The Mad Clockmakers’ Guild – A Parable

The following parable is a work of fiction. It represents the (probably mistaken) views of the author and not necessarily those of any saner, more reasonable person or persons, including members of the IS section of the AAA, or, any other member or officer of the IS section, or, of the AAA.

The mad clockmakers’ guild labors in the mountain kingdom of Strayhorn, near the clear waters of Lake Mystine. Clockmakers do two tasks: (1) making hand-crafted artisan clocks and (2) evaluating and approving the clocks made by other guild members. Membership in the guild is restricted to those who labor as apprentices to master clockmakers for four to six years, and who survive the (sometimes) harsh treatment by clockmakers of their apprentices. Constructing a single clock requires two to seven years and is usually done in teams of clockmakers. Clockmakers are handsomely rewarded for clocks that their fellow clockmakers approve. They receive nothing for clocks that are rejected by fellow clockmakers, and, they receive no compensation for evaluating and approving the clocks of others.

Competing teams of clockmakers use different tools and methods. Therefore, it is unsurprising that clockmakers, when evaluating clocks, favor those constructed using similar tools and methods as they use in making their own clocks. As in any guild, petty rivalries abound that lead the clocks of some teams to be favored by other teams, and eschewed by rivals - usually independent of their quality, craftsmanship, or accuracy. Although there are no substantive differences in their clocks, the clocks of clockmakers who live closer to the lake, i.e., in more beautiful and desirable locations, are approved more often than those who live in the more remote, less hospitable regions.

The citizens of Strayhorn consider the clockmakers mad because the clockmakers waste most of the resources provided to them, including time, metals, wood, and tools. Guild members approve less than 10% of the clocks made by their fellow craftsmen. The other 90% are burned, in large bonfires, in winter, to heat the clockmaker’s homes and studios. Clockmakers’ opinions in evaluating and approving clocks are sacred. They cannot be questioned or challenged without punishment by the Guild’s leaders, who are appointed by committees of clockmakers. This is another point on which the clockmakers are considered mad: clockmakers receive little training in evaluating the clocks of others; many know little or nothing about the tools and methods used by clockmakers who work in other areas. But these same clockmakers, when making clocks, at which they are highly skilled, have over 90% of their clocks rejected by their fellow Guild members.

Periodically, the citizens of Strayhorn call upon the Guild to reform, and to stop its remarkable waste of resources. In addition, in their darker moments, often in winter, the citizens ask why guild members are paid handsome salaries from the public treasury despite wasting 90% of their time on failed clocks. Guild leaders inevitably argue that this is the best possible system of clock making, that any reforms or changes would threaten the Guild’s vitality and viability, and that, after all, the citizens should be happy that they, now and then, actually get a working, accurate
count any of these sites or by email.

www.facebook.com/#!/AAAInfoSystems

that might improve the process:

author, reviewer and editor. Further, I think that we generally have more flexible
reviews often significantly improve the quality of papers. I have observed this as
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- 1. Ph.D. education requests 4-6 years to complete,
- 2. Ph.D. students are sometimes mistreated by their supervisors (Fine
- 3. The criteria for acceptance in journals are capricious (Gans and
- 4. An approximate 10% acceptance rate at journals (see AAA editor’s
- 5. Scholars receive little (i.e., inadequate) training in a very difficult task: reviewing manuscripts.
- 6. The rejection of manuscripts is sometimes motivated by petty
- 7. Schadenfreude, i.e., pleasure derived from the misfortune of others, i.e., the rejection of competing researchers’ papers, is an important
but largely unacknowledged motivator in manuscript evaluations

Reforms to ameliorate some of the above problems include:

- 1. Widely available online reviewer, submitting author, and reader
evaluations of academic journals, using Yelp and eBay like evaluations that are universally accessible.
- 2. Removal of abusive reviewers from the peer evaluation system through activist editors and public disclosure of their abusive behavior by editors and other scholars.
- 3. Training in writing constructive reviews for scholarly communities.
- 4. Ethical education of young scholars regarding the morale obligations of the review process, including fairness, objectivity, and constructive comments.

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A Reply: Baking Better Bread by Roger Debreceny

Guilds are an important part of the functioning of a modern economy. When managed well, guilds bring theoretical and applied learning to a knowledge domain. There is no comparison between the products of a German master guild baker (for example) with those of their counterparts in the USA. The same can be said for many other disciplines including medicine. The problem is not necessarily with the notion of a guild but with the training in the guild. Our problems often arise as a result of tenure and promotion performance metrics influencing our learning and knowledge production systems. The need to rush out two or three papers in a handful of accepted journals leads to Ph.D. dissertations made up of three papers ready to go to journals. This leads in turn to concentrated and narrow Ph.D. preparation that discourages the wide reading that was typical of earlier iterations of Ph.D. study.

Within our section there is probably little that we can do to change now strongly entrenched Ph.D. factories. We can, however, change the way that we do business within the section and the Journal of Information Systems. We can do more to improve the flow of papers through the JIS. We must not forget that reviews often significantly improve the quality of papers. I have observed this as author, reviewer and editor. Further, I think that we generally have more flexible reviewers in the accounting information systems domain than elsewhere in the discipline. There is more that we can do, however. Here are some suggestions that might improve the process:

- Pre-submission screening. Offer authors the opportunity to get informal feedback on a near to final draft. This might ensure that papers going to reviewers would be of higher quality. Talking about metrics – would a paper that came in for screening and was not subsequently completed count as a rejection? It is curious, that we revel in poor quality. “Look at me! I’m a high quality journal. I reject 90% of submissions!” That would never be acceptable in other areas of knowledge creation or use.
- Naming reviewers on the paper (some MIS journals are doing this already)
- Rating reviewers on consistent metrics
- Rewarding reviewers (financially or in some other tangible way) -- why just have one best reviewer award? Why not as many awards as reviewers meet five star ratings in the year? Why not give a complimentary mid-year meeting registration for each five star reviewer?
- Clearly stating expectations of reviewers.
- Working with authors to get the paper to publishable form (our current editor, Miklos Vastarhelyi excels in this)
- Clearly stating expectations of authors
- Taking risks on papers and theme issues
- Experimenting with production processes

Agree? Disagree? I have also posted this essay, and Roger’s response to it, on AECM at the AAA commons, and on the section’s Facebook (http://www.facebook.com/#!/AAnInfoSystems) page. Please comment on this dialogue at any of these sites or by email.
2013 AAA IS Section Midyear Meeting and AIS New Scholar Consortium

