AIS Newsletter

Volume 29, Fall 2006

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A Letter from the President – Scott Summers

Hello Information Systems Section,

It is my pleasure to serve you this academic year. I follow in the footsteps of many great individuals, whom I thank for their dedication and foresight. The Information Systems section is a wonderful community of friends and scholars.

I found myself sitting on a bench in Rome observing the Coliseum and Roman Forum a couple of weeks ago. A tour guide was explaining the functions and purposes of both areas in Roman civilization. According to the tour guide, the Coliseum was a place of recreation. It was used for many hours each day almost everyday for centuries. Beyond the gladiator fights (most of which were not to the death), the Coliseum was used for many sporting events. Often there were hunting challenges using the exotic species that were encountered by the expansion of the Roman Empire. They even had boating events in which they filled the floor area with water in order to accommodate small vessels that could engage in combat. The boating events didn't hold much interest for the Romans so after a short while

they did away with such and rebuilt the arena floor to enhance the other events. They excavated under the floor to create holding cells for slave combatants and animals. They then created an elevator system that allowed the insertion of animals or combatants through trap doors in the floor of the arena.

The Coliseum provided decades if not centuries of entertainment. The games in the Coliseum were instrumental in keeping the civilians of the day entertained. You see, a Roman citizen was limited to one day of work a week. The ruling government feared that all of these idle citizens would cause difficulty if they were not engaged in something. The guide noted that slaves accomplished the work that needed to be done.

Just across the way was the Forum. In contrast to the Coliseum, the Forum was the business section of the city and empire. Here one could conduct all of the business that was needed, from buying and selling food, textiles, wares or slaves to obtaining permits from the local government. Streets were laid out in a grid pattern to make efficient use of the space. Interestingly, the government dictated that a grid-pattern forum area be incorporated into each new Roman outpost as the empire expanded so that a Roman citizen would be comfortable with the business district wherever they went.

As I took in the wonder of the ancient sites, I thought of the IS section. I thought of the gladiatorial action that often accompanies the review processes of our research endeavors. I thought of how those processes would change if we moved them out of the Coliseum and into the Forum. I pondered on this for some time. How much of our academic careers are spent in the Coliseum verses the Forum areas of our professional endeavors?

This thought lead to other thoughts about the business district of the IS section. So many services are offered through the IS section which enable and empower us as we do our research, teaching and service. I thought of the many individuals offering services in our Forum district; from the newsletter editors, journal editors, reviewers, committee chairs and committee members. I wondered what the shops might look like in our Forum area. I am sure we would have shops and groupings of shops supporting the three areas of faculty endeavor. Among those clusters, we would have shops representing the *Journal of Information Systems*, the C3 projects, this newsletter and the newsletters that have gone before, the midyear meetings and doctoral consortium. We would have a governance center as well and perhaps embassies to the other areas of accounting and to the profession.

This vision stayed with me for some time. In sharing it with you, I hope that you will be encouraged to move from the Coliseum where most are just spectators to the Forum where we are active participants. I hope that you will engage the activities of the Forum from both sides of the table. I hope that you will be both offering and receiving services. I also hope that you will reach out to the visitors of our Forum area. Be inviting and encouraging to them as they shop among our stores. Embrace them.

Now, before this thought goes too far, I want to note that we will not be wearing togas at the midyear meeting in Savannah. Nonetheless, the meetings in

Savannah next month will be enlightening and beneficial to all that attend. If you haven't made your reservations yet, I hope you will do so soon.

I encourage each of you to be involved with the section. Particularly, I ask you to keep track of ideas where the section might provide benefit to you as you accomplish your research, teaching and service. As you note these intersections, I encourage you to send an email to a section officer so that we may act upon these opportunities.

Again, I thank you for the opportunity to serve.

Scott Summers

AAA IS Section Mid-Year Meeting Update – Mary Curtis

It's Not Too Late to Come to Savannah!!

AAA-IS Section Midyear Conference will be in Savannah, Georgia from January 3-6, 2007 at the Hilton Savannah DeSoto. The program this year contains an exciting blend of research, education and practitioner updates. The conference opens on Thursday afternoon with a new Early Bird session on IT audit, and closes Saturday afternoon at 3:00 after a session on forensics. Also new this year is an invitation to all members to submit works-in-progress to the JIS Research Workshop (previously open only to the new scholars), to be held on Friday morning. There will also be Best Paper Awards for both the best academic paper and the best education paper. So, come early and stay late!

There will be three **special sessions** open to all attendees this year, in addition to the education paper sessions: Thursday afternoon, January 4th, beginning at 3:00, there will be an update on practice, education and research for IS audit; Friday, at lunch, we will hear from Caleb Sima, on web application security; and Saturday afternoon, January 6th, immediately after lunch, Conan Albrect will talk on fraud examination and digital forensics. We are also happy to welcome AAA President-elect, Gary Previts, as our plenary session speaker. Finally, an education session on Friday afternoon will address the use of ERP software in the classroom with presentations by three accounting faculty, who have successfully integrated ERP into their systems courses.

Another change this year is the opening of the **JIS Research Development Workshop** to all members. Scheduled for Friday morning, January 5th, workshop participants can discuss drafts of their working papers or research ideas with members of the JIS Editorial Advisory and Review Board and with other workshop participants. Submissions should be made, via email, to Margarita Lenk (margarita.lenk@colostate.edu) no later than **November 1**, 2006. Papers submitted for conference consideration should not also be submitted to the Workshop.

Doctoral students and new AIS professors are invited to attend the 5th annual **AIS New Scholar Consortium**. It will kick off with a reception on Wednesday evening, January 3rd and end just before the Early Bird session on Thursday afternoon. Consortium attendees will see presentations on teaching cases, participate in

research topic brainstorming sessions and hear from the leaders in our field regarding current AIS topics. For doctoral students who are members of the IS section, the registration fee is a mere $10 for the entire conference.

As in prior years, the **Semantic Modeling of Accounting Phenomena (SMAP)** CPE Session will be offered as a continuing professional education (CPE) session on Thursday, January 4th from 8:30 am – 5:00 pm. The workshop will be led by Bill McCarthy and Julie Smith David. SMAP is designed for those interested in enhancing their REA expertise. Participants in prior years have included faculty with limited experience in REA to faculty who are active in researching advanced REA issues. Anyone interested in REA is encouraged to attend. SMAP submission should be made via email to Julie Smith David (julie.smith.david@asu.edu) by **December 1**, 2006. Additionally, the **AI/ET Section** of the AAA will join the IS section in this meeting.

Visit the AAA website (http://aaahq.org/infosys/conferences/midyear2007.htm) for more details on the conference, as well as information on Savannah and the hotel, and for registration. The price for early registration is $225 for members, $250 for non-members, $10 for doctoral students who attend the New Scholar's Consortium, and SMAP is an extra $120. There is an additional late-registration fee of $25 after Dec. 5.

AIS Dissertation Abstracts – Elaine Mauldin

Since 1997, the AAA-IS Section has distributed AIS dissertation abstracts, currently through its website. The 2006 Dissertation Abstracts have recently been posted on the web site for dissertations completed in 2005. Please visit our website to review these abstracts. We rely on members of the section to identify recently completed dissertations. If you or someone you know has an AIS dissertation completed in 2005 that was missed please contact Elaine Mauldin (maudlin@missouri.edu) with the person's name and current academic affiliation (an email address would be welcomed) so we can include it next year. AIS dissertations include topics such as the organization and management of AIS, database systems, expert systems, ERP systems, computer auditing and assurance, behavioral implications of AIS, E-commerce, the effect of system tools on decision-making, and many others.

Congratulations!

