From the Chair’s Desk
- Jianxi Luo

Greetings TIMES members and friends!

It is my pleasure to connect with you annually through our newsletter. This newsletter is prepared by TIMES officers to provide you with the news and updates of the TIMES community and a guide on the TIMES sessions at the upcoming annual conference of INFORMS in Nashville.

Since our official name change in 2014 from Technology Management Section (TMS) to Technology, Innovation Management and Entrepreneurship Section (TIMES) of INFORMS, the scope of activities, sessions and participants of our section have grown dramatically. Since then, we have embraced more interdisciplinary topics and scholars, to address the needs for innovation and entrepreneurship research and education. Currently, TIMES has ~200 formally registered members, of which 70% are based in the United States, and many friends and supporters in our community.

In 2016, we entered a mutually beneficial partnership with PICMET (Portland International Center for Management of Engineering and Technology), and became a Cooperating Society for PICMET'16 Conference in Hawaii. Through the partnership, TIMES members receive a significant discount in the registration fee for the international conferences organized by PICMET, and an additional discount in the PICMET membership fee.

At the INFORMS Annual Meeting, TIMES continually supports a wide range of activities, including the sponsored cluster of sessions, the Best Doctoral Dissertation and Best Paper Awards, the Distinguished Speaker, the Business Meeting and the newsletter. With this in mind, I would like to draw your attention to the TIMES sponsored cluster at the 2016 INFORMS Annual Meeting in Nashville. Our sponsored program will feature a variety of state of the art presentations and talks in exciting sessions from November 13th through November 16th. Thanks to Zhijian Cui for organizing it.

In particular, I would like to highlight three sessions at the INFORMS Annual Meeting. First, the Best Dissertation Award Finalists will present their dissertation work in the session “Emerging Scholars in Technology Management” on Monday, November 14th, from 11:00 to 12:30. Second, this year’s Distinguished Speaker is Moren Lévesque, the CPA Ontario Chair in International Entrepreneurship Professor, from Schulich School of Business of York University. Prof. Lévesque will deliver a talk on “Processes in Entrepreneurship”, on Monday, November 14th, from 4:30pm to 6:00pm. Last, but not least, I would like to invite you to TIMES Business Meeting, which will be held on Monday, November 14th, at 6:15PM after the distinguished talk, to meet and network with other innovation and entrepreneurship scholars.

At the business meeting, we will announce and congratulate the winner of the Best Dissertation Award, and the winner of the Best Paper Award. The winning paper is “Modeling a Paradigm Shift: From Producer Innovation to User and Open Collaborative Innovation” by Carliss Baldwin and Eric Von Hippel, published in Organization Science. Professor

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From the Chair’s Desk
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Professor Carliss Baldwin will give a talk on their award-winning research and share the journey behind the best paper, at the business meeting. Thanks to Gulru Ozkan-Seely for organizing the review and selection process for both awards, and the contributions of our distinguished reviewers.

Furthermore, I would like to thank our past TIMES chairs Sinan Erzurumlu, Leonardo Santia-go, Cheryl Druenl, Juliana Hsuan and Janice Carrillo for their incredible support. I am also very much in debt to Gulru Özkan-Seely (Chair-Elect), Zhijian Cui (Vice Chair of Programs), Jeremy Hutchison-Krupat (Vice Chair - Membership & Communication) and John Angelis (Chief Information Officer). Their service to the community makes our section thrive. If you have suggestions for TIMES, or would like to become an officer and join the team, please contact us.

For those who are coming to the 2016 Annual Meeting, I and other TIMES members wish you a productive and enjoyable conference, and look forward to seeing you in Nashville!

Best Regards,
Jianxi Luo

TIMES OFFICERS 2016

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2016 Distinguished Speaker
INFORMS Technology, Innovation Management and Entrepreneurship Section

It is my great pleasure to announce the INFORMS TIMES 2016 Distinguished Speaker, Moren Lévesque. She is Professor of Operations Management and Information Systems at York University’s Schulich School of Business. She also holds the Chartered Professional Accountants of Ontario Chair in International Entrepreneurship.

