The INFORMS fall meeting is an opportunity for the Technology Management Section (TMS) to bring new blood onboard. Over the past 5 years, I have been working with a vibrant group of officers that have continuously led new initiatives for our section. Our most recent addition, David Moore who serves as Vice Chair Membership & Communication, created a website (www.klicnet.org) under the TMS umbrella to meet a growing interest on the topics of knowledge, learning and intellectual capital (KLIC). We strongly encourage our members to visit this site. We also encourage our members to participate in our business meeting (which will be followed by a wine-and-cheese reception) on Monday November 6 in order to meet our current officers and suggest nominations for next year’s new officer. Attending the business meeting this year will further allow our members to raise their opinions on amendments to our bylaws that were distributed earlier this fall.

The TMS program encompasses many topics of interests to academicians in – and practitioners of – technology management. In addition to four sessions on KLIC, topics this year include technology strategies, behavioral operations, innovation management, IT capabilities, and three sessions focusing on the service industry. Francisco Veloso, Program Chair, worked with the New Product Development (NPD) Cluster to offer on Monday November 6 a joint panel on early career strategies for TMS and NPD scholars. We are grateful to Francisco for the TMS program and to Christian Terwiesch for the NPD program. Information from both programs has been included in this newsletter.

(Continued on page 26)

PITTSBURGH BUSINESS MEETING

The Technology Management Section business meeting will be held on Monday, November 6, 18:00h - 19:00h. A wine and cheese reception will follow and you will get to meet with the TMS officers and other distinguished colleagues. Don’t miss this networking opportunity!

IN THIS ISSUE
Distinguished Speaker.................................2
TMS Doctoral Dissertation Award...............4
The History of KLIC .................................5
TMS Pittsburgh Fall ’06 Program...............6
TMS Elected Officers 2006.........................18
NPD Pittsburgh Fall ’06 Program Overview.19
OS Pittsburgh Fall ’06 Program Overview...21
Calls for Papers .................................22
We’re very pleased to have Ashish Arora as our TMS/NPD Distinguished Speaker for the 2006 INFORMS annual meeting this fall. Ashish is Professor of Economics and Public Policy at Carnegie Melon’s Heinz School. His research centers around the areas of economics of technological change, management of technology, intellectual property rights, and technology licensing. In the past, Ashish has worked on questions of the productivity of university research, and the growth and development of biotechnology and the chemical industry.

Ashish’s numerous articles on these topics have appeared in a variety of journals, including Management Science, Economics of Innovation and New Technology, Strategic Management Journal and Research Policy. He has also written or edited two books: "Markets for Technology: Economics of Innovation and Corporate Strategy", with Andrea Fosfuri and Alfonso Gambardella, MIT Press, December 2001 and “Chemicals and Long Term Economic Growth”, edited with Ralph Landau and Nathan Rosenberg, John Wiley and Sons, 1998.

I was fortunate in May to have lunch with Ashish on the Stanford campus and to hear him give a talk on software patches and problem reporting. Ashish earned his doctorate from Stanford in economics with a dissertation titled: "Technology Licensing, Tacit Knowledge, and the Acquisition of Technological Capability." The interview below captures some of his views on his research to date as well as the kinds of questions he hopes to investigate next and to discuss with us this fall.

DB: Perhaps we could begin by having you tell us a bit about your research overall, the kinds of things you investigate and the questions you ask.

AA: Most of my research is concerned with markets for technology. I ask, “Under what conditions can technology be made into a tradable commodity? When can you make money by selling a technology instead of the things that embody the technology?” These are first order questions for an economist to study. An interesting subtopic concerns licensing, because typically technology is licensed. How does licensing work? What is the role of tacit knowledge? What is the role of IT and what does this mean for divisibility across divisions and for organizations? In thinking about economic issues like this across my career, I’ve come to conclude that the economic barriers are actually not that huge. The bigger barriers are cognitive. For example, in the context of licensing, an economist might say that the problem is asymmetric information, which make contracts difficult. But these issues are not insurmountable. The bigger problem is that technology may not be divisible, so there exist compelling cost economics for having all the work and functions associated with the technology in one organization. You can see this in
the software industry, which has been outsourcing the low-end stuff. I'm often asked if design will also be outsourced. I think that design for high-end business software – the kind you find in CRM or ERP systems – will not be outsourced due to the need for interaction, for trust, and for credibility. In short, the big lesson that I learned is not about technology, but about business.

Another example comes from security software. Check Point Software Technologies started in Israel, but today it is a US company. Why? Because you need your security people close to you. You need them close to you because old code never dies, which means you need to be able to deal with it. An engineer may say I can create great software from scratch, but the business manager knows that new software has to interact with all of his existing software. The business manager is willing to sacrifice a lot for predictability and reliability. He wants a working process and he says, “When I have a complaint, I need you [the security firm] right here to fix the problem.”

DB: You have done a lot of research on the creation of the Indian software industry. What have you learned?

AA: When you ask Indians why they have a successful software industry, they tell you that they’re good in math. But the best programmers in the world today are in Eastern Europe. Why isn’t there a large software industry there with lots of big software companies? Because they lack the managerial skills that one finds in India. You don’t need great CS people to write queries, and writing queries is a lot of what programmers do. I started my software studies in 1997, before it became a fashionable topic, which was lucky for me. One of the first things that struck me was that when I arrived at a software company there to talk to the CEO, his secretary knew I was coming and she called the CEO by his first name. That is not typical of Indian companies. I recognized that these firms were operating with a cross between American and Indian business cultures. It is amazing how quickly they have grown. They have had a 30% per year growth in headcount.

DB: Can you tell us what you might talk to us about this fall? What is the research that currently fascinates you?

AA: I think I’d like to address unresolved questions in markets for technology. One question asks, “Why is there so much money to be made in integration?” Consider pharmaceuticals. Many pharmaceuticals may become large integrators who outsource many functions, including drug development, and essentially become marketing companies. Why is there so much money in that? Why is there more money in selling the pill than developing it? We might also consider R&D labs. One might think that R&D labs ought to operate under the principle that they develop stuff and give it to whoever values it the most. But I have a friend who works for Intel on techniques to lower surface contaminants. What he makes, he makes for Intel. Yet, the efficiency argument says that whatever he develops should be diffused to all the semiconductor companies. What does this mean? It means that the way in which you organize economic activity affects efficiency. A similar story can be found in the case of Universal Oil Products [UOP], which develops new refining products and processes and sells them to independent companies. UOP has developed in the past several important refining processes, including a way to get sulfur out of petroleum to make it a more valuable gasoline.
These processes were widely diffused because UOP’s business model was to license, unlike the then dominant oil company, Standard Oil, which restricted access to its technology. Today the situation is different. Even Exxon (descended from Standard Oil of New Jersey) does share, primarily through licensing new technologies, like the technology for making polyethylene. Ultimately, how you organize innovation has efficiency effects, such as how long diffusion takes. Ken Arrow observed that people make as much money from marketing other people’s products as their own. Amgen is a good example of this: They started as an innovator but the market rewarded them for marketing other firms’ products. So integration MUST have value. The question I ask is, “When does integration have value? When can you pull apart work and functions, make them divisible?” Answering this question requires tracing the flow of money to find out who gets the rent.

For more information on Professor Arora, including his affiliations and recent publications, please see his web page: http://www.heinz.cmu.edu/bio/faculty/ashish.html.

Arora’s research focuses on the economics of technology and technical change. His research interests include the study of technology intensive industries such as software, biotechnology and chemicals, the role of patents and licensing in promoting technology startups, and the economics of information technology. His recent book is on the growth of the software industries in emerging economies: From Underdogs to Tigers? The Rise and Growth of the Software Industry in Brazil, China, India, Ireland, and Israel, (edited with Alfonso Gambardella), Oxford University Press, February, 2005.

The distinguished speaker lecture is scheduled on Monday, November 6, from 16h30 to 18h00 (session MD - please see the schedule for room location). After the lecture there will be a wine and cheese reception at 18h00 followed by the TMS business meeting. Please do not miss this networking opportunity.

**TMS Doctoral Dissertation Award 2006 Winners are**
Dr. Claudia González Brambila
and Dr. Giovanni Valentini
— Sebastian Fixson

The 2006 Doctoral Dissertation competition saw a finish that was too close to call. From a strong field of submissions two dissertations emerged as the outstanding ones. In the end, the committee decided that both dissertations —different in style, but both excellent in design and execution — represent the spectrum of our section, and both deserved to be recognized. Therefore, this year’s TMS best dissertation award is shared by two winners (in alphabetical order): Dr. Claudia González Brambila for her dissertation titled “Exploring Academic Scientific Productivity for the Design of Public Policies,” completed at Carnegie Mellon University, and Dr. Giovanni Valentini for his dissertation titled “Dynamic competitive advantage through innovation: M&A, Cooperation, Contracting and Technological Performance,” completed at IESE Business School in Barcelona. Claudia is now Assistant Professor at Instituto Tecnológico Autónomo de México, and Giovanni is Assistant Professor at Bocconi University, Italy.

Congratulations to both our winners! You will have a chance to see both present their work at the INFORMS meeting in Pittsburgh. Claudia is scheduled to present her work on Sunday in the afternoon session (SD), and Giovanni will give his talk in the Sunday morning session (SA). Please see the program for details. Both winners will also be formally recognized during our business meeting on Monday evening.

