBST Gilbert
 PULIC Ante
 RAHMAN Naseem J. *
 RAMCHAND Anand M. *
 RAO Madanmohan *
 RAVISHANKAR M. N. *
 RITTER Waltraut *
 RIVERA Melagros
 SAJJAD Ur Rehman
 SANKARA Shankar *
 SBARCEA Kim *
 SHAHEEN Majid
 SNOWDEN Dave *
 SPIRA Jonathan B. *
 SRIKANTIAH Kanti
 SRIRAMESH Krishnamurthy *
 STEINHEIDER Brigitte *
 STEPHENSON Karen
 SUTANTO Juliana *
 SYEED Zakir
 TIMBRELL Greg *
 TRONDSEN Eilif
 TSUI Eric *
 VAN UNNIK Arjan *
 WALLACE Danny
 WEINBERGER David
 YAMAZAKI Hideo
 YEUNG Kwok Tung Christopher *
 YOUNG Ron
 ZOECKLER Mark *

CONTENTS

PREFACE	v
ACKNOWLEDGEMENTS	vii
PART I Abstracts of Keynote Addresses	
THE HIDDEN POWER OF SOCIAL NETWORKS <i>Rob Cross</i>	3
KNOWLEDGE STRATEGY AND INNOVATION <i>Josef Hofer-Alfeis</i>	4
THE FUTURE OF KNOWLEDGE MANAGEMENT <i>Dave Snowden</i>	5
METADATA SPEAKS: THE THIRD ORDER OF ORDER AND THE VALUE OF THE UNSPOKEN <i>David Weinberger</i>	6
PART II Communities and Collaboration	
EFFECTS OF COMPANY SIZE AND WORKER'S EXPERIENCE ON KNOWLEDGE DELIVERY FACTORS VIS-À-VIS SOFTWARE DEVELOPMENT EFFICIENCY <i>Samuel A. Ajila & Zheng Sun</i>	9
DEVELOPING KNOWLEDGE IN "NETWORKS OF PRACTICE" <i>Pierpaolo Andriani, Gary Atkinson, Alistair Bowden & Richard Hall</i>	21
DEMONSTRATING THE EFFECTIVENESS AND EFFICIENCY OF KNOWLEDGE HALLWAYS WITHIN PRICEWATERHOUSECOOPERS <i>Gerard Bredenoord</i>	32
DYNAMICS IN TECHNOLOGY-ENHANCED TEAMS: TRANSACTIVE MEMORY IN TRUST NETWORKS <i>Klarissa Ting-Ting Chang</i>	44
APPLYING SENSE-MAKING METHODOLOGY TO ESTABLISH COMMUNITIES OF PRACTICE: EXAMPLES FROM THE BRITISH COUNCIL <i>Bonnie Cheuk</i>	55
SOCIAL NETWORK ANALYSIS IN CONTEXT: FROM A RESEARCH METHODOLOGY TO A BUSINESS TOOL <i>Kimiz Dalkir & Michele Ann Jenkins</i>	66

COLLABORATIVE FACTORS AFFECTING KM PROCESSES	
<i>Miguel Angel Morales Arroyo & Yun-Ke Chang</i>	76
COLLABORATIVE LEARNING BEHAVIOUR IN SOFTWARE DEVELOPMENT TEAMS	
<i>Sourav Mukherji & Abhoy K. Ojha</i>	87
CULTIVATING A COMMUNITY OF PRACTICE IN A SMALL RESEARCH ORGANIZATION	
<i>Samo Pavlin</i>	97
THE ROLE OF MEDIATORS IN CREATING STRATEGIC KNOWLEDGE COMMUNITES (SKC) AND PROMOTING COLLABORATION BETWEEN SCIENTIFIC AND LOCAL COMMUNITIES: A CASE STUDY FROM THAILAND	
<i>Nuta Supakata & Pierre Fayard</i>	108
TRUST, COHESION, AND IDENTIFICATION AS DRIVERS OF COP PERFORMANCE: THE MODERATING EFFECT OF KNOWLEDGE TYPE	
<i>Katja Zboralski & Hans Georg Gemünden</i>	115
 PART III Knowledge Sharing	
KNOWLEDGE SHARING IN RESPONSE TO A SUPPORTIVE WORK ENVIRONMENT: EVIDENCE FROM AN AUSTRALIAN ENGINEERING FIRM	
<i>Prashant Bordia, Bernd E. Irmer, Mary-Ann Garden, Kate Phair & David Abusah</i>	129
INTRAORGANIZATIONAL KNOWLEDGE SHARING IN KNOWLEDGE INTENSIVE FIRMS	
<i>Akshey Gupta & Snejina Michailova</i>	140
PREDICTING KNOWLEDGE SHARING ON KNOWLEDGE MANAGEMENT SYSTEMS	
<i>Scott Krebs & Prashant Bordia</i>	152
KNOWLEDGE INTEGRATION PROBLEMS AND THEIR EFFECT ON TEAM PERFORMANCE	
<i>Brigitte Steinheider & Natalja Menold</i>	163
KNOWLEDGE SHARING THROUGH SOCIAL NETWORKS IN PROJECT-BASED ORGANIZATIONS	
<i>Wang Jiangdian & Yim-Teo Tien Hua</i>	174
 PART IV Culture as Context	
TACIT KNOWLEDGE AND CULTURE	
<i>Peter Busch & Debbie Richards</i>	187

