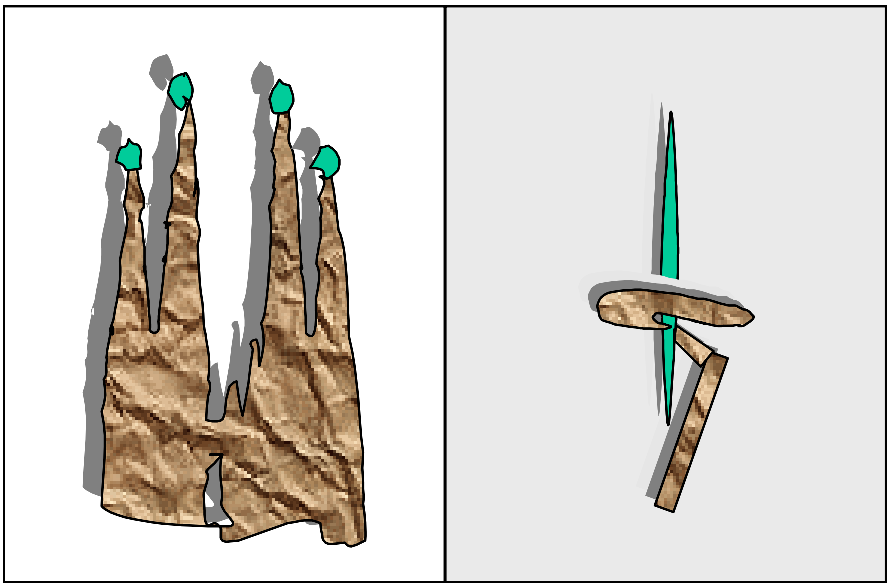
Twenty-Third Annual International Conference on Information Systems

Barcelona, Spain *December 15-18, 2002*

Meeting the Challenges of a Global Networked Economy



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Special Interest Group on Management Information Systems, Association for Computing Machinery

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Technical Committee 8: Information Systems, International Federation for Information Processing

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ESADE Business School

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Welcome to ICIS 2002 and Barcelona

Welcome to the 2002 International Conference on Information Systems. Our theme is "Meeting the Challenges of a Global Networked Economy" and we believe it addresses the pressing issues facing society, and our profession in particular, as 2002 comes to an end. We live in a completely interconnected world; economic and political decisions in one end of the world spread like wildfire and affect us all. Information and communication technologies are at the center of these events. Our responsibilities as researchers and teachers impel us to study these issues and their effect on our subject matter.

We are in Barcelona, a city that has been involved in "globalization" since the Roman Empire era. Founded by Romans as a sea port for trade and commerce, Barcelona is still today one of the busiest ports in the Mediterranean. We encourage you to visit the Roman ruins, medieval quarters and buildings, the modernist buildings from the late 1900s, and the many museums and parks. As the home town of architect Antonio Gaudí and painters Miró and Tàpies, the city offers many cultural alternatives. Our gala dinner will be held at the National Museum of Catalonia, a center of Romanesque and Gothic art. We hope you will spend some time feeling the city's beat by strolling through its streets and boulevards (Ramblas). 2002 is the Year of Gaudi *(Any Gaudi)* with events and exhibits around the city to celebrate the influence of this notable citizen and highlight the mark that he made on the architecture of Barcelona. Having hosted the 1992 Olympic Games, Barcelona is preparing to once again attract global attention as the organizers of the 2004 Forum of the Cultures. The city will host demonstrations and debates about cultural trends around the world.

The Program Committee has worked very hard for more than seven months to put together an extraordinary set of papers in six tracks. This year we decided to change the track definition from previous years, making the program more conceptual and less IS-function related. We believe this will better focus your contributions toward solving the challenges of the networked economy. This year we also had a record number of ancillary meetings held prior to the conference. Universities in Barcelona loaned us their rooms for many of these, and most probably, you will already have attended one by the time you read this letter. Thanks to all the individual organizers for putting together such a great variety of meetings to accompany ICIS while in Barcelona.

The Doctoral Consortium was held in Sant Feliu de Guixols, a coastal village North of Barcelona. We chose a summer resort that would provide the perfect setting for doctoral students and faculty to share their research interests. We have no doubt that this will be a memorable experience for all of them.

We owe our thanks to all sponsors, corporate and local, that are listed at the end of the program. In particular, we would like to mention our Platinum Sponsors, Microsoft and Microsoft Research Institute. Without sponsorship, it would be extremely difficult to organize these conferences outside the United States.

A final note of thanks goes to all the people that have helped make this ICIS meeting a reality, from the Atlanta Office personnel to our colleagues at ESADE and IESE. This conference, as is often the case, is not the result of one individual's actions, but a collection of small and not-so-small contributions of many people; to all of you, our heartfelt thanks.

Francesc Miralles
Josep Valor
Conference Cochairs

About Barcelona

The Barcelona of the 21st century is a city shaped by the 1992 Olympics, a city transformed for and by the need to do justice to that great international event, with the effort involved in carrying through this transformation allowing the city to overcome a series of historic disadvantages and make major quantitative and qualitative advances in its services and its physical fabric.

The Barcelona we see around us now, the Barcelona we enjoy today, is a new Barcelona, Mediterranean in keeping with its traditions, with its face to the sea and its arms open to other cultures and peoples, giving and receiving, happy to make and to share its riches.

The Barcelona of the 21st century is a European capital of astonishing cultural energy and a passion for progress, a city whose day-to-day life brings together every imaginable facet of the most diverse activities: these are the potential that has fashioned the city's present and give it the impetus to move forward into the future.

Commerce has always been a very important element in the history of Barcelona, and such relevance not only lies in the economic activity it generates, but in the fact it is an essential factor in the urban development of our city. It has also contributed to creating a specific city model, with such a plural urban weft where one can work, shop, walk and enjoy their free time, becoming another factor to improve quality of life.

The vigour of the local associations is very important in the city, and this is reflected in various entities that act as a focus of cultural activities. It is precisely at the local, grassroots level that the festive vitality of Barcelona is expressed in major celebrations such as those in the Gràcia, Sants and Poblenou neighbourhoods, where the residents' associations, cultural entities and local district councils join forces to make these popular festivities a continuing attraction, not only for the residents who deck out the streets but for all comers, citizens and visitors alike.

With its strong Mediterranean character, Barcelona is a city with an abundance of leisure activity and considerable public participation. The people of Barcelona use their free time to stroll in its parks, play on its beaches, visit its exhibition rooms and meet in its cafés. Night-time is when the people of Barcelona most participate in the city's leisure activities, attending concerts and theatrical productions and filling the restaurants, music bars and discotheques.

Letter from the Program Chairs

On behalf of the ICIS 2002 program committee, we are delighted to welcome you to the twenty-third International Conference on Information Systems, and to the beautiful and historic city of Barcelona, and to Catalonia. We know you are really going to enjoy the program we have for you this year. Packed with leading-edge research from information systems researchers from throughout the world, the papers and panels amply demonstrate the diverse interests and approaches of information systems scholars in our global community. We do hope that you agree with us that we as a community of scholars are addressing the many, varied and complex challenges of a global networked economy.

Conference Theme

Since it first burst on the scene in the 1950s, information technology (IT) has been viewed as something of a two-edged sword. It is a source of great opportunities and equally great risks. It creates uncertainty at the same time as it helps us manage uncertainty. Yet, despite many exasperating moments, we continue to embrace new technologies and embed them more deeply in the way we work, the way we learn, and the way we reach out and interact with others—both locally and globally. In setting the theme for ICIS 2002, we aimed to have a program that would examine the impact of 21st century technology at multiple levels: from individuals, to teams, organizations, markets, countries and society as a whole.

We attempted to do this by encouraging submissions that fit within seven tracks. And, befitting the complex, inter-related nature of the phenomena we are attempting to comprehend, we especially encouraged the submission of papers that addressed issues from an inter- or trans-disciplinary perspective. The "magnificent seven" were centered on

- business models, markets and economy
- innovation, strategy and change
- organization, culture, decision making, and knowledge
- time, space and mobility
- architecture, systems and infrastructure
- society, policy and regulation
- meta frameworks and theory

You may infer from this list that we were hoping to encourage both empirical work and theoretical contributions. We weren't disappointed. Submissions reached a record high and represented an extraordinary diversity of topic and approach. The quality was consistently high and made the job of the program committee, associate editors and reviewers that much more enjoyable…but that much more difficult!

Program Structure and Review Process

While we had seven tracks, we did not stick rigidly to these headings when we constructed the program. We attempted to ensure that the program is as well coordinated and consistent as possible, and that each session displays an internal coherence that will add to the enjoyment of the conference as a whole. We have also attempted to signpost the orientation of each session by providing each with a title that describes, in a few words, the subject matter of each of the papers.

Our job as Program Co-chairs was made possible by the energy and commitment of our track chairs, the associate editors they appointed, and the many referees from across the globe who willingly gave of their time in providing written comments on the many papers submitted. We would like to give special recognition to the track chairs

- Rob Austin, Harvard Business School, USA
- Sirkka Jarvenpaa, University of Texas at Austin, USA
- Rob Kaufman, University of Minnesota, USA
- Kalle Lyttinen, Case Western Reserve, USA
- Ramon O'Callaghan, Universitat Oberta de Catalunya, Spain, and Tilburg University, The Netherlands
- Kwok-Kee WEI, National University of Singapore
- Suzie Weisband, University of Arizona, USA

and to

- Cynthia Beath, University of Texas at Austin, USA (Panels & Debates)
- Gabe Piccoli, Cornell University, USA (Review Chair)
- George Westerman, Harvard Business School and MIT, USA (Review Coordinator)

Each track chair recommended members of the IS community that would serve in a role analogous to associate editors. For each submission they were asked to handle, the associate editors first identified and assigned appropriate reviewers. Then, based on the submitted reviews, they provided their own report for the authors and their recommendation for the track chairs. The track chairs themselves then came to a program committee meeting held in July to make final decisions on the program.

The Program

We were delighted to receive a record number of submissions (526). This marks the fourth successive year that the number of submissions reached record levels. Of these, 307 were completed research papers, 200 were research-in-progress papers and 19 were panels. Given the consistently high quality of the submissions, the program committee had the very difficult, but nonetheless enjoyable, task of selecting papers for presentation at ICIS this year. Based on the recommendations received, the limitations in the number of paper slots on the program, and with the aim of producing a coherent program very much in mind, we selected a total of 101 submissions for inclusion in the final program. This number includes 60 completed research papers (19.5% acceptance rate) and 33 research-in-progress papers (16.5% acceptance rate). In addition, we accepted eight panels. While we regret that we could only accept a small percentage of the many fine papers that were submitted, this is in keeping with ICIS's reputation as the premier academic IS conference of the Association for Information Systems. Six papers were nominated for the award of best paper, and four papers were similarly nominated for the best conference theme-related award by the track chairs. A subcommittee of the program committee selected the award winners from this shortlist.

Keynote Speakers

In keeping with the conference theme, we were delighted that our invitations to our top picks for keynote speakers were accepted enthusiastically. Manuel Castells will address us on Monday morning and John Hilley will address us on Tuesday morning. Manuel Castells is a native of Barcelona and is currently Senior Professor at the Universitat Oberta de Catalunya, having previously held chaired positions at the University of California at Berkeley and the Ecole des Hautes Etudes en Sciences Sociales, Paris. John Hilley is Chairman and CEO of NASDAQ International Inc., having previously served at the White House as Senior Advisor to the President of the USA. It is indeed an honor to have two such internationally respected figures provide us with their distinct perspectives on the global, networked society.

Acknowledgements

Putting together a program for ICIS is a monumental task. There are so many people to whom we owe an immense debt of gratitude. We have already acknowledged the considerable efforts of the track chairs. Unfortunately, space precludes us from personally acknowledging the individual associate editors and the many reviewers who spent countless hours helping us to ensure that every single submission was carefully and appropriately dealt with. We can't thank you enough for your contributions. In addition, Jan DeGross has once again produced the Proceedings with great care and cheerful diligence, Joan Rodon of ESADE managed the ICIS website, and Munir Mandviwalla and Laurel Pfitzinger of Temple University supported the review system. All these people worked tirelessly and with wonderful good humor on behalf of the international IS academy. Thank you one and all!

We do hope you enjoy the program and the face-to-face networking opportunities that ICIS provides. Welcome once again to Barcelona, or rather, "Benvinguts a Barcelona."

Bob Galliers
Provost, Bentley College, USA
Research Professor, Department of IS
London School of Economics, UK

Lynda Applegate
Henry R. Byers Professor of Business Administration
Harvard Business School, USA

Letter from the Chair of the ICIS Executive Committee

Dear Colleagues,

On behalf of the ICIS Executive Committee, I would like to welcome you to ICIS 2002 in beautiful and friendly Barcelona, Spain. ICIS, now in its 23rd year, continues to be the premier conference for information systems academics. As the leading conference for IS academics, it is vitally important that we continue to hold ICIS meetings outside the United States and North America to emphasize what a truly international community we really are. Past ICIS meetings outside North America, in Copenhagen, Amsterdam, Helsinki, and Brisbane, have all been extremely successful, and I am sure that Barcelona will be just as successful. The Executive Committee and I appreciate your attending ICIS this year, when so many people are concerned about travel and political events around the world.

In the ICIS tradition, this year's program is first rate. The ICIS 2002 program committee has succeeded in putting together an interesting, timely, and wide ranging program. And although we all come to ICIS for the program and to network, the Barcelona ICIS committee has succeeded in putting together an excellent overall conference. The venue, the social events, the special plenary speakers, and the city itself are all outstanding. I urge you to take advantage of this opportunity to learn about the latest IS research, to catch up with old friends and to make new ones, and, when you get a chance, to explore what Barcelona and Catalunya have to offer.

I encourage you now to start thinking about future ICIS meetings, starting with ICIS 2003 in Seattle, WA. The deadlines for submitting papers and panels will be here before you know it, and the ICIS 2003 committee would like to ensure the widest possible participation from the IS community. Subsequent ICIS meetings are already scheduled for Washington, DC, in 2004 and Las Vegas, NV, in 2005. The ICIS Executive Committee will choose a site for 2006 during this meeting—watch for the announcement of where it will be held. I would like to encourage you to think about proposing to host ICIS in 2007—we are always looking for good bids from solid committees to host ICIS in the future. I hope to see each of you at all of these future conferences as well.

Finally, I wish to thank Josep Valor and Francesc Miralles and all the members of their ICIS 2002 conference committee. Planning for and hosting an ICIS meeting is an enormous amount of work, and it requires a great deal of time and effort. We greatly appreciate all that Josep and Francesc and their colleagues have done to make ICIS 2002 a reality. Please enjoy the conference and please thank the members of the ICIS 2002 committee, when you see them in sessions and in the hallways, for their hard work.

Joey George
Chair, ICIS Executive Committee

Letter from the AIS President

Dear Colleagues,

It is a pleasure to welcome you to the 23rd ICIS. For one who has been attending the conference regularly almost from the beginning, it is hard to believe that it has indeed been held so many times, but it is easy to see why it is the premier conference of the Association for Information Systems. There are numerous reasons for the outstanding vitality displayed by ICIS over the years and they are all fully in evidence at the current conference:

- a devoted organizing committee chaired by Francesc Miralles and Josep Valor that has spared no efforts to ensure a truly memorable event
- an excellent and highly selective academic program put together by the Program Committee headed by Lynda Applegate and Bob Galliers
- an intellectually stimulating and productive Doctoral Consortium headed by Claudio Ciborra and Kuldeep Kumar
- a wealth of ancillary activities ranging from specialized conferences, through meetings of the new Special Interest Groups of AIS, to breakfasts organized by various constituencies within the IS community
- a beguiling setting in the beautiful city of Barcelona—surely one of the most attractive and exciting anywhere—and a witness to the truly international nature of the conference
- and, last but not least, you the participants who provide a rich environment for fruitful and pleasurable exchange of ideas and networking

I have no doubt that this ICIS, like its predecessors, will live up to its billing as "The most prestigious gathering of I/S academics and research-oriented practitioners in the world." Once bitten by the ICIS bug, it is a habit that is hard to shake.

Wishing you all a most enjoyable conference,

Phillip Ein-Dor
President, AIS

Conference Information

IS 2002: The Final Undergraduate IS Curriculum Model Report (Sunday, December 15, 1:00 p.m.—2:00 p.m.)

The Joint AIS/ACM/AITP Task Force will present its final recommendations for IS 2002, *Model Curriculum and Guidelines for Undergraduate Degree Programs in Information Systems*, in the joint IAIM/ICIS session. The task force will describe the key principles and guiding assumptions about the IS profession, exit characteristics of IS graduates, scope of the current curriculum update, course architecture and sequence, and high-level catalog descriptions. The session will conclude with a discussion on the next model curriculum development project.

A copy of the report is available in the ICIS Proceedings and is available at **http://webfoot.csom.umn.edu/ais/02IS2002.pdf** until December 31, 2002.

Doctoral Student Reception

The Doctoral Student Reception will be held on Sunday evening, December 15, from 6:00 p.m. to 7:30 p.m. in the Top City Room of the Princesa Sofia Hotel. We encourage all doctoral students registered for ICIS to attend this reception. It is a great opportunity to meet your peers.

Opening Reception

All conference registrants are invited to attend the traditional Opening Reception on Sunday evening, December 15. The reception will be held in the Mezzanine and Alemania Rooms of the Princesa Sofia Hotel from 7:30 p.m. to 9:00 p.m.

Social Event

This year's social event will take place on Monday evening, December 16, at the Oval Room of the Palau Nacional de Montjuic, on the mountain of Montjuic, one of the two hills overlooking Barcelona. Transportation will be provided. Buses will depart the hotels at 7:00 p.m. Dinner will be served at 8:15 p.m. Buses will return to the hotels at 10:15 p.m.

Special Event

Dr. Minder Chen from Microsoft Corporation will provide a special presentation at 4:30 p.m. on Sunday, December 15, in the Girona Room. The presentation topic is to be determined.

Placement

On-site placement services will be provided in collaboration with AIS. On-site facilities for conducting interviews will be available to participants registered in the AIS online placement system and registered for ICIS. For more information on the online system, see the AIS Placement Web site at **http://aisnet.org/placement/** or the ICIS registration booth for on-site registration. The ICIS on-site service will include a sign-in table and interview tables in the Mallorca Room. Interview table space will be allocated on a first-come, first-served basis on each day of the conference. Placement bulletin boards will be available near the sign-in table. On-site interview tables will be available during the following hours:

Sunday, December 15	4:30 p.m.—7:00 p.m.
Monday, December 16	8:00 a.m.—7:00 p.m.
Tuesday, December 17	8:00 a.m.—7:00 p.m.
Wednesday, December 18	8:00 a.m.—12:00 noon

E-Mail Services/Internet Access on Site

E-mail and Internet services are available for the duration of the conference in the Cadaqués Room. This year, we will provide high-tech laptop PCs courtesy of Toshiba. E-mail facilities and Internet access are courtesy of Telefónica.

Exhibits

Exhibitors, including textbook publishers and information technology vendors, will display materials for use in teaching, research, and business in the Alemania Room. Hours are:

Sunday, December 15	4:30 p.m.—7:00 p.m.
Monday, December 16	8:00 a.m.—7:00 p.m.
Tuesday, December 17	8:00 a.m.—7:00 p.m.
Wednesday, December 18	8:00 a.m.—12:00 noon

Future Conferences

ICIS 2003 will be in Seattle, Washington, USA, December 14-17. The conference cochairs are Joe Valacich and Leonard Jessup from Washington State University. The conference theme is "IT Is Everywhere: Impacts on Life, Work, and Learning." Visit the conference website at **http://www.icis2003.org/**.

ICIS 2004 will be held in Washington, DC, USA, December 12-15. V. Sambamurthy, Michigan State University, and Richard Watson, University of Georgia, are the conference cochairs. ICIS 2005 will be held in Las Vegas, Nevada, USA. The conference cochairs are William King, University of Pittsburgh, and Reza Torkzadeh, University of Nevada.

Proceedings

Papers accepted for presentation at ICIS 2002 are available to you anywhere in the world. The ICIS proceedings are available online through the eLibrary of the Association for Information Systems. Simply connect to the eLibrary, search, and download the papers you would like:

http://aisel.isworld.org/proceedings/

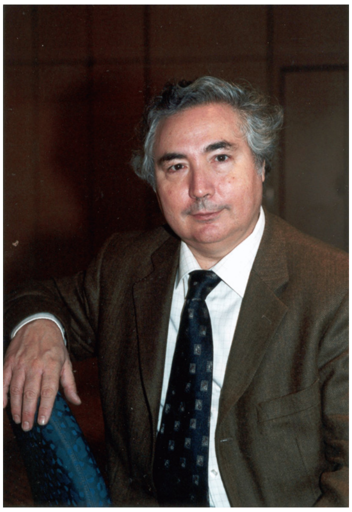
1. First, connect to the eLibrary.
2. Select either the link to "Research Papers" or "Research in Progress."
3. Next, find the paper you would like to download ant click on the link marked "[PDF]"

Note: You must be a current member of AIS to gain access to the proceedings. If you were not previously a member of AIS, please note that a one-year membership is included in the conference registration fee.