Please join us for the 2013 Information Systems Section Midyear meeting and 11th annual AIS New Scholar Consortium will be held January 10–12, 2013 at the Bahia Mar Doubletree, Fort Lauderdale, Florida. This joint meeting with the SET section will include a plenary speaker, pre-conference workshops, a panel discussion, research paper sessions, education paper sessions, and interactive short paper sessions. For more information https://aaahq.org/infosys/meetings/2013/online.cfm

New Scholars Consortium
The New Scholars Consortium enables new scholars (defined as no more than three years after receiving Ph.D.) and Ph.D. students to receive constructive feedback on their research in progress and proposals from successful faculty members in a small group setting. The IS section will provide one hotel night to the first five new scholars who submit a proposal to the Consortium, and the first twenty doctoral students (proposals are highly encouraged, but not necessary to receive the free night). Sharing of rooms is possible to lower lodging costs, please direct questions to Ann Dzuranin: (adzuranin@niu.edu)

Design Science (DRAW1), IT Governance & Assurance (WITGA3) and XBRL workshops
The Midyear meeting will feature three workshops on the afternoon of January 10. The third biennial Workshop on IT Governance and Assurance (WITGA3) is hosted by the IS Section. The First Design Science Research in Accounting Workshop (DRAW1) is hosted by the SET Section. Finally, Dr. Skip White will offer a hands-on workshop providing an introduction to and advanced topics in XBRL. Workshops details are available at: http://aaahq.org/infosys/meetings/2013/workshops_announcement.cfm.

How can you miss this?
Call for Papers—JIS

Special Issue of the *Journal of Information Systems*
Information and Control Systems in Virtual Business Environments

The *Journal of Information Systems* (JIS) is the journal of the Information Systems Section of the American Accounting Association. JIS will publish a special section in the Fall 2013 issue entitled Information and Control Systems in Virtual Business Environments.

A virtual business environment employs Internet-based technologies to carry out substantial portions or all of an entity's business transactions. Virtual business environments include technologies such as social media customer management and personnel tools, social payment networks, crowdsourcing, crowdfunding, and immersive virtual social worlds. The extent of virtual business environment involvement can range from a bricks and mortar establishment that occasionally uses social media for advertising and customer relationship management purposes to a fully immersive virtual world where participants assume an alternate online identity and engage in a variety of goal-directed activities.

Since virtual business environments extensively involve the use of information and control systems to achieve business objectives, they present a number of potential opportunities for accounting information systems research. Examples of specific relevant topics include the following:

- Privacy, security, and trust issues related to virtual organizations and transactions
- Efficacy of social media in achieving business objectives
- Monitoring of risks associated with business social media usage
- Preventing and investigating fraud in virtual environments
- Control systems for virtual organizations
- Virtual banking systems, currencies, and investment markets
- Virtual worlds as a laboratory for the study of accounting phenomena

All research methods are welcome, including behavioral, case study, and review.

Submit the paper proposals using the guidelines for regular journal submissions.

The editor of the special section is William Dilla, Associate Professor of Accounting, Iowa State University, USA. Email: wdilla@iastate.edu.

Submissions for the special issue are due on **February 15, 2013**. Earlier submission is encouraged.
Call for AISEC

The 15th Annual AIS Educators Conference will be held June 28-30, 2013, in Laramie, Wyoming. The Conference will be held at the Hilton Garden Inn and the University of Wyoming Conference Center. Research papers, case studies, computer training sessions, and panel discussions will focus on topics related to the content and the teaching of AIS courses. For those of you new to AIS, this is an excellent opportunity to get a friendly and collegial introduction to our field.

We invite scholarship from both a teaching and a research perspective. Submissions of completed papers, extended abstracts (proposals), working papers (unpublished cases or empirical research), teaching presentations, and panel discussion proposals addressing AIS topics are welcomed. Research at early stages of development is especially encouraged. Winners of the best paper award will be automatically accepted for publication in the AIS Educator Journal.

The Conference includes the Student Paper Competitions, intended to recognize outstanding work by graduate students of accounting information systems. The student(s) submitting the winning paper receive a $1,000 cash award (in total) upon attending the AIS Educator Conference and presenting the paper.

The Conference also includes the Jack and Maye Stewart Student Project Competition, intended to recognize outstanding work by students on Accounting Information Systems class projects and cases. Educators are encouraged to submit, with the permission of the student(s) involved, outstanding student work on projects or cases. The work may be completed by an individual or by a group and is open to either undergraduate or graduate level students. Awards will be presented as follows:

- Students with the top three projects will receive $200 per project.
- The educator of each of the top three projects is invited to attend the conference to present their winning course materials, project or case. Each educator attending the conference will receive a $250 award.

**THE DEADLINE FOR ALL SUBMISSIONS IS FEBRUARY 15, 2013. ACCEPTANCE NOTIFICATIONS WILL BE MADE BY MAY 1, 2013.**

Our guest speaker will be Dr. Andreas I. Nicolaou, Professor of Accounting at Bowling Green State University, and Editor of the International Journal of Accounting Information Systems.

This year’s Conference will be the 15th Annual Conference, and we have invited all of the Past President’s and Conference Chairs, including our founder, Dr. Jack Stewart, to attend this year’s Conference and to a celebration of this Anniversary during the Conference.

Laramie is a 2.5-hour drive north of the Denver International Airport (DEN). Laramie also has a regional airport near the city (LAR). If not renting a car at the Denver airport, the Green Ride shuttle [www.greenrideco.com](http://www.greenrideco.com) charges $75 round trip directly to the Hilton Garden Inn.

Please visit the AIS Educator Association’s Website at [www.aiseducators.com](http://www.aiseducators.com) for complete conference information. You will need to register at our website in order to make your Conference submission. The Conference Fee is $325, which includes breakfast and lunch on Friday, Saturday, and Sunday.
Send us your best teaching ideas!
The IS Section Education Committee calls for submissions for a "Top 7: Lessons from the Field" session at the Midyear meeting in Ft. Lauderdale (January 2013). Please submit a one page summary of your best practice for teaching Accounting Information Systems (AIS). We seek innovative solutions that our members can adopt or insightful "lessons from your experience". Chosen presenters will have 10 minutes to present or enact their best practices. At the end of the session, audience members will vote for their favorite. Gold, Silver, and Bronze winners will receive awards. Please send submissions to Eileen Taylor at eileen_taylor@ncsu.edu by November 26. Include "Lessons from the Field " in the subject line.