We would like to thank the members of the selection committee who reviewed the
dissertations and abstracts through multiple rounds. This year’s selection committee included: Dovev Lavie, McCombs School of Business, University of Texas at Austin, Mark Junkunc, School of Business Administration at the University of Miami, Oana Branzei, Schulich School of Business at York University, and Jeff Liker, Industrial and Operations Engineering at the University of Michigan. TMS officer Sebastian Fixson, University of Michigan, coordinated the review process.

As knowledge drives the global economy of the 21st Century, organizations, firms, industries, regions and nations are increasingly seeking competitive advantage from organizational knowledge. Consequently, knowledge-related phenomena constitute highly valuable subjects for academic study.

Scholars from diverse backgrounds but a shared interest in knowledge-related phenomena have established new foci in disciplines, such as new product development, strategy and business policy, or law and intellectual property. They participate in conferences of their established disciplines, presenting research that relates organizational knowledge to its associated phenomena in these established disciplines. However, they rarely have the opportunity to attend a forum in which organizational knowledge, learning, and intellectual capital are the primary focus of the community.

Over the last few years, a number of researchers have joined to establish a community of scholars that is dedicated to the study of organizational knowledge and related phenomena. The first successful attempt occurred at the 2004 INFORMS meeting in Denver, where Charles Weber of the Department of Engineering and Technology Management at Portland State University and Anita Tucker of the Wharton School at the University of Pennsylvania chaired two sessions on organizational learning and knowledge. The feedback on these sessions was overwhelmingly positive. Thus, at a meeting following these sessions, it was decided to repeat the effort at subsequent INFORMS meetings. The approach would be inclusive. All scholars and practitioners that are active in the areas of organizational learning, knowledge and intellectual capital were welcome to join the effort, which would henceforth be known as KLIC.

David Moore began leading the KLIC effort in 2005. He successfully organized a full Sunday of sessions within the Technology Management cluster at the 2005 INFORMS meeting in San Francisco and filled them with high quality papers. (David, Nile Hatch of BYU and Charles Weber acted as session chairs.) The first meeting of the “KLIC Clique” also occurred at INFORMS-2005. At that meeting it was decided to keep the effort going within the INFORMS Technology Management Section. David Moore proposed a KLIC website, to act as focal point for communication within the emerging KLIC community, and the group discussed basic requirements.

Nile Hatch agreed to lead the KLIC efforts for 2006. He was very successful in filling four INFORMS Technology Management Section sessions with high quality KLIC papers at the 2006 INFORMS meeting in Pittsburgh. Nile Hatch, David Moore, Anita Tucker and Charles Weber will act as chairs for these sessions.

KLIC grew beyond INFORMS in 2005-2006. Nile Hatch enabled a meeting between the KLIC community and the Learning Economics Group (LEG) at the Dec. 2005 LEG symposium in San Francisco. Cheryl Gaimon, Terri Griffith, Nile Hatch, David Moore and others presented at the LEG symposium. With the support of Michael Lapré of Vanderbilt University, KLIC became a subject of discussion at the 2006 POMS meeting in Boston. Charles Weber and Paul Carlile of the Boston University School of Management each chaired a KLIC session at POMS-2006. KLIC-related papers were also presented in 6 sessions at PICMET ‘06 in Istanbul.

Last but not least, David Moore implemented the KLIC website proposed in 2005, which became operational in October, 2006. Access the website at www.klicnet.org.
Dear TMS members,

It is a pleasure to be the host of this year’s annual TMS meetings in Pittsburgh. The program features over 60 individual presentations from Sunday to Wednesday. Thirteen regular paper sessions are complemented with three panels and a presentation by our 2006 TMS Distinguished Speaker, Dr. Ashish Arora, Professor at the Heinz School of Public Policy and Management of Carnegie Mellon University. We hope you find the program interesting, and actively participate in presentations and discussions.

On the first day, Sunday, November 5, the program starts with a session on Technology Strategy, covering various avenues to develop technical capabilities, including entry in new areas, technology adoption and even firm acquisition. The last paper in this session is also one of the winners of this year’s Best Dissertation Award, Dr. Giovanni Valentini, now a professor at Bocconi University, in Milan, Italy. The second session brings together organizations and operations, exploring how behavioral and cognitive issues condition operational decisions, procedures and models. The following two afternoon sessions are organized by the Knowledge, Learning, & Intellectual Capital (KLIC), now an established interest group within TMS. The first of session focuses on learning and knowledge transfer across individuals and organizations. The second session continues with a discussion on knowledge creation, but explores how this process is conditioned by issues such as pre-existing knowledge, alliances and networks, as well as representation and dynamics. This session includes the paper by the other winner of this year’s Best Dissertation Award, Dr. Claudia Gonzalez-Brambila, a professor at Instituto Tecnologico Autonomo de Mexico.

Monday, November 6, starts of with a panel discussion on early career strategies in interdisciplinary Areas. This session is co-hosted with the New Product Development Cluster and will explore these issues from both TMS and NPD perspectives. The second and third sessions of the day are also part of the KLIC interest group, covering a issues such as knowledge articulation, creation, retention and transfer, as well as organizational adaptation and learning. The fourth session on Monday is traditionally devoted to the TMS distinguished speaker. This year, we are proud to present Dr. Ashish Arora, from Carnegie Mellon University, who will talk about “markets for technology”.

The third day, Tuesday, November 7, begins with a session on management of innovation and technological change, presenting work on design and development decisions, technology interdependence and innovation contexts. The second session looks at Information Technology Capabilities, considering mechanisms to generate, deploy manage ITs and exploring how they influence performance. The third session focuses on decision analysis in technology management, with presentations covering tools such as forecasting, AHP and HDM. The last session of the day is a panel discussion of the Engineering and Technology Management Education and Research Council (ETMERC).

The fourth day of our program, Wednesday,
November 8, starts with a session on entrepreneurship and the buildup of regional innovation systems. Topics include the commercialization of university technology, how public and private incentives condition the process, the role of culture and offshoring impacts. The second session on Wednesday covers the use of RFID in Supply Chain and Services Management. Aspects such as the customer value of RFID, adoption of the technology, supply chain management and use impacts will be part of the session. The two last session of the program cover a new and exciting topic: technology management in services. It begins with a panel discussion on the topic that features both academics and industry, followed by a second session with research presentations on technology management in the service industry. The presentations cover issues of IP, learning from manufacturing, services engineering and university innovations in the area.

We are looking forward to this year’s meetings and hope to see you in Pittsburgh!

SUNDAY

Session Information: Sunday Nov 05, 08:00 - 09:30

Title: Technology Strategy: Entry, Adoption, and Acquisition
Chair: Sebastian Fixson, Visiting Assistant Professor, MIT Sloan School of Management, 30 Wadsworth St, Cambridge MA, United States, fixson@mit.edu

Title: Evolution of a Technological System and Organizational Dynamics: A Subsystem Level Analysis
Presenting Author: Jaegul Lee, Postdoctoral Fellow, Carnegie Mellon University, Pittsburgh PA 15213, United States, jaegull@andrew.cmu.edu
Abstract: This research examines the link between technological evolutions of the automobile emission control system at the subsystem level and the entry as well as exit patterns of firms' innovation activities. Findings of this research suggest that firms' entry and exit during the subsequent cycles of technological change is influenced significantly by the establishment of the subsequent technological regime and ecological processes of involved firm population.

Title: Knowledge Relatedness and Industry Life Cycle: Evidence from the Early Automotive Airbag Industry
Presenting Author: Sebastian Fixson, Visiting Assistant Professor, MIT Sloan School of Management, 30 Wadsworth St, Cambridge MA, United States, fixson@mit.edu
Co-Author: Wonhee Lee, University of Michigan, Ann Arbor MI 48109, United States, woni@umich.edu
Abstract: Linking the concepts of knowledge relatedness and industry life cycle we explore in this paper the dynamic nature of knowledge relatedness by comparing industry pre-takeoff and post-takeoff stages of the automotive airbag industry. We find that while prior to industry take-off firms' inward focus produces more valuable innovations, post industry take-off firms need to explore more across their firm boundaries to produce valuable innovations.

Title: Technology Adoption and Performance Among Medical Service Providers
Presenting Author: J. Lamar Pierce, Carnegie Mellon University, Tepper School of Business, Pittsburgh PA 15213, United States, jlp1@andrew.cmu.edu
Co-Author: Aaron Chatterji, Duke University, Fuqua School of Business, Chapel Hill NC, United States, chatterj@haas.berkeley.edu
Abstract: When and how to acquire new medical equipment is an important strategic decision for health care firms. Especially for new firms, significant tradeoffs exist between financial stability and quality of services. This study uses data on medical equipment to investigate the impact of technology adoption and financing on firm performance.

Title: Dynamic Competitive Advantage Through Innovation: M&A, Cooperation, Contracting & Tech. Performance
Presenting Author: Giovanni Valentini, Bocconi University, ISEA, Milan, Italy, giovanni.valentini@unibocconi.it
Abstract: Recent evidence suggests that the innovation process is increasingly involving partners beyond a firm’s boundaries, including research companies, business partners, and universities. This work explores issues on the drivers and the
consequences of an open innovation strategy.