Moren received her BS and MS degrees in Mathematics from Université Laval and PhD in Management Science from the University of British Columbia. She has been a professor at York University since 2009 and prior to that held the Canada Research Chair in Innovation and Technical Entrepreneurship at the University of Waterloo’s Faculty of Engineering. Moren has also been on the faculty at Université Laval, Carnegie Mellon University, Rensselaer Polytechnic Institute, Humboldt Universität and Case Western Reserve University, in addition to holding visiting professorships at Copenhagen Business School and National University of Singapore.


Moren was a pioneer in bringing mathematical modeling to understand various entrepreneurial phenomena associated with decision making. Her ability to elucidate the benefits of bringing operations research methods into entrepreneurial research enquiries and to make it more attractive to an audience not trained in formal modeling, created new areas of research in the field. It also encouraged a new generation of scholars to follow her lead and work at the interface of operations and entrepreneurship.

She has also served the Academy of Management’s Entrepreneurship Division as a member of its Research Committee and its Midwest Regional Liaison, as well as recently being the Chair of its Membership Committee. Moreover, she has served as an officer for our own TIME Section. She is currently a Department Editor at the IEEE Transactions on Engineering Management and a senior editor at Production and Operations Management.

Moren has brought her background of combining disciplines into her teaching by being a strong advocate for classrooms with students who come from colleges across the entire campus. She has been promoting and teaching new venture creation courses with business students mixed with students from engineering and other disciplines so that the strengths of everyone’s diverse training and experience can be utilized. She proudly speaks about the entrepreneurial achievements that have resulted from her classroom.
TIMES Distinguished Speaker

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We asked her a few questions:

TIMES: What are the biggest and most significant changes you have seen in your research field over the last ten years?

Moren: A significant increase in the number of entrepreneurship journals accompanied by a significant increase in the number of scholars interested in entrepreneurship. These scholars come from all around the world and while the majority was initially trained in strategy, they are now increasingly coming from other business functions and social science disciplines. Whoever told me twenty years ago that entrepreneurship was a fad was certainly mistaken.

TIMES: For a highly research active faculty and stellar teacher, what do you see as effective ways to bring research to the classroom?

Moren: Bringing my own research with a more applied flavor into the class has been especially turning on my undergraduate and MBA students. They seem to remember the takeaways from that research more than anything else. You can really get their attention, and I have observed that it helps them better understand and appreciate what you do as an academic when you are not in the classroom.

TIMES: Lastly, what do you see as more to come in the field of technology, innovation management and entrepreneurship?

Moren: Entrepreneurs have been labelled as being ‘Jack-of-all-trades.’ This qualifier applies not only to practitioners, but also to this research field. I have been observing that the multidisciplinary nature of the TIME field is increasingly requiring this characteristic for its research. In other words, to be most impactful I believe research will increasingly require teams of scholars from multiple disciplines.

At the INFORMS Annual Meeting, Moren will go over some findings from investigating the business investment process and entrepreneurial market process, while offering some thoughts on research opportunities to further our understanding of such processes and their practical implications. Please join us on Monday, 14 November 2016, as we welcome her, enjoy an interactive presentation, and honor her as the 2016 Distinguished Speaker of the Technology, Innovation Management and Entrepreneurship Section at INFORMS. The presentation begins at 16:30 (please see the conference program for location).

-Sinan Erzurumlu
This year we have received fascinating dissertations for 2016 TIMES Doctoral Dissertation Award and we would like to thank all of the participants. Our judges have had a hard task to choose the finalists. We also would like to thank the panel of judges for their time and dedicated work: Sreekumar Bhaskaran (Southern Methodist University), Sanjiv Erat (University of California San Diego), Manpreet Hora (Georgia Institute of Technology), Manuel Sosa(INSEAD) and Sezer Ulku (Georgetown University).