ORGANIZATIONAL ATMOSPHERE FOR NURTURING SOCIAL AND INTELLECTUAL CAPITAL: A CASE STUDY OF AN IT SERVICES VENDOR <i>N. Dayasindhu & Krishnan Narayanan</i>	199
---	-----

THE COMMUNICATION AUDIT: TRIED AND TRUE, BUT NOW LET'S USE IT FOR SOMETHING NEW – EXAMINING ORGANISATIONAL KNOWLEDGE SHARING <i>Celina Pascoe & Elizabeth More</i>	210
---	-----

MISSING FUNDAMENTAL ILLUSION: A NEW THEORY BASED ON JAPANESE KNOWLEDGE MANAGEMENT <i>María Sarabia, Juan Corro & José M. Sarabia</i>	222
---	-----

ORGANIZATIONAL CULTURE, SOCIAL EMBEDDEDNESS AND KNOWLEDGE LOSS: A CASE STUDY OF CHINA CENTRAL TELEVISION (CCTV) <i>Lingjie Wang</i>	233
--	-----

PART V Knowledge Management Strategies

MECHANISMS FOR INTEGRATING DISTRIBUTED KNOWLEDGE <i>Wai Fong Boh</i>	247
---	-----

THE SOURCES OF A FIRM'S COMPETITIVE ADVANTAGE ACCORDING TO THE KNOWLEDGE-BASED SCHOOL: THE CASE OF SLOVENIAN FIRMS <i>Tomaž Čater</i>	259
--	-----

A FRAMEWORK FOR KNOWLEDGE REUSE SUCCESS <i>D.C.Y. Lim, A. Kankanhalli & K.S. Raman</i>	270
---	-----

THE DEVELOPMENT OF KM COMPETENCIES IN LIS PROGRAMS: AN ANALYSIS <i>Sajjad Ur Rehman & Abdus Sattar Chaudhry</i>	281
--	-----

STRATEGIC APPROACHES TO KM: AN EMPIRICAL STUDY CONDUCTED IN THE US GOVERNMENT AND NONPROFIT SECTORS <i>Vincent Ribiére & Juan A. Román</i>	292
---	-----

PART VI Knowledge Creation

PATENT INTELLIGENCE AND ITS IMPLICATIONS FOR PATENT PRODUCTIVITY <i>Nilanjana Bhaduri Nee Chakraborty & Mary Mathew</i>	305
--	-----

INTELLECTUAL PROPERTY RIGHTS AND THE DEBATE ON RENT SEEKING AND ALLOCATION OF KNOWLEDGE RESOURCES <i>Bruno de Vuyst & Alea M. Fairchild</i>	316
--	-----

PART VII Knowledge Discovery

KNOWLEDGE SHARING OVER P2P KNOWLEDGE NETWORKS: A PEER ONTOLOGY AND SEMANTIC OVERLAY DRIVEN APPROACH <i>Syed Sibte Raza Abidi & Xiaolin Pang</i>	329
ASSESSING THE MICROECONOMIC FACET OF ASSOCIATION RULES VIA AN EFFICIENT WEIGHTING SCHEME <i>Ioannis N. Kouris, Christos H. Makris & Athanasios K. Tsakalidis</i>	340
A STUDY OF THE "MULTI-AGENT BASED USER ACCESS AND CORRELATED PATTERN IN OPTIMAL CONTENT ALLOCATION METHOD FOR FEDERATED VIDEO DIGITAL LIBRARIES" <i>R. Ponnusamy & T.V. Gopal</i>	350
INTELLIGENT CONTENT DISCOVERY WITHIN E-LEARNING WEB SERVICES <i>Gottfried Vossen & Peter Westerkamp</i>	365