Awards

This year, ICIS continues the tradition of hosting the presentation of the AIS Fellows and the Leo Awards. The AIS Fellows recognizes colleagues who have made an outstanding contribution the development and maintenance of the international community of Information Systems academics. The Leo Award for Lifetime Exceptional Achievement in Information Systems honors outstanding individuals who have contributed to the information systems community. The awards will be presented at lunch on Tuesday, December 17, in the Catalunya Room.

Keynote Speakers



Manuel Castells
Senior Professor,
Universitat Oberta de Catalunya

Manuel Castells is Senior Professor at the Internet Interdisciplinary Institute (IN3), Universitat Oberta de Catalunya, Barcelona. He has also been Professor of Sociology and Professor of Planning at the University of California at Berkeley, and Professor of Sociology at the Ecole des Hautes Etudes en Sciences Sociales in Paris.

Professor Castells is the author of 23 books, including the trilogy *Information Age: Economy, Society, and Culture* (Blackwell, 1996-2000), *The Internet Galaxy* (Oxford University Press, 2001), and *The Information Society and the Welfare State: The Finnish Model* (with Pekka Himanen; Oxford University Press, 2002). Among other appointments, Professor Castells has been a member of the European Commission's High Level Expert Group on the Information Society and of the United Nations' Secretary General Advisory Council on Information Technology and Global Development. He is also codirector of the Project Internet Catalonia, a major research program currently being conducted at the IN3.

John L. Hilley
Chairman and Chief Executive Officer
NASDAQ International, Inc.

John L. Hilley was appointed Chairman and Chief Executive Officer of NASDAQ International, Inc., in July 1999. In this capacity, Hilley leads all international efforts on behalf of the company including the direction of NASDAQ's markets in Europe and Japan, as well as forging strategic partnerships with foreign markets.

Prior to joining NASDAQ, Hilley served at the White House as Senior Advisor to the President of the United States. Joining the Administration in February 1996, he advised the President on the full range of national policy issues and served as his chief representative to the United States Congress. Hilley oversaw and managed the enactment of all major legislation in 1996 and 1997, and was the Administration's key strategist and negotiator for the Balanced Budget Act of 1997 and the Taxpayer Relief Act of 1997.

Earlier, Hilley held a number of senior positions in the United States Senate, including Chief Counsel for Senate Democratic Leader Tom Daschle; Chief of Staff for then Senate Majority Leader George Mitchell; and Staff Director for the Senate Budget Committee under Chairman Jim Sasser.

Prior to coming to Washington, Hilley was a tenured Professor of Economics at Lehigh University. Hilley holds a B.A., M.A. and Ph.D. in Economics from Princeton University.

Conference Schedule

Sunday, December 15

8:00 a.m.–1:00 p.m. Formentera	**Executive Committee Meeting**
1:00 p.m.–7:00 p.m. Mezzanine	**Conference Registration**
1:00 p.m.–2:00 p.m. Menorca	**IS 2002: The Final Undergraduate IS Curriculum Model Report** (sponsored by AIS, ACM, IAIM, and AITP)
4:30 p.m.–7:00 p.m.	
Alemania	**Exhibits**
Mallorca	**AIS/ICIS Placement**
Cadaqués	**E-Mail Facilities**
4:30 p.m. Girona	**Microsoft Presentation**
6:00 p.m. Top City	**Doctoral Student Reception**
7:30 p.m.–9:00 p.m. Mezzanine & Alemania	**Opening Reception**

Monday, December 16

8:00 a.m.–5:00 p.m.	
Mezzanine	**Conference Registration**
8:00 a.m.–7:00 p.m.	
Alemania	**Exhibits**
Mallorca	**AIS/ICIS Placement**
Cadaqués	**E-Mail Facilities**
9:30 a.m.–11:00 a.m.	
Session M1.1 Catalunya	**Plenary Session** **Keynote:** **Manuel Castells**, Senior Professor, Universitat Oberta de Catalunya, "The Internet and the Network Society: The Scholarly Record Beyond Myths"
11:00 a.m.–11:30 a.m. Alemania and Mezzanine	**Break — Refreshment**

11:30 a.m.–1:00 p.m.

Session M2.1 Sitges	**Completed Research**	**Valuing Information Privacy**
	Chair	Richard Mason, Southern Methodist University
Nominated for Best Theme-Related Paper	Paper	“Online Information Privacy: Measuring the Cost-Benefit Trade-Off,” Il-Horn Hann, University of Southern California, Kai-Lung Hui, Tom S. Lee and I. P. L. Png, National University of Singapore
	Discussant	Joey George, Florida State University
	Paper	“What Do They Want? Motivating Consumers to Disclose Personal Information to Internet Businesses,” Ee-Cheah Tam, Kai-Lung Hui, and Bernard C. Y. Tan, National University of Singapore
	Discussant	Amy Ray, Bentley College
Session M2.2 Ibiza	**Completed Research**	**IT Infrastructure and Business Effectiveness**
	Chair	Greg Timbrell, Queensland University of Technology
	Paper	“A Modular Systems Perspective of IT Infrastructure Configurations and Productivity,” Pratim Datta, Louisiana State University
	Discussant	Jeff Parsons, Memorial University of Newfoundland
	Paper	“A Framework for Assessing the Impact of Information Systems Infrastructure on Business Effectiveness,” Apiwan D. Born, University of Illinois at Springfield
	Discussant	David Upton, Harvard Business School
Session M2.3 Tibidabo	**Completed Research**	**Empirical Research in Information Economics**
	Chair	Eric Clemons, University of Pennsylvania
Nominated for Best Paper Award	Paper	“An Empirical Analysis of Network Externalities in Peer-to-Peer Music-Sharing Networks,” Atip Asvanund, Karen Clay, Ramayya Krishnan, and Michael D. Smith, Carnegie Mellon University
	Discussant	Otto Koppius, Rotterdam School of Management
	Paper	“Incentive Value of Stock Options at Information Technology Companies in the Down Market,” Mark Anderson, Rajiv D. Banker, and Ram Natarajan, The University of Texas at Dallas
	Discussant	Terry Hendershott, University of California, Berkeley
Session M2.4 Montjuich	**Completed Research**	**Challenges in IS Project Management**
	Chair	Iacovou Charalambos, Wake Forest University
	Paper	“A Study of User Involvement in Packaged Software Selection,” Debra Howcroft and Ben Light, University of Salford
	Discussant	Dan O’Leary, University of Southern California
	Paper	“Development of a Measure to Assess the Complexity of Information Systems Development Projects,” Gwanhoo Lee and Weidong Xia, University of Minnesota
	Discussant	Geoffrey Hubona, Georgia State University
Session M2.5 Menorca	**Research in Progress**	**Building and Transferring Trust: The Role of Interactivity**
	Chair	Keng Siau, University of Nebraska, Lincoln
	Paper	“An Experimental Examination of the Effects of the Nature and Direction of Hypertext Links on Trust Transfer between Organizations,” Katherine J. Stewart and Yali Zhang, University of Maryland
	Paper	“The Interactivity of Internet-Based Communications: Impacts on E-Business Consumer Decisions,” Jie Yin and Detmar Straub, Georgia State University
	Paper	“Building Effective Online Marketplaces with Institution-Based Trust,” Paul A. Pavlou, University of Southern California, and David Gefen, University of Drexel

Session M2.6 Barcelona	**Panel**	**Different IS Research Communities: Are They Competitors, Complements, or Ignoring Each Other?**
	Chair	Claudia Loebbecke, University of Cologne
	Panelists	David Feeny, University of Oxford Matthias Jarke, Fraunhofer Institute for Applied Information Technology Ajit Kambil, Accenture Institute for Strategic Change Peter Weill, Massachusetts Institute of Technology Rosalie Zobel, DG-Information Society, European Commission
1:00 p.m.–3:00 p.m. Catalunya	**Lunch — Sponsored by Bearing Point**	
3:00 p.m.–4:30 p.m.		
Session M3.1 Sitges	**Completed Research**	**Empirical Evaluation of Conceptual Modeling Methods**
	Chair	Sal March, Vanderbilt University
	Paper	"Representing Part-Whole Relationships in Conceptual Modeling: An Empirical Evaluation," Graeme Shanks, The University of Melbourne, Elizabeth Tansley, Central Queensland University, Jasmina Nuredini, The University of Melbourne, Daniel Tobin, The University of Melbourne, and Ron Weber, The University of Queensland
	Discussant	Yair Wand, University of British Columbia
Nominated for Best Paper Award	Paper	"How Good Are These UML Diagrams? An Empirical Test of the Wand and Weber Good Decomposition Model," Andrew Burton-Jones and Peter Meso, Georgia State University
	Discussant	Andrew Gemino, Simon Fraser University
Session M3.2 Ibiza	**Completed Research**	**Regulation and Reputation in Online Auctions**
	Chair	Alok Gupta, University of Minnesota
	Paper	"Self-Regulation for Online Auctions: An Analysis," Cecil Eng Huang Chua and Jonathan Wareham, Georgia State University
	Discussant	Charles Wood, Notre Dame University
	Paper	"Cooperation Without Enforcement? A Comparative Analysis of Litigation and Online Reputation as Quality Assurance Mechanisms," Yannis Bakos, New York University, and Chrysanthos Dellarocas, Massachusetts Institute of Technology
	Discussant	David Croson, University of Pennsylvania
Session M3.3 Tibidabo	**Completed Research**	**Adoption of Web-Based Services**
	Chair	V. Sambamurthy, Michigan State University
Nominated for Best Paper Award	Paper	"Adoption of Web-Based Transactional Banking: Efficiency-Choice and Neo-Institutional Perspectives," Sharon S. L. Tan and Mark Fichman, Carnegie Mellon University
	Discussant	Robert Fichman, Boston College
	Paper	"Explaining Satisfaction at Different Stages of Adoption in the Context of Internet-Based Services," Mohamed Khalifa and Vanessa Liu, City University of Hong Kong
	Discussant	Chino Rao, University of Texas, San Antonio
Session M3.4 Montjuich	**Research in Progress**	**Economic Analysis of Products, Software, and Networking Technology**
	Chair	Rajiv Dewan, University of Rochester
	Paper	"Market Expansion or Margin Erosion: The Double-Edged Sword of Digital Convergence," Ravi Mantena and Arun Sundararajan, New York University
	Paper	"Switching Costs, Network Effects, and Networking Equipment: Compatibility and Vendor Choice in the Market for LAN Equipment," Chris Forman, Carnegie Mellon University
	Paper	"Real Options and Software Upgrades: An Economic Analysis," Yonghua Ji, Vijay S. Mookerjee, and Suresh Radhakrishnan, University of Texas at Dallas

Session M3.5 Menorca	**Research in Progress**	**Social Issues: Privacy, Terrorism, and Voting**
	Chair	Nava Pliskin, Ben-Gurion University
	Paper	"Value Focused Assessment of Individual Privacy Concerns for Internet Commerce," Gurpreet Dhillon and John Bardacino, University of Nevada Las Vegas, and Ray Hackney, Manchester Metropolitan University
	Paper	"Dealing with Low-Tech Terrorist Communications in the Hi-Tech Age: Toward a Theory of Fault-Intolerant Network Organizations," Ekaterina Drozdova, New York University
	Paper	"Electronic Voting System Characteristics and Voter Participation Intention," Yurong Yao and Andrea L. Houston, Louisiana State University
Session M3.6 Barcelona	**Panel**	**Scholarly Products in IS: Will Advances in Electronic Media Promote Evolutionary or Radical Change?**
	Chair	Ken Peffers, Hong Kong University of Science and Technology
	Panelists	David Avison, ESSEC Business School Phillip Ein-Dor, Tel-Aviv University Bob Zmud, University of Oklahoma
	Session Manager	Brian Dos Santos, University of Louisville
	Facilitators	Hope Koch, Texas A&M University Vanessa Liu, City University of Hong Kong
4:30 p.m.–5:00 p.m. Alemania and Mezzanine	**Break — Refreshments**	
5:00 p.m.–6:30 p.m.		
Session M4.1 Sitges	**Completed Research**	**Leveraging Distributed Knowledge**
	Chair	Kevin Crowston, Syracuse University
Nominated for Best Paper Award	Paper	"The Provision of Online Public Goods: Examining Social Structure in a Network of Practice," Molly Wasko, Florida State University, and Robin Teigland, Stockholm School of Economics
	Discussant	Tor Larsen, Norwegian School of Business
Nominated for Best Theme-Related Paper	Paper	"Managing Expertise in a Distributed Environment," Wai Fong Boh, Yuqing Ren, and Sara Kiesler, Carnegie Mellon University
	Discussant	Samer Faraj, University of Maryland
Session M4.2 Ibiza	**Completed Research**	**Spinning the Semantic Web**
	Chair	Munir Mandviwalla, Temple University
	Paper	"Knowledge Integration to Overcome Ontological Heterogeneity: Challenges from Financial Information Systems," Aykut Firat, Stuart Madnick, and Benjamin Grosof, Massachusetts Institute of Technology
	Discussant	Jung Joo Jahng, Rensselaer Polytechnic Institute
	Paper	"Context-Aware Query Processing on the Semantic Web," Andrew Burton-Jones, Georgia State University, Sandeep Purao, Pennsylvania State University, and Veda C. Storey, Georgia State University
	Discussant	Abraham Bernstein, New York University/University of Zurich
Session M4.3 Tibidabo	**Completed Research**	**Modeling Information and Software Services**
	Chair	Jeff Parker, Tulane University
	Paper	"The Value of Shared Information Services," Thomas A. Weber, University of Pennsylvania
	Discussant	Jungpil Hahn, University of Minnesota
	Paper	"The Optimal Software Licensing Policy under Quality Uncertainty," Jie Zhang and Abraham Seidmann, University of Rochester
	Discussant	Pei-Yu (Sharon) Chen, Carnegie-Mellon University

Session M4.4 Montjuich	**Completed Research**	**Theorizing About IT Impacts**
	Chair	Guy Gable, Queensland University of Technology
	Paper	"Business-to-Business Electronic Marketplaces and the Structure of Channel Relationships," Ellen Christiaanse, University of Amsterdam, and M. Lynne Markus, Bentley College
	Discussant	Judy Scott, University of Colorado at Denver
	Paper	"Theorizing Technological Adaptation as a Trigger for Institutional Change," Nicole Haggerty, University of Western Ontario, and Brian Golden, University of Toronto
	Discussant	Tom McMaster, University of Salford
Session M4.5 Menorca	**Research in Progress**	**Supply Chain and ERP Research**
	Chair	Mark Cotteleer, Harvard Business School
	Paper	"Severity Assessment of ERP-Organization Misalignment: Honing in on Ontological Structure and Context Specificity," Siew Kien Sia and Christina Soh, Nanyang Business School
	Paper	"Impacts of Electronic Commerce on Supply Chain Management," Yuliang Yao, California State University, Jonathan Palmer, College of William & Mary, Martin Dresner, University of Maryland
	Paper	"Using Equity Theory to Understand User Satisfaction with ERP Systems: Extending and Advancing the Equity-Implementation Model," Traci J. Hess, Washington State University, and Ross Hightower, University of Central Florida
Session M4.6 Barcelona	**Panel**	**ICTs, Globalization, and Local Diversity**
	Chair	Geoff Walsham, University of Cambridge
	Panelists	Michael Barrett, University of Cambridge Sirkka Jarvenpaa, University of Texas at Austin Leiser Silva, University of Houston
7:00 p.m.	**Social Event (Oval Room — Palau Nacional de Montjuic)** Buses will depart from the **Princesa Sofia Hotel** at 7:00 p.m. At 7:45 p.m., there will be a Microsoft event. Dinner will be served at 8:30 p.m. Buses will return to the hotels at 10:15 p.m.	

Tuesday, December 17

8:00 a.m.–5:00 p.m.	
Mezzanine	**Conference Registration**
8:00 a.m.–7:00 p.m.	
Alemania	**Exhibits**
Mallorca	**AIS/ICIS Placement**
Cadaqués	**E-Mail Facilities**
9:30 a.m.–11:00 a.m.	
Session T1.1 Catalunya	**Plenary Session** **Keynote:** **John L. Hilley**, Chairman and Chief Executive Officer, NASDAQ International, Inc.
11:00 a.m.–11:30 a.m. Alemania and Mezzanine	**Break — Refreshment**

11:30 a.m.–1:00 p.m.

Session T2.1 Sitges	**Completed Research**	**Innovations in Information Systems Development**
	Chair	Michael Vitale, Australian Graduate School of Management
Nominated for Best Theme-Related Paper	Paper	"Social Capital in ERP Projects: The Differential Source and Effects of Bridging and Bonding," Sue Newell, Bentley College and Royal Holloway, University of London, Jimmy Huang, Nottingham University Business School, and Carole Tansley, Nottingham Trent University
	Discussant	Jeanne Ross, Massachusetts Institute of Technology
	Paper	"Collaborative Practices in Information Systems Development: A Collective Reflection-in-Action Framework," Natalia Levina, New York University
	Discussant	Laurie Kirsch, University of Pittsburgh
Session T2.2 Ibiza	**Completed Research**	**Being, Time, and Agency in Information Systems**
	Chair	Duane Truex, Florida International University
Nominated for Best Paper Award	Paper	"Conceptualizing Time and Space: Information Technology, Work, and Organization," Heejin Lee, University of Melbourne, and Steve Sawyer, Pennsylvania State University
	Discussant	Alex Citurs, Emory University
	Paper	"Reopening the Black Box of Technology Artifacts and Human Agency," Jannis Kallinikos, London School of Economics
	Discussant	Rajiv Kishore, State University of New York at Buffalo
	Paper	"Real-izing Information Systems: Critical Realism as an Underpinning Philosophy for Information Systems," John Mingers, Warwick University
	Discussant	Heinz Klein, Temple University
Session T2.3 Tibidabo	**Completed Research**	**Pricing in Electronic Commerce I**
	Chair	Waleed Muhanna, Ohio State University
	Paper	"Dynamic Pricing: A Strategic Advantage for Electronic Retailers," Anindya Ghose, Tridas Mukhopadhyay, and Uday Rajan, Carnegie Mellon University, and Vidyanand Choudhary, University of California, Irvine
	Discussant	Bin Wang, University of Minnesota
	Paper	"Optimal Design of Contingency Pricing in IT-Intensive Commerce," Hemant Bhargava and Shankar Sandaresan, Penn State University
	Discussant	Joe Bailey, University of Maryland
Session T2.4 Montjuich	**Completed Research**	**Cross-Country Studies of E-Commerce Diffusion**
	Chair	Rolf Wigand, University of Arkansas at Little Rock
	Paper	"Environment and Policy Factors Shaping E-Commerce Diffusion: A Cross-Country Comparison," Kenneth L. Kraemer, Jennifer Gibbs, and Jason Dedrick, University of California, Irvine
	Discussant	Christopher Sauer, Oxford University
Nominated for Best Theme-Related Paper	Paper	"A Cross-Country Study of Electronic Business Adoption Using the Technology-Organization-Environment Framework," Kevin Zhu, Kenneth L. Kraemer, and Sean Xu, University of California, Irvine
	Discussant	Rita Walczuch, Universiteit Maastricht