Roger Debreceny (U Hawai`i) has been appointed as the Chair of the CobiT Steering Committee of the IT Governance Institute (www.itgi.org). The Committee is responsible for the production of CobiT and all its ancillary materials, supporting products including CobiT Online and educational courses. Version 4.1 of CobiT will be published later in the year, along with the *Control Practices* that support CobiT, the *IT Governance Implementation Guide* (2nd Edition) and the *Assurance Guide using CobiT.*

Scott Summers (BYU) has been appointed as the Chair of the Academic Relations committee of ISACA (www.isaca.org) and Ed O'Donnell (U Kansas) has been appointed as a member of the committee. The committee is charged with developing strategies for linking ISACA to the academic community, building

educational materials including the CobiT in Academia materials and model curricula. A revised version of CobiT in Academia will follow shortly after publication of CobiT 4.1 (www.isaca.org/cobitinacademia)

ISACA Resources

Hello academic colleagues,

Do you need some help in surfing the "IT controls" wave? The remainder of this communication should be of help to you. The Academic Relations committee of ISACA, I would like to invite you to examine a few items that may assist you in your courses and curriculum.

COBIT is the premier framework for IT governance. It covers the broad spectrum of planning, creating, managing and monitoring the IT infrastructure, information and assets of the organization. Thus whether you teach IT audit, systems analysis, data communication, system security, IT management or risk management, this standard will fit into your curriculum. The standard is available for you to download at www.isaca.org/cobit .

ISACA has created a number of materials that can help you incorporate COBIT into your classroom. Collectively these materials are called COBIT in Academia (CiA). Included in this set of materials are a COBIT student book, teaching slide decks, cases and caselets. The cases provide an experience to the students allowing them to integrate their knowledge of systems, accounting, and IT governance. The mini cases provide excellent in-class thought activities and discussions. Pick through the materials and use what you like. The material is available after completing a questionnaire at www.isaca.org/cobitinacademia .

Want to check your curriculum against the model curriculum for IS Audit and Control? We can help you here. Give your students a competitive edge by certifying your curriculum with ISACA. ISACA's model curriculum is available for download at www.isaca.org/modelcurricula .

Would you like greater access ISACA's vast library of professional publications? The publications can really keep you up to speed. Become an Academic Advocate. As a member you will receive an ISACA membership, which will allow you to read all of the membership's reports and commentary. Information and an application are posted at www.isaca.org/academicadvocate .

I believe that you and your students will benefit from the information resources that ISACA generously shares with the academic community. I look forward to sharing more of those resources in future communications.

Best wishes,

Academic Relations Committee ISACA

New Website Devoted to Research Issues in Cybersecurity Risk Management

Larry Gordon, at the University of Maryland's Smith School of Business, developed a website devoted to research issues related to "Cybersecurity Risk Management." Anyone interested in this topic can find the website at: http://www.rhsmith.umd.edu/faculty/lgordon/cybersecurity/Cybersecurity%20Risk%20Management.htm

Call for Submissions: Conferences

- **The Tenth European Conference on Accounting Information Systems**
  Date: April 24, 2007
  Location: Lisbon, Portugal
  Website: http://www.ecais.org

  The tenth European Conference on Accounting Information Systems will take place in Lisbon, Portugal on April 24th, 2007, immediately preceding the 20th Annual Congress of the European Accounting Association.

  The objective of ECAIS is to bring together researchers from all disciplines related to *Accounting Information Systems (AIS)*. Topics of interest include, but are not limited to: business patterns, internal control developments, strategic information systems, cultural influences on AIS, performance evaluation, decision aids, business process reengineering, audit and assurance regarding AIS, enterprise resource planning, knowledge management, and educational studies.

  The ECAIS2007 program will consist of a keynote speech, a research forum (paper table top) and paper presentations. We encourage doctoral students to submit a paper.

  Instructions for submitting papers:
  To submit an original research paper, e-mail your complete manuscript (not to exceed 25 double-spaced pages of text including references, figures, tables, etc.) to Bernadette Ruf, Chair Scientific Committee: bruf@comcast.net Please note that only full papers will be considered for paper sessions.

  Scientific committee: Bernadette Ruf (chair – Delaware State University), Vicky Arnold (University of Central Florida), Barbro Back (Abo Akademi University), Laury Bollen (Universiteit Maastricht), Marc Despontin (Free University Brussels), Rick Dull (Clemson University), Cheryl Dunn (Florida State University), Guido Geerts (University of Delaware), Frank Hartmann (Rotterdam School of Management), Dan O'Leary (University of Southern California), Stewart Leech (University of Melbourne), Andy Lymer (University of Birmingham), Steven Maijoor (Universiteit Maastricht, AFM), Uday Murthy (University of South Florida), Phil Reckers (Arizona State University), Hanno Roberts (Norwegian School of Management), Steve Rockwell (University of Tulsa), Alan Sangster (Robert Gordon University), Julie Smith (Arizona State University), Paul Steinbart (Arizona State University), Steve Sutton (University of Central Florida), Barbara Waddington (University of Michigan at Flint).

Organizing committee: Jim Hunton (co-chair – Bentley College/Universiteit Maastricht), Eddy Vaassen (co-chair – Universiteit Maastricht/Universiteit van Amsterdam), Caren Schelleman (Universiteit Maastricht), Miriam Scheepers (secretary, Universiteit Maastricht): maj.scheepers@aim.unimaas.nl

ECAIS is organized by the Maastricht Accounting, Auditing and Information Management Research Center (Universiteit Maastricht), and Bentley College (Boston, MA)

Key dates: Deadline for submission of papers: **January 15th, 2007**
            Notification of acceptance of papers: **March 1st, 2007**

Please visit our website for further information and for registration: http://www.ecais.org

The Official Journal of ECAIS **- *International Journal of Accounting Information Systems.***
Accepted papers will be considered for publication in *IJAIS*

- **The 13th Annual International Symposium on Audit Research (ISAR 2007)**
  Date: June 22-23, 2007
  Place: Shanghai, China
  Website: www.isarhq.org

  The 13th Annual International Symposium on Audit Research (ISAR 2007) will be hosted by the Shanghai Jiao Tong University [SJTU] on 22 and 23 June, 2007. ISAR 2007 will be jointly organized by the University of Southern California, Universiteit Maastricht, Nanyang Technological University, the University of New South Wales and Shanghai Jiao Tong University. The symposium will be held in Shanghai, PRC.

  Scope of Topics
  The scope of ISAR is intended to be broad and includes research papers and panels that deal with various aspects of auditing, attestation and assurance. Papers that utilize any of a broad range of research methodologies will be considered.

  Submission of Research Papers
  Papers may be submitted in either English or Chinese. However, Chinese language papers must include an English language abstract which describes the paper's research objective[s]; research questions; research methodology; data sources (if applicable) and key research findings.

  To be eligible for presentation, manuscripts must follow the style guidelines of *Auditing: A Journal of Practice & Theory.* Be sure to include in your paper the author(s) affiliation(s), the contact author's email address, an abstract and keywords. Accepted papers or abstracts will be published in the Symposium proceedings which will be distributed only to participants. Thus they may be submitted to any appropriate journal for formal publication.

Paper Submission Deadline and Requirements
Papers should be submitted electronically in Adobe Acrobat or Word formats. Papers and, where appropriate, related research instruments must be received by **27 January 2007** and should be sent to: papers@isarhq.org.

Further Information
If you have questions about paper submission or early registration for the Symposium, please email to admin@isarhq.org.
Additional information is posted at www.isarhq.org.

- **The Ninth Annual AIS Educator Conference**
  Date: June 29, 2007
  Place: Estes Park, CO
  Website: http://www.aiseducators.com/

  The Ninth Annual AIS Educator Conference is scheduled for June 29-July 2 in Estes Park, Colorado. Hands-on training sessions by invited scholars are scheduled on Friday and Saturday, June 29 and 30. Conference sessions will be held Sunday and Monday, July 1 and 2. Submissions of papers, extended abstracts, or panel discussion proposals for the conference are welcome and are due by April 1, 2007. For details, visit http://www.aiseducators.com/

  This year we are pleased to invite submissions to the Jack Stewart Student Project Competition, in which faculty submit outstanding AIS student projects. For details contact Mark Lehman mlehman@cobilan.msstate.edu. We also strongly encourage and invite AIS research submissions from graduate students. Our AIS graduate student research competition awards $1000 for the best student research paper. Contact Mary Hill mhill@kennesaw.edu for details.