We have five dissertations for the final round of 2016 TIMES Doctoral Dissertation Award. In this issue we get to know our finalists better. We invite you to listen to the presentations for the 2016 TIMES Doctoral Dissertation Award on Monday, November 14th, 11:00 am - 12:30 pm, at the session "TIMES Best Dissertation Award Finalists". Our finalists are, in alphabetical order,

(continued on next page)
Daniel Armanios

Daniel Armanios with his dissertation titled:
“What is the Role of the State in Entrepreneurship and Venture Performance?”
Daniel completed his doctoral studies at Stanford University in August 2015, where he worked under the guidance of Professors Kathleen Eisenhardt and Charles Eesley (co-advisors), as well as Professors Stephen Barley and Riitta Katila. Daniel’s dissertation tries to unpack the different roles that state institutions play in entrepreneurship and venture performance. Prior empirical studies on entrepreneurship are limited in their answers to this question because they do not account sufficiently well for the variety of institutions, mechanisms, and features of local institutions within the state on the venturing process. Through three empirical investigations of Chinese technology ventures, Daniel’s dissertation finds three roles that the state plays during the venturing process. Public-private institutions (science parks) play an intermediary role whereby these institutions connect private-sector entrepreneurs to public-sector resources. Public research organizations (Chinese Academy of Sciences institutes) play an integrator role whereby these institutions develop and transfer public-sector knowledge for use in private-sector commercial applications. Local governments (provincial governments) play an implementer role whereby these institutions tailor national policies to local markets. Taking these institutions and their roles together, Daniel’s dissertation provides a more nuanced picture of the role of the state in the venturing process and in so doing, advance organizational theory, namely institutional theory, and its nexus to research on entrepreneurship and emerging economies. His dissertation’s findings also have public policy and venture strategy implications, particularly for those policymakers seeking to promote entrepreneurship and for those ventures seeking to acquire public resources. Daniel is an assistant professor in the Department of Engineering and Public Policy at Carnegie Mellon University.

Ersin Korpeoglu

Ersin Korpeoglu with his dissertation titled:
“Innovation and Crowdsourcing Contests”
Ersin Korpeoglu completed his doctoral studies at Tepper School of Business, Carnegie Mellon University in May 2015. He worked under the supervision of Professors Laurence Ales and Soo-Haeng Cho. Ersin’s dissertation examines the optimal design of innovation and crowdsourcing contests (also called tournament) wherein a contest organizer seeks solutions to an innovation-related problem from independent agents. In his first chapter, Ersin analyzes the impact of the number of solutions that an organizer seeks and the impact of different types of uncertainties agents face on the optimal contest design. One of his findings is that an open contest with unrestricted entry is optimal when there is significant uncertainty in the innovation process or evaluation of agents. In his second chapter, he establishes that with more participants in a contest, low-ability agents decrease effort and high-ability agents increase effort, and he shows that an open contest is more likely to be optimal than prior literature asserted. His findings in the first two chapters provide a theoretical justification for the widespread use of open innovation practices. In his third chapter, he analyzes the optimal compensation of heterogeneous contestants when they compete to generate an innovation at the minimum time. He derives an optimal compensation function that depends on agent’s solution times as well as how observable agents’ effort levels are to the organizer. Currently, Ersin is an assistant professor at the University College London, School of Management.
Haibo Liu with his dissertation titled: “Essays on Extreme Performance”

Haibo Liu completed his doctoral studies at INSEAD in 2015. His committee consists of Professor Gabriel Szulanski, Manuel Sosa, Jurgen Mihm, and Guoli Chen. Extreme performance refers to performance that is well above the average and belongs to the upper tail of the outcome distribution. In contrast to previous research that predominantly pays attention to improving mean performance, Haibo’s research aims to uncover mechanisms that contribute to breakthrough innovations and drivers that facilitate extreme successes in the innovation context. First chapter of his dissertation uses a large longitudinal data set consisting of all designers who were granted a design patent in the United States from 1975 through 2010 and shows how a designer’s likelihood of becoming a star is affected by collaborating with stars as compared to non-stars. He finds that the quality of a collaborator (star vs. non-star) moderates two important contextual factors of collaboration: social network cohesion and expertise similarity, hence, reconciling contrasting effects associated with the two factors that are found in prior literature. Second part of Haibo’s dissertation explores the antecedents of extreme performance in the context of a multiunit-multimarket organization. Currently, Haibo is an Assistant Professor of Management at the University of California Riverside.