Session T2.5 Menorca	**Research in Progress**	**Theoretical and Methodological Approaches to IT Infrastructure Research**
	Chair	Matti Rossi, Helsinki School of Economics
	Paper	"Software Application Outsourcing Contracts: An Agency Theory Perspective," Padmal Vitharana and Ravi Dharwadkar, Syracuse University
	Paper	"Optimal Design of Information Technology Security Architecture," Huseyin Cavusoglu, Srinivasan Raghunathan, and Birendra Mishra, University of Texas at Dallas
	Paper	"Principal Clusters Analysis: Analyzing Web Navigation Using a Multivariate Technique," Harris Wu, Michael Gordon, and Kurt DeMaagd, University of Michigan, Weiguo Fan, Virginia Polytechnic Institute and State University, and Huijiang Wu, Northeastern University (China)
Session T2.6 Barcelona	**Panel**	**Information Systems' Voyage to Self-Discovery: Is the First Stage the Development of a Theory?**
	Chair	Elena Karahanna, University of Georgia
	Panelists	Gordon B. Davis, University of Minnesota Tridas Mukhopadhyay, Carnegie Mellon University Bob O'Keefe, Surrey University Ron Weber, University of Queensland
	Facilitator	Richard T. Watson, University of Georgia
1:00 p.m.–3:00 p.m.	**Lunch — Sponsored by Expectra** **Presentation of AIS Fellows and Leo Awards**	
3:00 p.m.–4:30 p.m.		
Session T3.1 Sitges	**Completed Research**	**Understanding the Issues Associated with Open Source Software**
	Chair	Bill Richmond, Texas A&M University
	Paper	"Quality and Profits Under Open Source Versus Closed Source," Birendra Mishra, Ashutosh Prasad, and Srinivasan Raghunathan, University of Texas at Dallas
	Discussant	Don Harter, University of Michigan
Nominated for Best Paper Award	Paper	"Economic Incentives for Participating in Open Source Software Projects," Il-Horn Hann, University of Southern California, Jeff Roberts and Sandra Slaughter, Carnegie Mellon University, and Roy Fielding, Apache Software Foundation
	Discussant	Robert Josefek, University of Southern California
Session T3.2 Ibiza	**Completed Research**	**Theories of Information Systems**
	Chair	Dov Te'eni, Bar Ilan University
	Paper	"Evolution and Media Naturalness: A Look at E-Communication Through a Darwinian Theoretical Lens," Ned Kock, Lehigh University and Temple University
	Discussant	Allen Lee, Virginia Commonwealth University
	Paper	"Toward an Autopoietic Perspective on Information Systems Organization," Robert Kay, University of Technology Sydney, and Dubravka Cecez-Kecmanovic, University of New South Wales
	Discussant	Darren Meister, University of Western Ontario
Session T3.3 Tibidabo	**Completed Research**	**Models for Marketing and Delivering Mobile Applications and Services**
	Chair	Georgios Doukidis, Athens University
	Paper	"Exploring Consumer Demand for Networked Services: The Importance of Content, Connectivity, and Killer Apps in the Diffusion of Broadband and Mobile Services," Catherine A. Middleton, Ryerson University
	Discussant	Ramon O'Callaghan, Universitat Oberta de Catalunya and Tilburg University
	Paper	"Iterative Process Models for Mobile Application Systems: A Framework," Hans-Georg Kemper, University of Stuttgart, and Elke Wolf, University of Cologne
	Discussant	Nikos Mylonopoulos, ALBA Business School

Session T3.4 Montjuich	**Completed Research**	**Conflict and Coordination in Distributed Work Teams**
	Chair	Kathy Chudoba, Florida State University
	Paper	"Understanding Antecedents to Conflict in Geographically Distributed Research and Development Teams," Pamela J. Hinds and Mark Mortensen, Stanford University
	Discussant	Ilze Zigurs, University of Nebraska at Omaha
	Paper	"Shared Mental Models, Familiarity, and Coordination: A Multi-Method Study of Distributed Software Teams," J. Alberto Espinosa, American University, Robert E. Kraut, Sandra A. Slaughter, and Javier F. Lerch, Carnegie Mellon University, James D. Herbsleb, Lucent Technologies, and Audris Mockus, Avaya Research Labs
	Discussant	Anne Massey, Indiana University
Session T3.5 Menorca	**Research in Progress**	**Alternative Approaches to the Study of Electronic Markets**
	Chair	Eric Van Heck, Erasmus University
	Paper	"Noncontractible Factors as Determinants of Electronic Market Adoption," Sunil Mithas and Joni L. Jones, University of Michigan, and Will Mitchell, Duke University
	Paper	"IT as an Agent of Social Change: *Lonxanet* and the Case of the Galician Artisanal Fisheries," Enrique Dans, Instituto de Empresa, and Juan Freire, Universidade da Coruña
	Paper	"IT and the Pricing of New Securities: An Experimental Comparison of a Direct Auction System with Traditional Underwriting," Hugues Levecq, New York University
Session T3.6 Barcelona	**Panel**	**Taking the IT Artifact Seriously in IS Research: Theory Development from Multiple Perspectives**
	Chair	Richard J. Boland Jr., Case Wester Reserve University
	Panelists	Mary Culnan, Bentley College Vijay Gurbaxani, University of California, Irvine Helmut Krcmar, Technical University Munich Daniel Robey, Georgia State University
	Respondents	C. Suzanne Iacono, National Science Foundation Wanda J. Orlikowski, Massachusetts Institute of Technology
4:30 p.m.–5:00 p.m. Alemania and Mezzanine	**Break — Refreshments**	
5:00 p.m.–6:30 p.m.		
Session T4.1 Sitges	**Completed Research**	**Adoption Challenges in E-Commerce**
	Chair	Jae Nam Lee, City University of Hong Kong
	Paper	"Information Cascades in the Adoption of New Technology," Eric A. Walden and Glenn J. Browne, Texas Tech University
	Discussant	Judith Gebauer, University of Illinois, Urbana-Champaign
	Paper	"Mixing Bricks and Clicks: Organization Designs for Business-to-Consumer Electronic Commerce in Incumbent Retailers," George Westerman, Massachusetts Institute of Technology
	Discussant	Craig Van Slyke, University of Central Florida

Session T4.2 Ibiza	**Completed Research**		**Investments in Information Technology**
	Chair		Tony Cornford, London School of Economics
	Paper		"Determinants of Budgeted Information Technology Expenditures," Kevin Kobelsky, University of Southern California, Vernon J. Richardson, University of Kansas, and Robert W. Zmud, University of Oklahoma
	Discussant		Shinkyu Yang, New York University
	Paper		"Strategic IT Investments: Impact of Switching Cost and Declining Technology Cost," Didem Demirhan, University of Nevada, Las Vegas, Varghese S. Jacob and Srinivasan Raghunathan, University of Texas at Dallas
	Discussant		Eli Snir, Southern Methodist University
Session T4.3 Tibidabo	**Completed Research**		**Pricing in Electronic Commerce II**
	Chair		Paul Tallon, Boston College
	Paper		"Optimal Pricing and Capacity Allocation in Vertically Differentiated Web Caching Services," Kartik Hosanager and Rammayya Krishnan, Carnegie Mellon University, John Chuang, University of California, Berkeley, and Vidyanand Choudhary, Carnegie Mellon University
	Discussant		Boris Jukic, George Mason University
	Paper		"Information Gatekeepers: Paid Placement and Competition," Hemant K. Bhargava and Jane Feng, Pennsylvania State University
	Discussant		Bin Gu, University of Texas, Austin
Session T4.4 Montjuich	**Completed Research**		**Ethnographic Studies of Virtual Relationships**
	Chair		Suzanne Weisband, University of Arizona
	Paper		"Self-Serve Internet Technology and Social Embeddedness: Balancing Rationalization and Relationships," Ulrike Schultze, Southern Methodist University
	Discussant		Fred Niederman, St. Louis University
	Paper		"Emergent Online Communities: The Structuring of Communicative Practices Over the Internet," David R. Firth, University of California, Los Angeles
	Discussant		Nils Fonstad, Massachusetts Institute of Technology
Session T4.5 Menorca	**Research in Progress**		**Cognitive Perspectives of User Behavior**
	Chair		Susan Gasson, Drexel University
	Paper		"A Social Cognitive View of Technical Support and its Influence on User Learning," Nicole Haggerty and Deborah Compeau, University of Western Ontario
	Paper		"A Study of Entry-Level Information Technology Workers: Employee Expectations and Job Perceptions," Kathryn M. Bartol, Ian O. Williamson, Viswanath Venkatesh, and Wei Liu, University of Maryland
	Paper		"On the Cognitive-Affective Structure of Attitudes Toward Information Systems," Hans van der Heijden, Vrije Universiteit Amsterdam and Copenhagen Business School
Session T4.6 Barcelona	**Panel**		**Ubiquitous Computing: New and Old Research Opportunities and Challenges**
	Chair		Youngjin Yoo, Case Western Reserve University
	Panelists		Abraham Bernstein, New York University/University of Zurich Andrew Fano, Accenture Technology Lab Jeffrey Kim, University of Washington Joseph S. Valacich, Washington State University

Wednesday, December 18

8:00 a.m.–12:00 a.m.

Mezzanine	**Conference Registration**	
Alemania	**Exhibits**	
Mallorca	**AIS/ICIS Placement**	
Cadaqués	**E-Mail Facilities**	

9:30 a.m.–11:00 a.m.

Session W1.1 Sitges	**Completed Research**	**Sustainable Economic Development and IT**
	Chair	Chrisanthi Avgerou, London School of Economics
	Paper	"Old Wolf, New Wool Suit: India, IT, and the Legacy of Colonialism," Abhijit Gopal, Louis Beaubien, and Teresa Marcon, University of Western Ontario
	Discussant	Martin Smits, Tilburg University
	Paper	"Examining the Sustainability of Rural IT Interventions: Lessons from the Field," Shivraj Kanungo, George Washington University
	Discussant	G. Harindranath, University of London
Session W1.2 Ibiza	**Completed Research**	**Empirical Studies on Managing Knowledge Boundaries**
	Chair	Satish Nambisan, Rensselaer Polytechnic Institute
	Paper	"Does IT Knowledge Relatedness Differentiate Performance of Multi-Business Firms?," Hüseyin Tanriverdi, The University of Texas at Austin
	Discussant	J. Thong, Hong Kong University of Science and Technology
	Paper	"Communities of Practice and the Role of Location: Revealing Limits of Virtuality and Knowledge," Deborah Sole, Harvard University, and Marleen Huysman, Vrije Universiteit Amsterdam
	Discussant	Julie Rennecker, Case Western Reserve University
Session W1.3 Tibidabo	**Completed Research**	**Managing Information Technology Services**
	Chair	Jeff Sampler, London Business School
	Paper	"Information Technology Governance Processes Under Environmental Dynamism: Investigating Competing Theories of Decision Making and Knowledge Sharing," Ryan R. Peterson, Instituto de Empresa, Marilyn M. Parker, Key Strategies & Solutions Inc., and Pieter M. A. Ribbers, Tilburg University
	Discussant	Guy Fitzgerald, Brunel University
	Paper	"Impact of Information Systems Resources and Capabilities on Firm Performance: A Resource-Based Perspective," T. Ravichandran, Rensselaer Polytechnic Institute, and Chalermsak Lertwongsatien, Ministry of Finance, Thailand
	Discussant	Anandhi Bharadwaj, Emory University
	Paper	"Does Domberger's Theory of the Contracting Organization Explain Satisfaction with IT Outsourcing?," Peter Seddon, The University of Melbourne, Sara Cullen, Sara Cullen and Associates, Leslie Willcocks, Warwick University Business School
	Discussant	Wendy Currie, Brunel University

Session W1.4 Montjuich	**Research in Progress**	**Emerging Issues in IS Policy Research**	
	Chair	M. Bensaou, INSEAD	
	Paper	"The Virtual Commons: Why Free-Riding Can Be Tolerated in File Sharing Networks," Ramayya Krishnan, Michael D. Smith, Zhulei Tang, and Rahul Telang, Carnegie Mellon University	
	Paper	"An Exploration of the Emergence, Development, and Evolution of Regulatory Characteristics of Information Systems," Prodromos Tsiavos, Edgar A. Whitley, and Ian Hosein, London School of Economics and Political Science	
	Paper	"The Challenges of Redressing the Digital Divide: A Tale of Two Cities," Lynette Kvasny, Pennsylvania State University, and Mark Keil, Georgia State University	
Session W1.5 Menorca	**Research in Progress**	**Business Models and Strategy in the Digital Economy**	
	Chair	Pei-yu Chen, Carnegie Mellon University	
	Paper	"Continuous Adaptation in a High-Velocity Environment: A Study of the Dot-Com Experience," Vijay Sethi and Harminder Singh, Nanyang Technological University, and Vikram Sethi and Kevin Duffy, University of Texas at Arlington	
	Paper	"Business-to-Business E-Marketplaces: A Strategic Archetypes Approach," Christina Soh, Nanyang Technological University, and M. Lynne Markus, Bentley College	
	Paper	"Strategic Growth of Firms in the Digital Economy: Simulation and Research Proposal," Chitu Okoli and Ye-Sho Chen, Louisiana State University, and P. Pete Chong, University of Houston-Downtown	
Session W1.6 Barcelona	**Panel**	**Information Privacy in a Globally Networked Society: Implications for IS Research**	
	Chair	Robert Davison, City University of Hong Kong	
	Panelists	Roger Clarke, Xamax Consultancy Pty. Ltd. Bob Kuo, National Sun Yat Sen University Duncan Langford, University of Kent at Canterbury H. Jeff Smith, Wake Forest University	
11:00 a.m.–11:30 a.m. Alemania and Mezzanine	**Break — Refreshment**		
11:30 a.m.–1:00 p.m.			
Session W2.1 Sitges	**Completed Research**	**The Economic Value of Knowledge Creation and IT Outsourcing**	
	Chair	Lai Lai Tung, Nanyang Technological University	
	Paper	"An Economic Benefit Model for Knowledge Creation," Theresa M. Edgington and Andrew N. K. Chen, Arizona State University	
	Discussant	Mani Subramani, University of Minnesota	
Session W2.2 Ibiza	**Completed Research**	**Understanding Users and Consumers**	
	Chair	Fiona Rohde, University of Queensland	
	Paper	"The Use of Fuzzy Clustering to Examine End User Segmentation," Vikram Sethi, University of Texas at Arlington, Chittibabu Govindarajulu, Drexel University, Ruth C. King, University of Illinois at Urbana-Champaign, and Mark Eakin, University of Texas at Arlington	
	Discussant	Raj Sharman, Tulane University	
	Paper	"Determinants of Brand Equity in E-Businesses: An Exploratory Study," Yah-Ting Gwee and Kai-Lung Hui, National University of Singapore, and Patrick Y. K. Chau, University of Hong Kong	
	Discussant	Virpi Tuunainen, Helsinki School of Economics	

Session W2.3 Tibidabo	**Completed Research**	**Studies of End-User Effectiveness**
	Chair	Paul Bowen, University of Queensland
	Paper	"The Impact of Online Mobile Office Applications on the Effectiveness and Efficiency of Mobile Workers' Behavior: A Field Experiment in the IT Services Sector," Erik Beulen, Tilburg University, and Robert-Jan Streng, Atos Origin
	Paper	"Bridging the Digital Divide: The Effects of Home Computer Ownership and School IT Environment on Self-Directed Learning," Hock Hai Teo, Wen Wan, Hock Chuan Chan, and Cheek Yong Lim, National University of Singapore
	Paper	"Unanticipated Software Use by Adolescents Following Mandatory Adoption," Lester (Les) A. Singletary, Asli Yagmur Akbulut, and Andrea L. Houston, Louisiana State University
Session W2.4 Montjuich	**Research in Progress**	**Software Development in Context**
	Chair	Robert Austin, Harvard Business School
	Paper	"An Exploratory Study of Factors Influencing the Level of Vitality and Popularity of Open Source Projects," Katherine J. Stewart, University of Maryland, and Tony Ammeter, University of Mississippi
	Paper	"Balancing Quality and Agility in Internet Speed Software Development," Richard Baskerville, Georgia State University, Linda Levine, Software Engineering Institute, Jan Pries-Heje, IT University of Denmark, Balasubramaniam Ramesh, Georgia State University, and Sandra Slaughter, Carnegie Mellon University
	Paper	"Systems Planning and Analysis Research—1970 to 2002: A Comparison of Academic and Practitioner Activities," Susan K. Lippert and Murugan Anandarajan, Drexel University
Session W2.5 Menorca	**Research in Progress**	**Relationships in Distributed Environments**
	Chair	Gabriele Piccoli, Cornell University
	Paper	"An In-Depth Investigation of Communication Mode Choices in Distributed Teams," Mary Beth Watson-Manheim, University of Illinois at Chicago, and France Bélanger, Virginia Polytechnic Institute and State University
	Paper	"Interorganizational Systems and Transformation of Interorganizational Relationships: A Relational Perspective," Michael T. K. Tan and K. S. Raman, National University of Singapore
	Paper	"Exploring the Critical Success Factors for Customer Relationship Management and Electronic Customer Relationship Management Systems," Hee-Woong Kim, National University of Singapore, Gil-Hyung Lee, Korea Christian University, and Shan-Ling Pan, National University of Singapore
Session W2.6 Barcelona	**Panel**	**IS Success Measurement: Guidelines for Future Research**
	Chair	Eph McLean, Georgia State University
	Panelists	Peter Seddon, The University of Melbourne Reza Torkzadeh, University of Nevada Leslie Willcocks, Warwick University

End of Conference

Completed Research Papers

Monday, December 16
11:30 a.m.–1:00 p.m.
Session M2.1
Sitges

"Online Information Privacy: Measuring the Cost-Benefit Trade-Off," Il-Horn Hann, University of Southern California, Kai-Lung Hui, Tom S. Lee and I. P. L. Png, National University of Singapore

Concern over information privacy is widespread and rising. However, prior research is silent about the value of information privacy and the benefit of privacy protection. We conducted a conjoint analysis to explore individuals' trade-offs between the benefits and costs of providing personal information to Websites. We find that economic incentives (monetary reward and future convenience) do affect individuals' preferences over Websites with differing privacy policies. For instance, the disallowance of secondary use of personal information is worth between \$39.83 and \$49.78. Surprisingly, we find that cost-benefit trade-offs did not vary with personal characteristics including gender, contextual knowledge, individualism, and trust propensity.

"What Do They Want? Motivating Consumers to Disclose Personal Information to Internet Businesses," Ee-Cheah Tam, Kai-Lung Hui, and Bernard C. Y. Tan, National University of Singapore

An increasing number of Internet businesses are seeking consumer information in order to target their products or services at the right consumers. To overcome information privacy, or the desire of consumers to control the disclosure and subsequent use of personal information, Internet businesses need to motivate consumers to voluntarily disclose their personal information. This paper focuses on the issue of information disclosure by consumers. Based on a synthesis of literature from several disciplines, it offers a framework of seven motivators that can induce consumers to disclose their personal information. Through comprehensive conceptual and empirical validation processes, it presents a 32-question instrument to measure these motivators. This instrument can facilitate future efforts at developing theories on information privacy and can help Internet businesses to better understand how best to solicit personal information from consumers. Implications for research and practice are discussed.

Monday, December 16
11:30 a.m.–1:00 p.m.
Session M2.2
Ibiza

"A Modular Systems Perspective of IT Infrastructure Configurations and Productivity," Pratim Datta, Louisiana State University

Research on IT infrastructure investments and organizational productivity has been marked with ambiguity, evidenced by the much debated *productivity paradox.* Part of the ambiguity arises from a paradigmatic *aggregated* treatment of IT infrastructure and productivity constructs along with a disregard for contingencies and time lags. The focus in this paper is to extend the component based view to understand IT infrastructure productivity. Using a modular systems perspective, revisiting the constructs in an attempt to disaggregate them for a more detailed examination is proposed. This study adds to the body of knowledge through a holistic examination of the relationship between IT infrastructure configurations, contingencies, and organizational productivity.

"A Framework for Assessing the Impact of Information Systems Infrastructure on Business Effectiveness," Apiwan D. Born, University of Illinois at Springfield

Information systems infrastructure (ISI) was ranked as the most important issue in a 1994-1995 study of key issues in IS management (Brancheau et al. 1996). Yet, to date, little theoretical and empirical work has been done in this area. This study attempts to reconceptualize the ISI construct and its measures. Drawing from the literature, this study envisions ISI as a base of shared technological, human, and organizational capabilities that provide the foundation for business application systems in the form of services to a range of users.

A measure of ISI capability was developed and operationalized through a self-administered mail survey sent to IS executives across the country. A factor analysis revealed that ISI was a multidimensional construct consisting of three underlying dimensions: technological, human, and organizational.

A research model was proposed to assess the main impact of ISI on business effectiveness and the moderating effect of information intensity. Five selected business effectiveness variables were time and cost reduction in systems development, system availability, user satisfaction, improved financial performance, and outstanding financial performance. The results of hypotheses testing revealed that human capability was significantly related to system availability and user satisfaction, and organizational capability significantly influenced all business effectiveness, except system availability. Surprisingly, no significant impact of technological capability on any business effectiveness variables was detected. For the moderating effect, the more information intensive the organization, the greater the impact of ISI on time and cost reduction in systems development and outstanding financial performance. This study concluded that ISI capabilities contribute to business effectiveness. Future research should focus on refining the proposed research model using additional data or different data collection techniques.

Monday, December 16
11:30 a.m.–1:00 p.m.
Session M2.3
Tibidabo

"An Empirical Analysis of Network Externalities in Peer-to-Peer Music-Sharing Networks," Atip Asvanund, Karen Clay, Ramayya Krishnan, and Michael D. Smith, Carnegie Mellon University

Peer-to-peer (P2P) networks are becoming an important medium for the distribution of consumer information goods. However, there is little academic research into the behavior of these networks. We analyze the impact of positive and negative network externalities on the optimal size of P2P networks. Using data collected from the six most popular OpenNap P2P music-sharing networks between December 19, 2000, and April 22, 2001, we find that additional users contribute value in terms of additional network content at a diminishing rate, while they impose costs in terms of congestion on shared resources at an increasing rate.

Using an analytic model, we explore technical solutions to the congestion problem, for example, by increasing network capacity. This model suggests that although increasing capacity will allow more users to participate on the network, there may be little incentive for network operators to do so. This is because diminishing positive network externalities imply decreasing content benefits to adding more users. Together these results suggest that the optimal size of a P2P network may be bounded in many common implementations. We conclude by discussing various options to improve network performance including network membership rules and usage-based pricing.