Session Information: Sunday Nov 05, 10:00 - 11:30

Title: Behavioral Operations
Chair: Gary Pisano, Professor of Business Administration, Harvard Business School, Morgan Hall 417, Boston MA 02163, United States, gpisano@hbs.edu
Co-Chair: Francesca Gino, Post-Doctoral Fellow, Tepper School of Business, Carnegie Mellon University, Pittsburgh PA 15213, United States, fgino@andrew.cmu.edu

Title: Cross-Functional Coordination in Supply Chain (SC) Forecasting and Planning
Presenting Author: Noel Watson, Assistant Professor, Harvard Business School, Soldiers Field Road, Medford MA 02155, United States, nwatson@hbs.edu
Abstract: Quant. models of cross-functional coordination primarily exploit incentives which require complete system-wide knowledge by a planner. In practice, some efforts have instead focused on specific process mechanisms such as improving directly the collective information processing abilities of participating functions. We re-examine then coordination to see what is achievable without primarily changing incentives. Behavioral dynamic constructs such as perceptions are valuable in our models.

Title: A Behavioral Investigation of Service-Based Supplier Competitions
Presenting Author: Karen Donohue, Associate Professor, Carlson School, University of Minnesota, 321 19th Avenue S., Minneapolis MN 55455, United States, KDonohue@csom.umn.edu
Co-Author: Saif Benjaafar, Professor & Director, Division of Industrial & Systems Engineering, University of Minnesota, 111 Church Street SE, Minneapolis MN 55419, United States, saif@umn.edu
Elena Katok, Associate Professor, Penn State University, 465 Business Building, University Park PA 16802, United States, ekatok@psu.edu
Abstract: We compare two types of supplier competitions that are proven, in theory, to be equally effective ways for a buyer to elicit high service quality from his supply base. We study the two mechanisms in the laboratory to determine whether these similarities hold true with human decision-makers. We also test the effect of the number of competitors and different service cost structures on service performance.

Title: Bridging Laboratory and Field Behavior: Bargaining and Auctions in Controlled Experiments on eBay
Presenting Author: Gary Bolton, Smeal College of Business, Penn State University, 334 Business Building, University Park PA, United States, gbolton@psu.edu
Co-Author: Axel Ockenfels, Department of Economics and Business, University of Cologne, Cologne, Germany, ockenfels@uni-koeln.de
Abstract: We conducted a controlled field experiment on eBay to investigate first, whether basic laboratory results on equitable bargaining and competitive bidding surface in a naturally occurring market environment among experienced traders, and second, whether trading strategies observed in the experiment can be linked to trading patterns observed outside the experiment.

Title: Research Proposal: The Cognitive Aspects of Scheduling
Presenting Author: Yishai Boasson, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge MA 02139, United States, yishai@mit.edu
Abstract: We wish to understand how expert schedulers modify scheduling heuristics and choose between them. Field research methods will be used to collect data about expert scheduler behavior. Data will be compared and contrasted with lab data. Insights gained can be used in models for system design. This is different from previous works, as it is concerned with how schedulers make decisions, rather than with what those decisions are, or with benchmarking scheduler performance against normative theory.

Title: Experimental Operations Research
Presenting Author: J. Neil Bearden, Assistant Professor, University of Arizona, Eller College of Management, Mcclelland Hall 417, Tucson AZ 85720, United States, jneilb@gmail.com
Abstract: I survey laboratory studies of decision behavior in problems drawn from theoretical OR literature, focusing on job sequencing and revenue management. I argue that we should not be concerned with the “irrationality” of human decision making, but use OR models as standards to evaluate where decision making can be improved.
Title: KLIC I
Chair: Nile Hatch, Assistant Professor, Marriott School, Brigham Young University, 790 TNRB, Provo UT 84602, United States, nile@byu.edu

Title: Exploration and Exploitation in Complex Networks: Learning Rates and Interpersonal Networks
Presenting Author: Melissa Schilling, Associate Professor of Management, Stern School of Business, New York University, 40 West Fourth Street, New York NY 10012, United States, mschilli@stern.nyu.edu
Abstract: The rate at which superior solutions spread through an interpersonal network is strongly influenced by the learning rate utilized by individuals and the underlying network structure. We find that very low levels of random linking increase performance, but higher levels of random linking lower performance. Small-world network properties can enhance organizational learning by enabling short path lengths and semi-isolated pockets of heterogeneous knowledge to exist simultaneously in a network.

Title: Cross-Training, Social Identity and Knowledge Sharing
Presenting Author: Enno Siemsen, Assistant Professor of Business Administration, University of Illinois at Urbana-Champaign, Department of Business Administration, 350 Wohlers Hall, 1206 S. Sixth Street, Champaign IL 61820, United States, siemsen@uiuc.edu
Co-Author: Sridhar Balasubramanian, University of North Carolina at Chapel Hill, Kenan-Flagler Business School, Campus Box 3490, McColl Building, Chapel Hill NC 27599, United States, balasubs@bschool.unc.edu
Aleda Roth, Arizona State University, W.P. Carey School of Business, Main Campus, PO Box 874706, Tempe AZ 85287, United States, Aleda.Roth@asu.edu
Abstract: This research explores the relationship between cross-training and inter-employee knowledge sharing. Cross-training can increase knowledge sharing, for example by enabling better communication between employees. On the other hand, cross-training increases the functional similarity between employees, which in turn can increase the competition between them, thereby reducing knowledge sharing behavior. We explore these relationships empirically using survey data from three different companies.

Title: Dissecting Organizational Knowledge: Multimodal Apprenticeship in Vascular Surgery
Presenting Author: Curtis LeBaron, Associate Professor, Brigham Young University, 790 Tanner Building, Marriott School, Provo UT 84602, United States, LeBaron@byu.edu
Abstract: This is a video-based study of instruction within a surgical team. The attending surgeon, who is most expert, provides subtle visible and vocal prompts for the work of the resident, who is a novice. Such "scaffolding" behaviors are a form of practice that emerge organically within surgical activity, supporting the novice’s performance as needed and to the extent needed, disappearing into the folds of interaction as the resident develops expertise.

Title: Fractal Knowledge and Technological Change in Semiconductors and Disk Drives
Presenting Author: Roger Bohn, Professor, University of California - San Diego, 9500 Gilman Drive #0519, IR/PS, La Jolla CA 92093-0519, United States, Rbohn@ucsd.edu
Abstract: Knowledge can be modeled as a causal graph which grows as more is learned. Such graphs are fractal: parent-child relationships become complex subgraphs as more is learned. These patterns are illustrated by semiconductor lithography and hard disk drive head design. As product generations get smaller (Moore's Law), new physical relationships become large enough to be important. Also, incremental and radical technical change can be measured by how the graph changes.

Session Information : Sunday Nov 05, 16:30 - 18:00

Title: KLIC II
Chair: David Moore, Klicnet.org, 3788 Davidson Place, Boulder CO 80305, United States, dmoore@klicnet.org

Title: Pharmaceutical-Biotechnology R&D: Implications for Alliance Performance
Presenting Author: Jongwook Kim, Assistant Professor, Western Washington University, 351 Parks Hall MS9075, 516 High Street, Bellingham WA 98225, United States, JongWook.Kim@wwu.edu
Abstract: Alliance opportunities are often characterized by information asymmetry, particularly where key resources are intellectual property. In the context of biotechnology-pharmaceutical alliances, I test how alliance characteristics impact performance.
The data support the claim that utilization of network ties may be informational in nature where the role of reputation and network ties in latter stages diminish as the odds of success are higher, and more emphasis is placed on firm competence.

Title: Patents in Practice: Systemic Failures of Knowledge Representation in the US Patent System  
Presenting Author: Tony Briggs, Doctoral Candidate, Boston University Graduate School of Management, Information Systems Department, 595 Commonwealth Avenue, Boston MA 02215, United States, tbriggs@bu.edu  
Co-Author: Paul Carlile, Associate Professor, Boston University, 595 Commonwealth Avenue, Boston MA 02215, United States, carlile@bu.edu  
Abstract: The US patent system is charged to promote the progress of science and useful arts. While patents are managed as economic devices across firms, they are seldom used as knowledge repositories to shape innovation within firms. We use a knowledge management framework to examine 3 generic patenting practices: development, examination, and enforcement. We find that different practices lead to either knowledge obfuscation or obsolescence, resulting in the systemic failure to inform future innovation.

Title: Social Capital and the Creation of Knowledge  
Presenting Author: Claudia Gonzalez-Brambila, Business School, Instituto Tecnologico Autonomo, Rio Hondo 1, Mexico, D.F. 01000, Mexico, cgonzalez@itam.mx  
Co-Author: Krackhardt David, Heinz School, Carnegie Mellon University, Pittsburgh PA, United States, krack@andrew.cmu.edu  
Francisco Veloso, Assistant Professor, Carnegie Mellon University, Engineering & Public Policy, Pittsburgh PA 15213, United States, fveloso@cmu.edu  
Abstract: We examine the relation between knowledge creation, measured through published papers, and social capital, characterized through co-authorship. Using an extensive panel, analysis suggests that, contrary to previous results, structural holes are not significant; what matters are direct ties, being central, working across areas of knowledge, and being in non dense networks.

