From the Chair’s Desk
Juliana Hsuan

The theme of 2012 INFORMS Annual Meeting is *Informatics Rising*, reflecting on the dynamics of technology change and new means for communication. Technology of all sorts has become an integral of our lives, making Technology Management ever so fascinating to research. This is reflected on the four days of exciting sessions, organized by our charismatic Program Chair, Leonardo Santiago, in collaboration with Stelios Kavadias for organizing the NPD program. Similar to last year, we will feature a “Meet the Editors and Ask Them Questions” session, a joint effort between TMS, NPD and Organization Science clusters, on Monday at 11:00 am. This is a great opportunity to meet the editors and departmental editors of technology, innovation and entrepreneurship journals. There are no stupid questions! (See more in Leonardo Santiago’s report in p. 5).

We will also feature a Distinguished Speaker session. Our 2012 Distinguished Speaker Award goes to Professor James M. Utterback of MIT. Professor Utterback has been an influential icon in research on innovation and technology management. We thank Professor Utterback for honoring us the opportunity to listen to his presentation, “An Ecology of Innovation,” on Monday at 4:30 pm (see more in Juliana Hsuan’s report in p. 2).

This year’s doctoral dissertation award competition was coordinated by our wonderful Chair-Elect Cheryl Druehl. The winner is Zhijian Cui for his dissertation on "Management of Collaborations and Conflicts in New Product Development." The Runner-up is Vivek Tandon for his dissertation on "Make hay while the sun shines or be more loyal than the king? The impact of external labor markets on the technological search process within firms" (see more in Cheryl Druehl’s report in p. 4). Congratulations to Zhijian and Vivek! Join us at the Business Meeting for their awards.

This year we have added a new session, “TMS Best Paper Winner Presentation,” on Tuesday at 11:00 am. I would like to thank Cheryl Druehl and Erica Fuchs of Carnegie Mellon University for coordinating and organizing this event.

This newsletter has been prepared by our kind Vice Chair Membership & Communication, Sinan Erzurumlu. Thank you! Finally, I would like extend my sincere thanks to our patient CIO, Ken Hung, for developing our TMS home page. Have you had a chance to visit? On behalf of all of the officers, I wish you a fun and fruitful conference. May you build new friendships and exciting collaborations!

We look forward to seeing you in Phoenix, Arizona!

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**Phoenix BUSINESS MEETING**

The Technology Management Section business meeting will be held on **Monday, October 15, at 6:15 pm**. Please join the TMS officers and other distinguished colleagues for a wine and cheese reception after the meeting.

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It is our enormous pleasure to announce the INFORMS TMS 2012 Distinguishes Speaker, Professor James M. Utterback. Professor Utterback is currently the David J. McGrath jr (1959) Professor of Management and Innovation at the MIT Sloan School of Management, and Professor of Engineering Systems in the MIT School of Engineering. He delves into the emergence of dominant product designs and studies how to develop products in keeping with a company’s overall strategy. He also probes how to move concepts effectively to market. His book, Mastering the Dynamics of Innovation (Harvard Business School Press, 1994), looks at the creative and destructive effects of technological change on the life of a company. He has published extensively in the field of innovation management, especially (but not the least) in the following areas: adoption and diffusion of innovation; communication and organization; innovation in developing economies; the dynamics of innovation in firms and industries; anticipating technological change; innovation in new firms and growing industries; corporate strategy, innovation and renewal; product and process design and development; and, innovation and public policy.

Professor Utterback is one of the founding faculty of the Management of Technology Program (now called the Sloan Fellows in Innovation and Global Leadership), which was the first area of study at MIT that awarded degrees jointly from the Schools of Management and Engineering. He is also one of the founders of the Leaders for Manufacturing Program (now called Leaders for Global Operations), which awards dual degrees in engineering and in management and has recently helped develop a similar program in Biomedical Enterprise. Professor Utterback received the D.Sc. (Hon) from Chalmers University in Gothenburg, Sweden in 1997, and the Ph.D. (Hon) from KU Leuven in Belgium in 2012. Jim was elected a foreign member of the Royal Swedish Academy of Engineering Sciences in 1999, and a Life Fellow of Clare Hall at the University of Cambridge in 2006.

His current work, with Prof. Elicia Maine of Simon Fraser University, explores the idea that rich opportunities often arise during the convergence of fields of research. This research examines firm creation at the growing confluence of nano-materials and bio-sciences. Questions addressed include: How does the
convergence of technologies affect opportunities for the formation of new ventures? Will opportunities that arise at the confluence of technology streams be greater than those which arise in each individual stream? Will opportunities be increased in an environment that more strongly supports experimentation? Jim and Elicia have identified a sample of more than 150 firms in the bio-technology plus nano-technology space worldwide in 2005 and of 247 firms in 2008 and are currently constructing the sample for 2011.

Jim and Fernando Suárez of Boston University are starting work on a new book tentatively titled *An Ecology of Innovation*. Amid rapidly changing markets, extended supply chains, and widening sources of competition, dislocations and opportunities frequently arise from surprising sources. Suárez and Utterback argue that we might progress by thinking of innovation and firm formation as a process of experimentation in the market. Rather than seeking to reduce uncertainty and to optimize, perhaps we should seek to increase possibilities for experimentation and for broader search and synthesis. A prospectus of this work will be presented in Phoenix.

We are very looking forward to welcoming and honoring Professor Utterback as the 2012 TMS Distinguished Speaker. Please join us on Monday, 15 October, for our Distinguished Speaker Session in Phoenix! In this session we’ll have the opportunity to listen to Professor Utterback’s presentation. The presentation begins at 16:30 (please check the conference program for location).
Zhijian Cui Wins 2012 TMS Doctoral Dissertation Award

Vivek Tandon is the Runner-up

Congratulations!

- Cheryl Druehl

The 2012 TMS best dissertation award contest had several excellent entries. I was excited to see so much great work in the TMS area. The dissertations addressed a wide variety of current technology-related topics, including open innovation, technology search, incentives, open source, entrepreneurship, collaborative development, and knowledge. It was refreshing to see the depth and breadth of the topics addressed by these new researchers and to get a glimpse into the future of our TMS research community. There were entries from 5 countries, as well as engineering, strategy, management, and operations. I look forward to reading the published papers and meeting our newest TM colleagues. My thanks to the judges, including Raul Chao, Claudio Wolter, and Jianxi Luo. They read summaries of several dissertations as well as a few full dissertations each. We appreciate their efforts.

The winner of the Best Dissertation Award this year is Zhijian Cui. His dissertation is entitled “Management of Collaborations and Conflicts in New Product Development.” Zhijian completed his studies at INSEAD under the guidance of Professor Christoph Loch. This thesis capitalizes on the growing trend of external innovation partners and studies outsourcing innovation through multiple methodologies. Zhijian examines negotiation and payment schemes as well as project management techniques, contingent on the type of outsourcing partner. He further studies collaboration and agreement during the fuzzy front end of new product development projects. Zhijian is currently an Assistant Professor of Operations Management at Instituto de Empresa (IE) Business School in Madrid.

The runner up for the Best Dissertation Award this year is Vivek Tandon. His dissertation is entitled “Make Hay While the Sun Shines or Be More Loyal Than the King? The Impact of External Labor Markets on the Technological Search Process Within Firms.” Vivek completed his studies at the University of Michigan, Ross School of Business, where his dissertation chair was Professor Gautam Ahuja. In his thesis, Vivek examines the impact of career concerns and changing technological landscapes on search. Specifically, he empirically tests and finds support for several hypotheses finding that individual, relatively autonomous, researchers choose search domains based on career concerns. Most importantly, for the firm, this means that the domain of search may vary based on these concerns, impacting the research and profit outcomes for the firm. Vivek is currently an assistant professor at the National University of Singapore.

