

ALESSANDRO D'ATRI
MARCO DE MARCO
ALESSIO MARIA BRACCINI
FRANCESCA CABIDDU
Editors

Management of the Interconnected World

ItAIS: The Italian Association
for Information Systems



Physica-Verlag

A Springer Company

Management of the Interconnected World

Alessandro D' Atri · Marco De Marco ·
Alessio Maria Braccini · Francesca Cabiddu
Editors

Management of the Interconnected World

ItAIS: The Italian Association
for Information Systems



Physica-Verlag

Editors

Prof. Alessandro D'Atri
Centro di Ricerca sui
Sistemi Informativi (CeRSI)
Via G. Alberoni 7
00198 Roma
Italy
datri@luiss.it

Prof. Marco De Marco
Università Cattolica del Sacro Cuore
Facoltà di Economia
Dipto. Scienze dell'Economia e della
Gestione Aziendale
Via Necchi 7
20123 Milano Milano
Italy
marco.demarco@unicatt.it

Dr. Alessio Maria Braccini
Centro di Ricerca sui
Sistemi Informativi (CeRSI)
Via G. Alberoni 7
00198 Roma
Italy
abraccini@luiss.it

Francesca Cabiddu
Università di Cagliari
Dipto. Economia
Viale S. Ignazio 74
09123 Cagliari
Italy
fcabiddu@unica.it

ISBN 978-3-7908-2403-2 e-ISBN 978-3-7908-2404-9
DOI 10.1007/978-3-7908-2404-9
Springer Heidelberg Dordrecht London New York

Library of Congress Control Number: 2010927077

© Springer-Verlag Berlin Heidelberg 2010

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilm or in any other way, and storage in data banks. Duplication of this publication or parts thereof is permitted only under the provisions of the German Copyright Law of September 9, 1965, in its current version, and permission for use must always be obtained from Springer. Violations are liable to prosecution under the German Copyright Law.

The use of general descriptive names, registered names, trademarks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

Cover design: WMXDesign GmbH, Heidelberg

Printed on acid-free paper

Physica-Verlag is a brand of Springer-Verlag Berlin Heidelberg
Springer-Verlag is part of Springer Science+Business Media (www.springer.com)

Foreword

Joey F. George*

I was honored to be asked to open the VI Conference of the Italian Chapter of the Association for Information Systems (ItAIS), held in Olbia, on the Costa Smeralda of Sardinia, Italy, in October 2009. Over 90 research papers were presented over two days, and over 120 people attended the conference. Each day, five parallel sessions featured papers on diverse information systems topics. Session themes included Information and Knowledge Management; Organizational Change and Impact of ICT; IS Quality, Metrics and Impact; E-Justice and Ethics of Information Systems; Information Systems Development and Design Methodologies; E-Services in Public and Private Sectors; Innovation Transfer of IT Research Projects; the Strategic Role of Information Systems; Accounting Management and Information Systems; Human Computer Interaction; and Emerging Issues in a Globalized and Interconnected World. The majority of attendees were from Italy, which would be expected for a meeting of the Italian Chapter of AIS. However, as much as 30% of participants came from elsewhere, from other parts of Europe to be sure, but also from as far away as Nigeria, Mexico and Australia. That the conference was so decidedly international provides support for the 2009 conference theme, “Achieving Fusion in the Interconnected World.” Amid lively discussion and intellectual exchanges, professional networks were extended well beyond the Costa Smeralda and new connections and friendships were made.

The Italian Chapter of AIS has set standards to be emulated by the many other chapters and special interest groups in AIS. They have set the bar high. They have a healthy and growing membership, and yet they remain a tight-knit community. The annual ItAIS conference continues to prosper and to attract papers based on high quality research, from both inside and outside Italy. The list of session themes above attests to the breadth of research topics being pursued in the Italian IS community. While much of the work reported on at the conference contributes to scholarly IS research, much of it also contributes to practice. The papers presented at the conference also reflected a diversity of research methods and philosophies. The best of the conference’s papers, which capture this mix of methods, and with the focus on both research and practice, have been collected in this volume.