C3 Call
The IS Section of the AAA publishes a collection of IS-related teaching and instructional materials. Sharing your IS-related projects and cases will not only help new AIS instructors, but also more seasoned professors who would like to use new exercises, but may not have the time to develop them. Developing and validating reliable classroom exercises is very time consuming and also requires a considerable amount of experience. C3 is double-blind peer-reviewed and listed in Cabell’s Database of Academic Journals as the Compendium of Classroom Cases and Tools (C3).

We are interested in any of the following that can be easily and effectively integrated into AIS curricula:

- Short cases
- Class projects
- Business simulations using EXCEL, ACCESS, SAP, etc.

Submissions should follow *Issues in Accounting Education* editorial style (including a separate title page) and must include the:

- Instructional resource/teaching note to guide instructors in the use of the case/project/simulation
- Project/case/simulation, etc.
- Solution

**Deadline for submissions:**

- December 31, 2012

Communicate to authors, 1st round:

- March 1, 2013

Final deadline for project completion:

- July 1, 2013

Posting at AAA Commons:

- August, 2012

Please send your submissions to DeWayne Searcy at DeWayne@auburn.edu Please use “C3 Submission” in the subject line email.

Co-Editors:

- Tina Loraas
- School of Accountancy
- Auburn University
- loraatm@auburn.edu

- DeWayne L. Searcy
- Associate Professor and Director
- School of Accountancy
- Auburn University
Call for Papers—
Accounting & Microfinance Conference

Blassys...the Microenterprise e-magazine seeks original papers for its 2012 Accounting & Microfinance Conference that will be held on **December 21, 2012** at the Grove Park Inn, Asheville, NC. The purpose of this event is to expand the discourse in microfinance to involve accounting professionals and scholars. This serves as a unique niche for coalescing innovative and collaborative inputs between these key groups and the microfinance practitioners, funders, borrowers, researchers, and supporters. With increased attention and engagement from the accounting groups, there is opportunity to improve the quality of the accounting and reporting standards as well as expand the literature specific to quality on the concept. Ultimately microfinance can continue its mission of helping to expand the scale and scope of financial services available to disadvantaged small businesses around the world.

Papers should be related to Microfinance/Accounting. Areas of interest include but are not limited to:

- Accountability/Sustainability
- Auditing
- Due Diligence
- Emerging/technical issues
- Ethics
- Commercialization
- IFRS
- Quality Control Strategies
- SEEP Framework
- Technology Advancement/Innovations
- Regulatory issues on data transfer across borders

Please be sure to cite related works, existing journals, case studies, and how they have contributed to the Microfinance industry.

Authors of accepted papers will retain proprietary rights to their work and will be available to present their papers during the conference.

Please join in the excitement by partaking in this 2012 Accounting & Microfinance Conference at the alluring Asheville, NC. Come explore one of the GMA’s “10 Most Beautiful Places in America.”

Please send your submission (up to 8 pages) to Sandra Frempong, CEO of Blassys...the Microenterprise eMagazine, at sfrempong@blassys.com
Tilburg University is pleased to announce the fourth International Symposium on Accounting Information Systems (ISAIS), immediately preceding the 36th Annual Congress of the European Accounting Association. ISAIS is a unification of the AIS Research Symposium (AISRS), the European Conference on AIS (ECAIS), the Asia-Pacific Research Symposium on AIS (APRSAIS), and the International Research Symposium on Accounting Information Systems (IRSAIS). The International Symposium on Accounting Information Systems (ISAIS) will be rotated annually between the University of Central Florida, Tilburg University (The Netherlands) and University of Melbourne (Australia).

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

The 2013 ISAIS program will tentatively consist of a keynote speech, journal quality paper presentations, and a workshop. The emphasis is on a high level of interaction, discussion and debate in a friendly, supportive and relaxed atmosphere. At the same time, the intent of ISAIS is to provide a global forum for bringing the leading AIS researchers and developing scholars together to discuss and critique leading edge research in the field.

Registration deadline and conference fee: registration before March 15 conference fee €125,-, after that date conference fee €175,-

Please visit the conference website for further information and registration at: www.tilburguniversity.edu/isais2013

PAPER SUBMISSION

Only completed research papers should be submitted. Accepted papers will receive a conditional acceptance for publication in the International Journal of Accounting Information Systems. Papers are not required to be dually considered for the journal and authors should advise in their cover letter whether they wish to have their paper considered for IJAIS. The program chair will serve as the IJAIS editor on these papers in close collaboration with the IJAIS editor. We encourage doctoral students and junior researchers to submit their research. To submit an original research paper go to the IJAIS editorial system website at: http://ees.elsevier.com/accinf

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Notification of decision: March 15, 2013

ORGANIZING COMMITTEE
Eddy Vaassen (Chair, Tilburg University, The Netherlands)
Charles Cho (ESSEC Business School, France)
Joëlle Smulders (Tilburg University, The Netherlands)

PROGRAM COMMITTEE
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Carlin Dowling (University of Melbourne, Australia)
Stewart Leech (University of Melbourne, Australia)
Andreas Nicolaou (Bowling Green State University, United States)
Steve Sutton (University of Central Florida, United States)
Eddy Vaassen (Chair, Tilburg University, The Netherlands)

CONTACT
For more information, please contact Joëlle Smulders at pma@tilburguniversity.edu
Thanks & Congratulations!

A Big Thank You to KPMG!
The KPMG Foundation approved grants of $25,000 per year for sole sponsorship of the Information System Section midyear meetings and doctoral consortia occurring in 2014, 2015, and 2016. Thanks to the KPMG Foundation for their fantastic support of our section.

Jane Fedorowicz, Bentley University
Jane Fedorowicz of Bentley University was recently elected to head the Association for Information Systems. She currently serves as President Elect of AIS, and will assume the Presidency of the Association in July, 2013.

IS Section Member Receives Award for Research on Work-Life Balance
IS Section member Dr. Murphy Smith received the KPMG 2012 Outstanding Published Manuscript Award from the American Accounting Association Gender Issues and Work-Life Balance Section. The award is selected from papers published in the prior calendar year.

The award-winning paper, “An Examination of Work-Life Balance Perspectives of Accountants,” was authored by Dr. Katherine Taken Smith, Dr. Murphy Smith, and Dr. Tracy Rebecca Brower. The article was published in 2011 in Volume 3, Issue 4 of *International Journal of Critical Accounting*. Results of their study reveal that a healthy work-life balance is associated with job satisfaction, job performance, and ethical decision-making.