Congratulations to these two scholars!
INFORMS - Technology Management Section
Phoenix, Arizona 2012
Sponsored Program (October 14 - 17, Sun - Wed)
Leonardo P. Santiago

Dear TMS Colleagues,

Welcome to the Technology Management and New Product Development clusters at the 2012 INFORMS Annual Meeting! We would like to take this opportunity to thank the 26 session chairs, all the authors, and the TMS officers for putting together such a terrific program for this year!

The 2012 program is unique for offering sessions through the lens of three different clusters: the Technology Management Sponsored Cluster, the New Product Development Invited Cluster, and the Organization Science Sponsored Cluster - all of them featuring high caliber presentations. I would like to thank Stylianos Kavadias, NPD invited cluster chair, and Andreas Schwab, Org. Scie. sponsored cluster chair, for carefully organizing our cross-listed sessions.

As always, the research menu for this year is quite diverse and appealing. We would like to invite you to take a look in the next pages at the talks that will be given. You will have the opportunity to enjoy the state of the art of our field from Sunday, October 14th 2012, to Wednesday, October 17th 2012. I would like to draw your attention to some of our special sessions:

- On Monday Oct 15, 11:00 - 12:30, we will have the joint session (TMS/NPD/ORG SCI): Meet the Editors and Ask Them Questions. In this year’s session we plan to move beyond the standard discussions of “what does it take to publish in a top-research journal” and focus on exploring new ideas and opportunities for communicating research results, as well as on the role of journals and editors in exploiting them.

- On Monday Oct 15, 16:30 - 18:00, we are privileged to have Professor James Utterback, from MIT, as our Distinguished Speaker. Professor Utterback will deliver the talk "An Ecology of Innovation" where he argues for thinking of innovation and firm formation as a process of experimentation in the market.

- On Tuesday Oct 16, 11:00 - 12:30, we will have the Technology Management Section Best Paper Winner Presentation. Cheryl Druehl and Erica Fuchs organized this session for the first time. We will announce the winners of the award for the best paper on TMS published in an INFORMS journal for the period of 2007-2012. The Winner and Runner-ups will present their work building on their seminal papers and special-guest discussants will comment.

We are looking forward to seeing you in Phoenix!

Leonardo P. Santiago

Sunday, October 14

SC: 13:30 - 15:00 Entrepreneurship and Innovation I
CHAIR: Sinan Erzurumlu, Babson College,
erzurumlu@babson.edu

Optimal Bargaining Power in an Entrepreneurial Market Process
PRESENTING AUTHOR: Mohammad Keyhani, York University, mkeyhani08@schulich.yorku.ca, Co-AUTHOR: Moren Lévesque, York University, MLevesque@schulich.yorku.ca

ABSTRACT: We investigate the role of bargaining power in the economic returns to agents engaged in repeated cooperative games over time representing an entrepreneurial market process in line with the Austrian economics of entrepreneurship. We find that as expected, players with greater bargaining power accrue greater returns under various conditions, but under certain conditions closer to the Kirznerian school of thought the pattern is more complicated and not necessarily monotonic.
Are Innovative Companies also More Interactive? Evidence from Company Websites
PRESENTING AUTHOR: John Angelis, Rochester Institute of Technology, jangelis@saunders.rit.edu, CO-AUTHOR: Rajendra SriramachandraMurthy, Rochester Institute of Technology, rajsmurthy@saunders.rit.edu
ABSTRACT: For innovative firms, interaction with customers may lead to improved innovation, but also may lower innovation efficiency. We assess firms ranked by innovation premium in Forbes Magazine’s list of Top 100 Innovative Small-Cap Firms. Each website is evaluated on interaction opportunities for customers based on such areas as educational opportunities, co-creation options, and social media opportunities. We find strong industry-related impacts on innovation types selected by firms.

Growth of New Business Ventures through Innovation Replicability
PRESENTING AUTHOR: Juliana Hsuan, Copenhagen Business School, jh.om@cbs.dk, CO-AUTHOR: Moren Lévesque, York University, ML Evelo@schulich.yorku.ca
ABSTRACT: We propose a formal model of firm growth through replication that considers the extent of the investment to adapt routines as replication unfolds and the portion of this investment that goes toward innovation in the routines. Two growth policies for new business ventures emerge: bullimitation and bear-innovation.

Operations Design to Enhance ARPA-E Funding for Transformational Clean Technology Start-ups
PRESENTING AUTHOR: Sinan Erzurumlu, Babson College, serzurumlu@babson.edu, CO-AUTHOR: Jane Davies, University of Cambridge Judge Business School, j.Davies@ibs.cam.ac.uk, Nitin Joglekar, Boston University, joglekar@bu.edu
ABSTRACT: This paper analyzes the role of operations design in securing funding for highly risky projects. We use data from 36 transformational innovative clean technology projects to examine to what extent the operational decisions can mitigate risk and enhance firm valuation during clean technology start-up. We find that operations design for risk reduction induces more funding, but design for market competitiveness shows significant negative correlation to level of funding.

SD: 16:30 - 18:00 Entrepreneurship and Innovation II
CHAIR: Sinan Erzurumlu, Babson College, serzurumlu@babson.edu

Strategies for Profiting from Technologies with Weak Patent Rights
PRESENTING AUTHOR: Leonardo Santiago, Federal University of Minas Gerais, Escola de Engenharia da UFMG, lsantiago@ufmg.br, CO-AUTHOR: Henrique Rocha, Federal University of Minas Gerais, Escola de Engenharia da UFMG, henrique.oliveira.rocha@hotmail.com
ABSTRACT: We investigate a set of strategies that companies adopt in order to profit from innovations. The strategies depend not only on inherent features of the innovation at stake but also on the incentives potential competitors have to enter in the target market. Our main focus is on technologies characterized by weak patent rights.

Management of Innovation in the Product and Technology Markets
PRESENTING AUTHOR: Sinan Erzurumlu, Babson College, serzurumlu@babson.edu, CO-AUTHOR: Karthik Ramachandran, Georgia Institute of Technology, karthik.ramachandran@scheller.gatech.edu
ABSTRACT: Firms in many technology intensive industries increasingly license innovations to potential competitors besides using them in their own products. Licensing not only creates an additional profit stream, but could also enhance the value of the innovator’s own product. However, it also makes the licensee a potent competitor in the product market. In this paper, we develop a model to understand if, when and how a firm should share its innovation with a rival.

Value of Reverse Factoring in Multi-stage Supply Chains
PRESENTING AUTHOR: Fehmi Tanrisever, Eindhoven University of Technology, ftanrisever@tue.nl, CO-AUTHOR: Hande Cetinay, Eindhoven University of Technology, h.cetinay@tue.nl, Matthew Reindorp, Eindhoven University of Technology, m.j.reindorp@tue.nl
ABSTRACT: We develop a mathematical model for integration, analysis, and optimization of operational and financial processes within a supply chain. Specifically, we consider commercial transactions of a large corporate customer with a small- or medium-sized supplier. We show how application of reverse factoring – an increasingly popular product within the broad field of supply chain finance – influences the operational and financial decisions of these firms.