  Papers, extended abstracts, or panel discussion proposals related to AIS teaching or research are all invited. In AIS teaching, areas include, but are not limited to, innovative assignments, cases, or projects about emerging IT concepts and/or tools in AIS. In AIS research, areas include, but are not limited to, classroom research, curriculum development, innovative course designs and delivery methods, and theoretical modeling in AIS.

  From the conference review process, a committee will select full papers for publication in the *AIS Educator Journal*. You should indicate whether you would like your paper to be considered for publication in the email message of your submission. Such papers should follow these style guidelines. The Managing Editor is Arline Savage: email: savage@calpoly.edu; Associate Editor is Stacy Kovar: email: skovar@ksu.edu.

  Papers, extended abstracts, or panel discussion proposals should be submitted via electronic format as an email attachment. Submissions must be in Word format. Please send your material to Mary Hill at mhill@kennesaw.edu

  Papers, extended abstracts, or panel discussion proposals should include the following items in the email message: the title, type of submission (full paper, abstract, or panel discussion), name(s) of the author(s), school affiliation(s), whether you would like the paper to be considered for publication in the **AIS**

Educator Journal, primary contact person's name and address, telephone number, and email address. The body of the proposal (i.e., the attachment) should not include the authors' names.

If you wish to be a reviewer and/or session chair, please email your request to Mary Hill at mhill@kennesaw.edu

Registration for the conference is required to be a presenter, session chair or discussant.

- **12th Annual Ethics Research Symposium**
  Date: August 4-5, 2007
  Place: Chicago, IL

The Professionalism and Ethics Committee of the American Accounting Association invites submission of papers for presentation at the 12th Annual Ethics Research Symposium to be held August 4-5, 2007 in Chicago, IL. This Symposium will focus on ethics research and teaching within the field of accounting.

Highly publicized business and accounting scandals have prompted an increased interest in the ethical aspects of accounting practice. Accounting ethics research and education are seen to be important because one of the principal purposes of accounting is to foster the creation of credible and reliable information for purposes of decision-making throughout society. Honesty, integrity and objectivity are among the most important qualities of ethical accounting practice.

It has been 16 years since the Professionalism and Ethics Committee of the AAA offered its first seminar on teaching ethics in accounting curricula. The 12th Annual Ethics Research Symposium encourages thoughtful papers in a number of different areas of accounting ethics scholarship. Sample topics may include, but are not limited to, the following:

- Philosophical foundations of accounting and accounting ethics
- Theological foundations of ethical accounting practice
- Historical perspectives on the development accounting ethics
- The application of sociology, psychology and/or political theory to ethical issues in accounting
- Accountancy as an ethical profession
- Accounting ethics compared with professional ethics
- Critical studies of ethical lapses in business or accounting practice
- The ethical role of accounting in social and environmental reporting

The Symposium will take place as a Continuing Professional Education seminar immediately preceding the 2007 American Accounting Association Annual Meeting in Chicago.

Authors wishing to have papers considered for presentation at the Ethics Symposium should send their papers as an e-mail attachment (please identify all authors, their positions, and affiliations in a cover page, but not in the body of the

paper). A $20 non-refundable fee is required with each submission. Fees are waived for doctoral students. Please make all checks payable to the American Accounting Association. **Papers should be sent by e-mail and checks should be sent to the following address no later than April 1, 2007:**

C. Richard Baker, Ph.D., CPA
Professor of Accounting
School of Business
Adelphi University
1 South Avenue
Garden City, New York 11530
Telephone: (516) 877-4628
Email: Baker3@Adelphi.edu

Currently, the following journals are associated with the 12th Annual Ethics Symposium:

- Accounting and the Public Interest
- Global Perspectives on Accounting Education
- Research on Professional Responsibility and Ethics in Accounting

More journals may be added at a later date. Those presenting a paper at the Symposium may choose one these journals for submission of their paper. Authors who choose to designate a journal should contact that journal's editor to determine submission policies, including the timing of formal submission of the paper.

- **University of Waterloo Symposium on Information Systems Assurance:
  Information Integrity and Business Systems**
  Date: October 2007
  Place: Toronto, Canada
  Website: http://watarts.uwaterloo.ca/ACCT/uwcisa

The Center for Information Systems Assurance at the Waterloo (UWCISA) is pleased to announce a symposium to be held October 2007 in Toronto, Canada. The Symposium is sponsored by the Canadian Institute of Chartered Accountants, the Information Systems Audit and Control Association, CaseWare IDEA Inc. and the International Journal of Accounting Information Systems (IJAIS). Accepted papers will be published together with discussant's comments subject to editorial review and approval.

Papers are invited from academe and practice. Although we are particularly interested in works in the theme area, papers on other assurance issues will be considered as well. All research methods are welcome. Papers addressing education issues are also welcome.

CASE COMPETITION: A case competition will be held in conjunction with this symposium. Up to $5,000 in prizes will be awarded.

Information about previous Symposia and the Center may be obtained from the UWCISA website: http://watarts.uwaterloo.ca/ACCT/uwcisa.

Submissions Due June 1, 2007

Submitted papers should be at an advanced stage of completion. Papers will be subject to blind review by academics and practitioners. Authors must adhere to the editorial style of IJAIS. Please send an electronic copy of the paper and a submission fee of $50.00 (US) payable to the University of Waterloo to:

> Professor J. Efrim Boritz, Director
> Center for Information Systems Assurance
> School of Accountancy, University of Waterloo
> Waterloo, Ontario Canada N2L 3G1
> Tel (519) 888-4567 ext. 5774   Fax (519) 888-7562
> Email: jeboritz@uwaterloo.ca

Notice of acceptance or rejection will be sent out by July 15, 2007. Papers accepted subject to revision must be revised by August 30, 2007.

In the Literature - Ronny Daigle (new school and email: Sam Houston State University, daigle@shsu.edu)

Greetings! I hope all is well for everyone this semester. Consistent with past columns, I focus on the IS literature since most are aware of the current accounting literature. Also consistent with prior columns, article abstracts are provided with some possible minor editing for shortening or elaboration.

I enjoyed looking at many articles published since the last newsletter, and list and categorize a number of them below within certain topic areas. I found quite a number of articles on the topics of research, as well as privacy, security and internal control. I also noted below special issues of certain IS journals that are dedicated to a particular topic area.

One specific item that caught my attention while compiling this list is the following message at the website for the ***Journal of the Association for Information Systems*** (http://jais.isworld.org/contents.asp):

> To promote readership of the Journal, the Editors of JAIS have secured permission from the AIS Council to open the journal's articles to all interested readers. To access any article, please enter "readjais" into the UserID and Password boxes.

Membership is typically needed for accessing JAIS articles online, so I thought it would be of interest to IS section members that access is currently free for articles extending back to volume 1, which was published in 2000.

If an article peeks your interest and you cannot find it, please email me and I will try to get a copy for you.

Research on Research

What Does it Take for a Journal to Be Global? by Saunders, Carol in **MIS Quarterly**, September 2006, Vol. 30, Issue 3, p 1-4.

The article presents the editor's comments on what it means to be a truly global journal. The articles submitted to the journal in 2005 came from authors in 36 different countries, and in 2006 so far authors are from Australia, China, France, Germany, Hong Kong, Great Britain and the United States. A global journal offers a global product, that is, articles that are of interest to the global community such as Information Systems in developing countries, standard making and off-shoring. The journal also has an international review process with one third of senior editors in countries other than the U.S. Papers are often reviewed by a multinational review team from a global perspective. Finally, the quarterly is a target for scholars around the world for their research to be published.

Academic Data Collection in Electronic Environments: Defining Acceptable Use of Internet Resources by Allen, Gove N., Burk, Dan L. and Davis, Gordon B. in **MIS Quarterly**, September 2006, Vol. 30, Issue 3, p 599-610.

