

International Conference on Mobile Business

ICMB 2005

July 11-13, 2005

Crowne Plaza Darling Harbour
Sydney, Australia

Edited by

Wayne Brookes, Elaine Lawrence, Robert Steele, Elizabeth Chang



Los Alamitos, California
Washington • Brussels • Tokyo

All rights reserved.

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries may photocopy beyond the limits of US copyright law, for private use of patrons, those articles in this volume that carry a code at the bottom of the first page, provided that the per-copy fee indicated in the code is paid through the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

Other copying, reprint, or republication requests should be addressed to: IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, P.O. Box 133, Piscataway, NJ 08855-1331.

The papers in this book comprise the proceedings of the meeting mentioned on the cover and title page. They reflect the authors' opinions and, in the interests of timely dissemination, are published as presented and without change. Their inclusion in this publication does not necessarily constitute endorsement by the editors, the IEEE Computer Society, or the Institute of Electrical and Electronics Engineers, Inc.

IEEE Computer Society Order Number P2367
ISBN 0-7695-2367-6
Library of Congress Number 2005923694

Additional copies may be ordered from:

IEEE Computer Society
Customer Service Center
10662 Los Vaqueros Circle
P.O. Box 3014
Los Alamitos, CA 90720-1314
Tel: + 1 800 272 6657
Fax: + 1 714 821 4641
<http://computer.org/cspres>
csbooks@computer.org

IEEE Service Center
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331
Tel: + 1 732 981 0060
Fax: + 1 732 981 9667
[http://shop.ieee.org/store/
customer-service@ieee.org](http://shop.ieee.org/store/customer-service@ieee.org)

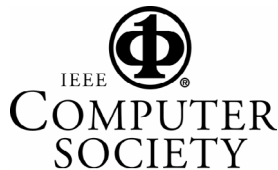
IEEE Computer Society
Asia/Pacific Office
Watanabe Bldg., 1-4-2
Minami-Aoyama
Minato-ku, Tokyo 107-0062
JAPAN
Tel: + 81 3 3408 3118
Fax: + 81 3 3408 3553
tokyo.ofc@computer.org

Individual paper REPRINTS may be ordered at: reprints@computer.org

Editorial production by JD Cantarella

Cover art production by Joseph Daigle, Studio Productions

Printed in the United States of America by The Printing House



IEEE Computer Society

Conference Publishing Services

<http://www.computer.org/proceedings/>

Table of Contents

*International Conference on Mobile Business
ICMB 2005*

Message from the General Chairs	xiii
Program Committee	xiv
Additional Reviewers	xvi
Organising Committee	xviii
Sponsors	xix

FULL PAPERS

Session 1A: mTransformation

Novel User-Centric Model for m-Business Transformation.....	3
<i>J. Chan and D. Hoang</i>	
Nomadic Culture and Its Impact on Organizational Support for Nomadic Behaviors and Employee Job Satisfaction.....	9
<i>L. Chen and C. Corritore</i>	
Challenges in Mobile Transformations: A Requirements Modeling Perspective for Small and Medium Enterprises	16
<i>I. Marmaridis and B. Unhelkar</i>	

Session 1B: Privacy and Security I

SPAM: Secure Protocol for Authentication in Mobile-Communications.....	23
<i>M. Das and A. Saxena</i>	
A Two-Factor Mobile Authentication Scheme for Secure Financial Transactions	28
<i>R. Di Pietro, G. Me, and M. Strangio</i>	
An Experimental Study of a Business Domain Independent Application Level and Internet Access Authentication and Authorization Concept.....	35
<i>R. Huber and N. Jordan</i>	

Session 1C: Case Studies

Mobile Customer Relationship Management: An Explorative Investigation of the Italian Consumer Market	42
<i>G. Camponovo, Y. Pigneur, A. Rangone, and F. Renga</i>	
The Impact of Wireless Field Force Automation on New Zealand Trade Services Organizations	49
<i>D. Innes, S. Barnes, and E. Scornavacca</i>	
Segments of the Mobile Internet Industry — Examples from Finland and Japan	56
<i>M. Soininen</i>	

Session 1D: Content Innovation in the Mobile Arena I

Mobile Phone-Enhanced User Interface of Remote Monitoring System.....	63
<i>Y. Imai, M. Ooga, D. Yamane, O. Sadayuki, Y. Iwamoto, and S. Masuda</i>	
Using Wireless Personal Digital Assistants in a Restaurant: Impact and Perceived Benefits	69
<i>M. Prasad, E. Scornavacca, and H. Lehmann</i>	

Session 8A: Mobile Health I

- A Mobile Medical Monitoring System: Concept, Design and Deployment 464
M. Biemer and J. Hampe
- Wireless Solutions Developed for the Australian Healthcare: A Review 472
R. Gururajan and S. Murugesan

Session 8B: Mobile Technologies

- Identity Management in Vertical Handovers for UMTS-WLAN Networks..... 479
M. Li, K. Sandrasegaran, and X. Huang
- ZoneIT: Using Short-Range Radios to Control Mobile Device Functionality 485
T. Moors, M. Mei, and A. Salim

Session 8C: Mobile Content Distribution

- Business Model Scenarios for Seamless Content Distribution and Delivery 492
U. de Montalvo, P. Ballon, and J. Sokol
- Analysis, Specification and Generation of Mobile Computer Data Synchronisation..... 499
Q. Ye, A. Sloane, and D. Verity

Session 8D: Mobile Information Retrieval

- Using the Novel FLC Dynamic Buffer Size Tuning Technique to Support More Dependable Location-Aware Information Retrieval..... 507
W. Lin, T. Dillon, and A. Wong
- RTPD/MACSC: A Novel Approach for Effective Pervasive Information Retrieval 514
R. Wu, T. Dillon, and A. Wong

Session 9A: Mobile Health II

- A Functional Framework of Ambient iCare e-Services for Quality Aging 521
W.-L. Chang and I.-C. Lin
- Wireless and Wearable Overview: Stages of Growth Theory in Medical Technology Applications..... 528
P. Ooi, G. Culjak, and E. Lawrence

Session 9B: Mobile Agents I

- Boosting m-Business Using a Truly Secured Protocol for Data Gathering Mobile Agents 537
R. Al-Jaljoui
- Distributed Sandbox Scheme for Mobile Agent Communication 545
F.-Y. Leu, H.-H. Tsai, and W.-K. Chang

Session 9C: Mobile Network Management

- Impacts and Cost of Faults on Services in Cellular Networks..... 551
O. Kogeda, J. Agbinya, and C. Omlin
- MACAM — Mobile Administration and Control Access Management in Networking 556
T. Nguyen, L. Ouakil, and G. Pujolle

Session 10A: Mobile Middleware and Mobile Environments

- Scalable M-Commerce and Load Balancing Technique Using Cost Based Approach 559
T.-H. Huang and J. Wu