PART VIII Abstracts of Poster Presentations

COLLABORATIVE KNOWLEDGE MANAGEMENT PORTALS FOR LEARNING ORGANIZATIONS <i>Rusli Abdullah, Mohd. Hasan Selamat, Shamsul Sahibudin & Rose Alinda Alias</i>	379
A STUDY OF THE ALIGNMENT OF KNOWLEDGE AND BUSINESS STRATEGIES AND THEIR EFFECT ON THE PERFORMANCE OF THE KINGDOM OF BAHRAIN'S BANKING AND FINANCIAL INSTITUTIONS <i>Jafiah AlAmmary, Chun Che Fung & Paula Goulding</i>	380
MODELING AIR TRAFFIC LANDING SEQUENCES AND CONTROL: A SIMULATION <i>Qurban Ali & Atif Rafeeq</i>	381
THE STATE OF IMPLEMENTATION OF KNOWLEDGE MANAGEMENT IN SINGAPORE <i>Sattar Bawany</i>	381
ORGANIZATIONAL EFFECTS ON KNOWLEDGE SHARING <i>Krisda Bisalyaputra, Chuvej Chansa-Ngavej & Tony Garrett</i>	382
LEARNING IN PROJECT-BASED ORGANIZATIONS <i>Wai Fong Boh</i>	383
APPLYING SOCIAL NETWORK ANALYSIS TO KNOWLEDGE MANAGEMENT <i>Peter Busch & Debbie Richards</i>	383
TACIT KNOWLEDGE DIFFUSION VIA TECHNOLOGY AND HUMAN NETWORKS <i>Peter Busch & Debbie Richards</i>	384

HOW DOES KNOWLEDGE MANAGEMENT INFLUENCE THE INNOVATION MANAGEMENT PROCESS? <i>Daniel K.S. Chang</i>	385
A MEASUREMENT MODEL FOR ASSESSING THE KNOWLEDGE-BASED ECONOMY <i>Chih-Kai Chen</i>	386
TRAVERSING THE FUTURE OF KNOWLEDGE MANAGEMENT (KM): AN EMERGING THEME IN HIGHER EDUCATION RESEARCH? <i>Chiam Ching Leen, John Hedberg & Peter Freebody</i>	387
PROMOTING PROFESSIONAL COLLABORATION BETWEEN MEDICAL PRACTITIONERS: LEVERAGING AN ONLINE DISCUSSION FORUM <i>Janet Curran, Syed Sibte Raza Abidi & Paula Forgeron</i>	388
MANAGING KNOWLEDGE IN GENERAL PRACTICE SURVEYING FIRMS: A COMPARATIVE STUDY BETWEEN SME AND LARGE FIRMS <i>Patrick S.W. Fong & Y. Cao</i>	389
AN EMPIRICAL EVALUATION OF A CORPORATE E-LEARNING PORTAL <i>Meliha Handzic & Joon-Ho Hur</i>	390
IMPROVING UNIVERSITY-INDUSTRY KNOWLEDGE PARTNERSHIPS FOR SCIENTIFIC RESEARCH AND DEVELOPMENT PROJECTS: A PILOT STUDY <i>Quamrul Hasan</i>	390
KNOWLEDGE MANAGEMENT SYSTEM: SOME METHODOLOGICAL REMARKS <i>Gianpaolo Iazzolino, Domenico Laise, Piero Migliarese & Saverino Verteramo</i>	391
THE ROLE OF STRATEGIC HUMAN RESOURCE MANAGEMENT IN THE PROCESS OF A COMPANY'S KNOWLEDGE CREATION <i>George Surya Kencana</i>	392
BUSINESS INTELLIGENCE FOR KNOWLEDGE MANAGEMENT <i>Vijay Kumar</i>	392
KNOWLEDGE MANAGEMENT AND COMMUNICATION CHALLENGES: DETERMINING WHAT INFORMATION PATIENTS REALLY WANT <i>Kevin J. Leonard & Warren J. Winkelman</i>	393
UTILIZATION OF INFORMATION AND COMMUNICATION TECHNOLOGY IN AGRICULTURAL KNOWLEDGE MANAGEMENT: THE CASE OF THE PHILIPPINE NARS <i>Ruel V. Maningas</i>	393
THE LEARNING SPACE OF THE SERVICE FIRM AND ELEMENTS IN THE CO- PRODUCTION OF KNOWLEDGE: EVIDENCE FROM AUSTRALIAN SERVICE FIRMS <i>M. Cristina Martinez-Fernandez, Claudine A. Soosay & Kell Tremayne</i>	394