Work-life balance refers to people spending sufficient time at their jobs while also spending adequate time on other pursuits, such as family, hobbies, and community involvement. Finding a balance between career and personal life has always been a challenge for working people. Keeping money in perspective is an ancient problem. Timeless guidance comes from the wise king Solomon who wrote: Whoever loves money never has money enough; whoever loves wealth is never satisfied with his income (Ecclesiastes 5:10).

Shown in the picture are Dr. Murphy Smith and coauthor Dr. Katherine Taken Smith at the awards ceremony in Washington, D.C. Murphy is the Dill Distinguished Professor of Accounting at Murray State University.
In the Education Literature ~ Cam Cockrell

On behalf of the IS Education Issues Committee, I have put together a subsection of education related articles for the “In the Literature” section. With the help of Suzanne Perry (Ph.D. student at the University of North Texas), I have compiled the following list of manuscripts. The articles included date back to January 2011, and include a broad scope of education related pieces, from cases to teaching methods. I decided to organize the articles into three sections -- AIS/Technology, Forensic/Audit, Pedagogical.

Thank you for allowing me the opportunity to serve the IS section.

--Cam Cockrell

The purpose of this case is to describe the benefits and challenges of an Enterprise Resource Planning (ERP) system at a higher education institution (HEI). The case also focuses on IT risk and systems security issues inherent in an ERP system. The case begins with the implementation of financials and HR modules at North Carolina State University, a land-grant institution with 33,000 students. This background sets the stage for the main focus of the case: the implementation of the ERP Student modules, which required a major overhaul of information systems, including admissions, student financials, and registration and records. Concluding the case is a recent dilemma facing NCSU—the potential merging of ERP systems with The University of North Carolina at Chapel Hill. Students have the opportunity to practice problem-solving skills with regards to this dilemma, as well as offer their opinions on the strengths and weaknesses of the Student implementations.

Keywords: ERP systems, higher education institution (HEI) information systems, PeopleSoft, student information systems


Internal control frameworks (ICF) provide a basis for understanding controls in an organization and for making judgments about the effectiveness of controls. The Sarbanes-Oxley Act of 2002 (SOX) requires companies to report, on an ongoing basis, the effectiveness of their internal controls in their annual filings. The Securities and Exchange Commission (SEC) recommends companies use ICF to help achieve compliance with SOX. ICF provide a useful tool for management and auditors evaluating and addressing the adequacy of controls in their organization. As there is no such thing as a "risk-free" enterprise, developing an understanding of ICF is important for students entering the accounting profession. This instructional case provides students the opportunity to assess internal control risks within an organization's information system using a "real-world" problem following COSO (SEC-recommended ICF) and/or COBIT as a guide. Students then evaluate the organization's overall level of internal control risks and formulate recommendations for mitigating such risks.

Keywords: internal controls, COSO, COBIT, internal control framework, data security


In this case, students (1) extend business process diagrams (BPD) to represent current and contemplated business processes for accounts payable processing for a convenience store company's merchandise purchases and (2) use the graphical representations of the business processes to identify control weaknesses and their potential effects on the financial statements and operational effectiveness. The case is appropriate for students developing skills in documenting business processes and evaluating internal control in business processes in introductory courses in accounting information systems (AIS), auditing, and information technology (IT) auditing. Before beginning the case, students should be familiar with the procure-to-pay process, preparing BPDs, and identifying internal control weaknesses in business processes. Working the case requires students to think critically about the business processes and the implications of differences in current and contemplated processes.

Keywords: business process diagram, business process modeling, financial statement assertions, internal control evaluation, operational effectiveness

This paper describes an instructional module developed for the principles of management accounting course to strengthen students’ analytical problem-solving skills using spreadsheets. The module and all its components are presented first, followed by one of the four mini-cases used in a recent semester along with implementation guidance. The Analyzing Business Issues--with Excel (ABI-WE) mini-cases present a short business scenario, data related to the business issue, and a set of requirements to be completed using specific Excel functions from a directory of 40 covered in a semester. The mini-case itself is in Excel, so students can readily copy data into a solution worksheet. The primary focus is on analysis of the business issue using managerial accounting data, and the secondary learning objective is to develop an advanced level of expertise in selected spreadsheet functions; such as pivot tables, regression, if/then statements, V-lookup, conditional formatting, goal seek, and net present value.

Keywords: principles of management accounting, Excel, spreadsheets, pivot tables, problem-solving, analytical skills, managerial accounting, active learning, accounting education


The purposes of this paper are to: (1) describe the integration of generalized audit software (GAS)—specifically, IDEA—in an information systems auditing course, (2) to illustrate the data mining capabilities of IDEA in two fraud detection cases and, (3) make recommendations regarding the effective integration of the software in other auditing or fraud/forensic classes. The first fraud case presented here illustrates the use of data mining techniques to detect unauthorized users in the system (Unauthorized Users), and the second illustrates detection of unauthorized payments (Unauthorized Payments). The purpose of the paper is to provide a framework for teaching fraud detection using the Generalized Audit Software (GAS) in IS auditing courses.

Keywords: Generalized Audit Software (GAS), IS auditing, fraud detection, cases.

Philips Electronics is a leader in integrated reporting. In 2010 it produced its third generation report. Since its first report in 2008, Philips’ integrated reports and its integrated reporting website had grown in sophistication. In planning for its integrated report for 2011, the company is exploring the issues that will need to be addressed in order to produce an integrated report. KPMG is the company’s auditor for both the financial and nonfinancial information contained in the integrated report, but these are covered by separate assurance opinions. Among the challenges of providing an integrated audit is getting the internal measurement and control systems for nonfinancial information to be of the same quality as for financial information. A further challenge is that the cultures of the finance function and those who work in sustainability are very different.

Keywords: Auditing; Internal controls; Organizational culture; Sustainability


You are a member of the internal audit department at E.Z. Pickens Conglomerate, S.A. which is a large, multi-national manufacturing organization. When arriving at the office one morning, you discover that an anonymous tip has been left on the company’s fraud hotline. The tip pertains to a division manager of the company and the manager’s significant other. From a general perspective, your task is to follow-up on this tip to determine whether a fraud has truly been committed and, if so, garner a confession from the potential fraudster. More specifically, this will require you to identify, gather, and evaluate appropriate background information and also accumulate a list of questions that will be used during a face-to-face interview with the accused division manager.

Keywords: interviewing, interrogation, fraud examination, forensic accounting, internal auditing


This case is based on an actual fraud that related to a litigation support engagement that focused on an accounts receivable collateral reporting fraud (improper revenue recognition and asset overstatement) on the part of the management of a services company against its bank. The litigation support work was for the bank’s legal counsel. In addition to background and historical financial results, the case study presents the motivations for the fraud, and the various techniques used to falsify the accounting records and conceal the fraudulent nature of the transactions from the bank and the company’s independent auditors. Specifically, the case requires not only the investigation of accounting issues as to the proper timing of revenue recognition, but also auditing questions and fraud investigation techniques.