Academic researchers access commercial web sites to collect research data. This research practice is likely to increase. Is this appropriate? Is this legal? Such commercial web sites are maintained to achieve business objectives; research access uses site resources for other purposes. Web site administrators may, therefore, deem academic data collection inappropriate. Is there a process to make research access more open and acceptable to web site owners and administrators? These are significant issues. This article clarifies the problems and suggests possible approaches to handle the issues with sensitivity and openness.

The Nature of Theory in Information Systems by Gregor, Shirley in **MIS Quarterly**, September 2006, Vol. 30, Issue 3, p 611-642.

The aim of this research essay is to examine the structural nature of theory in Information Systems. Despite the importance of theory, questions relating to its form and structure are neglected in comparison with questions relating to epistemology. The essay addresses issues of causality, explanation, prediction, and generalization that underlie an understanding of theory. A taxonomy is proposed that classifies information systems theories with respect to the manner in which four central goals are addressed: analysis, explanation, prediction, and prescription. Five interrelated types of theory are distinguished: (1) theory for analyzing, (2) theory for explaining, (3) theory for predicting, (4) theory for explaining and predicting, and (5) theory for design and action. Examples illustrate the nature of each theory type. The applicability of the taxonomy is demonstrated by classifying a sample of journal articles. The paper contributes by showing that multiple views of theory exist and by exposing the assumptions underlying different view points. In addition, it is suggested that the type of theory under development can influence the choice of an epistemological approach. Support is given for the legitimacy and value of each theory type. The building of integrated bodies of theory that encompass all theory types is advocated.

Is Information Systems a Reference Discipline? By Pairin Katerattanakul, Bernard Han, and Alan Rea in **Communications of the ACM**, Volume 49, Issue 5 (May 2006), p 114 – 118.

> An analysis of information systems (IS) as an applied discipline is presented. The author reviews how IS has been conceived as growing from other foundational fields, such as computer science, management science, and organization science. A description and analysis of the six major IS journals is presented. According to the author, the article presents the results of research using citation analysis to examine how frequently articles published in IS journals are cited by publications in other disciplines.

In addition to the above article, the May 2006, Volume 7, Issue 5 of the **Journal of the Association for Information Systems** is dedicated towards articles on Information Systems as a reference discipline.

Publication Opportunities in Premier Business Outlets: How Level Is the Playing Field? By Valachic, Joseph S., Fuller, Mark A., Schneider, Christoph, and Dennis, Alan R. in **Information Systems Research**, June 2006, Vol. 17 Issue 2, p 107-125.

> This paper reports an analysis of the proportion of faculty publishing articles in premier business journals (i.e., the ratio of authors of premier business journal articles to total faculty of a discipline) across the disciplines of accounting, finance, management, marketing, and information systems (IS) for the years 1994¿2003. This analysis revealed that over this period the management discipline had on average the highest proportion of faculty publishing in premier journals (12.7 authors per 100 management faculty), followed by finance (9.4 authors per 100 faculty), marketing (9.2 authors per 100 faculty), IS (5.5 authors per 100 faculty), and accounting (4.8 authors per 100 faculty). A further analysis examined these ratios for the different disciplines over time, finding that the ratios of authors to faculty have actually decreased for the disciplines of marketing and IS over this time period but have remained stable for the disciplines of accounting, management, and finance. Given steady growth in faculty size of all disciplines, the proportion of faculty publishing articles in premier journals in 2003 for all disciplines is lower than their 10-year averages, with IS having the lowest proportion in 2003. A sensitivity analysis reveals that without substantial changes that would allow more IS faculty to publish in the premier journals (e.g., by increasing publication cycles, number of premier outlets, and so on), IS will continue to lag far below the average of other disciplines. The implications of these findings for IS researchers, for institutions and administrators of IS programs, and for the IS academic discipline are examined. Based on these implications, recommendations for the IS discipline are presented.

How Low Should You Go? Low Response Rates and the Validity of Inference in IS Questionnaire Research by Stephen A. Sivo, Carol Saunders, Qing Chang and James J. Jiang in **Journal of the Association for Information Systems**, July 2006, Volume 7, Issue 6, Article 17.

> We believe IS researchers can and should do a better of job of improving (assuring) the validity of their findings by minimizing nonresponse error. To demonstrate that there is, in fact, a problem, we first present the response rates

reported in six well-regarded IS journals and summarize how nonresponse error was estimated and handled in published IS research. To illustrate how nonresponse error may bias findings in IS research, we calculate its impact on confidence intervals. After demonstrating the impact of nonresponse on research findings, we discuss three post hoc remedies and three preventative measures for the IS researcher to consider. The paper concludes with a general discussion about nonresponse and its implications for IS research practice. In our delimitations section, we suggest directions for further exploring external validity.

Research Models in Information Systems In Prashant Palvia, Vishal Midha and Parveen Pinjani in *Communications of the Association for Information Systems*, June 2006, Volume 17, Article 47.

The use of research models in driving scholarly investigation is of great importance in any field, including information systems (IS). As such, a taxonomy of IS research models should be of substantial value to the discipline. Such a taxonomy is developed in this article based on the IS research literature. Eleven model types are examined in detail in order to investigate how they are used by researchers, in articles published in seven leading IS journals during a recent six year period. Interesting results emerge in the use of models overall, as well as trends over time and relationships with specific methodologies and IS journals. Multi-tier influence diagram is the most used research model in IS research, while the no model, listing of variables, mathematical model, and simple influence diagram also find significant usage among the IS research community. Patterns of model use were also identified based on top journals and prevalent research methodologies.

In Search of the Primary Suppliers of IS Research: Who Are They and Where Did They Come From? By Jan Guynes Clark and John Warren in *Communications of the Association for Information Systems*, September 2006, Volume 18, Article 15.

The purpose of this study was to determine the leading IS researchers and the universities that supply them. We reviewed publications from the seven leading IS journals (CAIS, DSS, Information & Management, ISR, JAIS, JMIS, and MIS Quarterly) during calendar years 2001 to 2005. During that time, 2,401 authors contributed toward 1,486 published articles. We believe our findings to be valuable to the field of IS research by providing a means for assessing research productivity within the IS field.

How Shall We Manage Our Journals in the Future? A Discussion of Richard T. Watson's Proposals at ICIS 2004 by Paul Gray, Kalle J. Lyytinen, Carol Saunders, Richard T. Watson, Leslie P. Willcocks and Vladimir Zwass in *Communications of the Association for Information Systems*, September 2006, Volume 18, Article 14.

Journals are the lifeblood of all academic professions, including information systems. At the 2004 International Conference on Information Systems (ICIS), Rick Watson, then President of the Association for Information Systems (AIS), presented proposals for improving IS journal management that included accrediting reviewers, creating a market for journal articles, and moving our journals to the next level of Internet sophistication. This paper reports on a panel of journal editors convened at ICIS 2005 to discuss the Watson proposals and their implications. The editors were those of the Journal of the Association for

Information Systems, the Journal of MIS, and Management Information Systems Quarterly in the United States and the Journal of Information and Technology in the United Kingdom. The paper presents their views and a reply by Watson.

Research on Open Source Software Issues

The Transformation of Open Source Software by Fitzgerald, Brian in **MIS Quarterly**, September 2006, Vol. 30, Issue 3, p 587-598.

> A frequent characterization of open source software is the somewhat outdated, mythical one of a collective of supremely talented software hackers freely volunteering their services to produce uniformly high-quality software. I contend that the open source software phenomenon has metamorphosed into a more mainstream and commercially viable form, which I label as OSS 2.0. I illustrate this transformation using a framework of process and product factors, and discuss how the bazaar metaphor, which up to now has been associated with the open source development process, has actually shifted to become a metaphor better suited to the OSS 2.0 product delivery and support process. Overall the OSS 2.0 phenomenon is significantly different from its free software antecedent. Its emergence accentuates the fundamental alteration of the basic ground rules in the software landscape, signifying the end of the proprietary-driven model that has prevailed for the past 20 years or so. Thus, a clear understanding of the characteristics of the emergent OSS 2.0 phenomenon is required to address key challenges for research and practice.

The Impact of Ideology on Effectiveness in Open Source Software Development Teams by Stewart, Katherine J. and Gosain, Sanjay in **MIS Quarterly**, June 2006, Vol. 30, Issue 2, p 291-314.