Frank Nagle completed his doctoral studies at Harvard Business School in May 2015. He worked under the supervision of Professors Shane Greenstein, Marco Iansiti, Carliss Baldwin, Karim Lakhani and Feng Zhu. Frank’s dissertation explores how digital goods created for free through the process of crowdsourcing cause measurement issues for evaluating innovation and economic growth. The first paper in his dissertation argues that as information costs approach zero, the locus of innovation at the firm shifts from within firm boundaries to external communities. The second paper uses data from a scan of 1% of the 1.5 billion IP addresses in the US to show that the open source and free nature of the predominant web server, Apache, leads to an underestimation of GDP by upwards of $12 billion. The third and fourth papers use firm-level data on open source software (OSS) usage to show that firms that use OSS gain a previously unexplained bump in productivity and that firms that contribute to the creation of this important public good gain an even greater productivity bump than their free-riding peers. His broader research agenda is focused on understanding how the digital economy is weakening firm boundaries. Frank is currently an Assistant Professor of Strategy at the Marshall School of Business at the University of Southern California and is the co-director of the USC Marshall Digitopolis group.
Joost Rietveld

Joost Rietveld with his dissertation titled:
“Value Creation from Complements in Platform Markets: Studies on the Video Game Industry”

Joost completed his doctoral studies with Cass Business School in March 2015 under the guidance of Stefan Haefliger (Cass Business School), Melissa Schilling (NYU Stern School of Business), and JP Eggers (NYU Stern School of Business). Joost’s dissertation explores competitive dynamics for complementors in multisided markets (e.g., video games, mobile apps, and newspapers). Whereas previous literature in this domain mostly takes the perspective of a dominant platform firm, the dissertation takes the perspective of the complements producers studying how variation on the platform side and competition affect innovation incentives and performance. In three empirical studies in the context of the video game industry Joost studies (1) how demand heterogeneity in video game consoles affects the innovation incentives and product sales of video game producers, (2) how vertical disintermediation from incumbent publishers affects game developers’ relationship with the platform owner and their subsequent sales performance, and (3) how the advent of digital distribution platforms such as Apple’s App Store has affected game developers’ business models. The dissertation’s main contributions are to the literatures on multisided platforms and demand perspectives in innovation and strategic management. Joost is currently an Assistant Professor in Strategic Management at the Rotterdam School of Management (RSM), Erasmus University.

We look forward to seeing you at this session, which promises to be full of rich ideas and discussion.


- Gulru Ozkan-Seely
We have the pleasure to announce the Technology, Innovation Management and Entrepreneurship Best Paper Award for the year of 2016:

**Winner**

**Runner-up**

During 2011 and 2012, we have had the pleasure of working with the department editors at Management Science and at Organization Science to create the parameters for an annual INFORMS Technology, Innovation Management and Entrepreneurship Section (TIMES) best paper competition. Together with the editors, the board members of the INFORMS TIMES chose a system in which the best papers for the annual competition would be narrowed down to the top-cited technology management papers in INFORMS journals from five years earlier (e.g., for the year 2016, we considered papers published in 2011). Then, a panel of distinguished scholars, leaders in the field of technology, innovation and entrepreneurship domain, would select the top paper and the runner-up. Winners would be presented with a plaque, and invited to present their work that has built on that paper since its publication at the INFORMS Annual Meeting in a special session with a special-guest discussant.

For this year, after narrowing down the papers to those with top citations, Steve Eppinger, Moren Levesque, Glen Schmidt and Todd Zenger served on the best paper selection panel. We would like to thank them for being part of the panel of distinguished scholars!

The finalists will be presented with a plaque at the INFORMS TIMES Business meeting on Monday, November 14th during the INFORMS Annual Meeting, in Nashville, TN, 6:15pm (room to be assigned). Carliss Baldwin will present the winning work and the research built thereon at the business meeting. Please, come and join us to congratulate them!

Again, congratulations to the winners and finalists of the Best Paper Award Competition for the year of 2016!