Successful conferences result from the dedication and hard work of many individuals. Much of the credit for the success of the VI Conference of the Italian Chapter of AIS goes to the conference chairs, Gabriele Piccoli, Richard T. Watson, and Alessandro D’Atri. The rest of the credit goes to the organizing

* President Elect of the AIS 2009–2010, Florida State University, Tallahassee, FL, USA, jgeorge@cob.fsu.edu

committee, chaired by Francesca Cabiddu, and to the presenters and other attendees. It was a pleasure to attend the conference and to interact with my Italian (and non-Italian) colleagues. There is much this conference, and the papers presented there, can teach us. I urge other chapters of AIS to follow the example of the Italian Chapter in establishing a viable organization and a lively, stimulating IS conference.

Table of Contents

Introduction	xiii
---------------------------	-------------

Part I: E-Services in Public and Private Sector

Open Innovation in Research Libraries-Myth or Reality? <i>Ada Scupola and Hanne W. Nicolajsen</i>	3
News as a Service: Adoption of Web 2.0 by Online Newspapers <i>Soley Rasmussen.....</i>	11
Citizens Participation in Public Decisions: The Open Source Role <i>Lucia Scudu</i>	21
A System Dynamics Model to Identify and Measure the Paper Digitization Advantages in Public Administration <i>Nunzio Casalino, Stefano Armenia and Mauro Draoli</i>	29
ICTs in an Ageing Society: An Overview of Emerging Research Streams <i>Francesca Ricciardi</i>	37
Analyzing the Structure and Complexity of a Service Provision Network: Potential Applications to Network Assessment <i>Miguel Ángel Sicilia Urban and Manuel Jesús Prieto Martín</i>	45
Biometric Authentication and Authorization Infrastructures in Trusted Intra-Organizational Relationships <i>Matthias Olden and Stefano Za</i>	53
Reshaping eGovernment Through Institutional Agents <i>Maddalena Sorrentino and Luca Solari</i>	61
Patent Information System in R&D Strategies: Tasks, Techniques and On-line Search Tools <i>Daniela Baglieri and Fabrizio Cesaroni</i>	69

Part II: Organizational Change and Impact of IT

ERP Acceptance: The Role of Affective Commitment
Rocco Agrifoglio and Concetta Metallo 81

Individual Readiness for Change in the Context of Enterprise
Resource Planning System Implementation
Leonardo Caporarello and Assia Viachka 89

Changing Spaces for Social Learning in ERP Implementation:
A Situational Analysis
Gian Marco Campagnolo and Samantha Ducati 97

A Planning-Oriented Approach for ERP Implementation in SMEs
Capaldo Guido, Corbitt Gail, Jones Nancy and Rippa Pierluigi 105

Motivators and Inhibitors to IT Infusion in Tourism SMEs
Carla L. Wilkin 113

The Utilization of Information Systems Security in SMEs in the
South East of Ireland
Amanda Freeman and Liam Doyle 121

Influence of IT Service Management on Innovation Management:
First Insights from Exploratory Studies
M. Kießling, M. Marrone and L. M. Kolbe 129

Technological and Organizational Structures: A Case of Adaptation
in the Archaeological Sector
Alessio Maria Braccini and Tommaso Federici 137

Organizational Readiness and Success of the EHR-S Adoption
Valentina Albano 145

Part III: Information and Knowledge Management

Toward a Flexible Data Management Middleware for
Wireless Sensor Networks
*Razia Haider, Federica Mandreoli, Riccardo Martoglia,
Simona Sassatelli and Paolo Tiberio* 157

Semantic-Enriched Data Mining Techniques for Intensional
Service Representation
Devis Bianchini, Paolo Garza and Elisa Quintarell 167