A Dynamic Model of Knowledge Creation from Exploration and Exploitation in the High-tech Venture
PRESENTING AUTHOR: Jennifer Bailey, Georgia Institute of Technology, Jennifer.Bailey@mgt.gatech.edu, CO-AUTHOR: Cheryl Gaimon, Georgia Institute of Technology, Cheryl.Gaimon@mgt.gatech.edu
ABSTRACT: We develop a dynamic model of exploration and exploitation for a high-tech venture. The uncertain nature of these learning activities is captured in terms of the mean and variance of the innovation outcomes. We consider the impact of the venture’s absorptive capacity as well as the lagged effect of exploration on innovation outcomes. We determine when the typical explore-exploit versus an atypical exploit-explore sequential strategy is optimal.
SD: 16:30 - 18:00 Joint Session ORG/TMS: Organizing for Innovation in the Digitized World

CHAIR: Youngjin Yoo, Temple University, yxy23yoo@gmail.com

Digital Science and Knowledge Boundaries
PRESIDENTING AUTHOR: Deborah Dougherty, Rutgers University, doughert@business.rutgers.edu

ABSTRACT: Drug discovery has many unpredictable interdependencies. Science digitalization affords ways to measure, analyze, and model chemical compounds, diseases, and biology. We build on epistemic cultures to develop theory for integrating digital sciences. Digitalization creates essential knowledge and new knowledge boundaries around central activities of innovation. We explain how innovation activities can be transformed to integrate digital science into drug discovery.

Reconfiguring Boundary Relations: Robotic Innovations in Pharmacy Work
PRESIDENTING AUTHOR: Eivor Oborn, Royal Holloway University of London, eivor.oborn@rhul.ac.uk, CO-AUTHOR: Michael Barrett, University of Cambridge, m.barrett@jbs.cam.ac.uk, Wanda Orlikowski, Massachusetts Institute of Technology, wanda@mit.edu, JoAnne Yates, Massachusetts Institute of Technology, jyates@mit.edu

ABSTRACT: We explore the influence of robotic innovations on the boundary dynamics of three different occupational groups and extend conceptually Pickering’s tuning approach to examine the entanglement of mechanical elements and digital inscriptions. The robot’s hybrid and digital materiality over time reconfigured boundary relations among the three occupational groups with important and contradictory consequences for the pharmacy workers’ skills, jurisdictions, status and visibility.

Catalyzing Collaboration Amongst Strangers: Field Experimental Evidence
PRESIDENTING AUTHOR: Karim Lakhani, Harvard Business School, k@hbs.edu, CO-AUTHOR: Kevin Boudreau, London Business School, kboudreau@london.edu, Patrick Gaule, Harvard University, patrickgaule@gmail.com, Christoph Riedl, Harvard University, criedl@iq.harvard.edu, Anita Woolley, CMU, Tepper School, awoolley@cmu.edu

ABSTRACT: We used a field experiment to investigate the emergence of collaboration in 52 groups (5 members) of software developers. We test theoretical predictions from different disciplines – regarding the factors leading to the emergence of collaboration. We find that monetary rewards powerfully shape the effort that workers exert in their work. However, we also find substantial evidence for the existence of peer effects, whereby individuals exert more effort when other team members work harder.

Digital Innovation and the Division of Innovative Labor: Digital Controls in the Automotive Industry

TMS Sponsored Program - Monday

Monday, October 15

MA: 08:00 - 09:30 Joint Session ORG/TMS: Exploring the Process of Emergent Innovation: Knowledge Creation and Invention in Complex Adaptive Systems
CHAIR: James Hazy, Adelphi University, hazy@adelphi.edu

Processes for Incremental vs. Radical Innovation
PRESIDENTING AUTHOR: Tomas Backström, Mälardalen University, tomas.backstrom@mdh.se

ABSTRACT: Are there qualitative differences in the processes behind incremental and radical innovation? Incremental innovation is described as a process of emergence leading to continuously improving fitness of the system. Radical innovation is described as a punctuated development, where innovation maturity increases during the quiet times, to be used for jumps of fitness improvements when needed. But the increase of innovation maturity is a process of emergence.

Space for Emergent Innovation
PRESIDENTING AUTHOR: Erik Lindhult, Mälardalen University, erik.lindhult@mdh.se

ABSTRACT: The paper will explore the meaning and role of space – chronological, economic, social, cultural - for the emergence of innovation in services, processes and products, based on research from different organizational settings. This calls for “space management” as an important innovation leadership task from a complexity perspective.

Emergent Innovation as a Ratcheting Process that Accumulates Positive Deviations
PRESIDENTING AUTHOR: James Hazy, Adelphi University, hazy@adelphi.edu, CO-AUTHOR: Tom Shinick, shinick@adelphi.edu

ABSTRACT: Inventions can be observed as assignable deviations from the norm with positive though unrealized potential. Innovation recognizes, captures, and preserves inventions in a ratcheting process. By accumulating inventions, it evolves what is seen as normal activity in a positive direction with regards fitness. At each click of the ratchet, new information about what works is embedded in the system, events becomes more predictable, and additional recombination potentialities are created.
MA: 08:00 - 09:30 Performance and Creativity in the Value Chain
CHAIR: Juliana Hsuan, Copenhagen Business School,
Dept. of Operations Management, jh.om@cbs.dk

The Use of New Technology during Check-in at Airports
PRESENTING AUTHOR: Eric Bentzen, Copenhagen Business School,
eb.om@cbs.dk, CO-AUTHOR: Juliana Hsuan,
Copenhagen Business School, Dept. of Operations Management, jh.om@cbs.dk

ABSTRACT: Smartphone technology replaces the traditional tickets used at check in at airports. The often labour-intensive check in has developed several new ways of improving productivity. Self-service systems have been built and recently smart phones have been introduced as a new way of doing check in.

Vendor Selection, Contract Efficiency, and Performance Measurement in Knowledge Outsourcing
PRESENTING AUTHOR: Zhijian Cui, IE Business School,
Zhijian.Cui@ie.edu, CO-AUTHOR: Sameer Hasija, INSEAD,
sameer.hasija@insead.edu

ABSTRACT: This study compares the efficiency of some commonly observed vendor selection and contracting mechanisms. We show that good vendor selection and perfect contract efficiency are two fundamentally conflicting goals, unless certain conditions hold. We also highlight the implications of performance-based contracts in knowledge outsourcing.

Creativity Operators and Idea Matrix
PRESENTING AUTHOR: Jianxi Luo, New York University,
jiuo@nyu.edu, CO-AUTHOR: Victor Tang, Massachusetts Institute of Technology, victang@alum.mit.edu

ABSTRACT: Despite the importance of creativity to innovation and entrepreneurship, a formal model of idea generation and evaluation is lacking. In this paper, we present a formal introduction of "creativity operators" and formulate them. Then, we propose a formal method for assessing and comparing the creativity of ideas or solutions.

Ripples through the Value Chain: Scope and Profit Co-evolution as Technology Changes
PRESENTING AUTHOR: Claudio Wolter, Carnegie Mellon University,
cwolter@cmu.edu, CO-AUTHOR: Michael Jacobides, London Business School,
mjacobides@london.edu, Francisco Veloso, Carnegie Mellon University, fveloso@cmu.edu

ABSTRACT: This paper offers a computational model of heterogeneous firms competing along the value chain. We show how capability variance combines with transaction costs to shape specialization and profitability for the upstream and downstream segments. We then investigate how an upstream cost-saving innovation drives changes in scope and profitability for upstream, downstream, and integrated firms. Its effects can "ripple through" the value chain, affecting profit patterns in counterintuitive ways.