Keywords: Revenue recognition, collateral reporting fraud, accounts receivable fraud, litigation support engagement.
The purpose of this case is to introduce students to a real-life example of how organizations respond to activities of high level employees that appear to be inappropriate. At the same time the case engages the student since it sounds like the plotline for a TV sitcom — a college chancellor not only lived in a secret apartment in the university-owned building, but periodically hosted overnight guests. This case is unique in that rather than focusing on how the possible fraud was uncovered, it asks students to evaluate through their understanding of the fraud triangle, forms of power, and stages of crisis the impact of an employee’s actions on an organization and its constituents. To complete the case, students conduct some minimal online research.
Keywords: Fraud triangle, stages of crisis, forms of power, ethics.


The case exposes students to internal control and fraud and their related impacts on small business. Although the issues of internal control and fraud are involved in almost every discussion of accounting, only recently has this concept received increased discussion specific to small business organizations. In particular, the case provides clear evidence how professional owners can often lose sight of the business side of “running a business” as they get involved in their myriad professional responsibilities. Further, the case illustrates the importance of the CPA in both preventing and detecting fraud, particularly in small business. Finally, the case highlights the importance of human resource policies and procedures on internal control and fraud prevention.
Keywords: Small business, internal control, fraud detection, human resource policies, the fraud triangle.


The Dutch company Ahold NV, parent company of U.S. Foodservice, announced a large earnings restatement for current and prior years. The restatement was largely because of fraud related to vendor rebates at U.S. Foodservice. They announced that an extensive forensic accounting investigation would be launched. It was later discovered that in an effort to boost earnings, the company had booked vendor rebates that had not yet been earned and in some cases, were entirely fictitious. It was also discovered that several vendors had provided misleading or false third party confirmations to the external auditors. In this case, students will gain insight into the proper accounting for and disclosure of vendor rebates, improving the auditor’s understanding of the clients’ business, maintaining professional skepticism, and guarding against over-reliance on third party confirmations.
Keywords: Fraud, forensic accounting, earnings restatements, vendor rebates, confirmations.

This paper presents a two-part educational case to help students understand how CAATs can be used in a continuous auditing/monitoring context to detect potential fraud and security breaches. The first part is a step-by-step tutorial with instructions and screenshots that guides students to create an ACL script in a fictional company setting that can be run on a repetitive and recurring basis for detecting terminated employees who still have access to network resources. The second part involves creation of a script that can also be run on a repetitive and recurring basis for detecting active employees with dormant network accounts. While the second part can also be given as a step-by-step tutorial, we suggest that it be given as an assignment or take-home exam without instructions and screenshots. In both parts, students are also required to respond to ethical questions brought about by technology and use critical thinking skills.

Keywords: Accounting education; ACL; CAATs; continuous auditing; continuous monitoring; fraud investigation.


This is the case of Dr. Albert Sterling, a fictitious surgeon who has submitted a disability income claim to Guardian Protection Insurance Corporation, a fictitious insurance company. Students can practice forensic accounting techniques in the specific context of disability insurance, as they assume the role of an insurance investigator assessing the validity of the claim. The case is divided into two phases. Phase 1 contains the majority of the information and analysis and can stand alone. The optional Phase 2 presents additional sources of evidence relevant to the determination. The case contains background information on disability insurance and financial, personal and professional details about Dr. Sterling. Students will find several “red flags of fraud” to investigate and can request and consider additional evidence in their determination. This case is designed for students in an undergraduate or graduate forensic accounting course, or in an advanced auditing course.

Keywords: Disability income claim; insurance investigator; suspicious spending; insufficient accumulation of wealth; depression or addiction.

Studies such as Lewis et al. (2005) and Michinov and Michinov (2009) suggest that knowledge transfer across tasks occurs when realistic tasks within a domain are completed over a period of time. Our study represents the first attempt to investigate knowledge transfer, using cases describing situations similar to those faced in practice. We analyze whether accounting information systems students represent complex problems and show evidence of knowledge encapsulation in a manner similar to ad hoc or established groups of experienced information systems professionals. The number of correct concepts in the problem representation of novices who previously worked together in established groups exceeded those of the novice students and professionals who previously worked in ad hoc groups. These established-group novice students also performed as well as the experienced professionals assigned to either ad hoc or established groups. For the encapsulated knowledge measure, the novices did not perform as well as the experienced professionals, regardless of the type of group membership (ad hoc or established). These results have the potential to inform both educators and professional trainers regarding how to organize groups to solve cases that require practicing skills necessary to develop proficiency in responding to situations commonly addressed by accounting professionals.

Keywords: knowledge transfer; novice versus experienced; ad hoc versus established groups.


Prior research demonstrates that students learn more from homework practice when using online homework or intelligent tutoring systems than a paper-and-pencil format. However, no accounting education research directly compares the learning effects of online homework systems with the learning effects of intelligent tutoring systems. This paper presents a quasi-experiment that compares the two systems and finds that students’ transaction analysis performance increased at a significantly faster rate when they used an intelligent tutoring system rather than an online homework system. Implications for accounting instructors and researchers are discussed.

Keywords: artificial intelligence; tutoring; online homework; accounting cycle.
Teaching and student success in the classroom involve incorporating various sound pedagogy and technologies that improve and enhance student learning and understanding. Before entering their major field of study, business and accounting majors generally must take a rigorous introductory course in financial accounting. Technological innovations utilized in the classroom to teach this course include Audience Response Systems (ARS), whereby the instructor poses questions related to the course material to students who each respond by using a clicker and receiving immediate feedback. In a highly controlled experimental situation, we find significant improvements in the overall student examination performance when teaching this course using clickers as compared to traditional classroom teaching techniques. Finally, using a survey at the end of the introductory financial accounting course taught with the use of clickers, we add to the growing literature supporting student satisfaction with use of this type of technology in the classroom. As universities look for ways to restrain operating costs without compromising the pedagogy of core requirement classes such as the introductory financial accounting course, our results should be of interest to educators, administrators, and student retention offices, as well as to the developers and manufacturers of these classroom support technologies.

Keywords: audience response systems (ARS); clickers; interactive pedagogy; learning; online homework manager systems (OHMS); satisfaction.