> The emerging work on understanding open source software has questioned what leads to effectiveness in OSS development teams in the absence of formal controls, and it has pointed to the importance of ideology. This paper develops a framework of the OSS community ideology (including specific norms, beliefs, and values) and a theoretical model to show how adherence to components of the ideology impacts effectiveness in OSS teams. The model is based on the idea that the tenets of the OSS ideology motivate behaviors that enhance cognitive trust and communication quality and encourage identification with the project team, which enhances affective trust. Trust and communication in turn impact OSS team effectiveness. The research considers two kinds of effectiveness in OSS teams: the attraction and retention of developer input and the generation of project outputs. Hypotheses regarding antecedents to each are developed. Hypotheses are tested using survey and objective data on OSS projects. Results support the main thesis that OSS team members' adherence to the tenets of the OSS community ideology impacts OSS team effectiveness and reveal that different components impact effectiveness in different ways. Of particular interest is the finding that adherence to some ideological components was beneficial to the effectiveness of the team in terms of attracting and retaining input, but detrimental to the output of the team. Theoretical and practical implications are discussed.

Impacts of License Choice and Organizational Sponsorship on User Interest and Development Activity in Open Source Software Projects by Steward, Katherine J.,

Ammeter, Anthony P. and Maruping, Likoebe M. in *Information Systems Research*, June 2006, Vol. 17, Issue 2, p 126-144.

> What differentiates successful from unsuccessful open source software projects? This paper develops and tests a model of the impacts of license restrictiveness and organizational sponsorship on two indicators of success: user interest in, and development activity on, open source software development projects. Using data gathered from Freshmeat.net and project home pages, the main conclusions derived from the analysis are that (1) license restrictiveness and organizational sponsorship interact to influence user perceptions of the likely utility of open source software in such a way that users are most attracted to projects that are sponsored by nonmarket organizations and that employ nonrestrictive licenses, and (2) licensing and sponsorship address complementary developer motivations such that the influence of licensing on development activity depends on what kind of organizational sponsor a project has. Theoretical and practical implications are discussed, and the paper outlines several avenues for future research.

Research on Privacy, Security and Internal Control

Privacy Protection in Data Mining: A Perturbation Approach for Categorical Data by Xiao-Bai Li and Sumit Sarkar in *Information Systems Research*, September 2006, Vol. 17, Issue 3, p 254-270.

> To respond to growing concerns about privacy of personal information, organizations that use their customers' records in data-mining activities are forced to take actions to protect the privacy of the individuals involved. A common practice for many organizations today is to remove identity-related attributes from the customer records before releasing them to data miners or analysts. We investigate the effect of this practice and demonstrate that many records in a data set could be uniquely identified even after identity-related attributes are removed. We propose a perturbation method for categorical data that can be used by organizations to prevent or limit disclosure of confidential data for identifiable records when the data are provided to analysts for classification, a common data-mining task. The proposed method attempts to preserve the statistical properties of the data based on privacy protection parameters specified by the organization. We show that the problem can be solved in two phases, with a linear programming formulation in Phase I (to preserve the first-order marginal distribution), followed by a simple Bayes-based swapping procedure in Phase II (to preserve the joint distribution). Experiments conducted on several real-world data sets demonstrate the effectiveness of the proposed method.

Piracy, Computer Crime, and its Misuse at the University by Cronan, Timothy Paul, Foltz, C. Bryan and Jones, Thomas W. in *Communications of the ACM*, June 2006, Vol. 49, Issue 6, p 85-90.

> The article focuses on the effectiveness of computer misuse policies among university students. A study of Midwestern college students found that more than a third of business students, (undergraduate and graduate), had misused computer system resources or software in their lifetimes. Paradoxically, the study found that students who had read the computer misuse policy of the university committed more abuse. Greater familiarity with computers was also an indicator of greater

levels of computer misuse; in general, undergraduate misuse was lower than graduate student misuse. The study's implications for corporate computer use policies are discussed.

Trust Beyond Security: An Expanded Trust Model by Lance J. Hoffman, Kim Lawson-Jenkins and Jeremy Blum in **Communications of the ACM**, July 2007, Volume 49, Issue 7, p 94-101.

> The article discusses the development of improved trust models for distributed computer-based systems and the advantages this development will bring to information technology departments in business. Advances in computer technology has spurred its adoption in shopping, banking, voting, and automotive technology systems, but have also brought the proliferation of viruses and increased danger from widespread power outages. For modern business to succeed, they must utilize trust based security systems.

Value-Focused Assessment of Information System Security in Organizations by Dhillon, Gurpreet and Torkzadeh, Gholamreza in **Information Systems Journal**, July 2006, Volume 16, Issue 3, p 293-314.

> Information system (IS) security continues to present a challenge for executives and professionals. A large part of IS security research is technical in nature with limited consideration of people and organizational issues. The study presented in this paper adopts a broader perspective and presents an understanding of IS security in terms of the values of people from an organizational perspective. It uses the value-focused thinking approach to identify 'fundamental' objectives for IS security and 'means' of achieving them in an organization. Data for the study was collected through in-depth interviews with 103 managers about their values in managing IS security. Interview results suggest 86 objectives that are essential in managing IS security. The 86 objectives are organized into 25 clusters of nine fundamental and 16 means categories. These results are validated by a panel of seven IS security experts. The findings suggest that for maintaining IS security in organizations, it is necessary to go beyond technical considerations and adopt organizationally grounded principles and values.

Opportunities for Computer Crime: Considering Systems Risk from a Criminological Perspective by Robert Willison and James Backhouse in **European Journal of Information Systems** (2006) 15, p 403–414.

> Systems risk refers to the likelihood that an Information System (IS) is inadequately protected against certain types of damage or loss. While risks are posed by acts of God, hackers and viruses, consideration should also be given to the 'insider' threat of dishonest employees, intent on undertaking some form of computer crime. Against this backdrop, a number of researchers have addressed the extent to which security managers are cognizant of the very nature of systems risk. In particular, they note how security practitioners' knowledge of local threats, which form part of such risk, is often fragmented. This shortcoming contributes to situations where risk reducing efforts are often less than effective. Security efforts are further complicated given that the task of managing systems risk requires input from a number of departments including, for example, HR, compliance, IS/IT and physical security. To complement existing research, and also to offer a fresh

perspective, this paper addresses systems risk from the offender's perspective. If systems risk entails the likelihood that an IS is inadequately protected, this text considers those conditions, within the organisational context, which offer a criminal opportunity for the offender. To achieve this goal a model known as the 'Crime-Specific Opportunity Structure' is advanced. Focusing on the opportunities for computer crime, the model addresses the nature of such opportunities with regards to the organisational context and the threats posed by rogue employees. Drawing on a number of criminological theories, it is believed the model may help inform managers about local threats and, by so doing, enhance safeguard implementation.

Secure and Useful Data Sharing by Rathindra Sarathy and Krishnamurty Muralidhar in **Decision Support Systems**, Volume 42, Issue 1, October 2006, p 204-220.

Data sharing among organizations, both government and business, has increased with the advent of the Internet. The study is motivated by the need to address increased confidentiality and privacy concerns that arise with the use of the Internet, while realizing the benefits of data sharing. In this study, we develop a research issues framework based on a survey of existing literature. The framework is used to identify OR/MS research opportunities in disclosure prevention, record-linkage, and in the assessment of the impact of data sharing. Addressing these issues could enable organizations to securely share data.

Concern for Information Privacy and Online Consumer Purchasing by Craig Van Slyke, J.T. Shim, Richard Johnson and James J. Jiang in **Journal of the Association for Information Systems**, June 2006, Volume 7, Issue 6, Article 16.