"Incentive Value of Stock Options at Information Technology Companies in the Down Market," Mark Anderson, Rajiv D. Banker, and Ram Natarajan, The University of Texas at Dallas

Stock options have been criticized as fair weather friends: good at motivating and retaining executives when the market is going up, but of little incentive value when the market is going down. The veracity of this criticism is of particular importance to executives at information technology (IT) companies, where options are used aggressively and where stock declines in 2000 were extreme. In this study, we compare the performance-effectiveness of IT CEOs' stock and option holdings in the up market of 1993 through 1999 with their performance-effectiveness in the down market of 2000. We find that stock options that were exercisable had stronger positive performance effects during 2000 than in previous years but that options that were unexercisable (not vested) had much weaker performance effects in 2000 than in previous years. For non-IT CEOs, we also observe stronger performance effects for exercisable options in 2000 but we do not observe the same weakening of performance effects for unexercisable options in 2000.

Monday, December 16
11:30 a.m.–1:00 p.m.
Session M2.4
Montjuich

"A Study of User Involvement in Packaged Software Selection," Debra Howcroft and Ben Light, University of Salford

This paper is concerned with the decision-making processes surrounding the adoption of packaged software in organizations. We begin by looking at its increasing utilization and consider some of the strengths and limitations of employing a standardized approach, particularly in relation to its consideration of end-user requirements. We note the highly problematic nature of installing a global standardized product in the local environment. Using a field study concerning the adoption of a customer relationship management package in a small organization, we go on to illustrate the limited amount of end-user involvement in the selection and procurement of the product. We argue that the art of salesmanship by the third party vendor and project team, which focuses on the interests of senior management, ultimately secures the selection and procurement of the software package.

"Development of a Measure to Assess the Complexity of Information Systems Development Projects," Gwanhoo Lee and Weidong Xia, University of Minnesota

Information systems development (ISD) projects are becoming increasingly complex. ISD project complexity makes it difficult for project managers to deliver effective systems within time and budget constraints. As a result, the success of ISD projects is increasingly dependent on an organization's ability to effectively assess and manage complexity. The purpose of this paper is to develop a measure for assessing ISD project complexity. A two-dimensional conceptual framework is proposed to define four distinct types of software project complexity: structural organizational complexity, structural IT complexity, dynamic organizational complexity, and dynamic IT complexity. Based on field interviews, focus group discussions, and a large-scale survey of ISD project managers, a measure of ISD project complexity with 17 indicators was developed. The results of an exploratory data analysis provide strong evidence that the final measure has satisfactory measurement properties. The contributions of this research to both theory development and practice are discussed.

Monday, December 16
3:00 p.m.–4:30 p.m.
Session M3.1
Sitges

"Representing Part-Whole Relationships in Conceptual Modeling: An Empirical Evaluation," Graeme Shanks, The University of Melbourne, Elizabeth Tansley, Central Queensland University, Jasmina Nuredini, The University of Melbourne, Daniel Tobin, The University of Melbourne, and Ron Weber, The University of Queensland

The part-of or part-whole construct is a fundamental element of many conceptual modeling grammars that is used to associate one thing (a component) with another thing (a composite). Substantive theoretical issues surrounding the part-whole construct remain to be resolved, however. For instance, contrary to widespread claims, the relationship between components and composites is not always transitive. Moreover, how the part-whole construct should be represented in a conceptual schema diagram remains a contentious issue. Some analysts argue composites should be represented as a relationship or association. Others argue they should be represented as an entity. In this paper we use an ontological theory to support our arguments that composites should be represented as entities and not relationships or associations. We also describe an experiment that we undertook to test whether representing composites as relationships or entities enables users to understand a domain better. Our results support our arguments that using entities to represent composites enables users to better understand a domain.

"How Good Are These UML Diagrams? An Empirical Test of the Wand and Weber Good Decomposition Model," Andrew Burton-Jones and Peter Meso, Georgia State University

In 1989, Wand and Weber proposed a formal model of systems decomposition based on ontology. Chidamber and Kemerer (1994) soon applied this model to develop complexity metrics for object-oriented design (OOD). Chidamber and Kemerer's OOD metrics suite continues to receive interest in software engineering (Bansiya and Davis 2002; Basili et al. 1996). To date, however, Wand and Weber's good decomposition model has received almost no application in information systems (IS). For three reasons, we believe the theory might assist IS researchers. First, object-oriented analysis (OOA) has not been as successful in practice as OOD or OO programming (Chuang and Yadav 2000). The good decomposition model may help IS researchers investigate improvements to OOA. Second, Johnson (2002) recently lamented how few OOA studies employ any theory. Wand and Weber's theory may, therefore, be a useful approach. Third, many believe OOA is a revolutionary step away from traditional approaches (Sircar et al. 2001). Practicing analysts could benefit from theory-based principles to guide their use of this "revolutionary" technique.

In this study, we report an experiment to determine the utility of the good decomposition model in OOA. We operationalized each condition of Wand and Weber's model in a set of UML diagrams and tested participants' understanding of the diagrams across three levels. Our results lend support to Wand and Weber's theory, but only across dependent variables that tested participants' *actual* understanding. The impact on participants' *perceptions* of their understanding remained equivocal.

Monday, December 16
3:00 p.m.–4:30 p.m.
Session M3.2
Ibiza

"Self-Regulation for Online Auctions: An Analysis," Cecil Eng Huang Chua and Jonathan Wareham, Georgia State University

The most prevalent form of Internet fraud is auction fraud. As fraud affects both the profits of Internet auction houses as well as honest traders of auction goods, they have a mutual incentive to reduce fraud. However, existing research suggests that little effort has been made by the Internet auction industry to control fraud. As a result, there have been increasing calls for government intervention to regulate the Internet auction marketplace. In this study, we perform a grounded theory analysis of fraud in the Internet auction marketplace. Specifically, this research explores the institutions that experienced traders and auction houses employ to reduce the incidence of fraud. Preliminary evidence suggests that, contrary to common perception, the Internet auction industry has developed many sophisticated institutions for combating fraud. These institutions operate primarily by reducing information asymmetries that con artists exploit. However, due to the ease of entry into Internet auction markets, new entrants become easy prey for con artists.

"Cooperation Without Enforcement? A Comparative Analysis of Litigation and Online Reputation as Quality Assurance Mechanisms," Yannis Bakos, New York University, and Chrysanthos Dellarocas, Massachusetts Institute of Technology

Online reputation mechanisms are emerging as a promising alternative to more traditional mechanisms for promoting trust and cooperative behavior, such as legally enforceable contracts. As information technology dramatically reduces the cost of accumulating, processing, and disseminating consumer feedback, it is plausible to ask whether such mechanisms can provide an economically more efficient solution to a wide range of moral hazard settings where societies currently rely on the threat of litigation in order to induce cooperation. In this paper, we compare online reputation to legal enforcement as institutional mechanisms in terms of their ability to induce cooperative behavior and we explore the impact of information technology on their relative economic efficiency. We find that although both mechanisms result in losses relative to the maximum possible social surplus, under certain conditions online reputation outperforms litigation in terms of maximizing the total surplus, and thus the resulting social welfare.

Monday, December 16
3:00 p.m.–4:30 p.m.
Session M3.3
Tibidabo

"Adoption of Web-Based Transactional Banking: Efficiency-Choice and Neo-Institutional Perspectives," Sharon S. L. Tan and Mark Fichman, Carnegie Mellon University

This study is about the adoption of Web-based transactional banking (WBTB). A theoretical model integrating the efficiency-choice and neo-institutional perspectives was developed and tested using data from the population of all banks and thrifts in the United States. Does the Internet level the competitive landscape for small firms? Our results show that larger banking and thrift institutions have a greater propensity to adopt WBTB. In addition, adoption is also influenced by prior adopters who are incorporated within the same state, are of the same firm size, but not those of the same institution type. This study has important implications for theory and practice. It empirically validates the importance of including both a neo-institutional and efficiency-choice perspective in any theory of IT innovation adoption. It also provides empirical evidence on the diffusion and adoption of Internet-based innovation that will be helpful to the practice of Internet managers and policy makers

"Explaining Satisfaction at Different Stages of Adoption in the Context of Internet-Based Services," Mohamed Khalifa and Vanessa Liu, City University of Hong Kong

In this research we develop, operationalize, and empirically test a model for explaining/predicting the satisfaction of customers with Internet-based services at different stages of adoption. We argue and empirically demonstrate the need to consider the evolutionary nature of satisfaction and the variability of its determinants. Our model identifies desire disconfirmation, expectation disconfirmation, and perceived performance as the main determinants of satisfaction and differentiates between satisfaction at adoption of Internet-based services and satisfaction in the post-adoption stage. Our empirical results show that desires and expectations are both important comparison standards that need to be considered simultaneously in explaining satisfaction at adoption. The role of desires, however, diminishes significantly in the post-adoption stage. The results also show no significant relationship between post-adoption satisfaction and satisfaction at adoption. The paper presents the theoretical foundation of the proposed model and discusses the implications of the empirical results.

Monday, December 16
5:00 p.m.–6:30 p.m.
Session M4.1
Sitges

"The Provision of Online Public Goods: Examining Social Structure in a Network of Practice," Molly Wasko, Florida State University, and Robin Teigland, Stockholm School of Economics

Networks of practice (NOPs) are social spaces where individuals working on similar problems self-organize to help each other and share perspectives about their occupational practice or common interests, and exist primarily through computer-mediated exchange. This exchange of knowledge through message postings produces an online public good, where all participants in the network can access the knowledge, regardless of their contribution. Thus, this research builds upon theories of collective action and public goods to better understand the provision and maintenance of knowledge in a network of practice. We use social network analysis to examine the following research questions: (1) What is the pattern of contribution that produces and sustains the public good? (2) Are NOPs maintained by a critical mass? (3) How does the heterogeneity of resources and interests of participants impact the collective action of the NOP? We find that the network of practice is sustained through generalized exchange, is supported by a critical mass of active members, and is shaped as a star. The critical mass is significantly related to tenure in the occupation, expertise, availability of local resources, and desire to enhance one's reputation.

"Managing Expertise in a Distributed Environment," Wai Fong Boh, Yuqing Ren, and Sara Kiesler, Carnegie Mellon University

Expertise is the primary resource and product of professional service and technical firms. These firms often organize around project teams that advise and work under contract for clients. A key problem for management is to deploy expertise in project teams so as to meet the expertise requirements of projects and clients. Because expertise may be geographically distributed across multiple sites, many of these firms create virtual or distributed teams. Doing so gives these firms access to a larger pool of knowledge resources than would be available at one site and helps leverage expertise across the organization. However, geographically distributed collaboration in teams incurs coordination and other costs that local work does not. Is a distributed team worth these costs? We studied a professional service firm with distributed and collocated project teams. In this firm, domain expertise tended to be concentrated within geographic sites, whereas methodological expertise was distributed across the firm. We examined whether a better match of domain and methodological expertise to the needs of projects resulted in more profitable projects, and whether distributed teams matched these two types of expertise to the requirements of projects as well as or better than did collocated teams. We found that most projects were collocated, with members drawn from one site who had domain expertise that matched project requirements as well as when members were drawn from other sites. The profits of projects were unrelated to the match of domain expertise with project requirements. However, project profits were significantly and positively related to a match of methodological expertise with project requirements. Furthermore, distributed projects showed a stronger match of methodological expertise with project requirements than did collocated projects, and predicted disproportionately more profits. We conclude that an appropriate utilization of organizationally distributed expertise has a positive impact on project performance.

Monday, December 16
5:00 p.m.–6:30 p.m.
Session M4.2
Ibiza

"Knowledge Integration to Overcome Ontological Heterogeneity: Challenges from Financial Information Systems," Aykut Firat, Stuart Madnick, and Benjamin Grosof, Massachusetts Institute of Technology

The shift toward global networking brings with it many opportunities and challenges. In this paper, we discuss key technologies in achieving global semantic interoperability among heterogeneous information systems, including both traditional and Web data sources. In particular, we focus on the importance of this capability and the technologies we have designed to overcome ontological heterogeneity, a common type of disparity in financial information systems.

Our approach to representing and reasoning with ontological heterogeneities in data sources is an extension of the context interchange (COIN) framework, a mediator-based approach for achieving semantic interoperability among heterogeneous sources and receivers. We also analyze the issue of ontological heterogeneity in the context of source-selection, and offer a declarative solution that combines symbolic solvers and mixed integer programming techniques in a constraint logic-programming framework. Finally, we discuss how these techniques can be coupled with emerging Semantic Web related technologies and standards such as Web-Services, DAML+OIL, and RuleML, to offer scalable solutions for global semantic interoperability.

We believe that the synergy of database integration and Semantic Web research can make significant contributions to the financial knowledge integration problem, which has implications in financial services, and many other e-business tasks.

"Context-Aware Query Processing on the Semantic Web," Andrew Burton-Jones, Georgia State University, Sandeep Purao, Pennsylvania State University, and Veda C. Storey, Georgia State University

The continued growth of the World Wide Web makes the need for retrieval of relevant information for a user's query increasingly important. Current search engines provide the user many Web pages, but with varying levels of relevancy. In this research, an architecture is presented for the development of an intelligent agent methodology to automate the processing of a user's query, while taking into account the query's context. Four sample queries are processed simulating the methodology of the agent. The queries differ on two dimensions: the amount of clarity of the domain and the number of related terms. The results of the queries are compared to those obtained from the Google search engine. The comparisons show that applying the intelligent agent methodology to the queries produces significantly fewer Web pages that are equally or more relevant to the user.

Monday, December 16
5:00 p.m.–6:30 p.m.
Session M4.3
Tibidabo

"The Value of Shared Information Services," Thomas A. Weber, University of Pennsylvania

In this paper, we analyze the value of shared information services, both when they are operated by their members and when they are implemented by a monopoly provider. The value of information is defined as the compensating variation in price that makes a risk-averse agent indifferent between procuring an informative signal or not. We provide investment sharing rules that implement an individually rational Nash bargaining solution and compare this to the situation in which a nonscreening monopolist maximizes profits. We find that any efficient price schedule for information should take into account (1) the agent's confidence in the signal, (2) the project risk, (3) the agent's risk aversion, as well as (4) her wealth and the mean return if at least one of them is quite small. Interestingly, in a cooperative bargaining situation an agent's investment share may either increase or decrease when risk aversion goes up, depending on whether demand for information decreases faster than implicit bargaining power relative to the other agents or vice versa. We further show that even for CARA utilities, there are important wealth effects. Our results, including the definition of a critical Nash network size, provide a benchmark for the value of information that is shared by a group of agents for use in their respective projects and not employed strategically against each other.

"The Optimal Software Licensing Policy under Quality Uncertainty," Jie Zhang and Abraham Seidmann, University of Rochester

The rapid rate of standard software development, and the need of users to stay current, has unleashed unprecedented levels of process and product innovations in the software industry. A new service model has emerged which delivers application software and services over the Web on a lease or subscription basis. Software vendors such as Sun, Oracle, and Microsoft have already adopted this innovative business model. They have expanded their sales offerings with lease contracts that augment their traditional one-time purchase transactions.

Our paper studies the optimal licensing policy of a software vendor that uses that business model. We look at software vendors that are both selling (at a posted price) or leasing their products where as lessor they guarantee that the lessee will always have the latest version of the software on their desktop. We address some of the specific issues of implementing this policy at the packaged software market, including the impact of network externality, negligible marginal production costs, and upgrade compatibility. We show that by properly defining their pricing structure, software vendors can segment the market and realize effective second-degree price discrimination and show how and when software vendors can maximize their profits through the use of this new licensing policy.

Monday, December 16
5:00 p.m.–6:30 p.m.
Session M4.4
Montjuich

"Business-to-Business Electronic Marketplaces and the Structure of Channel Relationships," Ellen Christiaanse, University of Amsterdam, and M. Lynne Markus, Bentley College

Business-to-business (B2B) marketplaces have significant potential impacts on the structure of channel relationships and IT management arrangements. IS theory traditionally investigated electronic marketplaces from a transaction cost theory point of view. We identify three major limitations of transaction cost theory as it applies to B2B electronic marketplaces. A number of other literatures with a bearing on electronic marketplaces have critiqued and extended transaction cost models. Among them are strategic networks theory, marketing channel theory, and political economy. This paper reviews and attempts to synthesize these perspectives on electronic marketplaces and exchanges. We propose an integrative model combining transaction cost theory, strategic networks theory, relational exchange theory, and the theory of political economy. The synthesis promotes better operationalizations of EMP channel structure, identifies the antecedents and consequences of EMP channel structures, and suggests an agenda for future research.

"Theorizing Technological Adaptation as a Trigger for Institutional Change," Nicole Haggerty, University of Western Ontario, and Brian Golden, University of Toronto

Institutional pressures and technological adaptation have frequently been expressed as contrasting forces that explain organizational processes and actions. Institutional arguments suggest that environmental pressure, deriving from regulative, cognitive, and normative forces predict organizational action (or inaction), and impel organizations to favor legitimacy over efficiency. Theories addressing the use of technology view technological adaptation as the organization's response to competitive and efficiency demands. We argue here that structuration theory, by incorporating a temporal dimension, reveals an important intersection between institutional theory and a theory of technology use. Specifically, we develop a theoretical model that reveals interactions between technology, organizations, and institutions. Further, we suggest that institutional forces and technological adaptation are related by virtue of their common structurational foundations, within varying, but interrelated, time scales, and that both impact organizational behavior. In doing so, we seek to develop a hybrid theoretical perspective integrating the fields of organizational theory and information systems with the hope that it suggests new ways of analyzing technological and organizational change.

Tuesday, December 17
11:30 a.m.–1:00 p.m.
Session T2.1
Sitges

"Social Capital in ERP Projects: The Differential Source and Effects of Bridging and Bonding," Sue Newell, Bentley College and University of London, Jimmy Huang, Nottingham University Business School, and Carole Tansley, Nottingham Trent University

In this paper, we explore innovation processes surrounding the design and implementation of ERP systems in two case companies, looking at this from a knowledge integration perspective. More specifically, we examine the relationship and network building processes that are necessary to support knowledge integration and user involvement during innovation. In doing this, we utilize the concept of social capital and relate the different sources and effects of social capital to the different innovation episodes. This highlights how the bridging *and* bonding aspects of social capital are differentially important during different episodes and leads us to conclude, contrary to the suggestion of Adler and Kwon (2002), that it is helpful to differentiate between the two.

"Collaborative Practices in Information Systems Development: A Collective Reflection-in-Action Framework," Natalia Levina, New York University

With the growth of consumer-faced information systems (IS) applications, IS designers are increasingly moving from seeing their work as "capturing and automating requirements" to seeing it as "innovation in product development." The new metaphor engenders organizational practices targeted at fostering innovation. One such practice is the creation of professionally and organizationally diverse development teams with the goal of creatively combining individual competencies in the resultant product. This paper draws on the longitudinal field study of such a team in order to build a practice-based framework for understanding collaboration on IS development (ISD) projects. The framework depicts ISD as a collective reflection-in-action process that increasingly defines the product. The IS product is the result of participants iteratively challenging each other or following what has been already established on the project. Which action is taken is shaped by the status relations among professionally and organizationally diverse actors.

Tuesday, December 17
11:30 a.m.–1:00 p.m.
Session T2.2
Ibiza

"Conceptualizing Time and Space: Information Technology, Work, and Organization," Heejin Lee, University of Melbourne, and Steve Sawyer, Pennsylvania State University

Discussions about new forms of work and organization are typically framed by time, space, and the roles played by information and communication technologies. However, the meaning of time, space, and technology is often taken-for-granted. In this paper, we explore these concepts by first developing a set of constructs and, second, presenting some initial theorizing on the relationships among these constructs. To do so we represent time and space as socially developed constructs of temporal and spatial relations. We conceptualize a functional view of information and communication technologies. And, we characterize work as varying by two characteristics: the level of worker interdependence and the degree of work autonomy. Integrating these five constructs into an initial framework allows us to theorize that new forms of work are moving toward four distinct forms, each with particular spatial, temporal, and information technology characteristics.

"Reopening the Black Box of Technology Artifacts and Human Agency," Jannis Kallinikos, London School of Economics

The argument presented in this article is that the premises governing human-technology interaction partly derive from the distinctive ways by which each technology defines a domain of reference, and organizes and codifies knowledge and experience within it. While social in its origins and its implications, technology constitutes a distinct realm of human experience that is not reducible to social or institutional relations. Drawing on Goodman's (1976, 1978) cognitive philosophy the article proposes a scheme for analyzing the very architecture of items and relations underlying the constitution of cognition-based artifacts. Such an analysis is used as a basis for inferring the malleability and negotiability of technologies and the forms by which they admit human involvement and participation.