One of the major themes of the Accounting Education Change Commission (AECC) is the importance of teaching in a faculty member’s set of core responsibilities. In Issues Statement No. 5 (1993) the AECC called upon accounting educators to develop mechanisms for the sharing of ideas and strategies to improve teaching. This paper responds to that call and reports on specific strategies for enhancing teaching effectiveness as obtained from a survey of 100-plus award-winning U.S. accounting educators. Specific recommendations from our teaching exemplars call for accounting educators to embrace a continuous-improvement philosophy and to “reinvent” themselves as effective teachers. Also underscored from our teaching exemplars is the value of seeking out mentors, identifying and using support services, and maintaining an ongoing commitment to the goal of improving one’s effectiveness as a teacher. These recommendations are discussed with reference to practical concerns expressed in the literature, including possible trade-offs due to the perceived relative importance of teaching, research, and service in the performance evaluation model for accounting faculty. We also discuss our survey findings within the context of developing learning communities of teacher-scholars in accounting. Results reported in this paper should be useful to faculty interested in ongoing professional development, to graduate students in accounting (who are close to entering the profession), and to senior faculty who embrace the dual goals of community-building and mentoring of junior faculty.

No Keywords Provided.
Previous studies indicate that teaching Accounting Information Systems (AIS) is a challenging aspect of offering an accounting curriculum. Developing an AIS course is made difficult due to a constantly changing array of topics and a lack of consensus in pedagogical methods. Thus, controversy exists regarding its place in accounting programs, its content coverage, and its delivery. Seeking a framework for an AIS curriculum, we analyze data gleaned from surveys of accounting faculty, inspection of AIS books, and content analysis of AIS course syllabi. We conclude with proposals for the structure and sequence of the AIS curriculum, and for the materials used therein. Specifically, we propose that ideally the AIS curriculum be taught over two courses, using a loose-leaf format textbook. This enables the coverage of course fundamentals as well as ever-changing current topics driven by evolving technology.
In the Literature ~ Juan Manual Sanchez

On behalf of the IS Section of the AAA, I have compiled the following list of manuscripts I thought are interesting and advance our knowledge in significant ways. Most of these articles come from IS journals, the rationale being the potential cross-fertilization. The articles included date back to January 2011, and include a broad scope of related manuscripts.

Thank you for allowing me the opportunity to serve the IS section.

Juan Manuel Sanchez
In the Literature : Abstracts 1-4

The Effects of Social Network Structure on Enterprise Systems Success: A Longitudinal Multilevel Analysis. Working paper, Sharath Sasidharan (Emporia State University, ssasidha@emporia.edu), Radhika Santhanam (University of Kentucky, santhan@uky.edu), Daniel J. Brass (University of Kentucky, dbrass@uky.edu), and Vallabh Sambamurthy (Michigan State University, sambamurthy@bus.msu.edu).

The implementation of enterprise systems has yielded mixed and unpredictable outcomes in organizations. Although the focus of prior research has been on training and individual self-efficacy as important enablers, we examine the roles that the social network structures of employees, and the organizational units where they work, play in influencing the postimplementation success. Data were gathered across several units within a large organization: immediately after the implementation, six months after the implementation, and one year after the implementation. Social network analysis was used to understand the effects of network structures, and hierarchical linear modeling was used to capture the multilevel effects at unit and individual levels. At the unit level of analysis, we found that centralized structures inhibit implementation success. At the individual level of analysis, employees with high in-degree and betweenness centrality reported high task impact and information quality. We also found a cross-level effect such that central employees in centralized units reported implementation success. This suggests that individual-level success can occur even within a unit structure that is detrimental to unit-level success. Our research has significant implications for the implementation of enterprise systems in large organizations.

Social Networks and the Diffusion of User-Generated Content: Evidence from YouTube. Working Paper, Anjana Susarla (Carnegie Mellon University, anjanas@andrew.cmu.edu), Jeong-Ha Oh (University of Texas at Dallas, jhoh@utdallas.edu), and Yong Tan (University of Washington, ytan@uw.edu).

This paper is motivated by the success of YouTube, which is attractive to content creators as well as corporations for its potential to rapidly disseminate digital content. The networked structure of interactions on YouTube and the tremendous variation in the success of videos posted online lends itself to an inquiry of the role of social influence. Using a unique data set of video information and user information collected from YouTube, we find that social interactions are influential not only in determining which videos become successful but also on the magnitude of that impact. We also find evidence for a number of mechanisms by which social influence is transmitted, such as (i) a preference for conformity and homophily and (ii) the role of social networks in guiding opinion formation and directing product search and discovery. Econometrically, the problem in identifying social influence is that individuals’ choices depend in great part upon the choices of other individuals, referred to as the reflection problem. Another problem in identification is to distinguish between social contagion and user heterogeneity in the diffusion process. Our results are in sharp contrast to earlier models of diffusion, such as the Bass model, that do not distinguish between different social processes that are responsible for the process of diffusion. Our results are robust to potential self-selection according to user tastes, temporal heterogeneity and the reflection problem. Implications for researchers and managers are discussed.
Information Technology and Firm Boundaries: Impact on Firm Risk and Return Performance. Working Paper, Sanjeev Dewan (University of California at Irvine, sdewan@uci.edu) and Fei Ran (Peking University, fren@gsm.pku.edu.cn).

In this paper, we empirically investigate the impact of information technology (IT) investment on firm return and risk financial performance, emphasizing the moderating role of the firm boundary strategies of diversification and vertical integration. Our results indicate a sharp contrast between the direct and interactive effects of IT on both the return (profitability) and risk (variability of returns) dimensions. Although the direct effect of IT capital is to increase firm risk for a given level of return, we find that suitable boundary strategies can moderate the impact of IT on firm performance in a way that increases return and decreases risk, at the margin. This interaction effect is strongest in service firms, in firms with high levels of IT investment intensity, and in more recent time periods. Our results are robust to alternative proxies for firm risk, including an ex ante risk measure (variability of analysts’ earnings estimates), and alternative risk-return specifications. Put together, our results provide new insights into how IT and firm boundary strategies interact to affect the risk and return performance of firms.

Are New IT-Enabled Investment Opportunities Diminishing for Firms? Working Paper, Brian L. Dos Santos (University of Louisville, brian@louisville.edu), Zhiqiang (Eric) Zheng (University of Texas at Dallas, ericz@utdallas.edu), Vijay S. Mookerjee (University of Texas at Dallas, vijaym@utdallas.edu), and Hongyu Chen (University of Texas at Dallas, hxc051200@utdallas.edu).