Title: Organizational Learning in Distributed Innovation Planning  
Presenting Author: Edward Anderson, Professor, University of Texas, McCombs Business School, 1 University Station B6500, Austin TX 78733, United States, edward.anderson@mccombs.utexas.edu  
Co-Author: Nitin Joglekar, Associate Professor, Boston University, 525 Commonwealth Avenue, Boston MA 02215, United States, joglekar@bu.edu  
Abstract: Using a complex systems/system dynamics perspective, we examine the co-evolutionary relationship between the market, innovation, products and capabilities in distributed environments. In particular, we argue that the role of capability planning is of the highest leverage in guiding innovation. We also argue that this planning must incorporate extensive levels of risk management and flexibility because of the inherent path dependence in such complex systems.

MONDAY  
Session Information: Monday Nov 06, 08:00 - 09:30  
Title: Panel Discussion: TMS/NPD: Early Career Strategies in Interdisciplinary Areas - Perspectives from TMS and NPD  
Chair: Christian Terwiesch, Associate Professor, University of Pennsylvania, 548 JMHH, Philadelphia PA 19104, United States, terwiesch@wharton.upenn.edu  
Co-Chair: Francisco Veloso, Assistant Professor, Carnegie Mellon University, Engineering & Public Policy, Pittsburgh PA 15213, United States, fveloso@cmu.edu  
Presenting Author: Christian Terwiesch, Associate Professor, University of Pennsylvania, 548 JMHH, Philadelphia PA 19104, United States, terwiesch@wharton.upenn.edu  
Co-Author: Ashish Arora, Professor of Economics and Public Policy, Heinz School of Public Policy & Management, Carnegie Mellon University, Pittsburgh PA 15213, United States, ashish@andrew.cmu.edu  
Christoph Loch, Professor of Technology Management, INSEAD, Boulevard de Constance, Fontainebleau, France, christoph.loch@insead.edu  
Francisco Veloso, Assistant Professor, Carnegie Mellon University, Engineering & Public Policy,
Pittsburgh PA 15213, United States, fveloso@cmu.edu
Abstract: This Panel brings together several scholars to discuss strategies and approaches towards building a successful career working in the interdisciplinary areas that span the members of the TMS and NPD communities. Issues to be discussed include managing the tension between interdisciplinary interests and disciplinary journals, building recognition and focus across disciplines and developing successful tenure records.

Session Information : Monday Nov 06, 10:00 - 11:30

Title: KLIC III
Chair: Anita Tucker, Assistant Professor, University of Pennsylvania, 551 Huntsman Hall, 3730 Walnut Street, Philadelphia PA 19066, United States, tuckera@wharton.upenn.edu
Title: Knowledge Management for Product and Process Design Teams
Presenting Author: Cheryl Gaimon, Regents' Professor, Georgia Institute of Technology, College of Management, 800 West Peachtree Street, Atlanta GA 30308-0520, United States, Cheryl.Gaimon@mgt.gatech.edu
Co-Author: Gulru Ozkan, PhD Student, Georgia Institute of Technology, College of Management, 800 West Peachtree St., NW, Atlanta GA 30308-0520, United States, gulru.ozkan@mgt.gatech.edu
Abstract: We consider strategies for managing product and process design team knowledge. Net revenue is a function of knowledge. Each team's knowledge increases from learning-by-doing, knowledge transfer, and induced learning. We determine the optimal rate and direction for knowledge transfer and the optimal rate that induced learning should be pursued over time. Key results include conditions that drive different managerial strategies including the delay in knowledge creation.

Title: Myopia of Selection: Does Organizational Adaptation Limit the Efficacy of Population Selection?
Presenting Author: Hart Posen, Assistant Professor of Strategy, Ross School of Business, University of Michigan, 701 Tappan Street, Ann Arbor MI 48109, United States, hposen@umich.edu
Co-Author: Daniel Levinthal, Professor of Management, Wharton School - University of Pennsylvania, Steinberg Hall-Dietrich Hall, 3620 Locust Walk, Philadelphia PA 19104, United States, Levinthal@wharton.upenn.edu
Abstract: A central tenet of the evolutionary analogue in organization theory is that selection disproportionately removes less fit firms. However, the analogue is imperfect because variation is not blind - firms engage in adaptive learning. Is the efficacy of selection invariant to the nature of the adaptation process? We find that learning intended to enhance the performance of individual firms may have the unintended consequence of reducing the efficacy of selection in identifying superior firms.

Title: Knowledge and Learning in Complex Business Systems
Presenting Author: Zuobing Xu, UC Santa Cruz, zbxu@soe.ucsc.edu, WKT
Co-authors: Ram Akella, University of California at Santa Cruz and Silicon Valley Center, akella@soe.ucsc.edu, Kristin Fridgeirsdottir, London Business School, KFridgeirsdottir@london.edu; Arvind Vidyarthi, Altera; Eric Wang, UC Santa Cruz, zbxu@soe.ucsc.edu, WKT.
Abstract: We will describe a unifying approach we have been developing over several years for speeding up knowledge capture, learning, and associated business decision making across several industries. These include semiconductor, automotive, airline, IT, call/service centers and health. Our approach fuses resource management, financial and risk management, and knowledge management and has impacted worldwide industry. We summarize the integration of techniques ranging from statistics, queuing, and finance, to text/data mining, which enable optimized learning.

Title: Learning While Sourcing: Productivity Gains While Coordinating Software Development
Presenting Author: Paulo Gomes, Assistant Professor, Universidade Nova de Lisboa, Campus de campolide, Lisbon 1099-032, Portugal, pgomes@fe.unl.pt
Co-Author: Nitin Joglekar, Associate Professor, Boston University, 525 Commonwealth Avenue, Boston MA 02215, United States, joglekar@bu.edu
Steve Rosenthal, Professor, Boston University School of Management, 525 Commonwealth Avenue, Boston MA 02215, United States, srrosenthal@bu.edu
Abstract: Organization theory makes a distinction between work conducted within an organization’s technical core and coordination processes that buffer this core from the environment. We build on this distinction to look for evidence of learning while sourcing. Learning is not observed in terms of total
effort. Segregation yields significant effects: learning associated with the management of distributed software development is significant for coordination tasks and less pronounced for technical tasks.

**Session Information: Monday Nov 06, 13:30 - 15:00**

**Title**: KLIC IV  
**Chair**: Charles Weber, Assistant Professor of Engineering and Technology Management, Portland State University, ETM, PO Box 751, Portland OR 97207, United States, webercm@gmail.com

**Title**: Exploring Unique Learning in Bio-Pharmaceutical Innovation  
**Presenting Author**: Deborah Dougherty, Professor, Rutgers University, 1169 Lincoln Ct, Long Branch NJ 07740, United States, doughert@rbemail.rutgers.edu  
**Co-Author**: Danielle Dunne, PhD Student, Rutgers University, 111 Washington St, Newark NJ 07102, United States, dduinne@andromeda.rutgers.edu  
**Abstract**: Discovering and developing a new medicine requires ongoing alignment of disparate systems of knowing and doing – sciences, technologies, strategy, and operations – over 16 years and across multiple firm boundaries. This process cannot be simplified in the usual way (no paths, feedback, or modularity). We tease out unique learning for compounds and pipeline management, and suggest ways to enhance learning in this science-based industry that can also inform innovation management in general.

**Title**: The Effect of Information Technology on Knowledge Retention in Organizations  
**Presenting Author**: Linda Argote, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh PA 15213, United States, argote@andrew.cmu.edu  
**Co-Author**: Michael Ashworth, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh PA 15213, United States, ashworth@cmu.edu  
**Tridas Mukhopadhyay**, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh pa 15213, United States, tridas@cmu.edu  
**Abstract**: Our research examines whether new information technology (IT) contributes to an organization’s ability to retain knowledge. We conducted a cross-sectional time series analysis monthly data spanning five years at six financial institution payment processing facilities. Results indicate that the IT enhances the retention of knowledge about productivity.

**Title**: Choices and Outcomes: The Effects of Improvement Project Portfolio Choices  
**Presenting Author**: Anita Tucker, Assistant Professor, University of Pennsylvania, 551 Huntsman Hall, 3730 Walnut Street, Philadelphia PA 19066, United States, tuckera@wharton.upenn.edu  
**Co-Author**: Richard Bohmer, Associate Professor, Harvard University, Morgan Hall, Soldiers Field Road, Boston MA 02163, United States, rbohmer@hbs.edu  
**Ingrid Nembhard**, Doctoral Candidate, Harvard University, Morgan Hall 480B, Soldiers Field Road, Boston MA 02163, United States, inembhard@hbs.edu  
**Abstract**: Healthcare organizations strive to improve the quality of care they deliver. For many, the first step is to develop a portfolio of improvement projects. We present data from 44 intensive care units that created such portfolios by selecting among 93 practices they had collaboratively developed. We examine the effects of three portfolio choices - number of practices, type of practices and project team - and interactions among choices, on patient length of stay, infection rates and mortality.