- Gulru Ozkan-Seely

**Best Paper Selection Panel**

Steve Eppinger  
MIT Sloan School of Business  
eppinger@mit.edu

Moren Levesque  
York University  
Schulich School of Business  
mlevesque@schulich.yorku.ca

Glen Schmidt  
University of Utah  
glen.schmidt@utah.edu

Todd Zenger  
University of Utah  
todd.zenger@utah.edu
Dear TIMES Members, Colleagues and Friends,

On behalf of the Technology, Innovation Management and Entrepreneurship Section of INFORMS, it is my great pleasure to welcome you to the 2016 INFORMS Annual Meeting where we are excited to share two great clusters with you: Technology, Innovation Management & Entrepreneurship (TIME) and New Product Development (NPD). These two clusters offer an exciting combination of technology, innovation, product development and entrepreneurship sessions. We would like to take this opportunity to thank all of the session chairs and participants for their contribution to this year’s terrific program.

As always, the talks for this year are quite diverse and appealing. We would like to invite you to review the session descriptions in the newsletter and online to make the most out of the conference. You will have the opportunity to enjoy the state of the art of our field from Sunday, November 13th to Wednesday, November 16th 2016. It will be hard to decide with so many great options. We would like to draw your attention to some of the special sessions.

This year, all sessions scheduled on Sunday and Tuesday will be dedicated to the research of innovation management. Besides the sessions focused on product and process innovations, we highlight the sessions about the revenue generation (Sunday morning, from 8:00 to 9:30), business model innovation (Sunday morning, from 11:00 to 12:30) the link between innovation and value chain management (Tuesday morning, from 11:00 to 12:30) as well as the organizational innovations (Sunday afternoon, from 16:30 to 18:00).

On Monday, we have two special sessions dedicated to emerging scholars and research themes in innovation and entrepreneurship research. The first one entitled as “emerging scholars in technology management” (Monday morning, from 11:00 to 12:30), will invite all finalists of the 2016 TIMES Best Dissertation Award to present their cutting-edge research. We believe that it could be a great opportunity to get to know and interact with the emerging scholars in our field. The second one entitled as “Emerging Themes in Startup Product, Supply Chain & Technology Management” (from 13:30 to 15:00) will invite several faculty members to form a panel and discuss the new research themes that surge in the past few years in the field of innovation management and entrepreneurship.

One important session you should consider “not to be missed” on Monday afternoon is the annual “TIMES Distinguished Talk” (from 16:30 to 18:00). This year’s distinguished talk will be delivered by Professor Moren Levesque, Professor of Operations Management and Information Systems and CPA Ontario Chair in International Entrepreneurship, at Schulich School of Business, York University. The session will be hosted by Professor Sinan Erzurumlu, the former TIMES Chair, and followed by the annual TIMES business meeting.

Last but absolutely not the least, please do not miss the session scheduled on Wednesday. We prepared one excellent session dedicated to the application of product and process innovation in healthcare sector (Wednesday, from 8:00 to 9:30).

Thank you for all of your long-term supports and contributions to the TIMES sessions! We hope to see you in Nashville!

- Zhijian Cui
Sunday, November 13

Session SA53:  8:00 - 9:30 AM
Topics in Revenue Generation from Innovation
Music Row 1- OMNI
CHAIR: Pascale Crama, Singapore Management University, pcrama@smu.edu.sg

Presentation 1  8:00 - 9:30 AM
Retaining Capable New Employees: Role of Strategic Interaction and the Learning Rate
Onesun Steve Yoo¹, Dharma Kwon², 1. University College London, London, United Kingdom; 2. University of Illinois at Urbana- Champaign, Urbana, IL, Contact: onesun.yoo@ucl.ac.uk

Abstract
We study a two-sided game involving a firm and a newly hired employee whose capability is not initially known to either party. As the employee performs, both players learn and are presented with an option: the firm can terminate an incapable employee, and a capable employee can leave the firm for greater financial remuneration elsewhere. We examine the Markov perfect equilibrium (MPE) termination strategies and payoffs that unfold. We report a counterintuitive result: slower learning can increase the equilibrium payoff for both parties. Our result identifies a nonfinancial way for firms to improve retention of highly capable employees and create a win-win situation for both parties.