"Real-izing Information Systems: Critical Realism as an Underpinning Philosophy for Information Systems," John Mingers, Warwick University

The paper begins by pointing out the diversity of philosophical positions within information systems, and the range of reactions to this diversity. It then discusses problems within the underlying philosophies of science, particularly positivism and interpretivism. With this as a background, the paper proposes critical realism as an underpinning philosophy that has the potential to overcome both sets of difficulties. The theoretical arguments are practically illustrated by critiques of (positivist) statistical analysis and (interpretivist) soft systems methodology.

Tuesday, December 17
11:30 a.m.–1:00 p.m.
Session T2.3
Tibidabo

"Dynamic Pricing: A Strategic Advantage for Electronic Retailers," Anindya Ghose, Tridas Mukhopadhyay, and Uday Rajan, Carnegie Mellon University, and Vidyanand Choudhary, University of California, Irvine

We develop an analytical framework to investigate the competitive implications of dynamic pricing technologies (DPT), which enable precise inferring of consumers' valuations for firms' products and personalized pricing. These technologies enable first-degree price discrimination: firms charge different prices to different consumers, based on their willingness to pay. We first show that, even though the monopolist makes a higher profit with DPT, its optimal quality is the same with or without DPT. Next we show that in a duopoly setting, dynamic pricing adds value only if it is associated with product differentiation. We then consider a model of vertical product differentiation, and show how dynamic pricing on the Internet affects firms' choices of quality differentiation in a competitive scenario. We find that when the high quality firm adopts DPT both firms raise their quality. Conversely, when the low quality firm adopts DPT, both firms lower their quality. While it is optimal for the firm adopting DPT to increase product differentiation, the non-DPT firm seeks to reduce differentiation by moving closer in the quality space. Our model also points out firms' optimal pricing strategies with DPT, which may be non-monotonic in consumer valuations. Finally, we show that consumer surplus is highest when both firms adopt DPT. Thus, despite the threat of first-degree price discrimination, dynamic pricing with competing firms can lead to an overall increase in consumer welfare.

"Optimal Design of Contingency Pricing in IT-Intensive Commerce," Hemant Bhargava and Shankar Sandaresan, Penn State University

We propose the use of quality contingent prices, where a firm announces quality-price pairs for various levels of quality instead of a single price, as a mechanism for mitigating quality uncertainty. Contingency pricing is especially applicable to IT-intensive commerce where quality uncertainty is prevalent. The modern IT infrastructure allows easy capture, verification, and dissemination of performance and quality data essential for the implementation of contingency pricing framework. Under very broad conditions, we show that when the market underestimates firm performance, it is optimal to design a full-rebate contingent contract. The optimal quality threshold is set at the quality level that maximizes the gap between market and actual performance probabilities, and the optimal market size is independent of the quality threshold. When contingency pricing is optimal, it is sufficient to consider two-part contingent contracts: two-part contract performs as well as any multipart contract. Use of contingent prices include IT-intensive settings such as ASP service levels, Internet connectivity, and transaction execution in financial services.

Tuesday, December 17
11:30 a.m.–1:00 p.m.
Session T2.4
Montjuich

"Environment and Policy Factors Shaping E-Commerce Diffusion: A Cross-Country Comparison," Kenneth L. Kraemer, Jennifer Gibbs, and Jason Dedrick, University of California, Irvine

The growing use of the Internet and e-commerce for conducting business is being driven by global and national forces. Many firms are being driven toward greater adoption of e-commerce by global competitive pressures, which some suggest will lead to a global networked economy. On the other hand, firms are also being driven by national environmental and policy factors, which are both drivers and inhibitors of e-commerce diffusion. A key question is whether the continuing diffusion of e-commerce will lead to a single homogeneous global market or whether national market niches create special business opportunities and barriers that affect innovation outcomes.

This paper identifies and discusses major environmental and policy related factors that influence e-commerce diffusion across and within countries. It is based upon case studies in 10 countries representing both developed and developing countries in each of three major world regions. Although e-commerce is still in its infancy, this preliminary analysis indicates that diffusion is an uneven process across countries and industries. Certain countries and industries are driving the process while others lag behind. Digital divides are evident both between and within developed and developing countries. Moreover, local differences in e-commerce are evident between countries, suggesting that the diffusion process is strongly shaped by national environments and policy rather than following a universal trajectory.

"A Cross-Country Study of Electronic Business Adoption Using the Technology-Organization-Environment Framework," Kevin Zhu, Kenneth L. Kraemer, and Sean Xu, University of California, Irvine

In this study, we developed a conceptual model for electronic business (e-business or EB) adoption incorporating six adoption facilitators and inhibitors, based on the technology-organization-environment framework. Survey data from 3,100 businesses and 7,500 consumers in eight European countries were used to test the model. We conducted confirmatory factor analysis to assess the reliability and validity of constructs. To examine whether adoption behaviors differ across different e-business environments, we divided the full sample into high EB-intensity and low EB-intensity countries. The fitted logit models demonstrated four findings: (1) *Technology competence, firm scope and size, consumer readiness*, and *competitive pressure* are significant adoption drivers, while lack of trading partner readiness is a significant adoption inhibitor. (2) As EB-intensity increases, two environmental factors—consumer readiness and lack of trading partner readiness—become less important. (3) In high EB-intensity countries, e-business is no longer a phenomenon dominated by large firms; as more and more firms engage in e-business, network effect works to the advantage of small firms. (4) Firms are more cautious into adopting e-business in high EB-intensity countries, which seems to suggest that the more informed firms are less aggressive into adopting e-business.

Tuesday, December 17
3:00 p.m.—4:30 p.m.
Session T3.1
Sitges

"Quality and Profits Under Open Source Versus Closed Source," Birendra Mishra, Ashutosh Prasad, and Srinivasan Raghunathan, University of Texas at Dallas

The open source model of software development has received substantial attention in the industry and popular media; nevertheless, critics frequently contend that open source software are inferior in quality compared to closed source software because of lack of incentives and project management, while proponents argue the opposite. This paper examines this quality debate by modeling and analyzing software development under open and closed source environments. The results show no dominant quality advantage of one method over another under all circumstances. Conditions under which each method can generate higher quality software are examined.

"Economic Incentives for Participating in Open Source Software Projects," Il-Horn Hann, University of Southern California, Jeff Roberts and Sandra Slaughter, Carnegie Mellon University, and Roy Fielding, Apache Software Foundation

Using the Internet as a basis for communication, collaboration, and storage of artifacts, the open source community is producing software of a quality that was previously thought to be achievable only by professional engineers following strict software development paradigms. This accomplishment is even more astounding as developers contribute to the source code without any remuneration. Open source leaders as well as academics have proposed theories about the motivation of open source developers that are rooted in diverse fields such as social psychology and anthropology. However, Lerner and Tirole (2000) argue that developer participation in open source projects may, in part, be explained by existing economic theory regarding career concerns. This research seeks to confirm or disconfirm the existence of economic returns to participation in open source development. Our findings suggest that greater open source participation *per se*, as measured in contributions made, is not associated with wage increases. However, a higher status in a merit-based ranking within the Apache Project is associated with significantly higher wages. This suggests that employers do not reward the gain in experience through open source participation as an increase in human capital. The results are also consistent with the notion that a high rank within the Apache Software Foundation is a credible signal of the productive capacity of a programmer.

Tuesday, December 17
3:00 p.m.—4:30 p.m.
Session T3.2
Ibiza

"Evolution and Media Naturalness: A Look at E-Communication Through a Darwinian Theoretical Lens," Ned Kock, Lehigh University and Temple University

Modern theories of human evolution converge on the belief that our brain has been designed to cope with problems that occurred intermittently in our evolutionary past. Evidence suggests that, during over 99 percent of the evolutionary process leading to the emergence of our species, our ancestors communicated in a synchronous and colocated manner, and employing facial expressions, body language, and oral speech (what we refer to here, generally, as "face-to-face" communication). Thus, it is plausible to assume that many of the evolutionary adaptations our brain has undergone in connection with communication have been directed at improving the efficiency and effectiveness of face-to-face communication, which begs the question: What happens when we selectively suppress face-to-face communication elements (e.g., colocation, the ability to employ/observe facial expressions) through e-communication technologies? This paper tries to provide an answer to this question by developing a hypothesis, called the media naturalness hypothesis, which builds on modern human evolution theory. The media naturalness hypothesis argues that, other things being equal, a decrease in the degree of naturalness of a communication medium (or its degree of similarity to the face-to-face medium) leads to the following effects in connection with a communication interaction: (1) increased cognitive effort, (2) increased communication ambiguity, and (3) decreased physiological arousal. It is argued that the media naturalness hypothesis has important implications for the selection, use, and deployment of e-communication tools in organizations, particularly in the context of business-to-consumer interactions.

"Toward an Autopoietic Perspective on Information Systems Organization," Robert Kay, University of Technology Sydney, and Dubravka Cecez-Kecmanovic, University of New South Wales

This paper applies *autopoietic theory* to examine the nature of IS–organization relationships involving co-evolutionary processes among an organization and its IS, IS organization issues, and the impacts on an organization's competitive advantage. By drawing on a longitudinal field study in an international investment banking organization, where the development of a core IS has been studied since 1999, this paper (1) presents the distinct characteristics of the autopoietic approach; (2) demonstrates its explanatory power for understanding the IS–organization coevolutionary processes and IS organization, and (3) shows the implications of these autopoietic explanations for the firm's current and future competitive advantage.

Tuesday, December 17
3:00 p.m.—4:30 p.m.
Session T3.3
Tibidabo

"Exploring Consumer Demand for Networked Services: The Importance of Content, Connectivity, and Killer Apps in the Diffusion of Broadband and Mobile Services," Catherine A. Middleton, Ryerson University

What drives consumers to adopt new networked services and technologies? This paper illustrates the differences between *content is king* and *person-to-person communication is the killer app* perspectives on what will drive the adoption of mobile technologies. Through an exploration of user and provider understandings of content and interactivity, it is demonstrated that demand for broadcast-type content (e.g., video on demand) is different than demand for connectivity services (e.g., messaging, e-mail). It is noted that content providers are reliant upon finding a content-based killer application to sustain their revenue streams (and thus endorse the content is king perspective), whereas network providers can thrive whether they focus on meeting consumer demand for content or demand for connectivity (or both). Consumer experience with earlier communication networks (e.g., telephone, Internet) demonstrates a strong demand for services that facilitate person-to-person communication.

"Iterative Process Models for Mobile Application Systems: A Framework," Hans-Georg Kemper, University of Stuttgart, and Elke Wolf, University of Cologne

The development of mobile application systems is usually realized on the basis of iterative process models of which there are many different variants. The selection of an appropriate process model is a crucial issue for the success of every system development project, particularly for systems in a highly volatile environment such as mobile application systems. This article is devoted to the idea of selecting and applying alternative iterative process models in a project-specific way.

As a first step, an analysis of five predominant groups of mobile application systems has been conducted. On the basis of the results of this analysis, a three-dimensional classification scheme is developed. Applying this, we illustrate that mobile application systems can be classified, characterized, and differentiated over three dimensions: degree of innovation, speed of development, and risk. Based on these three dimensions, technical and organizational-personnel criteria are deduced and a typology of mobile application systems is developed. This framework allows the typification for a planned mobile application system according to eight defined types. Thus, recommendations concerning technical and organizational-personnel requirements can be generated and integrated into a specification in order to enable systems development teams to select an appropriate iterative process model.

Tuesday, December 17
3:00 p.m.—4:30 p.m.
Session T3.4
Montjuich

"Understanding Antecedents to Conflict in Geographically Distributed Research and Development Teams," Pamela J. Hinds and Mark Mortensen, Stanford University

We investigate the antecedents of conflict on collocated as compared with geographically distributed teams. In our field study of 16 collocated and 20 geographically distributed research and development teams, we found little evidence that distributed teams have more conflict. However, we did find that distributed teams experienced more coordination problems and less healthy conflict handling norms which were, in turn, associated with more conflict. Contrary to our predictions, neither frequency of communication nor reliance on mediating technologies were related to increased affective or task conflict. Our findings suggest that the frequency of communication and the medium used may be less important than the content of the information that flows between group members and the group's ability to speak openly and deal with conflict as it arises.

"Shared Mental Models, Familiarity, and Coordination: A Multi-Method Study of Distributed Software Teams," J. Alberto Espinosa, American University, Robert E. Kraut, Sandra A. Slaughter, and Javier F. Lerch, Carnegie Mellon University, James D. Herbsleb, Lucent Technologies, and Audris Mockus, Avaya Research Labs

Coordination is important in large-scale software development because of the many people involved and the complex dependencies present in software tasks. Even small improvements in productivity can lead to substantial cost savings and competitive advantage. But despite great technological advances in software engineering and collaboration tools in recent years, coordination in software development projects continues to be problematic. Traditional theories suggest that team members coordinate by programming their tasks and by communicating with each other, but more recent research also suggests that they coordinate through work familiarity, and team cognition mechanisms like shared mental models. This paper reports on the results of a multi-method research investigation of how shared mental models, work familiarity and geographic dispersion affect coordination in software teams. This research is based on three studies conducted at a large telecommunications company: face-to-face interviews, survey, and archival studies. Results show that shared mental models have a positive effect on team coordination and that prior familiarity with the same software parts and projects reduces software development time. Results also indicate that geographic dispersion increases software development time and that the effect of work familiarity is stronger for geographically distributed teams than for colocated teams.

Tuesday, December 17
5:00 p.m.—6:30 p.m.
Session T4.1
Sitges

"Information Cascades in the Adoption of New Technology," Eric A. Walden and Glenn J. Browne, Texas Tech University

This work presents a theory of information cascades, based on the work of Bikhchandi, Hirschleifer, and Welch (1992), to explain fad-like behavior in the adoption of new technology. An information cascade occurs when an individual ignores his or her own private signal about the value of a technology and relies, instead, upon the observed actions of others. This can lead to serious problems if the observed actions in question are based on still other observed actions rather than private signals. The present research provides an operational model to assess information cascade theory and empirically tests the model in the context of the adoption of electronic commerce technologies. The results suggest that information cascades play a large role in the adoption of such technologies.

"Mixing Bricks and Clicks: Organization Designs for Business-to-Consumer Electronic Commerce in Incumbent Retailers," George Westerman, Massachusetts Institute of Technology

Researchers disagree over the extent to which organizations can introduce innovations such as electronic commerce within existing organizational structures. Some argue that such innovations require completely autonomous innovating units. Yet, such autonomous units may have difficulty making use of scale, skills, and infrastructure in the established organization. This paper attempts to resolve the apparent conflict by building and testing a new theoretical model of organizing to adopt a discontinuous innovation. Using concepts from technology strategy and organization theory, it builds a hybrid model in which organizations simultaneously build new subunits and leverage existing ones to adopt the innovation. Two characteristics of each component in the innovation translate to two aspects of subunit-level organization design. The theoretical model is tested using a novel database of organizational structure and financial performance for the e-businesses launched by 36 incumbent retailers. The study contributes to theory by helping to resolve a long-standing debate, and contributes to practice by providing guidelines to help managers in organizing to adopt innovations.

Tuesday, December 17
5:00 p.m.—6:30 p.m.
Session T4.2
Ibiza

"Determinants of Budgeted Information Technology Expenditures," Kevin Kobelsky, University of Southern California, Vernon J. Richardson, University of Kansas, and Robert W. Zmud, University of Oklahoma

Information technology expenditures vary across firms and across industries; however, very little empirical research has investigated the factors influencing the level of these expenditures. The object of this paper is to present theory and evidence of the determinants of corporate IT budgets. Using *InformationWeek* data, we find that budgeted IT expenditures are significantly influenced by the strategic role that IT plays in an industry, and by the level of complexity arising from industry and firm-level factors. The level of concentration within the industry has a significant impact on IT budgets. A number of firm-level factors also affect IT budgets, including prior IT investments, resource availability, business volatility, and the level of diversification. This suggests that managers should adjust for these firm and industry-level factors when comparing their IT spending to selected benchmark firms.

"Strategic IT Investments: Impact of Switching Cost and Declining Technology Cost," Didem Demirhan, University of Nevada, Las Vegas, Varghese S. Jacob and Srinivasan Raghunathan, University of Texas at Dallas

Firms in information technology (IT) intensive industries rely on IT investments to improve the quality of their products and services. Competing firms in these industries need to consider two opposing effects when they make IT investment decisions. The declining cost and improving performance of IT over time provides the later entrant a potential cost advantage. On the other hand, the first entrant has the potential to build its market share and retain the market share if consumers incur a cost to switch to the later entrant. In this paper, we analyze the investment strategy of an early entrant that expects the later entrant to have a cost advantage. The results show that in a market with a low (high) switching cost, a decline in IT cost reduces (increases) the investment level of the early entrant. In both types of markets, a higher switching cost mitigates the cost advantage of the later entrant. The results suggest that the early entrant should design a product that imposes a high switching cost. We use examples from Internet Service Providers to provide the motivation for the problem and illustrate the model, analysis, and results.

Tuesday, December 17
5:00 p.m.—6:30 p.m.
Session T4.3
Tibidabo

"Optimal Pricing and Capacity Allocation in Vertically Differentiated Web Caching Services," Kartik Hosanager and Rammayya Krishnan, Carnegie Mellon University, John Chuang, University of California, Berkeley, and Vidyanand Choudhary, Carnegie Mellon University

Internet infrastructure is a key enabler of e-business. The infrastructure consists of backbone networks (such as UUNET and AT&T), access networks (such as AOL and Earthlink), content delivery networks (CDNs, such as Akamai) and other caching service providers. Together, all of the players make up the digital supply chain for information goods. Caches provisioned by CDNs and other entities are the storage centers, the digital equivalent of warehouses. These caches store and deliver information from the edge of the network and serve to stabilize and add efficiency to content delivery. While the benefits of caching to content providers with regard to scaling content delivery globally, reducing bandwidth costs and response times are well recognized, caching has not become pervasive. This is largely due to misaligned incentives in the delivery chain. Much of the work done to date on Web caching has focused on the technology to provision quality of service and has not dealt with issues of fundamental importance to the business of provisioning caching services, specifically, the design of incentive compatible services, appropriate pricing schemes, and associated resource allocation issues that arise in operating a caching service. We discuss the design of incentive compatible caching services that we refer to as quality of service caching. Pricing plays an important role in aligning the incentives. We develop an analytic model to study the IAP's optimal pricing and capacity allocation policies.

"Information Gatekeepers: Paid Placement and Competition," Hemant K. Bhargava and Jane Feng, Pennsylvania State University

Information gatekeepers such as Internet search engines and shopbots play a crucial role in the information society. Recently, such gatekeepers have begun implementing a paid placement strategy, where some content providers are given, in return for a placement fee, prominent positioning in response to user queries. Generally, users have disutility toward the bias created by paid placement, and the search engine can manipulate the placement strategy to affect users' disutility. We analyze the gatekeeper's tradeoff between revenue from paid placement and the potential loss in advertising revenue from the loss of credibility. In the optimal paid placement strategy, an increase in the gatekeeper's quality of service allows it to improve profits from paid placement, moving it closer to the ideal. However, an increase in the advertising rate motivates the gatekeeper to increase market share by reducing further its reliance on paid placement and fraction of paying providers. When there is competition between search engines of identical quality, they will choose the same bias level. For heterogeneous search engines with different qualities, the equilibrium outcome depends largely on the users' cognitive or other limitations on the number of search results they effectively consider.

Tuesday, December 17
5:00 p.m.—6:30 p.m.
Session T4.4
Montjuich

"Self-Serve Internet Technology and Social Embeddedness: Balancing Rationalization and Relationships," Ulrike Schultze, Southern Methodist University

Much of the research on the impacts of electronic communication networks such as the Internet presents as competing substitutes personal, embedded relationships and computer-mediated, arm's-length relationships between exchange partners. More recent research highlights the complementarity of these two kinds of relationships (e.g., Kraut et al. 1999). However, this research has not explored what following a strategy of complementarity means in situ. This paper seeks to address this shortcoming. Using ethnographic data to explore the consequences of implementing a self-service technology in an environment in which social relationships and social capital are regarded as a key to success, the research presented here highlights the tensions inherent in a business model that seeks to integrate rationalization and relationships.

"Emergent Online Communities: The Structuring of Communicative Practices Over the Internet," David R. Firth, University of California, Los Angeles

Commercial enterprises are increasingly using online communities to allow customers to interact with each other before and after a purchase, and television shows are using them to get a closer grip on the audience. Although they have been around since the foundation of the Internet, little research has been done to understand the communicative interactions that arise within such online communities. In this paper, we use the notion of genres to study the communicative practices of three emergent online Internet communities at a university in the United States. Genres are organizing structures shaped by the communicative actions of individuals, and they provide an analytical lens to investigate those actions (Orlikowski and Yates 1994a, 1994b). We find that a parsimonious set of only six genres is needed to adequately classify almost 1,250 communications between the members of our three communities. Evidence also suggests that three of these genres are essential foundation blocks for communication in online communities. We also witness unmediated, explicit structuring of a genre, and the increase in participation this generates, which provides insight for those building and managing online communities. This study shows that genre analysis is a powerful tool to assist in understanding emergent online communities and we provide insight into how its use may facilitate growth and participation in the community.