Although electronic commerce experts often cite privacy concerns as barriers to consumer electronic commerce, there is a lack of understanding about how these privacy concerns impact consumers' willingness to conduct transactions online. Therefore, the goal of this study is to extend previous models of e-commerce adoption by specifically assessing the impact that consumers' concerns for information privacy (CFIP) have on their willingness to engage in online transactions. To investigate this, we conducted surveys focusing on consumers' willingness to transact with a well-known and less well-known Web merchant. Results of the study indicate that concern for information privacy affects risk perceptions, trust, and willingness to transact for a well-known merchant, but not for a less well-known merchant. In addition, the results indicate that merchant familiarity does not moderate the relationship between CFIP and risk perceptions or CFIP and trust. Implications for researchers and practitioners are discussed.

Spreadsheets and Sarbanes-Oxley: Regulations, Risks, and Control Frameworks by Raymond R. Panko in **Communications of the Association for Information Systems**, April 2006, Volume 17, Article 29.

The Sarbanes–Oxley Act of 2002 (SOX) forced corporations to examine their spreadsheet use in financial reporting. Corporations do not like what they are seeing. Surveys conducted in response to SOX show that spreadsheets are used widely in corporate financial reporting. Spreadsheet error research, in turn, shows that nearly all large spreadsheets contain multiple errors and that errors of material size are quite common. The first round of Sarbanes-Oxley assessments confirmed

concerns about spreadsheet accuracy. Another concern is spreadsheet fraud, which also exists in practice and is easy to perpetrate. Unfortunately, few organizations maintain effective controls to deal with either errors or fraud. This paper examines spreadsheet risks for Sarbanes-Oxley (and other regulations) and discusses how general and IT-specific control frameworks can be used to address the control risks created by spreadsheets.

Developments In Practice XXI: IT in the New World of Corporate Governance Reforms by Heather A. Smith and James D. McKeen in **Communications of the Association for Information Systems**, May 2006, Volume 17, Article 32.

In the past, IT was only marginally affected by regulatory matters. Today, however, IT is in the middle of a whirlwind of corporate governance reforms. New standards for internal controls are affecting almost every aspect of IT work. These, in turn, have significant implications on how IT is managed and on IT costs and productivity. For example, many IT organizations have been so involved in developing and implementing Sarbanes-Oxley (SOX) procedures that very little has actually been accomplished for the business itself. This paper explores how new compliance frameworks and governance reforms, mandated by governments and/or industry groups, are changing IT work. It examines what IT managers perceive to be most significant issues these reforms present IT in their particular organizations. This paper is not designed to provide detailed information about IT controls and how to achieve them. Instead, it is intended to be a general introduction to the changing expectations of IT and how these are affecting IT work, structure and governance. It looks at the new effects regulatory issues are having in IT, and then examines the key issues IT managers face in an increasingly regulated environment. Next, it identifies the key areas within IT that are affected and the types of activities that need to be addressed by managers in order to achieve effective controls. Finally some recommended good practices are presented. The authors conclude that there is no question that new laws and regulations governing organizations, their finances and their information are having a huge impact on IT. IT managers are struggling to implement new controls and document existing ones, while still ensuring business as usual and trying to develop the new systems their companies need. The world is requiring IT to become thoroughly professional about what it does. The IT of the future will therefore of necessity be increasingly controlled, standardized and bureaucratized. It remains to be seen whether or not management will be able to use this "new and improved" IT for competitive advantage.

Implementing Section 404 of the Sarbanes Oxley Act: Recommendations for Information Systems Organizations by Ashley Braganza and Kevin C. Desouza in **Communication of the Association for Information Systems**, October 2006, Volume 18, Article 22.

Section 404 of the Sarbanes Oxley (SOX) Act addresses the effectiveness of internal controls, which in most organizations are either fully or partially automated due to the pervasiveness and ubiquity of information technologies. Significant or material control deficiencies have to be reported publicly. The adverse impact on organizations declaring deficiencies can be severe, for example, damage to reputation and/or market value. While there are many practitioner-led manuals and methods for dealing with 404, there has been little published in the academic research literature investigating the role of Information Systems organizations in

implementing Section 404. The paper addresses this gap in knowledge. We used institutional theory as the lens through which to examine the experiences of Section 404 implementation in three global organizations. We used the case study method and an abductive strategy to gather and analyze data respectively. Our findings are summarized in six recommendations. We found that institutional pressures play a critical role in the implementation of Section 404. In particular, organizations face coercive pressure to achieve Section 404 compliance, without which punitive sanctions can be imposed by regulators. Organizations tend to imitate one another in the methods they use so that each is perceived to be in line with their competitive environment. Organizations face normative pressures to act in ways that are socially acceptable, which is to achieve compliance. Failure to do so would be a signal to the market that the organization does not take controls seriously. We expand these findings in terms of power and influence tactics that IS organizations can use when implementing Section 404. Our findings provide directions for practice and lines of enquiry for further research.

Sharing and Access Right Delegation for Confidential Documents: A Practical Solution by S.M. Yiu, S.W. Yiu, L.K. Lee, Eric K.Y. Li and Michael C.L. Yip in **Information & Management**, Volume 43, Issue 5, July 2006, p 607-616.

This paper addresses a practical problem in document management systems for which no existing solution is currently available in the market. To store confidential documents, a common approach is to keep only the encrypted version of the documents to ensure confidentiality of the contents. In real cases, documents may need to be shared by more than one person or group in a company and it is common for a manager to delegate the access rights of a document to a delegatee. How is it possible to share encrypted documents and delegate the access rights of encrypted documents? Here, we discuss the issues related to this problem and provide a practical and easy-to-implement solution for solving the problem. It has been shown to be feasible by a prototype implementation. We also show how to extend our solution to be more scalable by taking advantage of the company's hierarchical structure.

Research on ERP System Implementation, Value and Educational Issues

ERP Investments and the Market Value of Firms: Toward an Understanding of Influential ERP Project Variables by Ranganathan, C. and Brown, Carol V. in **Information Systems Research**, June 2006, Vol. 17, Issue 2, p 145-161.

This study contributes to the growing body of literature on the value of enterprise resource planning (ERP) investments at the firm level. Using an organization integration lens that takes into account investments in complementary resources as well as an options thinking logic about the value of an ERP platform, we argue that not all ERP purchases have the same potential impact at the firm level due to ERP project decisions made at the time of purchase. Based on a sample of 116 investment announcements in United States' based firms between 1997 and 2001, we find support for our hypotheses that ERP projects with greater functional scope (two or more value-chain modules) or greater physical scope (multiple sites) result in positive, higher shareholder returns. Furthermore, the highest increases in returns (3.29%) are found for ERP purchases with greater functional scope and greater physical scope; negative returns are found for projects with lesser

functional scope and lesser physical scope. These findings provide empirical support for prior theory about the organizational integration benefits of ERP systems, the contribution of complementary resource investments to the business value of IT investments, and the growth options associated with IT platform investments. The article concludes with implications of our firm-level findings for this first wave of enterprise systems.

Technical and Management Perceptions of Enterprise Information System Importance, Implementation and Benefits by Hsin Hsin Chang in *Information Systems Journal*, July 2006, Vol. 16, Issue 3, p 263-292.

This paper compares information systems (IS) integration in high-tech organizations from the information technology (IT) and general management perspectives. All the organizations studied have experience of integrated Enterprise Resource Planning systems, and some with their extension to Supply Chain Management and Customer Relationship Management systems. The operational scope of the sample systems, and senior IT and general management perceptions of the importance of their functions, benefits and implementation success factors, obtained by qualitative interviews with 49 senior managers and a quantitative survey of 219 high-tech companies, are described and compared. Although the opinions expressed indicate some mutual hostility, IT and general management perceptions of IS implementation were very similar. IT managements overall importance assessments of business functions were more strongly correlated with their overall level of implementation, and they tended to rate system benefits and system reliability more highly. The significance of these findings is discussed and some suggestions for further investigation, placing them in a wider context, are made. Arguably, the similarities found are more important than the differences.

Relative Importance of Evaluation Criteria for Enterprise Systems: a Conjoint Study by Keil, Mark and Tiwana, Amrit in *Information Systems Journal*, July 2006, Vol. 16, Issue 3, p 237-262.