Today, few firms could survive for very long without their computer systems. IT has permeated every corner of firms. Firms have reached the current state in their use of IT because IT has provided myriad opportunities for firms to improve performance and, firms have availed themselves of these opportunities. Some have argued, however, that the opportunities for firms to improve their performance through new uses of IT have been declining. Are the opportunities to use IT to improve firm performance diminishing? We sought to answer this question. In this study, we develop a theory and explain the logic behind our empirical analysis; an analysis that employs a different type of event study. Using the volatility of firms’ stock prices to news signaling a change in economic conditions, we compare the stock price behavior of firms in the IT industry to firms in the utility and transportation and freight industries. Our analysis of the IT industry as a whole indicates that the opportunities for firms to use IT to improve their performance are not diminishing. However, there are sectors within the IT industry that no longer provide value-enhancing opportunities for firms. We also find that IT products that provided opportunities for firms to create value at one point in time, later become necessities for staying in business. Our results support the key assumption in our work.
The Productivity of Information Technology Investments: New Evidence from IT Labor Data. Working Paper, Prasanna Tambe (New York University, ptambe@stern.nyu.edu) and Lorin M. Hitt (University of Pennsylvania, lhitt@wharton.upenn.edu).

This paper uses newly collected panel data that allow for significant improvements in the measurement and modeling of information technology (IT) productivity to address some longstanding empirical limitations in the IT business value literature. First, we show that using generalized method of moments–based estimators to account for the endogeneity of IT spending produces coefficient estimates that are only about 10% lower than unadjusted estimates, suggesting that the effects of endogeneity on IT productivity estimates may be relatively small. Second, analysis of the expanded panel suggests that (a) IT returns are substantially lower in midsize firms than in Fortune 500 firms; (b) they materialize more slowly in large firms—in midsize firms, unlike in larger firms, the short-run contribution of IT to output is similar to the long-run output contribution; and (c) the measured marginal product of IT spending is higher from 2000 to 2006 than in any previous period, suggesting that firms, and especially large firms, have been continuing to develop new, valuable IT-enabled business process innovations. Furthermore, we show that the productivity of IT investments is higher in manufacturing sectors and that our productivity results are robust to controls for IT labor quality and outsourcing levels.

Research Note—Returns to Information Technology Outsourcing. Working Paper, Kunsoo Han (McGill University, kunsoo.han@mcgill.ca), Robert J. Kauffman (Arizona State University, rkauffman@asu.edu) and Barrie R. Nault (University of Calgary, nault@ulcalgary.ca).

This study extends existing information technology (IT) productivity research by evaluating the contributions of spending in IT outsourcing using a production function framework and an economywide panel data set from 60 industries in the United States over the period from 1998 to 2006. Our results demonstrate that IT outsourcing has made a positive and economically meaningful contribution to industry output and labor productivity. It has not only helped industries produce more output, but it has also made their labor more productive. Moreover, our analysis of split data samples reveals systematic differences between high and low IT intensity industries in terms of the degree and impact of IT outsourcing. Our results indicate that high IT intensity industries use more IT outsourcing as a percentage of their output, but less as a percentage of their own IT capital, and they achieve higher returns from IT outsourcing. This finding suggests that to gain greater value from IT outsourcing, firms need to develop IT capabilities by intensively investing in IT themselves. By comparing the results from subperiods and analyzing a separate data set for the earlier period of 1987–1999, we conclude that the value of IT outsourcing has been stable from 1998 to 2006 and consistent over the past two decades. The high returns we find for IT outsourcing also suggest that firms may be underinvesting in IT outsourcing.
Application service providers (ASP), who host and maintain information technology (IT) applications across the Internet, emerged as an innovation in the way IT services are delivered to client firms. In spite of many potential benefits of this model, ASPs experienced business failure and high rates of exit. Drawing on agency theory, we argue that the efficiency of contracting arrangements between ASPs and client organizations is an important determinant of ASP survival. We test this prediction using a unique data set combining multiple sources that allows us to track an ASP from the year of founding through the beginning of 2006. Contractual misalignment, or adopting contracts mismatched with the underlying agency costs, significantly lowers the probability of survival of service providers in the ASP marketplace. The impact of misalignment is particularly severe when coupled with adjustment costs that impede the transition to aligned contracts. To account for potential heterogeneity in ASPs' knowledge of contracting, we test for endogenous self-selection of ASPs in the relationship between contractual misalignment and survival. Our results are robust to a variety of model specifications as well as alternate explanations of survival from multiple theoretical domains.


The article presents management research on the executive position of chief information officer (CIO), considering the reporting structure of management in terms of the CIO's access to senior executives and participation in decision making. The informal assumptions that the CIO should report directly either to the chief executive officer (CEO) to promote the role of information technology or to the chief financial officer to control information technology costs are examined. A hypothesis is proposed that a company's strategic positioning should determine the CIO reporting structure, and longitudinal data is presented supporting the hypothesis.

How many articles in highly rated journals do Information Systems research faculty publish to earn tenure? Which journals are highly rated outlets? Tenure candidates, promotion and tenure committees, and those who are asked to write external letters are frequently called upon to answer such questions. When Dennis et al. (2006) examined all IS Ph.D. graduates entering academic careers, few faculty had published enough articles in 20 “elite” journals in six years to meet tenure research expectations at research-intensive schools. Our study builds on the dialog started by Dennis et al. In our study, we counted the number of journal articles at the point of tenure for faculty who earned tenure within five to seven years after their Ph.D. graduation date. We also examined the effect of acknowledging different sets of journals as highly rated on the publication rates of faculty who earned tenure. Specifically, we examined the effects of expanding on Dennis et al. by including *MIS Quarterly, Information Systems Research, Journal of Management Information Systems, Journal of the AIS, Information Systems Journal, European Journal of Information Systems, Journal of Information Technology, and Journal of Strategic Information Systems* in the journal basket. We also looked at the effect of acknowledging highly rated non-IS business journals and highly rated computer science and engineering journals. Finally, we present journal publication benchmarks based on these findings for different types of research institutions.


How do information technology capabilities contribute to firm performance? This study develops a conceptual model linking IT-enabled information management capability with three important organizational capabilities (customer management capability, process management capability, and performance management capability). We argue that these three capabilities mediate the relationship between information management capability and firm performance. We use a rare archival data set from a conglomerate business group that had adopted a model of performance excellence for organizational transformation based on the Baldrige criteria. This data set contains actual scores from high quality assessments of firms and intraorganizational units of the conglomerate, and hence provides unobtrusive measures of the key constructs to validate our conceptual model. We find that information management capability plays an important role in developing other firm capabilities for customer management, process management, and performance management. In turn, these capabilities favorably influence customer, financial, human resources, and organizational effectiveness measures of firm performance. Among key managerial implications, senior leaders must focus on creating necessary conditions for developing IT infrastructure and information management capability because they play a foundational role in building other capabilities for improved firm performance. The Baldrige model also needs some changes to more explicitly acknowledge the role and importance of information management capability so that senior leaders know where to begin in their journey toward business excellence.