Presentation 2  8:00 - 9:30 AM
The Impact of Valuation Heterogeneity and Network Structure on Equilibrium Prices in Supply Networks
Yi Xu¹, Alper Nakkas², 1. University of Maryland, College Park, MD, 2. Nova School of Business and Economics, Lisbon, Portugal. Contact: alper.nakkas@novasbe.pt

Abstract
We study how valuation heterogeneity and network structure on equilibrium prices in supply networks by identifying the main factors that influence the equilibrium prices, trading pattern and surplus allocation in such networks. We also show what types of links can be added into a supply network to improve its competitiveness and/or efficiency.

Presentation 3  8:00 - 9:30 AM
Signaling Product Quality Through a Trial Period
Shouqiang Wang¹, Gulru Ozkan-Seely², 1. Clemson University, Clemson, SC, 2. University of Washington Bothell, Bothell, WA, Contact: gulru@uw.edu

Abstract
We evaluate a firm's pricing and timing strategies when launching via a time-locked trial period a new product that has privately observable product quality. While the trial period allows consumers to learn about the product quality (a phenomenon we term a learning effect), a longer trial period increases the heterogeneity of consumers' willingness-to-pay for the firm (a phenomenon we term a disper-
and expanded access to service during peak demand.

**Presentation 3**  
11:00 - 12:30 PM  
*Team Leadership and Performance: Combining the Roles of Direction and Participation*

Morvarid Rahmani¹, Uday Karmarkar², Guillaume Roels³,  
1. Georgia Institute of Technology, Atlanta, GA, 2. UCLA, Los Angeles, CA, 3. UCLA, Los Angeles, CA, Contact: morvarid.rahmani@scheller.gatech.edu

**Abstract**  
One of the challenges that project team leaders face is how to combine their roles as individual contributors and managers. In this paper, we propose a model of team leadership and study how a contributor leader should adjust her managing effort over time and with respect to the project characteristics (e.g., team members' incentives and team size).

**Presentation 4**  
11:00 - 12:30 PM  
*Sole Inventor Vs Team of Inventors: What’s Best?*

Tian Chan¹, Jurgen Mihm², Manuel Sosa³,  
1. Emory University, Atlanta, GA, 2. Insead, Boulevard de Constance, France; 3. INSEAD, Singapore, Singapore. Contact: tianheong.chan@insead.edu

**Abstract**  
Should a team of inventors outperform individual inventors in creating groundbreaking innovations? The empirical evidence that examines into scientific papers and technology patents (representing millions of inventive work) suggests that the answer is an unqualified “yes”. However, in this work we use design patent data to show that “teams are better than individuals” is not true in the context of design innovation. While so, we find that collaboration yields future dividends—designers who has collaborated extensively in the past but currently operates alone outperforms either teams or sole designers. We discuss the implications of our results in the organization of innovative work.

**Session SC53**  
1:30 - 3:00 PM  
*Advances in Research Exploring the Link between Learning and Innovation*

MUSIC ROW 1- OMNI  
CHAIR: Onesun Steve Yoo, University College London, Contact: o.yoo@ucl.ac.uk

**Presentation 1**  
1:30 - 3:00 PM  
*Design of Resource Competitions for R&D Projects*

Pascale Crama, Singapore Management University, Contact: pcrama@smu.edu.sg

**Abstract**  
Academic research is funded by governments as well as by university administered research funds (UARF) at research universities. Government funding is based on arm’s length, competitive peer reviews of project proposals, whereas UARF funding is more relationship-based. We evaluate the impact of these two funding sources and their differing funding rules on the novelty of the projects being funded and social welfare creation. Our research points to the importance of an appropriate design of the two-stage funding system to increase social welfare.