Semantic Search of Distributed Information and Knowledge <i>Devis Bianchini, Valeria De Antonellis, and Michele Melchiori</i>	175
Exploring Strategic Indexes by Semantic OLAP Operators <i>Claudia Diamantini and Domenico Potena</i>	185
Automatic Definition of KDD Prototype Processes by Composition <i>Claudia Diamantini, Domenico Potena and Emanuele Storti</i>	193
Social Validation in the Ontology Evolution Process <i>Alessia Barbagallo, Antonio De Nicola, and Michele Missikoff</i>	201
A Logical Approach to Context-Aware Databases <i> Davide Martinenghi and Riccardo Torlone</i>	211
Uncertainty in Data Integration Systems: Automatic Generation of Probabilistic Relationships <i>Sonia Bergamaschi, Laura Po, Serena Sorrentino, and Alberto Corni</i>	221
The iCoord Knowledge Model for P2P Semantic Coordination <i>Silvana Castano, Alfio Ferrara, and Stefano Montanelli</i>	229
Part IV: e-Justice	
Measuring the Performance of Italian Courts: The Role of IS Success <i>Luigi Lepore, Rocco Agrifoglio and Concetta Metallo</i>	241
Part V: The Strategic Role of Information Systems	
Information Systems Security and End-User Consciousness – A Strategic Matter <i>Maurizio Cavallari</i>	251
The Simulation by Second Life of SMEs Start Up: The Case of New Fashion Perspectives <i>Laura Tampieri</i>	259
Web Reputation Management Systems as Strategic Tools <i>Alberto Francesconi and Claudia Dossena</i>	267
IS, Organization and Strategy: Convergence or Divergence? A Meta-Analysis <i>Marco De Marco, Barbara Imperatori, and Daniela Isari</i>	275

The Strategic Role of Business Intelligence Systems:
An Assessment Model
Cecilia Rossignoli, Antonella Ferrari, Lapo Mola, and Elisa Bertoni..... 283

Learning from a Wrong Consumer Perception: Bridging the
Gap Between Created Value and Perceived Value
Cinzia Dessì, Michela Floris, and Giuseppe Melis 291

Supply Chain Coordination and IT: The Role of Third Party
Logistics Providers
Roberta Pinna, Pier Paolo Carrus, and Daniela Pettinao 299

Generating Knowledge by Combining Prediction Models with
Information Technology
Luciano Marchi and Carlo Caserio 307

Part VI: IS Quality, Metrics and Impact

From IT Compliance Cost to IT Governance Benefits: An Italian
Business Case
Renata P. Dameri 317

The Evaluation of Information Systems: Lessons Learned
from Practice
Angela Perego 325

Towards a Classification of Maturity Models in
Information Systems
Tobias Mettler, Peter Rohner, and Robert Winter..... 333

Part VII: Information Systems Development and Design Methodologies

Web 2.0 Applications: Model-Driven Tools and Design
*Gaetanino Paolone, Gianluca Liguori, Gabriele Cestra,
and Eliseo Clementini*..... 343

Design of Information Systems Integration as Research Intervention:
A Case Study
Gianluigi Viscusi and Carlo Batini 351

Professional Desire, Competence and Engagement in IS Context
Peter M. Bednar and Christine Welch..... 359

Part VIII: Human Computer Interaction

From User Practice to ERP Customization: Reversing the Process <i>Daniela Fogli and Loredana Parasiliti Provenza</i>	369
A User Study on How to Render Criticality in Interfaces that Visualize Process Maps <i>Federico Cabitza</i>	379
A Design Patterns Catalog for Web-Based Emergency Management Systems <i>Paloma Diaz, Pablo Acuña, Ignacio Aedo, and Alessio Malizia</i>	387
Transforming Legacy Systems into User-Centred Web Applications <i>Anna L. Guido, Roberto Paiano, Andrea Pandurino and Luca Mainetti</i>	395
VALUTA: A Tool to Specify and Verify Interactive Visual Applications <i>Rosanna Cassino and Maurizio Tucci</i>	403
Dynamic User Modeling for Personalized Advertisement Delivery on Mobile Devices <i>Luca Paolino, Monica Sebillo, Genoveffa Tortora, Giuliana Vitiello, Alessandro M. Martellone, and David Tacconi</i>	411

Part IX: Emerging Issues in a Globalized and Interconnected World

Respecting the Deal: How to Manage Co-opetitive Actors in Open Innovation <i>Riccardo Bonazzi, Lotfi Hussami, Pius Bienz, and Yves Pigneur</i>	421
The Role of ICT in Clinical Risk Management: First Evidence from an Italian Experience <i>Gustavo Barresi and Carmelo Marisca</i>	429
Information Systems and Service Research: A Co-citation Analysis <i>Maria Chiara Di Guardo and Marco Galvagno</i>	437
The Cross-Level Antecedents of Dynamic Capabilities Development: The Case of Network Exploitation Capability <i>Francesca Cabiddu</i>	445