**Title**: Managing Pre-Technological Knowledge: A Multi-Dimensional Approach  
**Presenting Author**: Charles Weber, Assistant Professor of Engineering and Technology Management, Portland State University, ETM, PO Box 751, Portland OR 97207, United States, webercm@gmail.com  
**Abstract**: Bohn (1994) states that many high technology industrial processes are based on pre-technological knowledge -- knowledge that is incompletely characterized or cannot be measured. An empirical study suggests that high tech industrial processes are based on subsystem knowledge and prior, architectural knowledge that has been completely characterized. However, integration knowledge is pre-technological, and may be inherently so.

**Session Information: Monday Nov 06, 16:30 - 18:00**

**Title**: TMS Distinguished Speaker  
**Chair**: Diane Bailey, Stanford University, Management Science and Engineering, Stanford CA, United States, diane.bailey@stanford.edu

**Title**: Technology as a Tradable Commodity? Unresolved Questions in Markets for Technology
Presenting Author: **Ashish Arora**, Professor of Economics and Public Policy, Carnegie Mellon University, Heinz School of Public Policy & Management., Pittsburgh PA 15213, United States, ashish@andrew.cmu.edu  
Abstract: In this session, TMS Distinguished Speaker Ashish Arora will discuss important questions that remain unresolved in the area of markets for technology. In considering the conditions under which technology can be made into a tradable commodity, Ashish will explore when and why integration has value. The organization of inventive activity and the subsequent efficiency effects are a central issue in this discussion.

**TUESDAY**

**Session Information**: Tuesday Nov 07, 08:00 - 09:30

**Title**: Management of Innovation and Technological Change  
Chair: **Pedro Oliveira**, Assistant Professor, Universidade Catolica Portuguesa, FCEE, Lisbon, Portugal, poliveira@fcee.ucp.pt  
Co-Chair: **Enno Siemsen**, University of Illinois at Urbana-Champaign, Department of Business Administration, 350 Wohlers Hall, 1206 S. Sixth Street, Champaign IL 61820, United States, siemsen@uiuc.edu

**Title**: The Siren's Call of Complexity  
Presenting Author: **Enno Siemsen**, University of Illinois at Urbana-Champaign, Department of Business Administration, 350 Wohlers Hall, 1206 S. Sixth Street, Champaign IL 61820, United States, siemsen@uiuc.edu  
Abstract: We model a product design decision context in which a project manager chooses between designs with different levels of complexity. We show that managers with career concerns will under certain conditions voluntarily reduce their probability of succeeding with a project by choosing a complexity level greater than the minimum necessary to deliver the product's customer value.

**Title**: Mechanisms of Effective Error Detection in Product Development  
Presenting Author: **Phil Gouel**, University of Michigan, pgouel@umich.edu  
Co-Author: **Sebastian Fixson**, University of Michigan, Ann Arbor MI, United States, fixson@umich.edu  
Abstract: The development of complex products is a multi-year process involving thousands of engineers. Most established organizations have elaborated systems to detect and correct errors. Using a detailed study in the automotive setting in this paper we investigate empirically the effectiveness of various error detection mechanisms. We provide managerial guidelines for structuring error detection systems.

**Title**: Technology Interdependence  
Presenting Author: **Diane Bailey**, Stanford University, Management Science and Engineering, Stanford CA, United States, diane.bailey@stanford.edu  
Co-Author: **Jan Chong**, Stanford, 429 Terman, Stanford CA 94305-4026, United States, "Jan Chong"  
**Paul Leonardi**, Stanford, 425 Terman, Stanford CA 94305-4026, United States, "Paul Leonardi"  
Abstract: Organizational studies of interdependence typically focus on task interdependence while studies of workplace technology almost uniformly investigate a single tool. We unite these literatures by considering how the full range of technologies employed by working engineers are interdependently linked in "design flows." How engineers either "bridge" or "close" gaps in the flow proves instrumental in engineers' work and figures strongly in how technology interdependence shapes their work practices.

**Title**: Introducing Innovations in Small Economies  
Presenting Author: **Pedro Oliveira**, Assistant Professor, Universidade Catolica Portuguesa, FCEE, Lisbon, Portugal, poliveira@fcee.ucp.pt  
Co-Author: **João B. Assunção**, Associate Professor, Universidade Catolica Portuguesa, FCEE, Lisbon PT, Portugal, jba@fcee.ucp.pt  
Abstract: We explore how firm’s strategy is shaped by the nature of the environment they operate in. Specifically we study whether smaller economies constitute a major obstacle to the introduction of innovations. A second issue deals with the public policies that are likely to be effective in smaller economies.

**Session Information**: Tuesday Nov 07, 10:00 - 11:30

**Title**: IT Capabilities: Generative Mechanisms and Performance Implications  
Chair: **Andrea Masini**, Assistant Professor, London Business School, Sussex Place, London NW1 4SA,
Title: IT Adoption, Business Process Isomorphism and the Development of IT Capabilities
Presenting Author: Andrea Masini, Assistant Professor, London Business School, Sussex Place, London NW1 4SA, United Kingdom, amasini@london.edu
Abstract: This paper suggests that the generation of IT capabilities produces short-term performance advantages. Yet, in the long run the widespread diffusion of IT-based process templates may reduce performance differences among firms, thereby challenging the value of IT as a source of long-term competitive advantage. The role of environmental moderators in this process is also discussed.

Title: Virtual Knowledge Management: Effective Activities and Performance Impact
Presenting Author: Antonino Vaccaro, Ph.D Candidate, Carnegie Mellon University / I.S.T., 5000 Forbes Ave, Pittsburgh PA, United States, vaccaro@andrew.cmu.edu
Co-Author: Ronaldo Parente, Rutgers University, 227 Penn St., Camden, NJ 08102, United States, ronaldo@parente.com Francisco Veloso, Assistant Professor, Carnegie Mellon University, Engineering & Public Policy, Pittsburgh PA 15213, United States, fveloso@cmu.edu
Abstract: This research aims to understand the relation between the usage of virtual knowledge management tools and their impact on firm performance. In particular, we investigate how different organizational and environmental conditions affect ICT-enabled knowledge management practices and how different usage levels affect product innovation, speed to market, as well as financial performance.

Title: Improving Learning Through the Nurture of Open Source Communities
Presenting Author: Nile Hatch, Marriott School - BYU, 790 TNRB, Provo UT 84602, United States, nile@byu.edu
Co-Author: Monte Shaffer, Marriott School - BYU, 790 TNRB, Provo UT, United States, monte.shaffer@gmail.com
Abstract: Innovation in open source software is a product of individual and communal learning. We describe this process as the organic growth of communities of practice. Interaction between members of different levels of the community facilitates continued innovation and progress in the open source project. It also requires a boundary spanner to facilitate interaction between members of adjacent levels.

Title: Configuring Capabilities for Integrated Solutions: Evidence from the IT Sector
Presenting Author: Federica Ceci, Università di San Marino, via Livenza 17, Montesilvano Pe 65016, Italy, fceci@london.edu
Abstract: In an increasing number of industrial sectors, there is an emerging trend towards the provision of bundled services and products sold together, so-called integrated solution. This trend poses new challenges for manufacturers in terms of capabilities development and configuration. Firms shift their core capabilities to provide services and products previously not included in their offer. Aim of this paper is to understand how firms configure their capabilities to adopt this new kind of offer.
Abstract: This study presents a systematic approach to identify Information and Communication Technologies (ICTs), technology applications and key sectors that most impact the internal digital divide in developing countries. The methodology selected is Analytic Hierarchy Process (AHP). The results of this research suggest that the role of technology in 2010 will be distinctly oriented toward Internet mobility and collaboration in Costa Rica.

Title: HDM Sensitivity Analysis
Presenting Author: Hongyi Chen, Portland State University, Oregon OR 97201, United States, hongyi_chen123@yahoo.com
Co-Author: Dundar Kocaoglu, Professor, Portland State University, PICMET, Portland OR 97207, United States, kocaoglu@etm.pdx.edu
Abstract: Hierarchical Decision Model (HDM) is a widely used model in multi-level criteria decision making. In this paper, an algorithm of sensitivity analysis is developed to determine the allowable ranges within which perturbations can be induced on values at different levels of the hierarchy without changing the original ranking of the decision alternatives, sensitivity coefficient of contribution vectors on different levels of the hierarchy, and the critical criteria for keeping current ranking.

Title: Hierarchical Decision Modeling for Quantifying the Value of Technologies
Presenting Author: Nathasit Gerdsri, Mahidol University, Thailand, nathasitg@gmail.com
Co-Author: Dundar Kocaoglu, Professor, Portland State University, PICMET, Portland OR 97207, United States, kocaoglu@etm.pdx.edu
Abstract: This presentation describes a quantitative model used for evaluating the impact value of technologies on a company’s objective. The hierarchical decision making approach is applied to construct the model. Both quantitative and qualitative aspects of technology evaluation are integrated into the model development process. The impact of technologies on a company’s objective is calculated as a composite index called Technology Value.

WEDNESDAY

Session Information: Wednesday Nov 08, 08:00 - 09:30
Title: Building Regional Innovation Systems Through Entrepreneurship: Beyond Market Incentives
Chair: Robert Lowe, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh PA 15222, United States, roblowe@cmu.edu

Title: Are Environmental Technologies Unique?: University Inventions and Tech Adoption
Presenting Author: Matt Hamilton, PhD Student, Carnegie Mellon University, Pittsburgh PA 15213, United States, mhamilt@andrew.cmu.edu
Co-Author: Robert Lowe, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh PA 15222, United States, roblowe@cmu.edu
Abstract: Academics and practitioners have
expressed concerns that environmental technologies struggle to transition from laboratory to commercial adoption. The open question in this line of research is: are barriers to adoption attributable to environmental technologies specifically or indicative of a broader set of technologies. We study disclosure and commercialization of environmental technologies developed at universities to explore this critical question.