MB: 11:00 - 12:30 Joint Session TMS/ NPD/ORG SCI: Meet the Editors and Ask Them Questions
CHAIR: Leonardo Santiago, Federal University of Minas Gerais, Brazil, lsantiago@ufmg.br, CO-CHAIR: Andreas Schwab, Iowa State University, aschwab@iastate.edu

Panel Discussion: Meet the Editors and Ask Them Questions
ABSTRACT: Meet the Editors and Departmental Editors of Technology, Innovation and Entrepreneurship Journals and ask them questions.

MC: 13:30 - 15:00 Joint Session TMS/ ORG: Knowledge, Learning and Intellectual Capital
CHAIR: Charles Weber, Portland State University,
webercm@gmail.com

Knowledge Creation and Integration in Radical Product Innovation
PRESENTING AUTHOR: Paulo Gomes, Babson College,
pgomes@babson.edu

ABSTRACT: We approach the product development process from a knowledge management perspective and examine practices at the product and process level that drive cohesiveness and integration. In particular, we try to understand how these practices facilitate or hinder new problems frames and product mental models for radical innovation. The paper reports on the results of an empirical study.

Intellectual Property and Technology Start-ups: Size Matters
PRESENTING AUTHOR: Kelvin Willoughby, Curtin University,
k.willoughby@curtin.edu.au

ABSTRACT: Intellectual property features more prominently in the business of small entrepreneurial technology firms than it does in the business of large mature technology firms. Results of an empirical study of bioscience-technology firms in the US reveal that the strategies of entrepreneurial technology firms incorporate a distinctive intellectual property portfolio management approach, rather than a crude patent administration approach, to appropriating value from their technology.

Knowledge Work in Supply Chain Innovation Alliances: Technological Uncertainty as Inhibitor?
PRESENTING AUTHOR: Ricardo Bouncken, University of Bayreuth,
bouncken@uni-bayreuth.de, CO-AUTHOR: Robin Pesch, University of Bayreuth, robin.pesch@uni-bayreuth.de

ABSTRACT: Supply chain innovation alliances originally set...
up to improve effectiveness are today increasingly used for idea generation and new product creation. This study based on a sample of 418 firms delivers insights on how knowledge transfer and knowledge combination affect the joint knowledge creation and new product superiority in supply chain innovation alliances. We further provide insights how the knowledge work across supply chain partners is influenced by growing technological uncertainty.

**Synchronizing Knowledge Creation in a High Tech Manufacturing Ecosystem**
**PRESENTING AUTHOR:** Charles Weber, Portland State University, webercm@gmail.com

**CO-AUTHOR:** Jitian Yang, Portland State University, jiji323@gmail.com

**ABSTRACT:** A qualitative empirical study of a high tech manufacturing ecosystem shows that the keystone of the ecosystem gains competitive advantage by entraining the whole ecosystem. Knowledge creation activities are synchronized on a global scale.

**MD: 16:30 - 18:00 Joint Session TMS/NPD: TMS Distinguished Speaker**
**CHAIR:** Juliana Hsuan, Copenhagen Business School, jh.om@cbs.dk

**An Ecology of Innovation**
**PRESENTING AUTHOR:** James Utterback, Massachusetts Institute of Technology, jmu@mit.edu

**ABSTRACT:** Amid an increasingly diverse and chaotic scene of changing markets and widening competition, I will argue for thinking of innovation and firm formation as a process of experimentation in the market. Rather than seeking to reduce uncertainty and to optimize, we should seek to increase possibilities for experimentation and for broader search and synthesis.

**Tuesday, October 16**

**TA: 08:00 - 09:30 Joint Session TMS/ORG: Managing Product Configuration and Improvement**
**CHAIR:** Zhijian Cui, IE Business School, Zhijian.Cui@ie.edu

**Product Configuration, Ambidexterity and Firm Performance**
**PRESENTING AUTHOR:** Fabrizio Salvador, IE Business School, Fabrizio.Salvador@ie.edu

**ABSTRACT:** We identify two firm-level abilities—namely, product configuration effectiveness (PCE) and product configuration intelligence (PCI)—that explain how product configuration impacts firm performance. We link PCE and PCI to exploration and exploitation and, following the ambidexterity argument, propose that their interaction is associated to superior operational and financial performance. We find empirical support the ambidexterity argument relative to sales, but not to profit.

**Joint Product Improvement by Client and Customer Support Center: The Role of Gain-Share Contracts**
**PRESENTING AUTHOR:** Sameer Hasija, INSEAD, sameer.hasija@insead.edu, CO-AUTHOR: Shantanu Bhattacharya, INSEAD, shantanu.bhattacharya@insead.edu, Alok Gupta, University of Minnesota, gupta037@umn.edu

**ABSTRACT:** We study the role of different contract types in coordinating the joint product improvement effort of a client and a customer support center. The customer support center’s costly efforts include transcribing and analyzing customer feedback, analyzing market trends, and investing in product design. We show the role of gain-share contracts in resolving the agency issues present is such settings.

**Optimizing the Resource Allocation of an Entrepreneur: The Role of Learning Externalities**
**PRESENTING AUTHOR:** Onesun Yoo, University College London, onesun.yoo@ucl.ac.uk, CO-AUTHOR: Bilal Gokpinar, University College London, b.gokpinar@ucl.ac.uk, Yufei Huang, University College London, yufei.huang.10@ucl.ac.uk

**ABSTRACT:** We study the problem of an entrepreneur trying to sell his service to two potential buyers by providing them information about the service. Buyers learn and update their beliefs about the service quality both directly from the entrepreneur himself, and indirectly through the purchase decision of the other buyer. By developing a game-theoretic model, we characterize this learning and purchasing process, and analyze the optimal resource allocation policy for the entrepreneur.

**Collaborative Search**
**PRESENTING AUTHOR:** Fabian Sting, Erasmus University, FSting@rsm.nl, CO-AUTHOR: Christoph Loch, Cambridge Judge Business School, c.loch@ibs.cam.ac.uk, Jurgen Mihm, INSEAD, jurgen.mihm@insead.edu

**ABSTRACT:** Search has become a widely accepted paradigm to describe innovation activities. Formal models of search have incorporated a broad spectrum of different aspects relevant to search, such as cognition or organizational embedding. We contribute to the understanding of search by studying under which circumstances it is beneficial to have several organizational players search collaboratively.

**TB: 11:00 - 12:30 Joint Session TMS/NPD: Technology Management Section Best Paper Winner Presentation**
**CHAIR:** Cheryl Druehl, George Mason University, cdruehl@gmu.edu

**Technology Management Section Best Paper Winner Presentation**
ABSTRACT: Please join us to award the first annual TMS Best Paper Award. This is for the best paper from 2007 in the TMS domain in an INFORMS journal. The Winner and Runner-ups will present their work building on their seminal papers and special-guest discussants will comment.

TC: 13:30 - 15:00 Emerging Themes in Technology Management
CHAIR: Cheryl Druehl, George Mason University, cdruehl@gmu.edu

A Model of Product Specification Decision-making and Project Failure
PRESENTING AUTHOR: Zhijian Cui, IE Business School, Zhijian.Cui@ie.edu, CO-AUTHOR: Christoph Loch, Cambridge Judge Business School, c.loch@jbs.cam.ac.uk

ABSTRACT: This study models the bargaining process between two parties (leader and follower) on a one-dimensional feature design decision for a new product. We examine three managerial levers to reduce the risk of bargaining failure. First, follower can reduce the failure risk by signaling his fallback. Second, giving leader an incentive (as with a bonus) exacerbates the risk of failure. Third, if follower cares about his relative payoff or status, this also increases the risk of failure.