Wednesday, December 18
9:30 a.m.—11:00 a.m.
Session W1.1
Sitges

"Old Wolf, New Wool Suit: India, IT, and the Legacy of Colonialism," Abhijit Gopal, Louis Beaubien, and Teresa Marcon, University of Western Ontario

Information technology forms an intrinsic part of the current global imagination, a worldview that has recently been challenged. The challenge, however, has not been extended to IT, which is seen, for the most part, in a positive light. We use actor-network theory to explore whether there might indeed be some problematic aspects of global IT that deserve the attention of the IS community. By concerning ourselves with the mobility of IT through both time and space, we investigate IT transfers related to India and their links to the colonial era, considering how IT might unobtrusively carry in it assumptions and practices that derive from that epoch.

"Examining the Sustainability of Rural IT Interventions: Lessons from the Field," Shivraj Kanungo, George Washington University

The idea that IT can be used to alleviate and fight poverty has been widely embraced. However, while most IT-based interventions in poor and rural communities and villages have tended to demonstrate initial success, their long-term viability still remains unclear. Based on field experiences in India, we present findings of a case study that highlights issues and concerns beyond initial success associated with IT intervention in rural settings. We analyze the primary concern of sustainability to extend far beyond simple economic viability in the longer run. Governance structures for the IT setup, value links associated with the IT setup, and the nature of IT linkages add up to influencing the sustainability of IT interventions in rural settings. We base our analysis on Habermas' theory of communicative action (TCA) and conclude that sustaining the larger vision of empowerment and social change is more important that simply seeking economic viability for IT interventions. Our major implication from a policy perspective is to support IT interventions much longer than expected at present. The major implication for theory is the utility of TCA for assessing the value of IT investments.

Wednesday, December 18
9:30 a.m.—11:00 a.m.
Session W1.2
Ibiza

"Does IT Knowledge Relatedness Differentiate Performance of Multi-Business Firms?," Hüseyin Tanriverdi, The University of Texas at Austin

This study develops and validates the *IT knowledge relatedness* construct to measure the extent to which a multi-business firm leverages related IT knowledge across its business units. It hypothesizes that synergies arising from IT knowledge relatedness differentiate performance of multi-business firms. This hypothesis is tested with primary data from senior IT executives of 315 Fortune 1000 firms. The findings support the hypothesis: IT knowledge relatedness has a positive and significant association with firm performance.

"Communities of Practice and the Role of Location: Revealing Limits of Virtuality and Knowledge," Deborah Sole, Harvard University, and Marleen Huysman, Vrije Universiteit Amsterdam

Communities of practice provide a lens for understanding how knowledge develops and flows in organizations. This perspective highlights how, as a result of shared practice, knowledge flows more easily within a community than across community boundaries. Most prior empirical studies identify communities of practice whose members have similar occupations and thus emphasize knowledge boundaries that are congruent with occupational boundaries. In this paper, we argue that location also shapes practice and thus plays a critical role in defining knowledge boundaries. We use a case from a multinational organization to show that the common work practices, perspectives, and knowledge operational within one organizational location were not shared by employees at other locations. We suggest that, by reemphasizing the often overlooked unity of work, knowledge, and identity existing among functionally diverse, collocated organizational members, while simultaneously drawing attention to knowledge differences emerging between functionally similar members in different locations, this use of the communities of practice lens reveals the limits of virtuality when knowledge creation is at stake.

Wednesday, December 18
9:30 a.m.—11:00 a.m.
Session W1.3
Tibidabo

"Information Technology Governance Processes Under Environmental Dynamism: Investigating Competing Theories of Decision Making and Knowledge Sharing," Ryan R. Peterson, Instituto de Empresa, Marilyn M. Parker, Key Strategies & Solutions Inc., and Pieter M. A. Ribbers, Tilburg University

This paper describes an empirical study of IT governance processes in complex organizations under conditions of environmental dynamism. Rooted in competing theories of organizational decision making and knowledge sharing, and based on a case study investigation of large, distributed organizations, this study examines the design and effectiveness of IT governance processes from both rational-analytical and social-learning perspectives. The results indicate that, regardless of the level of environmental dynamism, effective IT governance processes are characterized by both methodological comprehensiveness and social capabilities. The implications for theory development, future research, and IT governance practices are discussed.

"Impact of Information Systems Resources and Capabilities on Firm Performance: A Resource-Based Perspective," T. Ravichandran, Rensselaer Polytechnic Institute, and Chalermsak Lertwongsatien, Ministry of Finance, Thailand

In this paper, we draw from the resource-based theory to examine how information systems resources and capabilities impact firm performance. A basic premise of this paper is that variations in firm performance can be explained by how effective it is in using information technology to support and enhance its core competencies. In contrast to past studies that have implicitly assumed that information systems assets could have direct effects on firm performance, this study draws from the resource complementarity arguments and posits that it is the targeted use of information systems assets that is likely to be rent yielding. We develop the theoretical underpinnings of this premise and propose a model that interrelates IS resources, IS capabilities, IT support for core competencies, and firm performance.

"Does Domberger's Theory of the Contracting Organization Explain Satisfaction with IT Outsourcing?," Peter Seddon, The University of Melbourne, Sara Cullen, Sara Cullen and Associates, Leslie Willcocks, Warwick University Business School

The paper tests whether what appears to be a strong general theory of why organizations choose to acquire goods and services through contracting rather than in-house service provision, namely Domberger's theory of the Contracting Organization, applies in an IT context. The validity of that theory is tested using data from a survey of 235 senior IT managers. The paper concludes that, in a field still searching for appropriate theory, Domberger's work does indeed provide a very useful lens for understanding IT outsourcing. His four types of benefit of contracting—specialization, market discipline, flexibility, and cost saving—emerge as a concise summary of senior IT managers' explanations of why their organizations chose to outsource IT. The paper also tests Domberger's theory against IT outsourcing outcomes, and further develops a model of organizational satisfaction with IT outsourcing based on Domberger's four factors. Three hold up, but cost savings were not important in explaining organizational satisfaction with IT outsourcing for either smaller or larger organizations. This outcome is explained in terms of the performance influencing factors inherent in Domberger's own model, in the distinctive difficulties inherent in managing IT, and in the location, time period, and context of the research data used by our study.

Wednesday, December 18
11:30 a.m.—1:00 p.m.
Session W2.1
Sitges

"An Economic Benefit Model for Knowledge Creation," Theresa M. Edgington and Andrew N. K. Chen, Arizona State University

The role of knowledge creation within organizations increases in importance within a knowledge economy. Unlike the industrial economy, which inspired basic economic theory, the knowledge economy collapses the time frame for economic agents to obtain relevant knowledge with which to make competitive resource allocation decisions. Further, much knowledge creation still occurs today in an inefficient and unstructured fashion within organizations. In this paper, we examine briefly the process of knowledge creation. We posit that knowledge creation yields an economic benefit to the organization and present an analytic model which examines how formal knowledge creation embedded in formal learning processes provide this benefit. Our model provides an inducement for organizations to increase their management and participation in knowledge creation processes.

Wednesday, December 18
11:30 a.m.—1:00 p.m.
Session W2.2
Ibiza

"The Use of Fuzzy Clustering to Examine End User Segmentation," Vikram Sethi, University of Texas at Arlington, Chittibabu Govindarajulu, Drexel University, Ruth C. King, University of Illinois at Urbana-Champaign, and Mark Eakin, University of Texas at Arlington

A key research theme in the field of end-user computing (EUC) is learning more about end users and their needs and designing support strategies for assisting, managing, and controlling end-user activities. Typology maps, such as those by Rockart and Flannery (1983), have been used to categorize end users into different groups based on criteria such as the skill and sophistication of EUC activity. In most such studies, users self-select themselves into one of several groups based on generic definitions provided in the study. As in most pure taxonomies, a user becomes a part of one and only one group. In this study,we provide an alternative analytical mechanism to self-selection and unitary membership: the use of fuzzy clustering, which allows for gradual membership in different groups, with membership values indicating the probability or degree of membership within a specific group or cluster. Cotterman and Kumar's (1989) classification scheme is operationalized while allowing for overlapping membership probabilities into one of three clusters: user-developer-controller (UDC), user-developer (UD), and user (U). Further, the study also examines the proposition that end users vary in their use of available support sources and also in the type of support that they require. The expectation that different categories of users have different support needs is examined at three levels: cluster level, individual level, and cluster-conjunctive level.

"Determinants of Brand Equity in E-Businesses: An Exploratory Study," Yah-Ting Gwee and Kai-Lung Hui, National University of Singapore, and Patrick Y. K. Chau, University of Hong Kong

Previous research suggests that brand equity is affected by marketing mix elements, such as store image or distribution intensity. However, because the Internet has no boundaries, some of these elements may not be applicable in building the brand equity of online companies. In this study, we identify factors pertaining to online contexts that may affect consumers' perception on quality and brand knowledge, both of which are found to be important determinants of brand equity. By performing confirmatory factor analyses on a set of survey data, we show that having a high quality Website and innovative products and technologies may help reinforce consumers' perceived quality. However, popular online marketing instruments, such as offering value-added services and features or advertising, may not contribute much to the formation of online firms' brand equity.

Wednesday, December 18
11:30 a.m.—1:00 p.m.
Session W2.3
Tibidabo

"The Impact of Online Mobile Office Applications on the Effectiveness and Efficiency of Mobile Workers' Behavior: A Field Experiment in the IT Services Sector," Erik Beulen, Tilburg University, and Robert-Jan Streng, Atos Origin

The wireless application protocol (WAP) is an example of technology that has found itself "stuck in the middle." Its introduction is not a clear success, especially when compared to the high expectations during its launch at the end of the 1990s. However, it is not dead. There is a significant number of users, and the telecommunications and content industry continue to invest. The interesting phenomenon is that "nonbelievers" say, "We don't need WAP," and that "believers" say, "Wait until we have resolved the technical problems."

This paper discusses a field experiment that tested the hypothesis that mobile workers benefit from a specific kind of WAP technology: the mobile office. In an 8-week pilot, 40 mobile workers of an IT services company in the Netherlands received a WAP phone providing them with mobile access to their agenda, mail, directory services, outstanding invoices information, and resource availability. They could also access public information services such as stock market information, weather forecasts, and traffic information. For research purposes, we distinguished two groups of workers: relationship managers and technicians. We expected that relationship managers would benefit more from their WAP phone than technicians.

During the 8-week period, all participants were closely monitored on a daily basis. We collected data on perceived usefulness and on the impact of using the mobile office on the efficiency and effectiveness of the work of relationship managers and technicians. The results show a clear increase in perceived usefulness and also in effectiveness, especially for relationship managers. In our discussion section, we argue there is indeed hope for the believers. Mobile workers have a positive attitude towards WAP if it brings their working environment within reach at any place. As the initial focus for WAP application was on mass private market services, this may explain the initial lack of success of WAP.

"Bridging the Digital Divide: The Effects of Home Computer Ownership and School IT Environment on Self-Directed Learning," Hock Hai Teo, Wen Wan, Hock Chuan Chan, and Cheek Yong Lim, National University of Singapore

The digital divide has attracted enormous attention from both the popular press and information systems researchers. A survey study was conducted to determine the impact of the digital divide on students' self-directed learning in an information technology-based learning environment through their computer self-efficacy, and to assess the role of the school IT environment in bridging this digital divide. Partial least square analyses, with data from more than 5,000 middle school students, show many significant effects. Computer self-efficacy has an effect on self-directed learning. Home PC (personal computer) ownership has a significant effect on computer self-efficacy. The school IT environment affects the computer self-efficacy of students with or without a home PC in different ways. In general, a better perceived school IT environment has more impact on students without a home PC, and thus is important in reducing the impact of the digital divide. The findings provide strong evidence of the digital divide affecting computer self-efficacy and learning behavior, and support investments in improving school IT environments.

"Unanticipated Software Use by Adolescents Following Mandatory Adoption," Lester (Les) A. Singletary, Asli Yagmur Akbulut, and Andrea L. Houston, Louisiana State University

This research proposes a model to predict unanticipated use of software by high school students after mandatory adoption. We define *unanticipated use* as *voluntarily extending the use of a software product to new tasks and new settings after mandatory adoption for a specific task in a specific setting.* We are basing our model on TAM2 (Venkatesh and Davis 2000), which is an extension of the original technology acceptance model (TAM) (Davis 1986). Typically, research in this area investigates technology acceptance in voluntary settings. However, a few studies have looked at acceptance in mandatory settings (Rawstorne et al. 2000). Our research involves actual behavior so we have removed the intention to use construct from the original TAM2 model. Due to the nature of our subjects and the educational setting, we have also removed the following original TAM2 constructs: output quality, voluntariness, and job relevance. We have added personal innovativeness in the domain of information technology (PIIT) (Agarwal and Prasad 1998) and computer self-efficacy (CSE) (Compeau and Higgins 1995).

Research-in-Progress Papers

Monday, December 16
11:30 a.m.–1:00 p.m.
Session M2.5
Menorca

"An Experimental Examination of the Effects of the Nature and Direction of Hypertext Links on Trust Transfer between Organizations," Katherine J. Stewart and Yali Zhang, University of Maryland

Trust transfer occurs when a person bases his or her initial trust in an unknown target (a person, group, or organization) on the relationship between that unknown target and another source of trust (e.g., a well known organization). This study examines how hypertext links between organizations on the World Wide Web influence this process. A hypertext link between a trusted organization and an unknown organization has been shown to increase the extent to which consumers perceive that there is a relationship between the two organizations. Perceptions regarding the relationship between organizations have been shown to influence trust in the unknown organization. In the current study, these past findings are extended by examining how the type of link (an advertising link versus a link sent to a partner) and the direction of the link (from a trusted organization to an unknown organization or vice versa) influence the trust transfer process.

"The Interactivity of Internet-Based Communications: Impacts on E-Business Consumer Decisions," Jie Yin and Detmar Straub, Georgia State University

Various Internet-based technologies have been used to offer online customer service. Common to these technologies is their ability to support interactive communication in exchanges with customers. This paper examines the impacts of communications interactivity on customer decision behaviors. We propose that interactivity can improve customer satisfaction and trust through perceptions of responsiveness and mutuality, which further increase customer intentions to buy. We are in the process of developing, operationalizing, and testing a model of interactivity impacts to examine these relationships. The research uses experiments to collect data and PLS to analyze the data.

"Building Effective Online Marketplaces with Institution-Based Trust," Paul A. Pavlou, University of Southern California, and David Gefen, University of Drexel

Despite the inherent risk arising from separating buyers and sellers, networked online marketplaces are proliferating. We describe how online auction marketplaces take advantage of institutional structures to build buyer trust in auction sellers, mitigate risk, increase satisfaction, and promote transaction intentions. It is hypothesized, based on institutional trust (Zucker 1986), that buyer trust in auction sellers can be increased, beyond past experience with sellers, through structural assurances, such as buyer-driven certification, auction house escrows, and credit card guarantees. We examined buyer transaction intentions, mediated by trusting beliefs, risk reduction, and satisfaction. The model is tested with 274 buyers in Amazon's online auction marketplace. The results support the hypotheses, highlighting the importance of institution-based trust in online networks. Implications are discussed.

Monday, December 16
3:00 p.m.–4:30 p.m.
Session M3.4
Montjuich

"Market Expansion or Margin Erosion: The Double-Edged Sword of Digital Convergence," Ravi Mantena and Arun Sundararajan, New York University

Dgital convergence enables firms in the computing, communications, and electronic consumer industries to design and launch multifunctional converged products. This presents firms with a significant opportunity for value creation and profit growth. At the same time, the increased substitutability between products supplied by different industry segments heightens competition and poses a significant threat of margin erosion. These conflicting incentives make it difficult for firms in converging industries to make strategic product line and product design decisions.

In our study, we analyze the technological, product, and market factors that have an impact on these decisions and derive conditions under which it is (and is not) optimal for firms to launch converged products that combine the functionalities of products in two different industries. We find that the optimality of including converged products in the product line depends crucially on the synergies arising out of functionality colocation. Further, as technology permits higher levels of product convergence, converged products relegate specialized products to narrow market niches, even when there is some quality degradation from functionality colocation. Overall production and total firm profits tend to increase, although the impact on consumer surplus and total welfare is ambiguous.

"Switching Costs, Network Effects, and Networking Equipment: Compatibility and Vendor Choice in the Market for LAN Equipment," Chris Forman, Carnegie Mellon University

This paper examines the importance of compatibility on buyer behavior in the market for LAN equipment over the period 1996 through 1998. I provide evidence that switching costs drive firm establishments to purchase LAN equipment from incumbent vendors. Because LAN equipment is a networked good, incumbency affects vendor choice both when it occurs at the same establishment and/or at other establishments within the same firm. Moreover, compatibility across different product lines within the same vendor also influences vendor choice. This manifests itself in a buyer tendency to purchase routers and switches from the same vendor. These propositions are explored in data on purchases of LAN equipment utilizing open standards such as the Ethernet networking protocol, and represent the first econometric measurement of compatibility effects within products utilizing open standards. These findings show that there are strong economic incentives to offer broad product lines, and provide some rationale for the acquisition strategies of major vendors.

"Real Options and Software Upgrades: An Economic Analysis," Yonghua Ji, Vijay S. Mookerjee, and Suresh Radhakrishnan, University of Texas at Dallas

This work extends earlier work on software upgrades as well as research on real options and IT investment. We consider a two-period model with one software provider who develops and releases a software product to the market. The result shows that the profit from the upgrade policy increases when the market size uncertainty increases. The option value of upgrade is higher when there is more market uncertainty. Also, the value of investing in design effort is more when the development cost is low.

Monday, December 16
5:00 p.m.–6:30 p.m.
Session M4.5
Menorca

"Value Focused Assessment of Individual Privacy Concerns for Internet Commerce," Gurpreet Dhillon and John Bardacino, University of Nevada Las Vegas, and Ray Hackney, Manchester Metropolitan University

This paper presents preliminary findings from an empirical study to assess individual privacy concerns for Internet commerce. Using Keeney's (1999) value-focused thinking approach, 92 individuals with prior Internet shopping experience were interviewed from across the United States and the United Kingdom. Data from the interviews was used to identify eight fundamental and 20 means objectives that are essential for protecting individual privacy in the context of Internet commerce. The findings help in developing a framework to ensure privacy of individuals and provide a basis for an instrument to measure privacy concerns when shopping online.

"Dealing with Low-Tech Terrorist Communications in the Hi-Tech Age: Toward a Theory of Fault-Intolerant Network Organizations," Ekaterina Drozdova, New York University

Information systems analysts have typically focused on hi-technology, often overlooking low-technology communications even though the core of social network load is still essentially low-tech. In this context, the paper argues that while hi-tech offers efficiency gains at the individual level, many shortcomings prevent its complete penetration at the social network level in organizations that operate in hostile environments, requiring them to prioritize fault-tolerance above efficiency. Thus, such fault-intolerant network organizations optimize hi-tech for the individual level and low-tech for the social network level. The general class of such organizations is well represented among business and government structures; however, terrorist organizations provide an especially fitting research case at this time of acute terrorist threats facing the world economy and society at large. Hence, setting aside the prevailing preoccupation with hi-tech and attempting to understand the underlying principles of the high- versus low-tech interplay, particularly as applied to these organizations, is crucial in being able to detect terrorist communications and thwart their activities. Toward this goal, this paper introduces a concept of fault-intolerant network organization (FINO) and develops an analytical framework for addressing the research question of how such organizations use technology.

"Electronic Voting System Characteristics and Voter Participation Intention," Yurong Yao and Andrea L. Houston, Louisiana State University

The rapid development of communication and information technology has made electronic voting technologically and economically feasible. In this study, we will examine the differential impact of four electronic voting system (EVS) characteristics (privacy, accessibility, mobility, and accuracy) on voter participation intention (i.e., EVS voting) and on preferred EVS mechanism (telephone, Web-based, or touch-screen) for electronic voting.

Monday, December 16
5:00 p.m.–6:30 p.m.
Session M4.5
Menorca

"Severity Assessment of ERP-Organization Misalignment: Honing in on Ontological Structure and Context Specificity," Siew Kien Sia and Christina Soh, Nanyang Business School

It has been estimated that at least half of all ERP (enterprise resource planning packages) implementations fail to meet expectations or achieve estimated benefits. In many cases, the misalignments between ERP features and organizational requirements have resulted in costly workarounds. In extreme cases, such misalignments have even contributed to project abandonment and organizational failure. One question that arises is why such severe misalignments have not been surfaced and recognized by organizations. Specifically, this paper proposes a framework that seeks to assess the severity of misalignment by critically examining the seductive *universal best practices* embedded in ERP. The framework is grounded theoretically on key ontological and context specificity concepts. We illustrate the framework by applying it to several hundred instances of misfits that we collected from multiple ERP implementations. We use the results of the analysis to shed light on the functionality "black box" of ERP misalignment.