Title: Government Regulation of Entrepreneurs Presenting Author: **Steven Michael**, Schoen Faculty Fellow and Associate Professor of Business Administration, University of Illinois at Urbana-Champaign, Urbana-Champaign IL 61801, United States, smichael@uiuc.edu Co-Author: **Candace Martinez**, PhD Student, University of Illinois at Urbana-Champaign, Urbana-Champaign, Urbana-Champaign IL 61801, United States, cjmartnz@students.uiuc.edu

Abstract: Little empirical research has been carried out to shed light on the relationship between the informal norms of a society (its culture) and the formal rules and regulations that structure the economic lives of its citizens (regulation). This study examines the effects of culture on regulation of entrepreneurs for starting new businesses in 51 countries. Culture does affect regulation of entrepreneurs in ways consistent with existing theory. Implications for theory and practice are discussed.

Title: Public Innovation and Commercial Entrepreneurship in Nascent Software Markets Presenting Author: **Jon Eckhardt**, Assistant Professor, University of Wisconsin-Madison, Madison WI 53706, United States, jeckhard@wisc.edu

Abstract: This paper empirically examines in a sample of over one million transactions if the effect innovations have on a focal commercial product depends on whether innovators pursue financial incentives or not. I predict that innovations that are shared by individuals who are not guided by market incentives will increase the sales of commercial products. Conversely, due to competition products created for commercial purposes will decrease the sale of other commercial producers.

Title: Offshoring of Technology and Local Innovation Dynamics Presenting Author: **Brian Fifarek**, PhD Student, Carnegie Mellon University, Pittsburgh PA 15213, United States, bfifarek@andrew.cmu.edu

Abstract: Current research maintains that firm-level offshoring practices are beneficial to firms and national economies, but little is known about the long-term effect of offshoring on home economy innovation, especially at a regional or local level. We look at the rare earths industry to understand how offshoring practices have adverse effects on innovation at the regional and national levels.

**Session Information : Wednesday Nov 08, 10:00 - 11:30**

Title: RFID in Supply Chain and Services Management Chair: **Chris Forman**, Assistant Professor, Information Systems, Carnegie Mellon University, Tepper School of Business, 5000 Forbes Avenue, Pittsburgh PA 15213, United States, cforman@andrew.cmu.edu

Title: The Value to the Customer of RFID: A Taxonomy of RFID-Enhanced Service Presenting Author: **Gregory Heim**, Assistant Professor, Wallace E. Carroll School of Management, Boston College, 140 Commonwealth Avenue, Chestnut Hill MA 02467, United States, heimgr@bc.edu Co-Author: **William Wentworth**, Boston College, 140 Commonwealth Avenue, Chestnut Hill MA, United States, williamwentworth3@gmail.com

Abstract: It is essential today for managers to determine the strategic implications posed by RFID. To the best of our knowledge, prior research has not analyzed how customer value will be provided via RFID, or what aspects of value customers might gain from RFID applications. We examine the customer value proposition of RFID within physical service environments. We develop a taxonomy of RFID applications in services, and use the taxonomy to examine survey data on value across the RFID application types.

Title: Inventory Management with Differential Pricing and RFID Presenting Author: **Diego Klabjan**, Associate Professor, University of Illinois at Urbana-Champaign, United States, klabjan@mit.edu

Abstract: We study the inventory control problem of a single item, which is priced differently based on the added value. Radio frequency identification is an enabling technology for several new applications of this concept. We give results with respect to standard base-stock and (s,S) policies.
Title: RFID Adoption and Implementation in Supply Chains  
Presenting Author: Reyes Pedro, Assistant Professor, Hankamer School of Business, Baylor University, One Bear Place #98006, Waco TX 76798-8006, United States, pedro_reyes@baylor.edu  
Abstract: Like many other technologies of the past few decades, RFID technology in supply chain operations promises a variety of performance benefits and a powerful competitive weapon. While the ROI has been widely debated, we present findings based on secondary data collected on multiple international cases along with twelve field study interviews of RFID implementation in order to provide insights, identify implementation challenges, and highlight lessons learned.

Title: Assessing the Impact of RFID on Return Center Logistics  
Presenting Author: Nishtha Langer, Ph.D. Candidate, Tepper School of Business, Carnegie Mellon University, 5000 Forbes Ave, Posner #357, Pittsburgh PA 15213, United States, nishtha@cmu.edu  
Co-Author: Chris Forman, Assistant Professor, Information Systems, Carnegie Mellon University, Tepper School of Business, 5000 Forbes Avenue, Pittsburgh PA 15213, United States, cforman@andrew.cmu.edu  
Sunder Kekre, Professor of Operations Management and Manufacturing, CMU, Tepper School of Business, 5000 Forbes Ave, Pittsburgh PA 15213, United States, skekre@cmu.edu  
Alan Scheller-Wolf, Tepper School of Business, Carnegie Mellon University, Pittsburgh PA 15213, United States, awolf@andrew.cmu.edu  
Abstract: RFID technology is being widely embraced in the supply chain, but there is a debate about its business value. To ascertain the real benefits of RFID, we conduct a field study with a third party logistics company that deployed RFID at one of its outbound logistics operations. After controlling for product, process and customer mix, we find that RFID not only provides operational benefits through improvements in productivity and process quality, but also moderates transaction costs.

Session Information: Wednesday Nov 08, 13:30 - 15:00

Title: Panel Discussion: Service Industry - The Next Frontier for Technology Management  
Chair: Tugrul Daim, Portland State University, Portland OR 97201, United States, tugrul@etm.pdx.edu  
Presenting Author: Daniel Berg, Rensselaer Polytechnic Institute, Troy NY 12180, United States, bergd@rpi.edu  
Co-Author: Dundar Kocaoglu, Professor, Portland State University, PICMET, Portland OR 97207, United States, kocaoglu@etm.pdx.edu  
Arnold Reisman, Reisman and Associates, Shaker Heights OH 44122, United States, reisman@cs.com  
James C. Spohre, IBM Director, Almaden Services Research & Innovation, Almaden Research Center, E3-260, 650 Harry Road, San Jose CA 95120, United States, spohrer@almaden.ibm.com  
Abstract: Service industry represents 75% of the U.S. economy today; and its backbone is technology. Yet, while the manufacturing sector has improved impressively through proper application of technology management concepts and methodologies, the service industry has lagged behind manufacturing very badly in that context. This panel will explore the ways technology management can and should be applied to the health, financial, educational, government and other sectors of the service industry.

Session Information: Wednesday Nov 08, 15:30 - 17:00

Title: Technology Management and Service Industry  
Chair: Tim Anderson, Portland State University, Dep. Engineering & Technology Management, Portland OR 97207, United States, tima@etm.pdx.edu  
Presenting Author: Arnold Reisman, Reisman and Associates, Shaker Heights OH 44122, United States, reisman@cs.com  
Abstract: Tradition recognizes manufacturing, public, and services. Thus, service sector subsumes both the knowledge and entertainment industries (K&EI). Each K&EI firm is much more dependent on protection of its intellectual property (IP) rights than are companies or agencies in the other sectors. Because IP protection is an emerging domain, there is no general theory, model, or structure, for this field. Using a taxonomic approach this paper views the broad field of IP protection as a tapestry.

Session Information: Wednesday Nov 08, 13:30 - 15:00

Title: Panel Discussion: Service Industry - The Next Frontier for Technology Management
Title: Can Service Industry Learn Technology Management from Manufacturing?
Presenting Author: Antonie Jetter, Portland State University, Dep. Engineering & Technology Management, Portland OR 97207, United States, jettera@cecs.pdx.edu
Abstract: Many firms in the service industry still lack systematic approaches to technology evaluation and selection, to new product development, and to providing organizational structures that foster innovation. This paper highlights the differences between manufacturing and service industries and discusses which of the technology management approaches currently employed by the most productive and innovative manufacturing firms can be successfully adopted by the service sector.

Title: Exploratory Evaluation of University Technology Transfer Efficiency
Presenting Author: Tim Anderson, Portland State University, Dep. Engineering & Technology Management, Portland OR 97207, United States, tima@etm.pdx.edu
Co-Author: Tugrul Daim, Portland State University, Portland OR 97201, United States, tugrul@etm.pdx.edu
Francois Lavoie, Portland State University, Portland OR 97207, United States, annie.frank.pdx@verizon.net
Abstract: Services represents largest part of the US economy. One great example is IBM that has long been more of a services company than a computer company. Services can be difficult to analyze and outputs may not be tangible products as units may not be easily converted to dollars. Universities are also considered a part of the service economy. They provide education as well as innovations resulting from research. This paper focuses on the service of transferring research results into the other sectors.