New Wine in Old Bottles? Print-newspapers’ Overlooked Role in Digital Media Diffusion
PRESENTING AUTHOR: Bo Kyung Kim, Southern Methodist University, kimb@smu.edu

ABSTRACT: During the implementation process of discontinuous technology, incumbents can emphasize the similarity between new and current technologies to have better adoption performance by making their current assets more valuable in the new market. In the U.S. daily newspaper industry, incumbent newspapers that deemphasized interactivity on the web, the most distinctive character of digital media from print media, indeed had better online readership, potentially creating “print-media-like” digital media.

How Can Companies Leverage Their External Environment when Engaging in Open Innovation?
PRESENTING AUTHOR: Irina Savitskaya, Lappeenranta University of Technology, skinnarilankatu, Irina.Savitskaya@lut.fi

ABSTRACT: In the modern environment firms do not operate by themselves, they are rather a part of ecosystems. Hence their actions and success depends on how good are they in co-innovation. When companies engage in open innovation activities, they most commonly build a strategy on cooperation with the direct stakeholders. What often stays neglected is the role of external factors influencing and shaping this cooperation: structural, institutional and cultural environment play an important role.

Paradigm-changing vs. Paradigm-deepening Innovation: Firm Scope and Technological Response to Shocks
PRESENTING AUTHOR: Vivek Tandon, National University of Singapore, vtandon@nus.edu.sg, CO-AUTHOR: Gautam Ahuja, University of Michigan, gahuja@umich.edu, Curba Lampert, Zayed University, Curba.Lampert@zu.ac.ae

ABSTRACT: We examine firms’ technological response to supply shocks (sharp increase in a key input’s price). Firms can respond by investing in paradigm-changing technologies that use substitute inputs or in paradigm-deepening ones that improves the efficient use of existing inputs. Our framework relates this choice with the degree of relatedness across a firm’s businesses. We test our hypotheses examining the responses of large manufacturing firms in the United States to the oil shock of the early 1980s.

TD: 16:30 - 18:00 Joint Session TMS/ORG: Outsourcing of Knowledge-Based Tasks: Challenges, Strategies, Performance, and Implications
CHAIR: Saikat Chaudhuri, The Wharton School, University of Pennsylvania, saikatc@wharton.upenn.edu

Capability Development Across Firm Boundaries: Comparing Offshore Outsourcing of R&D vs. IT Services
PRESENTING AUTHOR: Saikat Chaudhuri, The Wharton School, University of Pennsylvania, saikatc@wharton.upenn.edu

ABSTRACT: Motivated by globally disaggregating firms, we compare the performance drivers in the offshore outsourcing of more routinized, codified IT services with less routinized and codifiable R&D work, to identify the conditions under which more central tasks can be located outside. Our analysis of a sample of such projects by a leading vendor suggests that capability creation across firm boundaries is fruitful under certain organizational designs, bearing implications for notions of core vs. periphery.

Coordination, Contracts or Control? The Drivers of Quality In Offshore Service Production
PRESENTING AUTHOR: Ravi Aron, The Johns Hopkins Carey Business School, raviaron@jhu.edu, CO-AUTHOR: Ying Liu, University of Hawaii, yliu@hawaii.edu, Praveen Pathak, University of Florida, praveen.pathak@warrington.ufl.edu

ABSTRACT: We study the factors that drive the quality of output in services produced offshore. We investigate how the nature of work, the extent of control exerted by buyers and suppliers of offshore services and the features of the contract all impact on the quality of work produced offshore. Our research is based on a panel data set (a balanced panel of suppliers and buyers) from multiple countries and multiple buyers and suppliers of offshore services.
**Technology Management Section**

**The Architecture of Multi-partner Alliances in R&D Projects: Scale, Ambidexterity and Integration**

**PRESENTING AUTHOR:** Anant Mishra, George Mason University, amishra@gmu.edu, CO-AUTHOR: Aravind Chandrasekaran, The Ohio State University, chandrasekaran.24@osu.edu, Alan MacCormack, Harvard Business School, amaccormack@hbs.edu

**ABSTRACT:** Why are some partnering alliances more successful than others? And how should firms structure their partnering alliances, particularly when such alliances involve multiple partners? Using primary data on multi-partner alliances across 147 R&D projects in six different industries, we develop and test hypotheses that examines the interrelationship between the different elements of partnering architecture and quality performance in an R&D project.

**Wednesday, October 17**

**WA: 08:00 - 09:30 Technology Management in the Service Sector**

**CHAIR:** Tugrul Daim, Portland State University, tugrul@etm.pdx.edu

**Exploring University Technology Transfer Incorporating Time-lags and Institutional Characteristics**

**PRESENTING AUTHOR:** Jisun Kim, Portland State University, kimjisun73@gmail.com, CO-AUTHOR: Tugrul Daim, Portland State University, tugrul@etm.pdx.edu

**ABSTRACT:** This paper aims to develop institutional strategy to improve the licensing practice of academic research institutions based on further understanding of licensing performance and related institutional characteristics. The results which are grounded on the comprehensive observations over multiple time durations provide an insight into the licensing practices of US research institutions.

**Health Information Technology Adoption**

**PRESENTING AUTHOR:** Nima Behkami, Portland State University, behkamin@hotmail.com, CO-AUTHOR: Tugrul Daim, Portland State University, tugrul@etm.pdx.edu

**ABSTRACT:** Using an interdisciplinary study of healthcare and technology, the objective of this research is to measure the prevalence of health information technology capabilities and their impact on delivery of care. We surveyed health care providers for prevalence their capabilities used to implement a Patient-Centered Medical Home.

**A Technology Screening Tool for Energy Efficiency Program Planning in Electric Utilities**

**PRESENTING AUTHOR:** Ibrahim Iskin, Portland State University, ibrahimiskin@gmail.com, CO-AUTHOR: Tugrul Daim, Portland State University, tugrul@etm.pdx.edu

**ABSTRACT:** Number of potential energy efficiency program alternatives is huge due to existence of numerous energy efficient technologies and end use areas. Most of the time energy savings data for emerging energy efficiency technologies is not in place, and data collection becomes a serious issue. Proposed approach is intended to utilize expert judgment and provide a quick way of surveying large number of program alternatives, saving energy planning practices resource and time.

**WB: 11:00 - 12:30 Determiners of Innovation: Governments, Firms & Individuals**

**CHAIR:** Eyiwunmi Akinsanmi, Carnegie Mellon University, eyiwunmi@cmu.edu

**The Effect of Labor Market Mismatches on Entrepreneurship**

**PRESENTING AUTHOR:** Briana Sell, Georgia Institute of Technology, bSELL3@GATECH.EDU, CO-AUTHOR: Henry Sauermann, Georgia Institute of Technology, henry.sauermann@mgt.gatech.edu

**ABSTRACT:** The objective of this study is to gain a deeper understanding of the sources and consequences of job mismatches in the Science and Engineering labor force using SESTAT survey data. The novel contribution is that it links mismatches to transitions into entrepreneurship among high ability workers. We hypothesize that mismatches are associated with a higher likelihood of entry into entrepreneurship since founding one’s own firm may allow workers to mitigate negative consequences of mismatches.

**The Mobility of Scientists during Economic Downturns and its Impact on Technology Trajectories**

**PRESENTING AUTHOR:** Eyiwunmi Akinsanmi, Carnegie Mellon University, eyiwunmi@cmu.edu, CO-AUTHOR: Erica Fuchs, Carnegie Mellon University, efuchs@andrew.cmu.edu, Ray Reagans, Massachusetts Institute of Technology, reagans@mit.edu

**ABSTRACT:** We investigate how inventor mobility after the burst of the telecommunications bubble impacts innovation using 350 hand-collected resumes of U.S. photonics inventors. Our preliminary results suggest that emerging technology inventors that move to new markets increase innovation, driving national trends. In addition we find that using patents alone – without the additional information provided in CVs as has been done in the past – fails to provide these insights.