Part X: IS Theory and Research Methodologies

Learning Computer Supported Collaborative Problem Solving:
A Case Study in Postgraduate Education
Paola Adinolfi, Luca Tateo and Vittorio Scarano 455

Part XI: Accounting Management and Information Systems

ICT and Procurement: The E-sourcing Systems of an Italian Bank Group
Lapo Mola, Cecilia Rossignoli and Alberto Rigodanza 465

IT Training: Impacts and Decision Drivers
Paola Bielli and Pier Franco Camussone 473

The Impact of Law on Accounting Information System: An
Analysis of IAS/IFRS Adoption in Italian Companies
Katia Corsi and Daniela Mancini 483

Part XII: Innovation Transfer of IT Research Projects

Transferring FAME, a Methodology for Assessing Open
Source Solutions, from University to SMEs
Filippo E. Pani, Daniele Sanna, Michele Marchesi and Giulio Concas 495

Innovative Strategies to Knowledge Transfer in a Context of
Open Innovation
Angela Sansonetti and Alessandro D'Atri 503

An Approach to Digital Business Ecosystems based on Process Models
*Nicola Boffoli, Marta Cimitile, Fabrizio M. Maggi
and Giuseppe Visaggio* 511

Intelligent Agents in a Logistics Domain: The PROMIS Project
*Maurizio Colica, Marco A. Mastratisi, Fabio Palopoli
and Sergio Greco* 519

Towards Management Guidelines for Collaborative Research
Projects on Information Systems – Learning from Project Management
Contingency Theory
Jan vom Brocke and Sonia Lippe 527

Introduction

The decision to publish 63 selected papers from the 2009 sixth Conference of the Italian Chapter of AIS shows the willingness to discuss the issues raised by the work of the contributors on a larger scale than that of a conference. In fact the general theme addressed ('Achieving fusion in the interconnected world: exploring the connection between organizations and technology') drew the attention of researchers on the interplay of 'organizations' and 'technology' within a possible and workable set of planetary connections. Even though the questions at stake have been present for quite a while in the literature, the debate is far from being concluded. The search for frameworks capable of exploring the interconnections that link, for example, e-services providers to different groups (e.g.: customers for e-commerce, users for a wide variety of Internet services, citizens for e-government) is necessary to develop more effective utilizations. Such a search, however, is becoming more and more complex because Castells' *Internet Galaxy* has grown further and at an ever increasing pace since 2001. Thus the number of variables to be considered keeps expanding and there is no single set of assumptions, concepts, values, and practices able to view a reality that escapes framing because of its evolution. In fact, depending on the spreading in the production and uses of ICT-IS, the number of the relevant actors multiplies and a mass of organizations (different per size, industry, market, competences, function, entrepreneurial history, character, societal environment and so on) have become active and interacting on the rich turf of information exchange. Furthermore, different perspectives must be adopted when considering the 'individual' (be that a person or an organization) approaches to information technology versus the 'group' level ones or when examining the constraints that 'back offices applications' exert on the amount and kind of value that the institutions and enterprises would like to ensure through their 'front office application mediated' work. The dichotomies and facets developing in short periods of time make the results of IS research certainly incremental but denoted by a pro tempore slant in their validity and relevance. Moreover, the increasing amplitude of the field of inquiry reveals its heterogeneity, thus stressing the need for drawing on several contributing disciplines and highlighting the 'situated' character of investigations in a world that is experiencing the fiercest economic crisis since the years 30 of the past century.

The authors (from 15 countries, besides Italy, and mainly from Spain, Switzerland, Germany, Australia, and the United States) who have contributed to this collective work are well aware of the above mentioned challenges and have catalyzed their efforts around 12 themes which constitute the sections of this book. The research areas include 'macro' questions and 'organization specific' issues bridging theoretical aspects with the description of exemplary cases. Thus, for example,

ethical implications of ICT, which remain in many respects controversial, have been studied in connection with the possibility of increasing the transparency and efficiency of courts by evaluating the results of change induced by the adoption of extensive IS (Part IV). The theoretical implications stemming from the encounter of human practices with tools and learning aims have been explored by examining a case of post graduate education (Part X).