While a large body of research exists on the development and implementation of software, organizations are increasingly acquiring enterprise software packages [e.g. enterprise resource planning (ERP) systems] instead of custom developing their own software applications. To be competitive in the marketplace, software package development firms must manage the three-pronged trade-off between cost, quality and functionality. Surprisingly, prior research has made little attempt to investigate the characteristics of packaged software that influence management information system (MIS) managers' likelihood of recommending purchase. As a result, both the criteria by which MIS managers evaluate prospective packaged systems and the attributes that lead to commercially competitive ERP software products are poorly understood. This paper examines this understudied issue through a conjoint study. We focus on ERP systems, which are among the largest and most complex packaged systems that are purchased by organizations. In a conjoint study, 1008 evaluation decisions based on hypothetical ERP software package profiles were completed by managers in 126 organizations. The study represents the first empirical investigation of the relative importance that managers ascribe to various factors that are believed to be important in evaluating packaged software. The results provide important insights for both organizations that acquire

such systems and those that develop them. The results show that functionality, reliability, cost, ease of use and ease of customization are judged to be important criteria, while ease of implementation and vendor reputation were not found to be significant. Functionality and reliability were found to be the most heavily weighted factors. We conclude the paper with a detailed discussion of the results and their implications for software acquisition and development practice.

ERP Misfit: Country of Origin and Organizational Factors by Wang, Eric T. G., Klein, Gary and Jiang, James in *Journal of Management Information Systems*, Summer 2006, Vol. 23, Issue 1, p 263-292.

There are many benefits of enterprise resource planning (ERP) systems, but their implementation is both complicated and difficult because the product spans functional silos and involves many internal and external entities. An ERP system is the outcome of social processes, and different ERP systems can embody distinct social arrangements when developed in different cultural contexts. Such social arrangements are difficult to change due the closure effect of technology stabilization. This leads to various misfit problems, both during and after ERP implementation, causing adverse effects on delivered ERP quality. With a survey of 85 ERP implementation cases in Taiwan, this study derives and empirically tests the main as well as the interaction effects of the country of origin of the ERP package, consultant quality, top management support, and user support of the ERP system quality as perceived by the client after implementation. The results demonstrate the important role of the country of origin of the ERP package and consultant quality in configuring a high-quality ERP system and alleviating the negative effect of misfit problems.

Enterprise Integration Using the Agent Paradigm: Foundations of Multi-Agent-Based Integrative Business Information Systems by Rajiv Kishore, Hong Zhang and R. Ramesh in *Decision Support Systems*, Volume 42, Issue 1, October 2006, p 48-78.

Enterprise integration through integrated business information systems (IBIS) is necessary to achieve agility in the current age of hyper-competition. Multi-agent systems (MAS) provide a new paradigm for IBIS development. In this paper, we review the IBIS modeling and MAS literatures and find that the MAS paradigm provides an excellent approach for modeling and implementing IBIS systems. We synthesize these two bodies of literature and propose a conceptual framework for multi-agent-based integrative business information systems (MIBIS) and a unified set of eight orthogonal ontological constructs that are minimally required for any conceptual modeling grammar for the MIBIS bounded universe of discourse.

Teaching with Enterprise Systems by Diane Strong, Jane Fedorowicz, James Sager, Glenn Stewart, Edward E. Watson in *Communications of the Association for Information Systems*, Volume 17, Article 33.

With the wide-spread adoption of Enterprise Systems (ES), such as SAP, Oracle, and Peoplesoft, in medium and large-sized organizations, there is increasing demand for students who know how to work with such systems. While the demand for ES developers and integrators has declined, the demand for employees that can help companies achieve benefits from these systems continues to grow. Such employees need skills in decision-making and process design in an integrated,

data-rich environment enabled by an ES. This paper provides advice about teaching with enterprise systems at the undergraduate and graduate levels within the IS curriculum and across management and engineering curricula. This advice is provided by five professors from five different schools, California State University at Chico, Louisiana State University, Queensland University of Technology, Bentley College, and Worcester Polytechnic Institute that together have many years of experience in teaching with SAP or with the Oracle e-business suite. This paper includes a summary of the experiences at each of these schools, advice based on questions from the audience at an AMCIS 2005 panel, and references to resources that may be helpful to those considering, or already engaged in, teaching with enterprise systems.

Research on Improving IS Design, Implementation and Usage

Enhancing the Design of Web Navigation Systems: The Influence of User Disorientation on Engagement and Performance by Webster, Jane and Ahuja, Jaspreet S. in *MIS Quarterly*, September 2006, Vol. 30, Issue 3, p 661-678.

> This paper draws on research from a wide literature base to develop a model relating Web navigation systems, disorientation, engagement, user performance, and intentions. The model is tested in an experimental study examining the effects of one simple and two global navigation systems. Although well-accepted design guidelines were followed for the first global navigation system, it was not superior to the simple system. However, the second global navigation system resulted in lower disorientation than the simple system. Based on the study's results, two design guidelines to govern the development of future Web-based systems are suggested. Readers need a sense of context, of their place within an organization of information. In paper documents this sense of "where you are" is a mixture of graphic and editorial organizational cues supplied by the graphic design of the book, the organization of the text, and the physical sensation of the book as an object. Electronic documents provide none of the physical cues we take for granted in assessing information. When we see a Web hypertext link on the page we have few cues to where we will be led, how much information is at the other end of the link, and exactly how the linked information relates to the current page. Even the view of individual Webpages is restricted for many users. (Lynch and Horton 2002) On IBM's website, the most popular feature was the search function, because the site was difficult to navigate. The second most popular feature was the "help" button, because the search technology was so ineffective. IBM's solution was a 10-week effort to redesign the site. In the first week after the redesign, use of the "help" button decreased 84 percent, while sales increased 400 percent.

The Effects of State-Based and Event-Based Data Representation on User Performance in Query Formulation Tasks by Allen, Gove N. and March, Salvatore in *MIS Quarterly*, June 2006, Vol. 30, Issue 2, p 269-290.

> Ad hoc query formulation is an important task in effectively utilizing organizational data resources. To facilitate this task, managers and casual end-users are commonly presented with database views expressly constructed for their use. Differences in the way in which things, states, and events are represented in such views can affect a user's ability to understand the database, potentially leading to different levels of performance (i.e., accuracy, confidence, and prediction of the

accuracy of their queries). An experiment was conducted over the Internet involving 342 subjects from 6 universities in North America and Europe to investigate these effects. When presented with an event-based view, subjects expressing low or very low comfort levels in reading entity-relationship diagrams expressed confidence that better predicted query accuracy although there were no significant differences in actual query accuracy or level of confidence expressed.

Reconceptualizing System Usage: An Approach and Empirical Test by Andrew Burton-Jones and Detmar W. Straub, Jr. in **Information Systems Research**, September 2006, Vol. 17, Issue 3, p 228-246.

Although DeLone, McLean, and others insist that system usage is a key variable in information systems research, the system usage construct has received little theoretical scrutiny, boasts no widely accepted definition, and has been operationalized by a diverse set of unsystematized measures. In this article, we present a systematic approach for reconceptualizing the system usage construct in particular nomological contexts. Comprising two stages, definition and selection, the approach enables researchers to develop clear and valid measures of system usage for a given theoretical and substantive context. The definition stage requires that researchers define system usage and explicate its underlying assumptions. In the selection stage, we suggest that system usage be conceptualized in terms of its structure and function. The structure of system usage is tripartite, comprising a user, system, and task, and researchers need to justify which elements of usage are most relevant for their study. In terms of function, researchers should choose measures for each element (i.e., user, system, and/or task) that tie closely to the other constructs in the researcher's nomological network. To provide evidence of the viability of the approach, we undertook an empirical investigation of the relationship between system usage and short-run task performance in cognitively engaging tasks. The results support the benefits of the approach and show how an inappropriate choice of usage measures can lead researchers to draw opposite conclusions in an empirical study. Together, the approach and the results of the empirical investigation suggest new directions for research into the nature of system usage, its antecedents, and its consequences.