**Collaborator Novelty and Creativity: Evidence from DARPA and MIT**

**PRESENTING AUTHOR:** Phech Colatat, Massachusetts Institute of Technology, pcolatat@mit.edu

**ABSTRACT:** There have been numerous attempts to understand the innovation model of the Defense Advanced Research Projects Agency (DARPA), a highly regarded R&D organization. In this paper, I uncover one aspect of the DARPA model using data from MIT patent disclosures. Recent research on collaboration and creativity suggests that repeated collaborations can be detrimental to creativity.
Consistent with this literature, I find that DARPA-funded research is less likely to involve repeated collaborations.

**Gains from Others’ Losses: The Technology Trajectories and the Global Division of Firms**

**PRESENTING AUTHOR:** Chia-Hsuan Yang, Carnegie Mellon University, chiahsuy@andrew.cmu.edu, **CO-AUTHOR:** Erica Fuchs, Carnegie Mellon University, erhf@andrew.cmu.edu, Rebecca Nugent, Carnegie Mellon University, rmugent@stat.cmu.edu

**ABSTRACT:** After the burst of the telecom bubble in March 2000, the majority of U.S. optoelectronic component firms moved manufacturing offshore. This research explores (1) whether due to the different offshore production economics, the firms who move manufacturing offshore stop or slow U.S.-based R&D activities in particular technologies and (2) whether inventors originally within these offshoring firms, leave, and continue to innovate in the pre-offshoring technologies at different institutions.

**WC: 13:30 - 15:00 Emerging Topics in Technology Management**

**CHAIR:** Leonardo Santiago, Federal University of Minas Gerais, lsantiago@ufmg.br

**Optimal Investment in Product Support and New Product Development in Pharmaceutical Industry**

**PRESENTING AUTHOR:** Zhili Tian, Towson University, zhili.a.tian@gmail.com

**ABSTRACT:** A firm invests in the support of existing product and new product development. The first influences the adoption of the existing product while the second brings new product in the future market. The firm has to balance the investment in the two competing projects. We optimize the investment in these two types of projects. We estimate the new drug adoption model, which is a function of investment in different advertisement vehicles using drugs from Pfizer and the similar drugs in the market.

**Innovation Inside: An Analysis of Internal Idea Competitions in Two Large IT Companies**

**PRESENTING AUTHOR:** Sebastian Fixson, Babson College, sfixson@babson.edu

**ABSTRACT:** To generate innovations, idea competitions have grown in number and sophistication in recent years. In this paper, we study internal idea competitions in two large companies. We compare and contrast the choices the two companies have made regarding a set of decision variables in the design of their idea competitions, and how those choices impacted the outcome.

**The Impact of Sector Dynamic Rules on the Choice of Management Strategy in Highly Uncertain Market and Technology Situation**

**PRESENTING AUTHOR:** Olga Kokshagina, CGS Mines ParisTech, olga.kokshagina@mines-paristech.fr, **CO-AUTHOR:** Patrick Cogez, Innovation and External Research, STMicroelectronics, patrick.cogez@st.com

**ABSTRACT:** Management strategy choice in high uncertainty is predefined by sector dynamics. There are sectors “pushed” by technology or “pulled” by market. But what happens in the situations when technology and markets are unknown (ex., semiconductors). Which strategy to adopt in these conditions? We create a simulation model to test the influence of different sector dynamics on the choice of management strategies. Our results show new strategies that minimize risks and exploration costs in double unknown.

**Network Structure, Time and Timing in Online Social Networks**

**PRESENTING AUTHOR:** Charles Weber, Portland State University, **CO-AUTHOR:** Nitin Mayande, Portland State University, nitin.mayande@gmail.com

**ABSTRACT:** An empirical study of connectivity in online social network has identified a link between network structure and the time and timing of information propagation. The findings of the study suggest that the timing of surges in network performance may be predictable.

**The Impact of Quality Exploration and Exploitation on Sustainable Production Systems**

**PRESENTING AUTHOR:** Graça Silva, ISEG, gracamsilva@iseg.utl.pt, **CO-AUTHOR:** Paulo Gomes, Babson College, pgomes@babson.edu

**ABSTRACT:** We develop a model to explain how firm level quality exploration and quality exploitation capabilities impact sustainable production. The data come from ISO 9000 registered manufacturing firms. Structural equation modeling analyses show that while quality exploitation capabilities strongly influence sustainable production quality exploration has no impact. The findings also reveal that sustainable production contributes for enhancing operational performance.
Sunday, October 14

SD: 16:30 - 18:00 The Architecture of Coordination
CHAIR: Alan MacCormack, Harvard Business School, amaccormack@hbs.edu

Innovation Analytics: Using Complexity Science and Big Data for Sequencing of Products
PRESENTING AUTHOR: Nitin Joglekar, Boston University, joglekar@bu.edu, CO-AUTHOR: Edward Anderson, University of Texas McCombs School of Business, Edward.Anderson@mccombs.utexas.edu

ABSTRACT: Many projects are sequentially dependent on one another because their features and pricing influence market tastes, and vice-versa, thus creating a complex system. Firms have begun to use “Big Data” from social media and allied sources to inform underlying decisions. We explore an information scaling framework for navigating through this complexity.

Managing Distributed Product Development Projects: Integration Strategies for Language and Geography
PRESENTING AUTHOR: Edward Anderson, University of Texas McCombs School of Business, Edward.Anderson@mccombs.utexas.edu, CO-AUTHOR: Aravind Chandrasekaran, The Ohio State University, chandrasekaran.24@osu.edu, Xiao Yue Jiang, Tulane University, xjiang@tulane.edu

ABSTRACT: We study two barriers to distributed product development work, (1) geographic distance and (2) language. Our empirical setting involves 55 projects in 20 focal firms that outsource complex innovation work to their suppliers. We investigate the effects of two integration mechanisms used to overcome these barriers, (1) colocating firm and supplier personnel and (2) giving a “supply chain integrator” personnel that manage the DPD projects control over key aspects of their projects.

Transparent Environments for Leaky Modules
PRESENTING AUTHOR: Jim Herbsleb, Carnegie Mellon University, jdh@cs.cmu.edu, CO-AUTHOR: Laura Dabbish, Carnegie Mellon University, dabbish@cs.cmu.edu, Colleen Stuart, Carnegie Mellon University, hcsstuart@andrew.cmu.edu, Jason Tsay, Carnegie Mellon University, jsjay@cs.cmu.edu

ABSTRACT: Design rules enable concurrent work when organizational structure mirrors the technical architecture.

Perfect modularity, however, is difficult to achieve. Imperfect modularity requires ongoing coordination of inter-module dependencies. In this qualitative study, we examine how an emerging generation of workspaces, explicitly designed around transparency, expose details of ongoing work and support surprisingly rich inferences about people, activities, technical direction, and dependencies.

The Human Cost of Complexity: How System Architecture Affects Developer Productivity
PRESENTING AUTHOR: Alan MacCormack, Harvard Business School, amaccormack@hbs.edu, CO-AUTHOR: Dan Sturtevant, Massachusetts Institute of Technology, Dan.Sturtevant@mathworks.com

ABSTRACT: Prior work shows that systems with greater complexity suffer greater quality problems, in terms of experiencing defects. Few studies however, examine the human costs of complexity - that is, the impact on the productivity of system developers. We explore this relationship in a commercial software system. We find that i) developer productivity is impacted by where in the system architecture they work, and ii) only skilled developers are allowed to work on the most complex parts of the system.