**Presentation 2**  
1:30 - 3:00 PM  
*Staged Ideation in Crowdsourced Problem Solving*

Nilam Kaushik, University College London, Contact: uceikau@ucl.ac.uk

**Abstract**  
Crowdsourcing ideation platforms are increasingly gaining traction and are being used by firms to tap into the wisdom of crowds to generate ideas and to solve problems. Some such platforms are based on a multi-staged ideation paradigm where ideas are elicited from the user community for an open problem. A few ideas are selected for further refinement which involves updating the idea based on feedback from the user community. Refined ideas are subsequently evaluated and a subset is chosen for winning. Using a novel dataset from a crowdsourcing innovation platform, we investigate factors that affect the selection of an idea into the refinement stage and further into the winning stage.

**Presentation 3**  
1:30 - 3:00 PM  
*Research and Development Competition with Spillovers and Uncertain Completion Times*

Wenxin Xu¹, Dharma Kwon², Jovan Grabovac³, 1. University of Illinois at Urbana-Champaign, 2. University of Illinois at U-C, Champaign, IL, 3. University of Illinois, Champaign, IL, Contact: wxu9@illinois.edu

**Abstract**  
We examine a game-theoretic model of two firms that are competitively engaged in R&D projects and address two questions:  
(1) What is the impact of natural spillover upon innovative firms’ payoffs?  
(2) Does an innovative firm have an incentive to unilaterally increase the spillover to its competitor? To answer these questions, we investigate the impact of natural spillover on R&D investment strategies when the R&D completion times are uncertain and either firm can receive spillover from the other. We characterize the Nash equilibrium of the model and find that natural spillover may or may not diminish the profit of the more efficient firm.

**Presentation 4**  
1:30 - 3:00 PM  
*A Theoretical Analysis of the Lean Startup’s Agile Product Development Process*

Onesun Steve Yoo¹, Tingliang Huang², Kenan Arifoglu³, 1. University College London, 2. Carroll School of Management, Boston College, Chestnut Hill, MA, 3. University College London, London, United Kingdom. Contact: onesun.yoo@ucl.ac.uk

**Abstract**  
We provide a theoretical foundation for the lean startup’s agile product development process. It helps us better understand why lean start-up works, and also predict when it does not work. We discuss the implications of our results to research and practice.
Session SD53: 4:30 - 6:00 PM
Organizational Innovation
MUSIC ROW 1- OMNI
CHAIR: Sinan Erzurumlu, Babson College,
Contact: serzurumlu@babson.edu

Presentation 1 4:30 - 6:00 PM
Business Start-up Operations
Nitin Joglekar, Boston University School of Management,
Contact: joglekar@bu.edu

Abstract
Evidence on operational innovations (OI), based on connectivity based analytics and low cost intelligent robotics, points to the co-evolution between business models and OI. We argue that this evolution offers opportunities to develop new types of decision support models.

Presentation 2 4:30 - 6:00 PM
Communication, Incentives, and the Execution of a Strategic Initiative
Jeremy Hutchison-Krupat, University of Virginia,
Contact: krupatj@darden.virginia.edu

Abstract
Senior leadership can influence a direct report through incentives and communication. Financial incentives are credible and precisely specified, but offer limited flexibility, whereas communication is flexible, but lacks precision and must be deemed credible to affect a direct report's actions. We study senior leadership who seeks to add an initiative to their portfolio. Early on, its potential to create value is not well-understood, however, senior leadership eventually obtains knowledge on its potential which they may communicate to their direct report.

Presentation 3 4:30 - 6:00 PM
How Cost Reduction and Change of Technology Significantly Changed the Demand of a Product. Case Study Based on Daily Demand Data from 2012-2016
Eric Bentzen, Copenhagen Business School,
Contact: eb.om@cbs.dk

Abstract
Cloud-based point of sale solutions provide a number of advantages over more traditional point of sale solutions. One advantage is the significant reduction in costs which many small business should consider. In this case we look at a solution where useless aggregated monthly costs where decomposed into single units costs and combined with the introduction of a cloud-based point solution this cost decomposition were traced directly to the sales of every single unit. The change in technology directly affected the daily sales.

Presentation 4 4:30 - 6:00 PM
Relationship-specific Agreements Between the Service Provider and the Firm in the Gig Economy
Sinan Erzurumlu, Babson College,
Contact: serzurumlu@babson.edu

Abstract
In this research we explore the interactions between the service providers and the firm in the gig economy. We analyze survey data to understand the relationship-specific norms and agreements between the service provider and the firm through the lens of psychological contracting.