Accommodating Individual Preferences in the Categorization of Documents: A Personalized Clustering Approach by Wei, Chih-Ping, Chiang, Roger H. and Wu, Chia-Chen in **Journal of Management Information Systems**, Fall 2006, Vol. 23, Issue 2, p 173-201.

As electronic commerce and knowledge economy environments proliferate, both individuals and organizations increasingly generate and consume large amounts of online information, typically available as textual documents. To manage this ever-increasing volume of documents, individuals and organizations frequently organize their documents into categories that facilitate document management and subsequent access and browsing. Document clustering is an intentional act that should reflect individual preferences with regard to the semantic coherency and relevant categorization of documents. Hence, effective document clustering must consider individual preferences and needs to support personalization in document categorization. In this paper, we present an automatic document-clustering approach that incorporates an individual's partial clustering as preferential information. Combining two document representation methods, feature refinement

and feature weighting, with two clustering methods, precluster-based hierarchical agglomerative clustering (HAC) and atomic-based HAC, we establish four personalized document-clustering techniques. Using a traditional content-based document-clustering technique as a performance benchmark, we find that the proposed personalized document-clustering techniques improve clustering effectiveness, as measured by cluster precision and cluster recall.

An Empirical Analysis of the Value of Complete Information for eCRM Models by Padmanabhan, Balaji, Zhiqiang, Zheng and Kimbrough, Steven O. in *MIS Quarterly*, June 2006, Vol. 30, Issue 2, p 247-267.

Due to the vast amount of user data tracked online, the use of data-based analytical methods is becoming increasingly common for e-businesses. Recently the term analytical eCRM has been used to refer to the use of such methods in the online world. A characteristic of most of the current approaches in eCRM is that they use data collected about users' activities at a single site only and, as we argue in this paper, this can present an incomplete picture of user activity. However, it is possible to obtain a complete picture of user activity from across-site data on users. Such data is expensive, but can be obtained by firms directly from their users or from market data vendors. A critical question is whether such data is worth obtaining, an issue that little prior research has addressed. In this paper, using a data mining approach, we present an empirical analysis of the modeling benefits that can be obtained by having complete information. Our results suggest that the magnitudes of gains that can be obtained from complete data range from a few percentage points to 50 percent, depending on the problem for which it is used and the performance metrics considered. Qualitatively we find that variables related to customer loyalty and browsing intensity are particularly important and these variables are difficult to derive from data collected at a single site. More importantly, we find that a firm has to collect a reasonably large amount of complete data before any benefits can be reaped and caution against acquiring too little data.

On the Valuation of Multistage Information Technology Investments Embedding Nested Real Options by Benaroch, Michell, Shah, Sandeep and Jeffery, Mark in *Journal of Management Information Systems*, Summer 2006, Vol. 23, Issue 1, p 239-261.

As real options analysis (ROA) is being applied to increasingly complex information technology (IT) investment problems, a concern arises over the use of heuristic ROA models that are simpler to apply but can produce overvaluations. A good example is the application of a heuristic nested variation of the Black-Scholes (BS) model to the evaluation of interrelated IT investments as nested options. This particular heuristic BS model could overvalue by more than 100 percent. Using a binomial model that is custom-tailored to a generic IT investment embedding nested options as the "baseline," we identify conditions under which the degree of overvaluation of this heuristic BS model is severe and unpredictable. Moreover, upon examining the structure of the custom-tailored binomial model, we identify the reason for overvaluation and derive a more accurate nested variation of the BS model. These findings should serve as a cautionary message about the use of untested heuristic ROA models.

A Framework for Data Warehouse Refresh Policies by Michael V. Mannino and Zhiping Walter in *Decision Support Systems*, Volume 42, Issue 1, October 2006, p 121-143.

In a field study to explore influences on data warehouse refresh policies, we interviewed data warehouse administrators from 13 organizations about data warehouse details and organizational background. The dominant refresh strategy reported was daily refresh during nonbusiness hours with some deviations due to operational decision making and data source availability. As a result of the study, we developed a framework consisting of short-term and long-term influences of refresh policies along with traditional information system success variables influenced by refresh policies. The framework suggests the need for research about process design, data timeliness valuation, and optimal refresh policy design.

Examining the Coalition Dynamics Affecting IS Project Abandonment Decision-Making by Gary Pan and Shan L. Pan in *Decision Support Systems*, Volume 42, Issue 2, November 2006, p 639-655.

Despite recent reports that suggest growing evidence of a higher rate of information systems project success, experts have warned against complacency over the risks associated with project failure. While IS project failure has been attracting constant attention in recent years, IS project abandonment—which is a subset of the larger organizational issues of IS failure—has been largely ignored. This study aims to provide a deeper understanding of the project abandonment phenomenon. We undertook a case study of an abandoned electronic procurement project to investigate the coalition dynamics affecting project abandonment decision-making—an area that is remotely addressed in the project abandonment literature. We found that antecedent conditions, level of coping with uncertainty, level of substitutability, and level of centrality are key issues in the coalition dynamics that influence project abandonment decisions. Research and practical implications of these findings were discussed, and we concluded with a summary of the contributions of this study and a note on its limitations.

In addition, the August 2006, Volume 7, Issue 8 of the *Journal of the Association for Information Systems* is dedicated towards articles on research of IS analysis and design.

Research on Outsourcing

Information Systems Outsourcing: A Literature Analysis by Reyes Gonzalez, Jose Gasco and Juan Llopis in *Information & Management*, Volume 43, Issue 7, October 2006, p 821-834.

Outsourcing has become one of the strategies adopted by businesses to manage their IS. During the last few years, the use of outsourcing has resulted in an increase in the volume of literature devoted to it. We decided therefore to analyse the literature with the aim of identifying the main topics, the methodologies most often applied and the authors and countries that have contributed most to the area of IS outsourcing. We also intended to offer suggestions on improving research in this field. The paper thus provides a review of articles about IS outsourcing published in the most prestigious journals of the IS area and journals of Management or Business.

Market Reactions to E-Business Outsourcing Announcements: An Event Study by Manish Agrawal, Rajiv Kishore and H. Raghav Rao in *Information & Management*, Volume 43, Issue 7, October 2006, p 861-873.

Stock markets have reacted favorably to firms who announced their implementation of E-business projects for commercial exploitation. Those that outsourced E-business projects in order to achieve swift execution also achieved abnormal positive returns. Contrary to expectations, outsourcing E-business projects with high task complexity also led to positive results. We analyzed the process and found that these three factors explained more than 20% of the variance in abnormal returns. The results were obtained from an event study of 96 E-business-related announcements, including those made by firms in the S&P500 index during 1999–2002. This paper contains information that should therefore help firms identify E-business projects for outsourcing.

Outsourcing Alignment with Business Strategy and Firm Performance by Jae-Nam Lee in *Communications of the Association for Information Systems*, Volume 1,7 Article 49.

As motivations of Information Technology (IT) outsourcing are evolving from a primary focus on cost reduction to an emerging emphasis on improving business performance, it is imperative for organizations to align their outsourcing strategy with their business strategy in order to reap better outsourcing benefits and firm performance. Accordingly, a critical challenge facing organizations is how to effectively organize and manage a well-planned outsourcing strategy in accordance with the direction of a business strategy. With the premise that organizations with the fit between business strategy (i.e., defenders, prospectors, and analyzers) and outsourcing strategy (i.e., independent, arm's length, and embedded strategies) are expected to have better outsourcing benefits and organizational performance than those without such fit, this study seeks to answer the following questions: First, are certain outsourcing strategies more effective than others in particular business strategies?; Second, do their effective alignments positively affect outsourcing benefits and firm performance? To answer these questions, we hypothesize three theoretical feasible sets of internally congruent patterns between business strategy and outsourcing strategy which lead to a greater achievement of outsourcing benefits and firm performance as compared with misfit patterns between them. Empirical data gathered from 136 organizations in Korea that have outsourced their IT functions to external service providers are analyzed. The empirical evidence shows that outsourcing alignment with business strategy significantly influences the outsourcing success and firm performance of defenders, analyzers, and prospectors. The findings have significant implications for further research and practice.

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