Monday, October 15

MA: 08:00 - 09:30 NPD Deep Dive Session

Quality Consciousness, Perceived Value and Product Design
PRESENTING AUTHOR: Sreekumar Bhaskaran, Southern Methodist University, sbhaskar@mail.cox.smu.edu, CO-AUTHOR: Priyali Rajagopal, SMU-Cox School of Business, priyalir@mail.cox.smu.edu, Karthik Ramachandran, Georgia Institute of Technology, karthik.ramachandran@scheller.gatech.edu

ABSTRACT: Research in economics and marketing assumes that quality consciousness consumers will be willing to pay more than low quality consciousness consumers for any given level of quality. We invalidate this assumption by demonstrating that there is a threshold of acceptable quality below which consumers who are highly quality conscious may in fact be willing to pay less than consumers whose quality consciousness is lower. Implications of our findings on product line design are investigated.

MB: 11:00 - 12:30 Joint Session TMS/NPD/ORG SCI: Meet the Editors and Ask
Collaboration. Using data from the medical device industry, we empirically demonstrate that when the incumbents’ costs of cooperation are exogenously increased, a subset of inventors are more likely to pursue entrepreneurship and less likely to collaboratively develop new technologies.

MC: 13:30 - 15:00 Patents: Analysis and Use
Chair: Jurgen Mihm, INSEAD, jurgen.mihm@insead.edu

Emergence and Decline of Design Gurus
Presenting Author: Haibo Liu, INSEAD, haibo.liu@insead.edu, Co-Author: Jurgen Mihm, INSEAD, jurgen.mihm@insead.edu, Manuel Sosa, INSEAD, manuel.sosa@insead.edu

Abstract: This study examines the creative output of individual designers over time and disentangles knowledge and social factors that predict both the emergence and decline of design gurus. We define design gurus as top ranked designers based on the citations received by their design patents. We test our hypotheses by using Event History Analysis on the design patents filed in United States Patent and Trademark Office (USPTO). Practical and theoretical implications for design management are discussed.

Presenting Author: David Pingry, University of Arizona, pingry@email.arizona.edu, Co-Author: Matt Thatcher, University of Louisville, matt.thatcher@louisville.edu

Abstract: Since the patentability of computer software was first affirmed in 1981 there has been an explosion of software patents and a vigorous, twofold debate about software patent policy: 1. Should there be software patents? 2. If so, what should the policy parameters be? The academic literatures have had little impact on this important policy debate. This paper examines the state of the academic literatures in addressing these questions and proposes future directions for software policy research.

On the Effectiveness of Patenting Strategies
Presenting Author: Fabian Sting, Rotterdam School of Management, f.sting@rsm.nl, Co-Author: Jurgen Mihm, INSEAD, jurgen.mihm@insead.edu, Tan Wang, INSEAD, tan.wang@insead.edu

Abstract: What patenting strategy should a company pursue? What factors should the choice of strategy depend on? We build a coherent inventory of patenting strategies and we integrate it into a common coherent framework. Through a simulation model, we identify competitive dynamics as the most crucial contingency and within our framework we characterize the optimal patenting choices. Our research makes a step towards a contingency theory of patenting strategies.

Corporate R&D Allocations in Systems Industries
Presenting Author: Markus Reitzig, Vienna University, markus.reitzig@univie.ac.at, Co-Author: Ramon Lecuona Torras, London Business School,
Different Feedbacks Different Benefits: Customers and Product Development Process
PRESENTING AUTHOR: Bilal Gokpinar, University College London, b.gokpinar@ucl.ac.uk
ABSTRACT: Companies receive a substantial amount of feedback and learn a lot about their products from the customers after their products are on the market. In this empirical study, we examine the effects of different feedbacks on organizational learning and subsequent design and development efforts.

Patients as Health Care Innovators and Developers of New Treatments, Therapies or Medical Devices
PRESENTING AUTHOR: Pedro Oliveira, Catolica-Lisbon School of Business and Economics, poliveira@ucp.pt
ABSTRACT: We empirically investigate the role of patients of chronic diseases in the development of new treatments, therapies or medical devices (TT&DM). We studied a subset of diseases (Cystic Fibrosis, Asthma, Sleep Apnea and Diabetes) and found that patients, or their families, have developed about 50% of all TT&DM available. However, the main health-care players have resisted integrating them in their development cycles. Our empirical findings have important policy and managerial implications.

Does Pre-market Approval of Medical Devices Benefit Patients?
PRESENTING AUTHOR: Cheryl Druehl, George Mason University, cdruehl@gmu.edu, CO-AUTHOR: Zhili Tian, Towson University, zhili.a.tian@gmail.com
ABSTRACT: We examine whether the FDA Pre-Market Approval (PMA) and 510(K) processes benefit patients using two types of medical devices: spinal implants and stents. In PMA, applicants provide scientific evidence to assure that the device is safe and effective for its intended uses. To quickly get to market, firms often go through 510(K) notification. Without scientific evidence, physicians may either ignore the innovative devices or adopt potentially unsafe devices. In either case, patients suffer.

Collocation Matters: The Interdependence of R&D and Manufacturing
PRESENTING AUTHOR: Enno Siemsen, University of Minnesota, siems017@umn.edu, CO-AUTHOR: John Gray, Ohio State University, gray.402@fisher.osu.edu, Gurneeta Vasudeva, University of Minnesota, gurneeta@umn.edu
ABSTRACT: Does the collocation of manufacturing and research and development (R&D) activities improve or hurt manufacturing performance? We empirically show that the conformance-quality-related benefits from collocating manufacturing and R&D in the pharmaceutical industry generally dominate the drawbacks, and thus, collocated sites have superior manufacturing quality performance.

Tuesday, October 16

TA: 08:00 - 09:30 Experimental Research on Innovation/NPD
PRESENTING AUTHOR: Joel Wooten, University of Pennsylvania, jwooten@wharton.upenn.edu
ABSTRACT: Experiments have the ability to test theory and validate hypotheses. Here, we look at algorithmic innovation tournaments from Kaggle.com to examine the effect of incremental progress in innovation. We use submission-level entries in data-driven tournaments to examine whether the innovation horizon inspires additional innovation.

Ambiguous Problem Complexity, Group Synergy and Performance: An Experiment
PRESENTING AUTHOR: Elliot Bendoly, Emory University, elliot_bendoly@bus.emory.edu, CO-AUTHOR: Stylianos Kavadias, Georgia Institute of Technology, stylianos.kavadias@mgt.gatech.edu, Svenja Sommer, HEC Paris, sommers@hec.fr
ABSTRACT: Kavadias and Sommer (2009) describe a normative model predicting strong collaborative group problem solving in relatively simple settings, but weakness in increasingly complex ones. We revisit the issue through a computer-based experiment. The value of the normative model is strengthened through the consideration of member diversity, focus, control and accountability.