A number of researcher looked into the opportunities that are coming to the foreground when considering the interplay of globalization and connectedness. In this respect there are companies that manage to combine in-house innovation with externally acquired technologies in order to enhance new businesses (the so-called 'open innovation' and 'lead users innovation' is examined in Part IX addressed to emerging issues). Also the question of transferring innovation of IT research projects (Part XII) relates to the possibility of cooperation among private and public partners by investigating models capable of harnessing different competences and knowledge. Since such choices of engaging in partnerships involve the overall objectives pursued by organizations (together with the ways they choose to pursue them), the strategic role of information systems is growing. Thus eight writings have explored some of the manners in which IS and the Internet can contribute to acquire and to sustain a competitive advantage (Part V). Within the strategic discourse related to the governance of an organization, accounting information systems have an important role to play both in operations and reporting (Part XI). The ways through which value is created and governed is particularly critical in exploring the ways through which e-services can be designed and delivered. Emerging services and novel models have been examined in nine essays addressing both the private and public sectors (Part I). The question concerning the overall equilibrium of an organization when new 'tools' are adopted (for example, to secure a new e-service) is crucial because such 'equilibrium' has a dynamic character. It requires people to undertake change in their behaviors and the context of processes and regulations to open up to innovation. Thus, 10 papers have studied the interplay of ICT impacts and organizational change (Part II). The impacts of ICT (considered specifically as a human-computer interaction) have been studied for a long time. In this book specific attention has been paid to the involvement of the user base of business interactive systems in the issues related to HCI (Part VIII) so that a better accessibility is achieved. The problem of 'access' is certainly crucial in the information society, as the European Union policies show, so that appropriate research in the ways in which new technologies (e.g.: service oriented architectures, tools for data and service integration) facilitate networked collaboration and knowledge exchanges are of high interest: nine papers concern this subject in Part III.

Of course, all the above mentioned efforts performed by private and public bodies have to be supported by appropriate IS development and design methodologies (Part VII) so that a proper balance can be achieved between business requirements and solution development. Such balance is certainly rooted in the availability of reliable criteria and metrics in the evaluation of IS, of their impacts and costs (Part VI).

Part I

E-Services in Public and Private Sector

Marco De Marco*

The rapid development of the Internet since the 1990s has spawned an increasingly variegated virtual landscape, in terms of both the services provided via the electronic networks – such as information, interaction, and transaction – and the user mix – firms, institutions, and individuals. The all-encompassing nature of the Internet, which is used by businesses but also society as a whole, means that the study of e-services cannot but straddle several disciplines. Thus, computer science and engineering investigate the development and provision of the e-services; economics and organization science deal with service quality and value research; and sociology examines emerging issues, such as the “digital divide” and “e-inclusion”. These converging (or diverging) elements are key factors when it comes to analyzing, for example, the pros and cons of applying a private-sector perspective to the study of public-sector e-services. Defining integrated frameworks for the study of e-services in both the public and the private sectors underscores the need to shape new business models and increase the value of e-services integration by enhancing the collaboration between e-service providers and users (customers, citizens, peers). Technical advances in infrastructure integration, service-oriented architectures, and Enterprise Application Integration (EAI) overlap new revenue-generating models, in addition to expanding the scope for service improvement and building better customer/citizen relationships.

These issues are the focus of the contributions profiled below. The studies use different perspectives and research domains and draw on a broad research background: theoretical issues and empirical evidence developed in specific service areas (e.g. healthcare and government); processes (e.g. participation and innovation); and public or private environments. Thus, one study has used surveys to highlight the newspaper industry’s evolution towards an emerging “media-as-a-service” approach, based on the adoption of extensively interactive features and user-generated content via social networks or aggregation sites. Another study employs the design of a causal loop diagram and a stock-and-flow simulation model to show the interaction of citizens with the public administration, emphasizing the significance of social and psychological factors in change management. The proliferation of social players has led one of the contributions to propose adopting an institutional perspective to leverage the growing number of intermediary actors in the implementation of the multichannel strategies deployed to enhance eGovernment plans. A further paper makes its research focus the literature on the emerging – and complex – issue of ageing and the possible role of IS-ICT.

* Università Cattolica del Sacro Cuore, Milano, Italy, marco.demarco@unicatt.it