Title: Of People, By People, and For People: A Pragmatic View of Business Service Engineering Acceptance
Presenting Author: William "Ike" Eisenhauer, Assistant Vice President of Loss Mitigation and Equity Operations, Wells Fargo CCG, ike@techsensei.com
Abstract: Engineering of business processes, in general, and servicing processes, specifically, are experiencing a resurrection in the United States. This effort, typically done to remain competitive and customer orientated, has brought with it a new exposure to operations research and its tools. This exposure has done a great deal to bring potential optimization and streamlining of labor intensive and costly servicing activities. However, too many times this potential, however justified by "the data" is never reached or even attempted by the business channel. We explore the typical barriers to acceptance of operations research and process engineering efforts in the "real world" and what can be done to overcome them. In addition, some suggested and proven methods are presented to assist and ease the integration of operations research and management science in to the day to day operations of servicing organizations. Examples presented are primarily in the financial services industry, but are applicable to any servicing industry.

TMS OFFICERS 2006
Chair: Moren Lévesque (levesque@uwaterloo.ca)
Chair-Elect: Sebastian Fixson (fixson@mit.edu)
Vice Chair Programs: Francisco Veloso (fveloso@cmu.edu)
Vice Chair Membership & Communication: David Moore (dmoore@klicnet.org)
Information Officer: Ken Hung (khung@suffolk.edu)
Past Chair: Diane Bailey (diane.bailey@stanford.edu)
Dear TMS members,

Once again, the product development community has been able to create an exciting set of sessions and presentations as part of this year's INFORMS meeting. As you know, the boundaries between the Technology Management cluster and the product development cluster are rather fuzzy and several authors are active in both clusters. Our close link is further visible in a joint panel that we will host talking about issues related to junior faculty development.

It is always hard to single out any particular session. However, if you force me to do so, I would like to direct your attention towards the session chaired by my colleague Karl Ulrich. The session, which is entitled Sciences of the Artificial Since Simon 1969: Design, Problem Solving, and System Improvement in Management, is especially interesting given the theme and location of the overall INFORMS meeting. With its focus on problem solving, the session looks at a topic that is of interest well beyond the product development community.

I look forward to meeting you in Pittsburgh. Safe travels!

Christian Terwiesch
The Wharton School

New Product Development
Chair: Christian Terwiesch, Associate Professor, University of Pennsylvania, 548 JMHH, Philadelphia PA 19104, United States, terwiesch@wharton.upenn.edu

Sunday Nov 05, 08:00 - 09:30 : R&D Decisions in Entrepreneurial Settings
Chair: Nitin Joglekar, Associate Professor, Boston University, 525 Commonwealth Avenue, Boston MA 02215, United States, joglekar@bu.edu

Sunday Nov 05, 10:00 - 11:30 : Empirical and Experimental Research in New Product Development
Chair: Kamalini Ramdas, Associate Professor, Darden School, 189 FOB, 100 Darden Boulevard, Charlottesville VA 22902, United States, Ramdask@Darden.virginia.edu

Sunday Nov 05, 13:30 - 15:00 : Management of Innovation & New Product Development in Complex Systems Environments
Chair: Edward Anderson, Professor, University of Texas, McCombs Business School, 1 University Station B6500, Austin TX 78733, United States, edward.anderson@mccombs.utexas.edu

Sunday Nov 05, 16:30 - 18:00 : Sciences of the Artificial Since Simon 1969: Design, Problem Solving, and System Improvement in Management
Chair: Karl Ulrich, Professor, The Wharton School,
Monday Nov 06, 08:00 - 09:30: Emerging Issues in Innovation

Chair: Vish Krishnan, Professor, University of California - San Diego, Rady School of Management, 9500 Gilman Drive MC 0093, La Jolla CA 92093, United States, vkrishnan@ucsd.edu

Monday Nov 06, 08:00 - 09:30: Joint Panel Discussion TMS/NPD: Early Career Strategies in Interdisciplinary Areas - Perspectives from TMS and NPD

Chair: Christian Terwiesch, Associate Professor, University of Pennsylvania, 548 JMHH, Philadelphia PA 19104, United States, terwiesch@wharton.upenn.edu
Co-Chair: Francisco Veloso, Assistant Professor, Carnegie Mellon University, Engineering & Public Policy, Pittsburgh PA 15213, United States, fveloso@cmu.edu

Monday Nov 06, 10:00 - 11:30: Innovation and the Management of the Development Process

Chair: Gary Pisano, Professor of Business Administration, Harvard Business School, Morgan Hall 417, Boston MA 02163, United States, gpisano@hbs.edu

Monday Nov 06, 16:30 - 18:00: Open Innovation, Open Source, Networks

Chair: Christian Terwiesch, Associate Professor, University of Pennsylvania, 548 JMHH, Philadelphia PA 19104, United States, terwiesch@wharton.upenn.edu

Tuesday Nov 07, 08:00 - 09:30: Multi-Firm New Product Development

Chair: Svenja Sommer, Assistant Professor of Management, Krannert School of Management, Purdue University, 403 W. State Street, West Lafayette IN 47907, United States, ssommer@purdue.edu

Tuesday Nov 07, 10:00 - 11:30: Emerging Issues in New Product Development

Chair: Juergen Mihm, INSEAD, Boulevard de Constance, Fontainebleau 77305, France, jurgen.mihm@insead.edu

Tuesday Nov 07, 13:30 - 15:00: New Product Configurations, Positioning and Portfolios

Chair: Janice Carrillo, Assistant Professor, University of Florida, PO Box 117169, Gainesville FL 32611-7169, United States, janice.carrillo@cba.ufl.edu
INFORMS – College on Organization Science
Pittsburgh, PA ‘06
Program Overview
(Sunday, November 5)

Organization Science
Chair: Tina Dacin, tdacin@business.queensu.ca

Sunday Nov 05, 08:00 - 09:30:
Perspectives on the Journal

Chair: Linda Argote, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh PA 15213, United States, argote@andrew.cmu.edu

Sunday Nov 05, 10:00 - 11:30: Cultural Pragmatics in Professions

Chair: Klaus Weber, Assistant Professor of Management and Organizations, Kellogg School of Management, Northwestern University, 2001 Sheridan Rd, Evanston IL 60208-2001, United States, klausweber@northwestern.edu
Co-Chair: Amit Nigam, Post Doctoral Researcher, Rotman School of Management, University of Toronto, 105 St. George Street, Toronto ON M5S 3E6, Canada, amit.nigam@rotman.utoronto.ca

Sunday Nov 05, 13:30 - 15:00: Micro-Institutional Processes

Chair: Klaus Weber, Assistant Professor of Management and Organizations, Kellogg School of Management, Northwestern University, 2001 Sheridan Rd, Evanston IL 60208-2001, United States, klausweber@northwestern.edu
Amit Nigam, Post Doctoral Researcher, Rotman School of Management, University of Toronto, 105 St. George Street, Toronto ON M5S 3E6, Canada, amit.nigam@rotman.utoronto.ca

Sunday Nov 05, 16:30 - 18:00: Language, Culture, and Representation in Markets

Chair: Amit Nigam, Post Doctoral Researcher, Rotman School of Management, University of Toronto, 105 St. George Street, Toronto ON M5S 3E6, Canada, amit.nigam@rotman.utoronto.ca
Klaus Weber, Assistant Professor of Management and Organizations, Kellogg School of Management, Northwestern University, 2001 Sheridan Rd, Evanston IL 60208-2001, United States, klausweber@northwestern.edu
Calls for Papers

Special Issue of Journal of Technology Transfer

Discontinuous Technology Innovations with Disruptive Market Potential: Perspectives and Roles of Federal, Academic and Corporate Laboratories and Implications for Policy and Practice

Guest Editors

Elias G. Carayannis (caraye@gwu.edu) and Suleiman Kassicieh (sul@unm.edu)

The current Technology Transfer Journal Special Issue aims to focus on conceptual and empirical studies that analyze perspectives and roles of federal, academic and corporate laboratories as sources, triggers and catalysts of discontinuous technology innovations with disruptive market potential.

• Innovation is a word derived from the Latin meaning to introduce something new to the existing realm and order of things. In this sense, innovation is endowed with a faculty of discontinuity and possibly disruptiveness in the form of a continuum of discontinuities reflected by a simple analogy to the way we walk. From a business perspective, an innovation is perceived as the happy ending of the commercialization journey of an invention, when that journey is indeed successful and leads to the creation of a sustainable and flourishing market niche or new market. Not all innovations are discontinuous and not all discontinuous innovations prove to be disruptive. This is determined by the scope, timing, and impact of the innovation under consideration (Carayannis et al, Elsevier Handbook of Innovation, Chapter 8, 2003).

• Disruptive (vs. sustaining) technologies (DT) have first been identified by Schumpeter in his “destructive creation” of new economic entities and have since been researched by a number of scholars (Christensen et al). Disruptive technologies emanate from scientific discoveries that break through the usual product/technology capabilities performance envelop and provide a basis for a new market/technological paradigm. Disruptive technologies can be described as inflection points, emergent technologies, earthquakes, or typhoons. The nomenclature is not important but the phenomena have become increasingly important to firms. These technologies replace current products with new technological capabilities or by new technologies with a new manufacturing base for products and industries that do not yet exist. They initiate the development of new firm-based competencies and are the wellspring of future sustaining technologies. For more on some of these issue see Kassicieh et al Special Issue of IEEE TEM, November 2002.