Tolerance for Failure and Incentives for Collaborative Innovation
PRESENTING AUTHOR: Jeremy Hutchison-Krupt, Darden School of Business, University of Virginia, KrupatJ@darden.virginia.edu, CO-AUTHOR: Raul Chao, Darden School of Business, University of Virginia, ChaoR@darden.virginia.edu
ABSTRACT: An organization’s ability to innovate can be enhanced by managing risk-taking behavior through monetary incentive schemes and through an organizational culture that tolerates failure. This paper reports the results of two controlled experiments aimed at understanding how tolerance for failure and incentives impact the decisions of individuals engaged in a collaborative innovation initiative.
The Design Challenges of Experiential Services

PRESENTING AUTHOR: Yannis Bellos, Georgia Institute of Technology, yannis.bellos@mgt.gatech.edu, CO-AUTHOR: Stylianos Kavadias, Georgia Institute of Technology, stylianos.kavadias@mgt.gatech.edu

ABSTRACT: In this paper we explore the design challenges of an organization that develops an experiential service. Building on the customer journey concept, which maps an experiential service to customer-provider interaction touchpoints, we analyze the service provider's design decisions: the touchpoints she controls, and the price she charges. We fully characterize the conditions under which the provider can use her design decisions to successfully signal service quality.

Idea Generation and the Role of Feedback

PRESENTING AUTHOR: Joel Wooten, University of Pennsylvania, jwooten@wharton.upenn.edu, CO-AUTHOR: Karl Ulrich, University of Pennsylvania, ulrich@wharton.upenn.edu

ABSTRACT: In many innovation settings, ideas are generated over time and managers face a decision about if and how to provide in-process feedback about the quality of submissions. We use innovation tournament field experiments to examine the effect of feedback on idea generation and show individual-level differences between no feedback, random feedback, and directed feedback.

A Structured Approach to Identify Styles in Designs

PRESENTING AUTHOR: Tian Chan, INSEAD, TianHeong.CHAN@insead.edu, CO-AUTHOR: Jurgen Mihm, INSEAD, jurgen.mihm@insead.edu, Manuel Sosa, INSEAD, manuel.sosa@insead.edu

ABSTRACT: A style is an organizing principle based on categorizing visually similar designs into a describable concept. This paper presents a structured approach to identifying styles using cluster analysis. Design patent data provides a unique opportunity to analyze style on a large scale due to a tightly controlled citation process which conveys similarity in visual impression between designs. Finally, we test styles developed using this approach against theory and perceptual experiments.

Submission Transparency in Idea Generation

PRESENTING AUTHOR: Joel Wooten, University of Pennsylvania, jwooten@wharton.upenn.edu, CO-AUTHOR: Karl Ulrich, University of Pennsylvania, ulrich@wharton.upenn.edu

ABSTRACT: In innovation tournaments, administrators face a variety of decisions that impact the course of the contest. We examine the effect of submission transparency by comparing blind and unblind contests using innovation tournament field experiments. We control submission visibility and show individual-level differences in idea quality and uniqueness from the tournament participants - the solvers.

Cognitive Response of Workers to Competition

PRESENTING AUTHOR: Michael Menietti, Harvard Business School, mmenietti@fas.harvard.edu, CO-AUTHOR: Kevin Boudreau, London Business School, kboudreau@london.edu, Constance Helfat, Tuck School of Business, Constance.Helfat@tuck.dartmouth.edu, Karim Lakhani, Harvard Business School, k@hbs.edu

ABSTRACT: Rank-order tournaments are widely employed to incentivize workers and elicit effort. We examine software developers competing in rank-order tournaments. We find performance falls among developers in response to the number of competitors and independently from the presence of superstar competitors. Though those affected still work on solutions, fewer solutions are submitted and more solutions that are submitted contain errors.

Prize Amount and Entry Behavior in Innovation Contests

PRESENTING AUTHOR: Anant Mishra, George Mason University, amishra6@gmu.edu, CO-AUTHOR: Jesse Bockstedt, University of Arizona, bockstedt@email.arizona.edu, Cheryl Druehl, George Mason University, cdruehl@gmu.edu

ABSTRACT: Innovation contests are being widely used by firms to generate creative ideas and identify solutions to complex problems. Using a large panel dataset of unblind innovation contests from a popular online logo-design platform, we examine the interplay or prize amount and contestant's prior winning experience on their entry behavior in a contest.

The Impact of Monetary and Non-monetary Incentives in Platform-based Innovation Contests

PRESENTING AUTHOR: Anника Мueller, Harvard University, amueller@fas.harvard.edu, CO-AUTHOR: Kevin Boudreau, London Business School, kboudreau@london.edu, Karim Lakhani, Harvard Business School, k@hbs.edu

ABSTRACT: In this study we examine the effect of pecuniary and non-pecuniary incentives on the participation, effort and productivity of individuals on an open crowdsourcing contest platform. Specifically, we conduct a unique field-experiment in which subjects are randomly allocated to nine treatment groups to investigate the causal impact of various combinations and levels of money, status and job market signalling as prizes on the participation and performance of coders in an online programming contest.

Submission Transparency in Idea Generation

PRESENTING AUTHOR: Joel Wooten, University of Pennsylvania, jwooten@wharton.upenn.edu, CO-AUTHOR: Karl Ulrich, University of Pennsylvania, ulrich@wharton.upenn.edu

ABSTRACT: In innovation tournaments, administrators face a variety of decisions that impact the course of the contest. We examine the effect of submission transparency by comparing blind and unblind contests using innovation tournament field experiments. We control submission visibility and show individual-level differences in idea quality and uniqueness from the tournament participants - the solvers.
Projects and Team Dynamics
PRESENTING AUTHOR: George Georgiadis, University of California-Los Angeles, georgiadis@ucla.edu
ABSTRACT: This paper studies the dynamic collaboration of a team on a project that stochastically evolves to completion over time. The main result is that members of a larger team work harder both individually and on aggregate if and only if the project is sufficiently far from completion. By using this framework, I examine how a manager who recruits agents into a team to complete a project on her behalf should choose the team composition, as well as the agents’ compensations.

An Incentive Scheme to Resolve Parkinson's Law in Project Management
PRESENTING AUTHOR: Bo Chen, Warwick Business School, Bo.Chen@wbs.ac.uk, CO-AUTHOR: Xiaotie Deng, University of Liverpool, Xiaotie.Deng@liverpool.ac.uk, Nicholas Hall, Ohio State University, hall.33@osu.edu
ABSTRACT: A major challenge in executing many projects is the widespread prevalence of Parkinson's Law, which results in wasting the benefit of potential early project completion. We design mechanisms that incentivize task owners to complete their tasks early when possible and to report their ability to do so when they realize this is possible with progress on their tasks. Our mechanisms further incentivize task owners to get ready for starting their tasks early.

Consequences and Control of Procrastination in Projects
PRESENTING AUTHOR: Yaozhong Wu, National University of Singapore Business School, yaozhong.wu@nus.edu.sg, Co-AUTHOR: Vish Krishnan, University of California-San Diego, vkrishnan@ucsd.edu, Karthik Ramachandran, Georgia Institute of Technology, karthik.ramachandran@scheller.gatech.edu
ABSTRACT: We analyze how managers can design project tasks to influence procrastinating workers. We also report findings from an experiment on the effects of different task designs on individual worker’s behavior and on the quality of their performance.

Stakeholder Commitment: Product Development With Uncertainty
PRESENTING AUTHOR: Jeremy Kovach, Georgia Institute of Technology, Jeremy.Kovach@mgt.gatech.edu, Co-AUTHOR: Stylianos Kavadias, Georgia Institute of Technology, stylianos.kavadias@mgt.gatech.edu
ABSTRACT: We explore incentive structures used by firms to motivate functional stakeholders’ resource commitment decisions during NPD projects. We consider projects where as the project progresses, the locus of responsibility shifts from one functional stakeholder to another. We design optimal contracts for the functional stakeholders, factoring in the stakeholder’s preference to resource commitment, in order to maximize project value based on the project uncertainty and project monitoring costs.

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