KNOWLEDGE SHARING ENABLERS: A REVIEW OF ORGANIZATIONAL STRATEGIES AND PRACTICES <i>Laila Marouf</i>	395
KNOWLEDGE MANAGEMENT: FROM PRODUCTIVITY GAINS TO STRATEGIC ADVANTAGE <i>Sourav Mukherji</i>	395
DEVELOPING A KNOWLEDGE MANAGEMENT FRAMEWORK FOR SMALL BUSINESSES: A CASE STUDY <i>Jothimani K. Muniandy</i>	396
APPLICATION OF ADAPTIVE NETWORK BASED FUZZY INFERENCE SYSTEM FOR MODEL RECONSTRUCTION IN REVERSE ENGINEERING <i>D. Nagajyothi</i>	397
REVAMPING UNIVERSITIES - KNOWLEDGE MANAGEMENT: A MEANS TO EFFECTIVE PERFORMANCE <i>K. Padmini</i>	398
INTELLIGENT KNOWLEDGE RETRIEVAL THROUGH COLLABORATIVE KNOWLEDGE SHARING <i>Hatim Saleh & Syed Sibte Raza Abidi</i>	398
GLOBALIZATION AND KNOWLEDGE MANAGEMENT: IMPLICATIONS FOR HRD <i>Avneet Saxena & S. Wadhwa</i>	399
CONVERSION OF A HETEROGENEOUS EDUCATION SYSTEM (HEES) INTO A HOMOGENEOUS EDUCATION SYSTEM (HOES) BY USE OF KNOWLEDGE MANAGEMENT AND INFORMATION TECHNOLOGY <i>Asif Ali Syed</i>	400
DEVELOPING A KNOWLEDGE-BASED ECONOMY: AN INVESTIGATION OF CULTURAL INFLUENCES <i>Eileen Trauth, Perry Wong & Benjamin Yeo</i>	401
SUPPORTING COMMUNITIES OF PRACTICE: A RIPPLE DOWN RULES APPROACH TO CALL CENTRE MANAGEMENT <i>Megan Vazey & Debbie Richards</i>	401
THE APPLICATION OF KNOWLEDGE MANAGEMENT IN PUBLIC SECTOR BANKS IN INDIA'S POST LIBERALISATION ERA <i>Surendra Kumar Vyas</i>	402
A KM AND E-LEARNING BASED ARCHITECTURE: AN INNOVATIVE APPROACH FOR SMES <i>S. Wadhwa & Avneet Saxena</i>	403
MODELING A SIMPLIFIED KNOWLEDGE SYSTEM FOR TECHNOLOGY TRANSFER BETWEEN DONOR AND HOME PARTNERS <i>Eade Wang, Fu-Sheng Tsai & Shieh-Chieh Fang</i>	404

KNOWLEDGE MANAGEMENT PRACTICES IN THE INDIAN CORPORATE SECTOR:
AN EMPIRICAL STUDY

P. Subrahmanya Yadapadithaya

404

KNOWLEDGE SHARING IN THE ASIAN PUBLIC ADMINISTRATION SECTOR

L. J. Yao, T. Kam & S. Chan

405

A MULTI-AGENT SYSTEM FOR SUPPLY CHAIN COORDINATION

Xiao You & Jianxin (Roger) Jiao

406

PART I

Abstracts of Keynote Addresses

THE HIDDEN POWER OF SOCIAL NETWORKS

ROB CROSS

McIntire School of Commerce, University of Virginia
robcross@virginia.edu

In today's flatter organizations work of significance demands effective collaboration within and across functional, physical and hierarchical boundaries. In all but the most rote manufacturing and service environments work has become a collaborative endeavor accomplished less through standardized processes and formal structure than informal networks of relationships. This presentation will demonstrate why and how to pay attention to the health of networks based on in-depth experience with over 60 organizations in the last five years. Specifically, the session will:

- Demonstrate the importance of networks in terms of performance (organizational and individual), learning, innovation and quality of work life.
- Provide case examples of strategic problems organizations uncover when conducting a social network analysis and means of correcting them.
- Characterize networks of high performing individuals and provide diagnostic questions that people can apply to assess their own networks.
- Describe new work assessing energy in networks, both how it is created and transferred as well as its impact on performance and innovation.