The article compares methodologies for assessing the validity of effect and causal indicators in structural equation models. A difference is found between composite and causal indicators and it is suggested validity is most relevant to causal indicators. Validity assessment of indicators is said to be dependent on an adequate model fit and on the stability of the parameter estimates for the latent variables of indicators as they appear in different models. Given that fit and stability, validity can be assessed.


In this article, the association between the strength of information technology controls over management information systems and the subsequent forecasting ability of the information produced by those systems is investigated. The Sarbanes-Oxley Act of 2002 highlights the importance of information system controls by requiring management and auditors to report on the effectiveness of internal controls over the financial reporting component of the firm's management information systems. We hypothesize and find evidence that management forecasts are less accurate for firms with information technology material weaknesses in their financial reporting system than the forecasts for firms that do not have information technology material weaknesses. In addition, we examine three dimensions of information technology material weaknesses: data processing integrity, system access and security, and system structure and usage. We find that the association with forecast accuracy appears to be strongest for IT control weaknesses most directly related to data processing integrity. Our results support the contention that information technology controls, as a part of the management information system, affect the quality of the information produced by the system. We discuss the complementary nature of our findings to the information and systems quality literature.
In the Literature : Abstracts 13-16

**The Circulation of Ideas in Firms and Markets.** Working Paper, Thomas Hellman (University of British Columbia, hellmann@sauder.ubc.ca) and Enrico Perotti (University of Amsterdam, e.c.perotti@uva.nl).

This paper models the generation, circulation, and completion of new ideas, showing how markets and innovative firms complement each other in a symbiotic relationship. Novel ideas are initially incomplete and require further insight before yielding a valuable innovation. Finding the complementary piece requires ideas to circulate, which creates appropriation risks. Circulation of ideas in markets ensures efficient completion, but because ideas can be appropriated, market entrepreneurs underinvest in idea generation. Firms can establish boundaries that guarantee safe circulation of internal ideas, but because firms need to limit idea circulation, they may fail to achieve completion. Spin-offs allow firms to benefit from the market’s strength at idea completion, whereas markets benefit from firms’ strength at generating new ideas. The model predicts diverse organizational forms (internal ventures, spin-offs, and start-ups) coexisting and mutually reinforcing each other. The analysis provides new insights into the structure of innovation-driven clusters such as Silicon Valley.

**Determinants and Outcomes of Internet Banking Adoption.** Working Paper, Mei Xue (Boston College, xueme@bc.edu), Lorin M. Hitt (University of Pennsylvania, lhitt@wharton.upenn.edu), and Pei-yu Chen (Temple University, pychen@temple.edu).

This paper examines the drivers of adoption of Internet banking and the linkages among adoption drivers and outcomes (product acquisition, service activity, profitability, loyalty). We relate Internet banking adoption to customer demand for banking services, the availability of alternative channels, customers’ efficiency in service coproduction (“customer efficiency”), and local Internet banking penetration. We find that customers who have greater transaction demand and higher efficiency, and reside in areas with a greater density of online banking adopters, are faster to adopt online banking after controlling for time, regional, and individual characteristics. Consistent with prior work, we find that customers significantly increase their banking activity, acquire more products, and perform more transactions. These changes in behavior are not associated with short-run increases in customer profitability, but customers who adopt online banking have a lower propensity to leave the bank. Building on these observations we also find that the adoption drivers are linked to the postadoption changes in behavior or profitability. Customers who live in areas with a high branch density or high Internet banking penetration increase their product acquisition and transaction activity more than Internet banking adopters in other regions. Efficient customers and those with high service demand show greater postadoption profitability.
**Extracting Business Value from IT: A Sensemaking Perspective of Post-Adoptive Use.** Working Paper, J.J. Po-An Hsieh (Hong Kong Polytechnic University, jj.hsieh@polyu.edu.hk), Arun Rai (Georgia State University, arunrai@gsu.edu), and Sean Xin Xu (Tsinghua University, xuxin@sem.tsinghua.edu.cn).

How can firms extract value from already-implemented information technologies (IT) that support the work processes of employees? One approach is to stimulate employees to engage in post-adoptive extended use, i.e., to learn and apply more of the available functions of the implemented technologies to support their work. Such learning behavior of extending functions in use is ingrained in a process by which users make sense of the technologies in the context of their work system. This study draws on sensemaking theory to develop a model to understand the antecedents, contingencies, and consequences of customer service employees' extended use of customer relationship management (CRM) technologies. The model is tested using multisource longitudinal data collected through a field study of one of the world's largest telecommunications service providers. Our results suggest that employees engage in post-adoptive sensemaking at two levels: technology and work system. We found that sensemaking at both of these levels impacts the extended use of CRM technologies. Employees' sensemaking at the technology level is influenced by employees' assessment of technology quality, whereas employees' sensemaking at the work system level is influenced by customers' assessment of service quality. Moreover, in the case of low technology quality and low service quality, specific mechanisms for employee feedback should be conceptualized and aligned at two levels: through employee participation at the technology level and through work system coordination at the work system level. Such alignment can mitigate the undesirable effect of low technology quality and low service quality, thereby facilitating extended use. Importantly, we found that extended use amplifies employees' service capacity, leading to better objective performance. Put together, our findings highlight the critical role of employees' sensemaking about the implemented technologies in promoting their extended use of IT and improving their work performance.

**Information Technology and Trademarks: Implications for Product Variety.** Working Paper, Guodong (Gordon) Gao (University of Maryland, ggao@rhsmith.umd.edu) and Lorin M. Hitt (University of Pennsylvania, lhitt@wharton.upenn.edu).

This paper examines the relationship between information technology (IT) and trademarks. Using an 11-year panel data set (1987–1997) of IT capital stock, trademark holdings, and other measures for 116 Fortune 1000 manufacturing firms, we find that IT contributes to higher trademark holdings. Further, we find evidence suggesting that firms with more IT capital tend to apply for more new trademarks and retire existing trademarks more quickly, leading to a shorter trademark life cycle. Because trademarks are mainly used by firms to communicate differences among similar products to the marketplace, these results suggest that the business value of IT can be realized in greater product variety.