"Impacts of Electronic Commerce on Supply Chain Management," Yuliang Yao, California State University, Jonathan Palmer, College of William & Mary, Martin Dresner, University of Maryland

This research empirically examines supply chain structure, price competition, and supply chain performance using data obtained from the GSA's Federal Supply Service. The preliminary results show positive relationships between supply chain performance and implementation of electronic commerce initiatives to support both transaction and distribution channels. The potential contributions of the research include (1) extending transaction cost economics to a supply chain context with use of multiple transaction technologies and (2) providing additional empirical evidence that supply chain performance is improved and price competition is heightened with the use of electronic transaction systems.

"Using Equity Theory to Understand User Satisfaction with ERP Systems: Extending and Advancing the Equity-Implementation Model," Traci J. Hess, Washington State University, and Ross Hightower, University of Central Florida

Research on the user satisfaction dimension of information systems (IS) success has typically focused on the technical characteristics of the system being studied and has not emphasized user attitudes toward the system. IS researchers have noted both the omission of user attitudes and the weak theoretical foundation in research on user satisfaction with IS. Joshi's equity-implementation (E-I) model (1991), based upon equity theory, incorporates user attitudes and provides a framework for understanding satisfaction with a new IS. An extended E-I model is proposed as a theoretical foundation for investigating user satisfaction with an IS. Measures for the E-I model constructs have been developed and refined through pretests and a pilot test administered to users of enterprise resource planning (ERP) systems in three different organizations. The full data collection has been administered, and results will be presented at the conference.

Tuesday, December 17
11:30 a.m.–1:00 p.m.
Session T2.4
Montjuich

"Software Application Outsourcing Contracts: An Agency Theory Perspective," Padmal Vitharana and Ravi Dharwadkar, Syracuse University

Scholars have proposed agency, game, resource-dependency, and transaction cost theories as a means to study outsourcing. Although risks faced by outsourcing firms and developers (i.e., vendors) and corresponding agency costs have been identified, key agency constructs (e.g., firm competence, risk-neutrality of the developer) and their linkage to outsourcing practice (e.g., monitoring, screening) have not been extensively studied. In this research, we extend the classical agency theory by examining the impact of risk orientation of the outsourcing parties, application features, multi-period attributes and environmental factors on monitoring, bonding, compensation, screening, and signaling. By developing the agency framework, we set the stage for future empirical testing of key outsourcing constructs and their linkages.

"Optimal Design of Information Technology Security Architecture," Huseyin Cavusoglu, Srinivasan Raghunathan, and Birendra Mishra, University of Texas at Dallas

Information technology (IT) security has emerged as an important issue in e-commerce. Firms typically employ multiple security technologies such as firewalls and intrusion detection systems (IDS) to secure their IT systems. An assessment of the value of these technologies is crucial for firms to design the optimal architecture. Such assessments are also useful to security technology developers in focusing their design efforts. We describe in this report our ongoing research in economic modeling of IT security management. Specifically we describe the technologies used in a typical IT security architecture, a game theoretical model of the significant aspects of the architecture, preliminary analysis of the model, and our current and future work. Our research, when completed, will yield guidelines that will help security technology deployment firms make their investment decisions and security technology developers make their design decisions.

"Principal Clusters Analysis: Analyzing Web Navigation Using a Multivariate Technique," Harris Wu, Michael Gordon, and Kurt DeMaagd, University of Michigan, Weiguo Fan, Virginia Polytechnic Institute and State University, and Huijiang Wu, Northeastern University (China)

We present a new statistical approach, called principal clusters analysis, for analyzing millions of user navigations among Web documents. This technique can identify distinct clusters of related information on a given topic. In addition, it can determine which information items within a cluster are useful starting points to explore the topic of the cluster, as well as key documents within the cluster to explore the topic in greater detail. This technique should prove promising in addressing information overload and other knowledge management issues.

Tuesday, December 17
3:00 p.m.—4:30 p.m.
Session T3.5
Menorca

“Noncontractible Factors as Determinants of Electronic Market Adoption,” Sunil Mithas and Joni L. Jones, University of Michigan, and Will Mitchell, Duke University

Newly emerging electronic marketplaces have significant implications for the choice of governance mechanisms used by firms. This paper builds on transaction cost and routine based perspectives in analyzing buyers’ decision to use IT-enabled market mechanisms such as reverse auctions. The study argues that buyers are less likely to adopt reverse auctions for products with higher degrees of noncontractibility. A significant contribution of this study lies in operationalizing and validating the concept of noncontractibility as an explanatory variable for predicting buyer adoption of electronic marketplaces. We argue that the notion of noncontractibility addresses the mixed predictions in previous research concerning the impact of IT on firm boundaries as evident in the *electronic market* and *move to the middle* hypotheses.

“IT as an Agent of Social Change: *Lonxanet* and the Case of the Galician Artisanal Fisheries,” Enrique Dans, Instituto de Empresa, and Juan Freire, Universidade da Coruña

Information technologies (IT) can be used as an agent to foster social change. This case study describes an Internet start-up, Lonxanet, and analyzes its potential role as a catalyst of changes in the Galician (northwest Spain) artisanal seafood fisheries. These fisheries are traditionally associated to rural communities of fishers, selling their products in local auction markets known as *lonxas*. Galician seafood is hugely appreciated in the Spanish market, where products achieve very high prices and have luxurious connotations. However, the product passes through a wide array of intermediaries where lack of transparence prevails until it reaches the end market, so fishers achieve just a tiny amount of the potential profits despite assuming all the risks associated to the extractive phase. In order to foster social and economic change, Lonxanet proposes a large electronic marketplace initiative partially owned by fishers’ organizations, integrating marketing and logistic services and selling directly to restaurants and other final consumers. This change enables fishers to exert control over the whole commercial cycle. Consequently, they switch from a *survival mentality* to an *industrial* one, and they become especially interested in the sustainability of the resource, thus achieving environmental benefits.

“IT and the Pricing of New Securities: An Experimental Comparison of a Direct Auction System with Traditional Underwriting,” Hugues Levecq, New York University

Experimental economics techniques are used in this paper to examine the benefits and potential adoption of Internet-based electronic auctions for the initial public offerings (IPO) market. The IPO market is dominated by investment banks, which organize the promotion, pricing, and allocation of new securities. The high transaction costs and inefficiency evident in the IPO market make it an apparent anomaly among modern financial markets. Issuers pay high commissions, issues tend to be underpriced, and individual investors have virtually no direct access to the market. Emerging Internet-based markets organized as electronic auctions offer an alternative to traditional practices, and can potentially reduce costs and improve market quality.

The auction and traditional intermediated market structures were replicated in a laboratory environment. Subjects playing the role of investors and investment bankers participated in simulated IPO markets involving various levels of risk and buying pressures similar to those expected in actual IPOs. The offer price and the revenue to the market participants observed in the auction were compared to those collected in the intermediated market. Results show that auction prices were greater than traditional intermediated market prices when the value of the securities offered was more uncertain. As uncertainty decreased, auction prices became comparable to intermediated market prices. Issuers received larger proceeds when going public through the auction. Investors’ overall profits were positive in both market structures, although they were significantly higher in the intermediated market.

Tuesday, December 17
5:00 p.m.—6:30 p.m.
Session T4.5
Menorca

“A Social Cognitive View of Technical Support and its Influence on User Learning,” Nicole Haggerty and Deborah Compeau, University of Western Ontario

Understanding how to develop users’ skills and abilities and how to best support users in their everyday use of technology remains a key managerial problem. This study uses Bandura’s social cognitive theory (1986) to focus on the everyday phenomenon of technical support as a mechanism of vicarious learning through which users learn about their technology. We argue that this conceptualization aids in understanding how and why users gain value from support. Focusing specifically on support provided through a technical help desk at a large, distributed financial services organization, this study randomly collected 100 audiotaped support calls and matched them with user evaluations of the support provided. By examining the behaviors that characterize the provision of support by IT professionals and linking these characteristics to users’ reactions including learning, this research will result in a more grounded model of support and its relationship to users’ development of self-efficacy, satisfaction, and knowledge about technology.

“A Study of Entry-Level Information Technology Workers: Employee Expectations and Job Perceptions,” Kathryn M. Bartol, Ian O. Williamson, Viswanath Venkatesh, and Wei Liu, University of Maryland

As noted in the President's Information Technology Advisory Committee (PITAC) report (1999), the need for a "continuous supply of well-trained, high-quality professionals" in information technology (IT) is critical for companies to maintain global competitiveness. Yet, as discussed in the report and elsewhere, a tightness in the market for IT professionals has been chronic for at least two decades and, despite the current slowdown, is expected to accelerate in the present decade and beyond (Council on Competitiveness 1998; Eisenberg 2002).

Even in the current fluctuating job market for IT workers, attracting, motivating, and retaining workers continues to be a formidable challenge. Increasingly firms in the IT industry operate on "Internet Time," necessitating a core workforce that can provide innovative products and services, as well as respond to competitive threats (Barney 1995). Additionally, most non-IT industry companies are also feeling the pressure via the need to utilize IT in such forms as developing enterprise resource planning systems, setting up intranets, and forging a greater role in the e-business space. Interestingly, the continuing competition for the IT workers is causing companies to think more broadly about workplace issues (Useem 2000). This paper aims to enhance our understanding of individual and organizational context factors that influence important IT employee attitudes, such as job satisfaction, organizational commitment, and turnover intention. Specifically, we have the following three research objectives:

1. Understand expectations of entry-level IT professionals concerning their work environments
2. Understand how entry-level IT professionals perceive the workplace as meeting their expectations
3 Examine the relationship between expectations, importance, and job perceptions in the context of entry-level IT professionals

"On the Cognitive-Affective Structure of Attitudes Toward Information Systems," Hans van der Heijden, Vrije Universiteit Amsterdam and Copenhagen Business School

Social psychologists have long recognized that attitudes are formed through a combination of cognitive appraisals (i.e., evaluations based on beliefs) and affective appraisals (i.e., evaluations based on feelings, emotions, and gut reactions). However, the dominant perspective for explaining user attitudes toward information systems is still cognition-based. In this research, we study the cognitive and affective composition of user attitudes, and the way this composition is influenced by individual differences and system design differences.

This research aims to make three contributions. First, we strengthen the current understanding of IS attitudes with new empirical findings on the relative role of affect and cognition. Second, we aim to demonstrate how the features of an information system evoke different compositions of affective and cognitive attitudes. Third, we expect to demonstrate how gender and experience influence cognitive-affective structures, even when controlling for system features.

Wednesday, December 19
9:30 a.m.—11:00 a.m.
Session W1.4
Montjuich

"The Virtual Commons: Why Free-Riding Can Be Tolerated in File Sharing Networks," Ramayya Krishnan, Michael D. Smith, Zhulei Tang, and Rahul Telang, Carnegie Mellon University

Peer-to-peer networks have emerged as a popular alternative to traditional client-server architectures for the distribution of information goods. Recent academic studies have observed high levels of free-riding in various peer-to-peer networks, leading some to suggest the imminent collapse of these communities as a viable information sharing mechanism. Our research develops an analytic model to analyze the behavior of P2P networks in the presence of free-riding. In contrast to previous predictions we find that P2P networks can operate effectively in the presence of significant free-riding. In future work we plan to explore how much peer-to-peer network performance could be improved if free-riding were eliminated and discuss both the costs and benefits of managerial mechanisms to limit free-riding.

"An Exploration of the Emergence, Development, and Evolution of Regulatory Characteristics of Information Systems," Prodromos Tsiavos, Edgar A. Whitley, and Ian Hosein, London School of Economics and Political Science

What does it mean for code to be law? Is there an inherent characteristic in software that renders it a modality of regulation? How should technology-as-regulation be studied and what is the role of the developer as a regulator? These are some of the research questions we are trying to address in our study concerning the mode of development of peer-to-peer technologies and the evolution of their regulatory facets over time. The study considers whether peer-to-peer technologies have regulatory characteristics that accumulate over time as a result of the effort to deal with the complexity and uncertainty of the tasks they support. The process of development of these technologies reflects the involvement of different stakeholders, both humans and nonhumans, in the refinement and proliferation of the regulatory characteristics. In our study we follow the path of development of code-as-law and seek alternative methods, drawn from both the fields of regulatory theory and systems development, in order to study these emergent phenomena.

"The Challenges of Redressing the Digital Divide: A Tale of Two Cities," Lynette Kvasny, Pennsylvania State University, and Mark Keil, Georgia State University

This paper presents a study that was designed to examine efforts undertaken by two cities—Atlanta and LaGrange, Georgia—to redress the digital divide. Atlanta's initiative has taken the form of community technology centers where citizens can come to get exposure to information technology and to learn something about computers and their applications. LaGrange has taken a very different approach, providing free Internet access to the home via a digital cable set-top box. This research is designed to examine the strengths and limitations of the two initiatives, with the goal of understanding why neither effort has had the impact that policy makers had hoped for with respect to solving the digital divide problem. Our findings indicate that the relationship between access and use of IT is not deterministic. Social processes that exist at both the institutional and individual levels of analysis complicate this relationship. From the institutional perspective, a persistent divide exists even when cities are giving away a theoretically "free good" or service. Free goods often took the form of a training course that delivered little more than basic IT literacy and computer hardware of inferior quality and capabilities. From the individual perspective, we found that economic capital explains gaps in physical access to IT, but social capital and cultural capital explain gaps in the ability to use IT as well as disparities in the benefits that one derives from IT use. Therefore, as IT access continues to proliferate to nontraditional communities of users, sustainability of these digital divide initiatives should not continue to be measured in purely economic and technological terms. We must also consider the sustainability of the innovative elements: the participants.

Wednesday, December 19
9:30 a.m.—11:00 a.m.
Session W1.5
Menorca

"Continuous Adaptation in a High-Velocity Environment: A Study of the Dot-Com Experience," Vijay Sethi and Harminder Singh, Nanyang Technological University, and Vikram Sethi and Kevin Duffy, University of Texas at Arlington

In this study, we examine the phenomenon of the decline in valuation of dot-com organizations and propose that dot-com organizations that have continuously altered their business model in response to the environment have been rewarded by superior valuations in the market place. We first present the dominant perspectives in organizational adaptation research, and discuss their relevance to the current study. Using the concept of business models, we investigate the strategic adaptation paths of 22 dot-com organizations in the period from 1998 through 2001 and correlate them against the performance of their share prices over the same period.

"Business-to-Business E-Marketplaces: A Strategic Archetypes Approach," Christina Soh, Nanyang Technological University, and M. Lynne Markus, Bentley College

Electronic marketplaces (EMs) are an important empirical phenomenon, because they are theoretically linked to significant economic and business effects. Different types of EMs have been identified; further, some researchers link different EM types with different impacts. Because the effects of EMs may vary with types, classifying and identifying the characteristics of EM types are fundamental to sound research.

Some prior approaches to EM classification have been based on empirical observations, others have been theoretically motivated; each has strengths and limitations. This paper presents a third approach: surfacing strategic archetypes. The strategic archetypes approach has the empirical fidelity associated with the large numbers of attributes considered in the empirical classification approach, but the parsimony of types and the theoretical linkages associated with the theoretical classification approach. The strategic archetypes approach seeks a manageable number of EM configuration types in which the attributes are theoretically linked to each other and to hypothesized outcomes like performance and impacts. The strategic archetypes approach has the potential to inform future theoretical and empirical investigations of electronic marketplaces and to translate research findings into successful recommendations for practice.

"Strategic Growth of Firms in the Digital Economy: Simulation and Research Proposal," Chitu Okoli and Ye-Sho Chen, Louisiana State University, and P. Pete Chong, University of Houston-Downtown

With the rise of the Internet as an important dimension of business, fierce competition is resulting in industries that fit skew distributions, where those few firms that can best leverage the digital economy accrue the majority of the revenues. Porter points out that the Internet erodes industrial profitability and intensifies the need for sound strategy. As a tool for modeling the growth of firms in the competitive Internet environment, we apply Herbert Simon's model for business firm growth and relate its two key parameters—rate of entry and industrial growth potential—to Porter's strategic theories. We also introduce the idea of individual growth potential as a measure of firm competitiveness within an industry. We present a research proposal to empirically test the model, and provide the results from a simulation to demonstrate the applicability and usefulness of Simon's model to the business environment in the digital economy.

Wednesday, December 19
11:30 a.m.–1:00 p.m.
Session W2.4
Montjuich
ROOM

"An Exploratory Study of Factors Influencing the Level of Vitality and Popularity of Open Source Projects," Katherine J. Stewart, University of Maryland, and Tony Ammeter, University of Mississippi

In this research, we ask the question: What differentiates successful from unsuccessful open source software projects? Using a sample of 240 open source projects, we examine how organizational sponsorship, target audience (developer versus end user), license choice, and development status interact over time to influence the extent to which open source software projects attract user attention and developer activity.

"Balancing Quality and Agility in Internet Speed Software Development," Richard Baskerville, Georgia State University, Linda Levine, Software Engineering Institute, Jan Pries-Heje, IT University of Denmark, Balasubramaniam Ramesh, Georgia State University, and Sandra Slaughter, Carnegie Mellon University

This research seeks to discover how quality and agility can be achieved in Internet speed software development. The study is being conducted in multiple phases. During phase 1, detailed case studies of Internet software development were conducted with 10 companies. In phase 2, a Discovery Colloquium was held to synthesize knowledge on innovative practices for quality and agility in Internet software development. During phase 3, the objective is to develop a contingency framework that characterizes choice and effectiveness of the practices based upon the insights from the prior two phases and through a second round of interviews with the original companies (still in business) and with selected additional companies from phase 2. This paper reports on findings on the use of agile methodologies that have emerged from phase 2, the Discovery Colloquium, as presented within the larger context of the study.

"Systems Planning and Analysis Research—1970 to 2002: A Comparison of Academic and Practitioner Activities," Susan K. Lippert and Murugan Anandarajan, Drexel University

Systems planning and analysis is an integral part of information systems research, education, and business practice. This study identifies differences between academic and practitioner research during the period 1970 to 2002. The Wetherbe and Vitalari (1994) systems framework classifies the literature within the domains of systems planning and analysis. An expanded version of the Singleton, Straits, and Straits (1993) structure organizes the data based on the inquiry method. A seven dimension classification schema, proposed by the authors, is used to organize the data based on study orientation. The Tapscott and Caston (1993) information age segmentations, pre-1990 and post-1990s, support the existence of two analytical time frames and are used to identify shifts in research focus. Thirteen internationally recognized journals within the IS community—ten academic and three practitioner—provide the data source for this comparative research. Content analysis is used as the primary data coding technique. Correspondence analysis is used to identify themes, patterns, and trends across the classifications structures. Independent rater reliability procedures verified coding classifications. ANOVAs determined significance and direction of research differences. Graphic plots were derived for interpretation of the results. This study contributes to field knowledge by systematically analyzing the differences in research schema for academics and practioners. Research gaps will be highlighted and areas of future investigation will be suggested.

Wednesday, December 19
11:30 a.m.–1:00 p.m.
Session W2.5
Menorca

"An In-Depth Investigation of Communication Mode Choices in Distributed Teams," Mary Beth Watson-Manheim, University of Illinois at Chicago, and France Bélanger, Virginia Polytechnic Institute and State University

Advances in information technologies facilitate new organizational forms and new ways of structuring work, such as the use of distributed teams. In distributed environments, individuals have many choices of communication modes for use with colleagues. Previous research has primarily addressed the need for richness of a medium to "fit" the characteristics of the communication task being performed. There has been little research on when and how different communication technologies are used in the performance of specific communication-based work processes (e.g., information gathering, relationship development). Using an interpretive case study approach, and guided by a hermeneutic perspective, texts from interviews of 40 individuals working in distributed teams in two organizations were analyzed. Analysis was conducted in three stages: (1) key patterns of meanings expressed by each employee, (2) key patterns of meaning that emerge across organizations, and (3) broader conceptual and managerial implications from the analysis. Some initial individual patterns include the relationship between media choice and the specific communication-based work process performed, and the influence of the type of team structure in which the communication-based work process is embedded on the choice. Findings at all stages of analysis will be discussed.

"Interorganizational Systems and Transformation of Interorganizational Relationships: A Relational Perspective," Michael T. K. Tan and K. S. Raman, National University of Singapore

Increasingly, organizations have been investing heavily in information systems to support greater interorganizational coordination and cooperation with key business partners. However, the adoption of such IOSs appears to depend not only on the firm's perspective, but also on the complementary perspective of each of these partners.

Drawing on three IS theoretical perspectives and three views of competitive advantage, this study first develops a *relational perspective* which we posit to have general applicability in several different contexts, including adoption, diffusion and success of dyadic IOS implementations. In this current study, the relational perspective is operationalized in the specific context of dyadic IOS adoption, and its applicability is being demonstrated in two parts via case studies in the context of the BookNet and CoreNet projects in Singapore. The insights gained and lessons learned from the experiences of these case-study companies may hold valuable implications for both IS research and practice.