• Discontinuous innovations (DI) are products/processes/services that provide exponential improvements in the value received by the customer and disrupt the product/customer relationship of old. As discussed above, not all discontinuous innovations may have a disruptive effect (instead they may have a sustaining effect on existing or emerging markets) and not all disruptive technologies need to be affiliated with discontinuous innovations (Carayannis et al, ibid). Discontinuous innovations have been called radical, architectural, generational and revolutionary among many others. They are often based on disruptive technologies but can also be the product of current sustaining technologies that produce higher value propositions. They provide major improvements to current product market paradigms and produce the physical and/or service products that initiate new industries or markets that define a new and differing product platform from which incremental innovations are generated.

• Carayannis et al (ibid) have tabulated innovations in terms of their continuity/discontinuity and their disruptive/sustaining nature thus:
Technology transfer processes used in moving incremental improvements might not be appropriate for disruptive technologies. It is, therefore, important for the field to define new methods and assess their efficacy. Disruptive technologies play an essential role in firms’ competitiveness and in national and international economies and that is of importance to managers, scientists, economists and policy makers. The commercialization techniques applied to untested and unverifiable markets could present the world with the new products that transform whole industries as seen in transistors, cell phones or personal computers.

Submissions to the Special Issue may be theoretical, conceptual, or empirical. They should relate to: I) methods used to commercialize DT/DI from federal laboratories and universities? II) management of R&D for change in this area III) market issues IV) policy implications of DT/DI on transfer and commercialization of technologies. V) What is the role of entrepreneurship in the commercialization of disruptive technologies?

The topics may include but are not limited to:
- Diffusion of DT/DI and transfer of ideas from one area of application to another.
- Theories, models and applications of DT/DI commercialization and technology transfer
- Inventions, patents, intellectual property, licensing and other implications of technology transfer in DT/DI
- Studies of public-private partnerships for innovation (PPP4I) involving federal laboratories, universities and R&D organizations on DT/DI
- Research methods in DT/DI technology transfer/commercialization
- Cross-cultural issues in DT/DI technology transfer/commercialization
- Empirical analysis of successes and failures in DT/DI commercialization/technology transfer activities
- Organizational, managerial, economic, and environmental issues in commercialization of DT/DI

Papers submitted to this special issue will be reviewed in accordance with the Journal’s editorial policy and should be emailed in MS Word format to: Professor Elias G. Carayannis at caraye@gwu.edu or Professor Sul Kassicieh at sul@unm.edu

DEADLINE FOR SUBMISSIONS: October 31, 2006
Call for Papers
*Decision Sciences* Special Topic Forum

**Behavioral Issues**
in Information Systems-Enabled Operational Decision Making

**Associate Editor Team**
Elliot Bendoly, *Goizueta Business School, Emory University*
Cheri Speier, *Eli Broad School of Management, Michigan State University*

The business community has seen countless claims regarding the potential role of information systems toward more effective operational decision making. It is now recognized that the simple possession of information systems does not imply effective use of these systems by individuals charged with operating decisions. The amount of time and money spent on IS systems are similarly insufficient proxies for their use. In order to truly diagnose the linkages between information systems and operational benefits, a much more micro-level of study is necessary. Such a micro-level view must delve deeper than the common considerations of training programs, deployment of system experts, cross-functional integration, and other organization-wide concepts. It must fundamentally attempt to get into the mind of the decision maker and ask questions regarding why certain information is regularly sought out while other information may be ignored; how the information obtained subsequently is manipulated and interpreted; why some conclusions associated with immediate benefit are forgotten while others that imply greater risk of loss are pursued. These questions require the consideration of the psychological mechanisms that serve as barriers and motivators of continued and evolving use of IT in operational decision making.

This Special Topic Forum (STF) calls upon researchers to challenge some of the well-established beliefs regarding the linkages between the availability of information supported by technology and the operational gains obtainable through “better” decision making. In order to ground this forum in real-world contexts, we will be seeking rigorous empirical works making use of such methodologies as action research and field/lab experiments, case-based investigations coupled with structured or semi-structured survey collection, and system archival mining of use and decision making patterns. Theoretical models driving the specifics of such data collection and subsequent analysis should make ample use of established behavioral theory as it relates to information system use and operational decision making. Approaches to analysis can include a wide variety of techniques including both standard statistical comparisons common to experimental research as well as more qualitative approaches, such as content analysis and augmented forms of social network modeling intended to take into account cognitive phenomena.

While multiple levels of analysis and theories are acceptable, the individual decision maker must represent a key element of the research. As a result, theories that are fundamentally tied to higher levels of analysis or examine individual technology acceptance behavior (in general) are likely to be ineffective at approaching the kind of detailed research questions sought out by this call and are generally not encouraged. **Instead, theories that focus on decision making cognitive processes to illuminate what happens within the “decision making” black box are encouraged.** Finally, this call places no limitations on the specific form of information system studied or the specific operations management context / problems these systems are intended to benefit. Having said this, a wide range of research questions are open for consideration:

Examples topics of interest might, but are certainly not limited to:
- Selective disregard for pricing information in purchasing decisions
- Adversity to the use of process analysis recommendation in project management
- Misinterpretation and misuse of supply chain management solutions
- System circumvention in yield management settings
• Bias in scheduling constraint specification and performance sensitivity
• Customer relationship management overloads and assumption making in new service development
• Organizational information system characteristics and the resulting effects on decision making
• The role of information integration on work sharing and behavioral outcomes
• How decision support systems outputs are actually interpreted and interacted with in operations
• Decision maker ability to identify invalid or inappropriate data in operational decision making systems

Following the interdisciplinary focus of this STF, the Associate Editors bring expertise in IS, OM, and behavioral theory. Like other STFs, this research collaboration strengthens *DSJ*’s renewed focus on decision making and provides a foundation for future research on the role of the individual decision maker in improving OM and IS practices within and between organizations.

Articles published in this STF must meet *Decision Sciences*’ high standards of research rigor and originality, while embracing managerial relevance, not only in the research problem studied, but also in their impact on enhanced decision making. STFs consist of a collection of three to five articles that are published in a regular issue along with other peer-reviewed articles. All submissions must adhere to *Decision Sciences* journal format and style guidelines. Manuscripts will be evaluated on the same criteria as regular manuscripts. The evaluation process will be similar to regular paper submissions, except the Associate Editors assigned to the manuscript will be part of the STF Editorial Team. Manuscript preparation and submission instructions can be found on the journal’s web site at [http://wpcarey.asu.edu/dsjOnline/index.cfm](http://wpcarey.asu.edu/dsjOnline/index.cfm). In the cover letter, please indicate that your submission is for the Special Topic Forum on Behavioral issues in IS-Enabled Operational Decision Making.

**Deadline for Submissions: January 20, 2007**

**A NEW JOURNAL FROM MIT PRESS: INNOVATIONS**

"INNOVATIONS is a must-read for anyone interested in creative, local solutions to the world's problems. Its content bridges the gap between 'whatever works' [bottom of the pyramid] practice and rigorous academic analysis."

From blog by Rob Katz of the World Resources Institute posted at <nextbillion.net>
http://www.nextbillion.net/blogs/2006/03/28/innovations-from-base-to-top-a-must-read

Full text of the inaugural issues and subscription information are at
http://mitpress.mit.edu/innovations/

Iqbal Quadir, one of the two co-editors of INNOVATIONS was recently featured in a two-page article in THE ECONOMIST

The journal is featured on the George Mason University homepage
http://www.gmu.edu/
Our distinguished speaker this year is Ashish Arora, Professor of Economics and Public Policy at the Heinz School of Public Policy and Management of Carnegie Mellon University. During his session to be held on Monday November 6, Professor Arora will discuss a set of unresolved questions in markets for technology. We thank Diane Bailey, Past Chair, for inviting Professor Arora. Please see on page 2 Diane’s report from an interview she conducted in spring 2006 with Professor Arora.

Fourteen dissertations were submitted for consideration for the INFORMS TMS best Dissertation Award. Sebastian Fixson, Chair-Elect, selected the review committee for double-blind review. Sebastian and his committee had a difficult task this year in selecting a sole winner. As a result, we have two outstanding winners, Dr. Claudia González Brambila and Dr. Giovanni Valentini. Please refer to page 4 for additional details on our winners. We would like our members to promote this award and encourage their graduated students to submit their completed dissertations. An announcement will be made in the winter and will appear on our website at http://tms.section.informs.org/.

Besides our members, David, Francisco, Diane and Sebastian, there are other people who are key to the success of TMS. We are represented internationally by Elicia Maine, who serves as our Canadian regional representative, and Christian Schade, who serves as our Western Europe representative. Most of the communication with our membership and the broader technology management community would not be possible without the support of Ken Hung, who serves as the TMS Information Officer. Over the past three years, Ken has been doing a fantastic job of maintaining our website and listserv. Please contact Ken at khung@suffolk.edu with any suggestions on how our website may serve you better.

Pittsburgh is a city that has a lot to offer and we hope you have a chance to enjoy it, as well as the conference. Newcomers be aware that with the greatest number of bridges in the world – 29 cross the three main rivers and a total of 446 bridges in the city (which is three more then in Venice) – driving in Pittsburgh can be an adventure…