"Exploring the Critical Success Factors for Customer Relationship Management and Electronic Customer Relationship Management Systems," Hee-Woong Kim, National University of Singapore, Gil-Hyung Lee, Korea Christian University, and Shan-Ling Pan, National University of Singapore

Both customer relationship management (CRM) and electronic customer relationship management (eCRM) systems have unique characteristics that support customer-business interactions and are linked to internal business processes and systems across different areas for operational and analytical purposes. Such characteristics may imply that different critical success factors are required for both to be successfully implemented. This exploratory study identifies the factors and the interrelationships associated with the success of CRM and eCRM, compares the differences between CRM and eCRM, and discusses the reasons of the differences. Since there are only a few cases of CRM or eCRM systems fully implemented across marketing, technology, people, and business processes, an exploratory multiple-case study is conducted. The current status of CRM research and future research direction are discussed.

Panels

Monday, December 16
11:30 a.m.—1:00 p.m.
Session M2.6
Barcelona

Different IS Research Communities: Are They Competitors, Complements, or Ignoring Each Other?

Chair: **Claudia Loebbecke**, University of Cologne
Panelists: **David Feeny**, University of Oxford
Matthias Jarke, Fraunhofer Institute for Applied Information Technology
Ajit Kambil, Accenture Institute for Strategic Change
Peter Weill, Massachusetts Institute of Technology
Rosalie Zobel, DG-Information Society, European Commission

At its core, the debate will focus on the differences in topic choice, project/study acquisition, research strategy, respondents and site access, and expected, measurable outcome including the choice of dissemination channel of different IS research communities. In this context, the panel represents four major IS research communities, the first two stemming more from the academic world and the last four representing the practitioners' side: (1) university professors /academics working in their respective departments; (2) university-bound research centers, in most cases financed by external money either from companies or, rarely, from public sources; (3) non-university related IS/computer science research institutes, mostly financed by a combination of public and private money (e.g., Fraunhofer Gesellschaft, Mitre Corporation, INRIA); (4) consulting companies, using the research reports as a teaser for demonstrating excellence in the field and thus attracting consulting/auditing customers. Further, the European Commission, the largest IS research funding body in Europe, will offer insights regarding the selection criteria and topical priorities with regard to the different research communities from the point of view of the Information Society Technologies R&D program.

Monday, December 16
3:00 p.m.–4:30 p.m.
Session M3.6
Barcelona

Scholarly Products in IS: Will Advance in Electronic Media Promote Evolutionary or Radical Change?

Chair: **Ken Peffers**, Hong Kong University of Science and Technology
Panelists: **David Avison**, ESSEC Business School
Phillip Ein-Dor, Tel-Aviv University
Bob Zmud, University of Oklahoma
Session Manager: **Brian Dos Santos**, University of Louisville
Facilitators: **Hope Koch**, Texas A&M University
Vanessa Liu, City University of Hong Kong

Does the academic IS research community now face revolutionary IT-enabled changes in its products and in the way that they are delivered and consumed, as have producers in so many other industries? IS journals look much the way research journals looked 50 years ago. Will the next 10 or 20 years see dramatic changes in the nature of IS research media, behavior, processes, and outputs? Is the traditional full IS research paper still relevant to its audience or will it be replaced by something more attuned to the needs of IT-enabled readers. Will the top journals continue to produce sufficient value to attract the best research contributions?

Here we will present four very different views of the current and future needs of the IS research community for the communication of new research knowledge.

Phillip Ein-Dor (President, AIS) will argue that electronic communications are destined to replace print journals, but more important will be the radical effects that the new media will have on the nature and process of research publication. New research products might include, for example, journals where reviewers select themselves.

David Avison (Joint Editor, *Information Systems Journal)* will argue that the typical IS researcher is a very conservative scholar, who will look at changes promoted by the new media with some substantial misgivings. Will academic life lose its aesthetically appealing trappings, such as libraries, books, and bookshops, to become a mere office job?

Ken Peffers (Editor-in-Chief, *JITTA*) will argue that the battle between print and electronic research publications is already over; print publications are now a declining legacy media in a strategic regime characterized by low economies of scale, low entry barriers, and a permanent surplus of publication outlets. Research outputs will become extremely varied, including research based on reference disciplines and methodological templates such as art, history, and politics.

Bob Zmud (Current and former editor for numerous journals) will argue that, while traditional journals might be criticized on various grounds, they are critically important for academics. The editorial review process can add significant value by serving as a filter for the vast pool of supposed intellectual contributions, much of which adds very little to understanding and knowledge. Since it takes a long time for a top scholarly journal to be accepted as such by an academic community, it is in the best interests of an academic field to sustain its core of recognized top journals.

Monday, December 16
5:00 p.m.–6:30 p.m.
Session M4.6
Barcelona

ICTs, Globalization, and Local Diversity
Chair: **Geoff Walsham**, University of Cambridge
Panelist: **Michael Barrett**, University of Cambridge
Sirkka Jarvenpaa, University of Texas at Austin
Leiser Silva, University of Houston

The term *globalization* is widely used to describe phenomena such as the increasing interconnectedness of different societies in the world. The importance of ICTs to such globalization processes is well-accepted. However, there is much evidence that the world is not becoming a homogeneous arena for global business and global attitudes. For example, the term *glocalization* has been used to describe ways in which local diversity constrains acceptance to some ideas and technologies rather than others, and adaptation takes place in locally specific ways.

This panel will draw on the substantial research experience of the panelists in examining the role of ICTs in diverse local contexts, but with an overall research agenda concerned also with the broader context provided by globalization. The panel will be of interest to all IS researchers concerned with the role of ICTs in our more globalized world. The following key questions will be used to frame the panel contributions and the subsequent audience debate. What is globalization? What are important aspects of local diversity and why do they matter? What is the role of ICTs in globalization/glocalization phenomena? What are key questions for IS researchers in this arena? What theories can help to address these research questions?

Tuesday, December 17
11:30 a.m.—1:00 p.m.
Session T2.6
Barcelona

Information Systems' Voyage to Self-Discovery: Is the First Stage the Development of a Theory?
Chair: **Elena Karahanna**, University of Georgia
Panelists: **Gordon B. Davis**, University of Minnesota
Tridas Mukhopadhyay, Carnegie Mellon University
Bob O'Keefe, Surrey University
Ron Weber, University of Queensland
Facilitator: **Richard T. Watson**, University of Georgia

Some academicians believe that Information Systems is not really an academic discipline because there is no core IS theory. Why are we without a uniquely IS theory that defines our field? How do we as an academic community develop such a theory? Are we meant only to study existing theory in technological contexts, or are we moving toward a new identity and unity centered around a unique contribution? What is the mutually agreed-upon set of core constructs and relationships that defines the IS field and forms the foundations of IS research? Our understanding of this core can help integrate and unify IS research and give direction to our research by making explicit the shared beliefs and assumptions that are unique to IS. The panel debates and explores the need for developing a theory of Information Systems that defines these core concepts and relationships and helps define IS as a discipline. Representing different points of view and perspectives, the panelists will address the need or lack thereof of such a theory-development endeavor, debate balancing benefits derived from a such a unified view of the field with the advantages of theoretical pluralism, address pros and cons of such an approach, discuss potential alternatives, and attempt to identify a set of mutually agreed upon structures that define the field.

Tuesday, December 17
3:00 p.m.—4:30 p.m.
Session T3.6
Barcelona

Taking the IT Artifact Seriously in IS Research: Theory Development from Multiple Perspectives

Chair: **Richard J. Boland Jr.**, Case Wester Reserve University
Panelists: **Mary Culnan**, Bentley College
Vijay Gurbaxani, University of California, Irvine
Helmut Krcmar, Technical University Munich
Daniel Robey, Georgia State University
Respondents: **C. Suzanne Iacono**, National Science Foundation
Wanda J. Orlikowski, Massachusetts Institute of Technology

In June 2001, *Information Systems Research* published a research commentary by Orlikowski and Iacono entitled, "Desperately Seeking the 'IT' in IT Research—A Call to Theorizing the IT Artifact." The purpose of this panel is to push forward the premises and views articulated in that paper by engaging the IS research community in constructive discussion about how to develop and use new conceptualizations of the IT artifact in our research. This is not a panel intended to challenge or defend the arguments raised in the paper, but rather to take its charge seriously, and to begin the process of theorizing the IT artifact in ways that may benefit the IS research community.

This panel invites four scholars to each propose ways of reconceptualizing the IT artifact from different perspectives. The panelists represent a broad range of theoretical perspectives on the IT artifact, as identified in the *Information Systems Research* paper—information processing, economics, computer science, and social studies of technology. While panelists are encouraged to go as far as they like to develop their ideas, they are expected to start from the same premises laid out in the paper, and to discuss the relevance and practicality of their proposed reconceptualizations for their own research and that of similar others.

Tuesday, December 17
5:00 p.m.—6:30 p.m.
Session T4.6
Barcelona

Ubiquitous Computing: New and Old Research Opportunities and Challenges

Chair: **Youngjin Yoo**, Case Western Reserve University
Panelists: **Abraham Bernstein**, New York University/University of Zurich
Andrew Fano, Accenture Technology Laboratory
Jeffrey Kim, University of Washington
Joseph S. Valacich, Washington State University

Rapid developments in mobile computing along with the continuing miniaturization of computing devices enables a ubiquitous computing environment that integrates mobile computing devices with traditional desktop computing, media services, and various sensors embedded in the environments. While the emergence of ubiquitous computing as the next wave of organizational computing offers new possibilities and opportunities for organizations to improve their productivity and effectiveness, it also creates a set of *technical, organizational, and behavioral* challenges. At the same time, the adoption and diffusion of ubiquitous computing will require us to revisit many fundamental assumptions underpinning IS research. Questioning these traditional assumptions will lead to new and novel problem formulations and will considerably extend our methodological and theoretical discourses. At the same time, IS researchers may have to return to the many old and established topics that seemed to be *passé* and reanalyze them in light of radical improvements in the computing capability. In this session, the panel of researchers from industry and academia will address the following questions:

1. What are the new technical and managerial challenges that ubiquitous computing brings to IS management in organizations?
2. What are the new challenges that ubiquitous computing brings to IS research?
3. What are the old IS issues and challenges that researchers need to revisit in light of ubiquitous computing?

Wednesday, December 18
9:30 a.m.—11:00 a.m.
Session W1.6
Barcelona

Information Privacy in a Globally Networked Society: Implications for IS Research

Chair: **Robert Davison**, City University of Hong Kong
Panelists: **Roger Clarke**, Xamax Consultancy Pty. Ltd.
Bob Kuo, National Sun Yat Sen University
Duncan Langford, University of Kent at Canterbury
H. Jeff Smith, Wake Forest University

The recent popularity of the World Wide Web has heightened the awareness of and concern for the privacy of personal information. A key issue arises from the extreme ease with which personal data, once stored electronically, can be transferred in digital format anywhere in the globally networked society in which we live.

While legislative protections have been enacted in many developed economies, these have come under fire from some economists and technology proponents, who argue that traditional notions of privacy are both outdated and obstructive to growth in the burgeoning new economy.

This panel will address the following question:

> **In what ways do information privacy matters challenge IS researchers as they go about their normal business?**

The panelists will take culturally diverse and contentious perspectives on this important matter, seeking to identify key concerns for all IS researchers. The audience should expect to be both stimulated and challenged by these views, and is invited to engage the panelists in debate. We anticipate a lively and provocative session.

Wednesday, December 18
11:30 a.m.—1:00 p.m.
Session W2.6
Barcelona

IS Success Meaurement: Guidelines for Future Research
Chair: **Eph McLean**, Georgia State University
Panelists: **Peter Seddon**, The University of Melbourne
Reza Torkzadeh, University of Nevada
Leslie Willcocks, Warwick Univesrity

In 1980, Peter Keen asks for clarification of "the dependent variable." In 1992, DeLone and McLean provide a much-cited integrative survey of the literature that contains a scheme for classifying the multitude of IS success measures that have been used in the literature in the 1980s into six categories. It also suggests a model of "temporal and causal" interdependencies between those categories.

In 2002, this panel asks
1. What is IS success?
2. What is the best of current thinking about how IS success should be measured?
3. What are the implications for the future? Where should future research efforts most profitably be directed?

Peter Seddon's perspective in discussing seven guidelines for IS success measurement is a *multi-stakeholder view*. Reza Torkzadeh uses an *individual-as-stakeholder* view as he questions our success at measuring the success of information technology. Finally, Leslie Willcocks adopts an *organizational* view of IS success in discussing five IS evaluation paradoxes.

Map of Facility, Hotel Princesa Sofia

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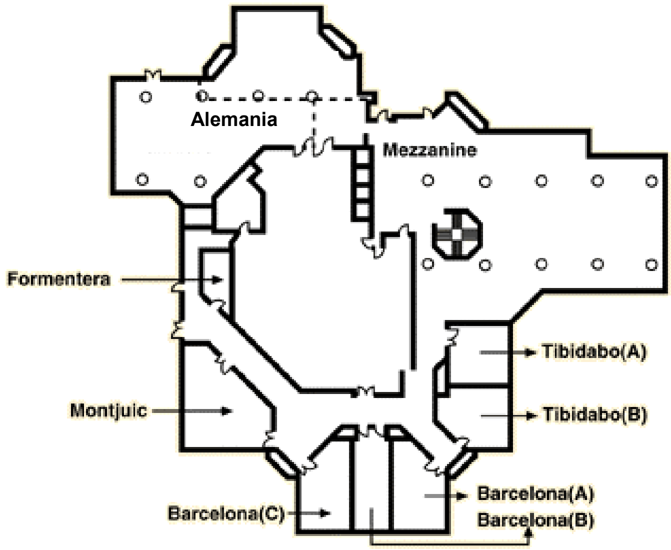

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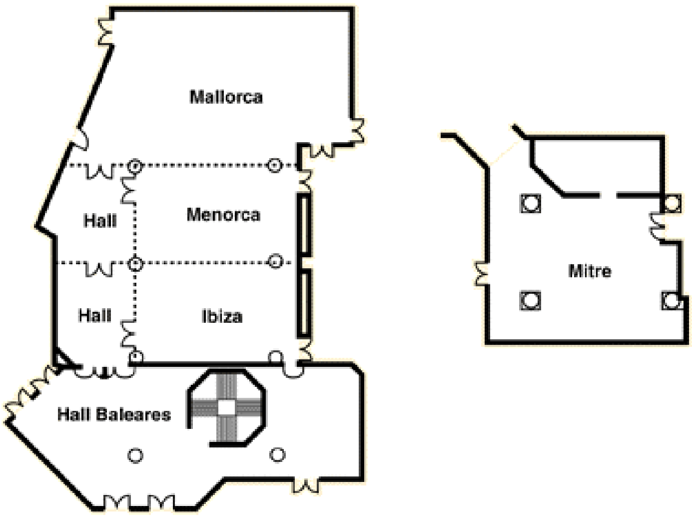

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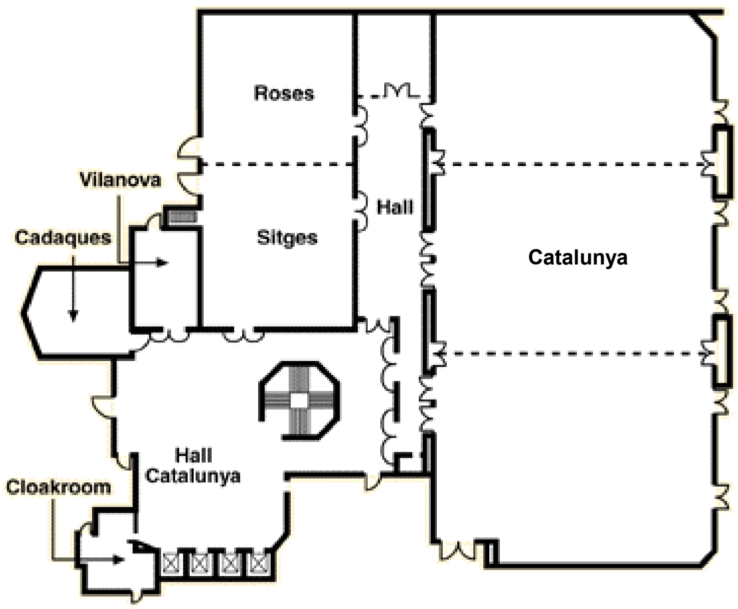

ICIS 2002: Program at a Glance

Monday, December 16, 2002

Time Slot	Session 1 Sitges	Session 2 Ibiza	Session 3 Tibidabo	Session 4 Montjuich	Session 5 Menorca	Session 6 Barcelona
9:30 a.m. – 11:00 a.m. M1.1	**Keynote:** Manuel Castells, Senior Professor, Universitat Oberta de Catalunya **Catalunya**					
11:30 a.m. – 1:00 p.m. M2	**Completed Research:** Valuing Information Privacy	**Co mpleted Research:** IT Infrasturcture & Business Effectiveness	**Completed Research:** Empirical Research in Information Economics	**Completed Research:** Challenges in IS Project Management	**Research in Progress:** Building and Trans-forming Trust: The Role of Interactivity	**Panel:** Different IS Research Communities: Are They Competitors, Complements, or Ignoring Each Other?
1:00 p.m. – 3:00 p.m.	**Lunch — Catalunya**					
3:00 p.m. – 4:30 p.m. M3	**Completed Research:** Empirical Evaluation of Conceptual Modeling Methods	**Completed Research:** Regulation and Reputation in Online Auctions	**Completed Research:** Adoption of Web-Based Services	**Completed Research:** Economic Analysis of Products, Software, and Networking Technology	**Research in Progress:** Social Issues: Privacy, Terrorism, and Voting	**Panel:** Scholarly Pro-ducts in IS: Will Advances in Electronic Media Promote Evolu-tionary or Radical Change
5:00 p.m. – 6:30 p.m. M4	**Completed Research:** Leveraging Distributed Knowledge	**Completed Research:** Spinning the Semantic Web	**Completed Research:** Modeling Information and Software Services	**Completed Research:** Theorizing About IT Impacts	**Research in Progress:** Supply Chain and ERP Research	**Panel:** ICTs, Globali-zation, and Local Diversity

Tuesday, December 17, 2002

Time Slot	Session 1 Sitges	Session 2 Ibiza	Session 3 Tibidabo	Session 4 Montjuich	Session 5 Menorca	Session 6 Barcelona
9:30 a.m. – 11:00 a.m. T1.1	**Keynote:** John L. Hilley, Chairman and Chief Executive Officer, NASDAQ **Catalunya**					
11:30 a.m. – 1:00 p.m. T2	**Completed Research:** Innovations in Information Systems Development	**Completed Research:** Being, Time, and Agency in Information Systems	**Completed Research:** Pricing in Electronic Commerce I	**Completed Research:** Cross-Country Studies of E-Commerce Diffusion	**Research in Progress:** Theoretical and Methodological Approaches to IT Infrastructure Research	**Panel:** Information Systems' Voyage to Self-Discovery: Is the First Stage the Develop-ment of a Theory?
1:00 p.m. – 3:00 p.m.	**Lunch — Catalunya**					
3:00 p.m. – 4:30 p.m. T3	**Completed Research:** Understanding the Issues Associated with Open Source Software	**Completed Research:** Theories of Information Systems	**Completed Research:** Models for Marketing and Delivering Mobile Applications and Services	**Completed Research:** Conflict and Coordination in Distributed Work Teams	**Research in Progress:** Alternative Approaches to the Study of Electronic Markets	**Panel:** Taking the IT Artifact Seriously in IS Research: Theory Development from Multiple Perspectives
5:00 p.m. – 6:30 p.m. T4	**Completed Research:** Adoption Challenges in E-Commerce	**Completed Research:** Investments in Information Technology	**Completed Research:** Pricing in Electronic Commerce II	**Completed Research:** Ethnographic Studies of Virtual Relationships	**Research in Progress:** Cognitive Perspectives of User Behavior	**Panel:** Ubiquitous Computing: New and Old Research Oppor-tunities and Challenges

Wednesday, December 18, 2002

Time Slot	Session 1 Sitges	Session 2 Ibiza	Session 3 Tibidabo	Session 4 Montjuich	Session 5 Menorca	Session 6 Barcelona
9:30 a.m. – 11:00 a.m. W1	**Completed Research:** Sustainable Economic Development and IT	**Completed Research:** Empirical Studies on Managing Knowledge Boundaries	**Completed Research:** Managing Information Technology Services	**Research in Progress:** Emerging Issues in IS Policy Research	**Research in Progress:** Business Models and Strategy in the Digital Economy	**Panel:** Information Privacy in a Globally Networked Society: Implications for IS Research
11:30 a.m. – 1:00 p.m. W2	**Completed Research:** The Economic Value of Knowledge Creation and IT Outsourcing	**Completed Research:** Understanding Users and Consumers	**Completed Research:** Studies of End-User Effectiveness	**Research in Progress:** Software Development in Context	**Research in Progress:** Relationships in Distributed Environments	**Panel:** IS Success Measurement: Guidelines for Future Research