Monday, November 14

Session MA53 8:00 - 9:30 AM
Decision Analytics for Technology Management Understanding Knowledge
MUSIC ROW 1- OMNI
CHAIR: Tugrul Daim, Portland State University,
Contact: ji2td@pdx.edu

Presentation 1 8:00 - 9:30 AM
GPS for Innovation
Jianxi Luo, Singapore University of Technology & Design,
Contact: luo@sutd.edu.sg

Abstract
Engineers, firms or governments continually explore innovation opportunities and roadmaps. However, related activities and decisions are traditionally based on intuition or experiences. InnoGPS is developed to provide scientifically-grounded and data-driven support for decisions regarding innovation directions. It integrates an empirical network map of technologies that represent the total technology space, and various map-based functions that allow users to navigate through the technology space, locate themselves, explore technologies within and across neighborhoods, and identify capability-building paths. InnoGPS is a “GPS for Innovation” in the technology space.

Presentation 2 8:00 - 9:30 AM
Integrating Bibliometric and Social Network Analysis for Identifying Knowledge Sources
Tugrul U. Daim1, Edwin Garces2, 1. Portland State University, 2. Portland State University, Portland, OR, Contact: ji2td@pdx.edu

Abstract
At an era when technologies are developing rapidly, decision making becomes even more challenging. However data analytics have shown that data can be used effectively to help decision making in such environments. Several management strategies for technological innovations require expert judgments and thus making the expert identification very crucial. This paper integrates SNA and Bibliometric Analysis to determine the lead authors and their network. The main objective of this paper is to present cases from the power sector where this method was used to identify experts for applications such as technology road mapping or forecasting.

Presentation 3 8:00 - 9:30 AM
Evaluating Research Centers: Case of NSF’s I/URUC Program
Elizabeth Gibson, Portland State University, Tigard, OR,
Contact: elgibson@pdx.edu
This research is focused on gaining deeper insights into US National Science Foundation (NSF) science and engineering research center challenges and motivated to develop a method that effectively measures the performance of these organizations. While research has addressed organizational performance at the micro, or single-actor level for universities or companies and at the regional or national macro level, the middle level where the NSF centers reside is largely missing. The bulk of the cooperative research center studies use either case-based methods or bibliometric data to measure traditional research outputs. Many are excellent studies; however, they only focus on a piece of the performance measurement problem. There is a need for more research to understand how to measure performance and compare performance of cooperative research centers formed in a triple-helix type partnership involving government, industry, and academia.

Abstract
Bibliometrics has been a powerful tool to comprehend the current status and to analyze R&D trends but most of approach is descriptive. We proposed alternative approach to design salient research project by integrating citation analysis with text analysis. Explicit research cluster is extracted by citation relationships and implicit potential ones are by text analysis. This approach can help to find neglected opportunities between different research domains. This approach can also visualize plausible path how academic can contribute to development of industrial technology and to solve social issues. Efficiency and effectiveness of the approach are demonstrated in case studies.

Presentation 4 8:00 - 9:30 AM Design Support of Salient Research Project by Integrated Approach of Text and Citation Analysis
Yuya Kajikawa, Tokyo Institute of Technology, Contact: kajikawa@mot.titech.ac.jp

Abstract
In an innovation tournament, an organizer solicits innovative ideas from a number of independent agents. Agents exert efforts to develop their solutions, but their outcomes are unknown due to technical uncertainty and/or subjective evaluation criteria. We derive necessary and sufficient conditions under which the winner-take-all scheme that awards only the best solution is optimal. Under these conditions, the organizer should offer a larger winner prize when he seeks a higher number of good solutions, but interestingly the organizer need not raise the winner prize when anticipating more participants to a tournament. Finally, we compare rank-based compensation with other compensation rules.

Session MB53 11:00 - 12:30 PM Emerging Scholars in Technology Management
Music Row 1- OMNI
Chair: Gulru Ozkan-Seely, University of Washington Bothell, Contact: gulru@uw.edu

Presentation 1 11:00 - 12:30 PM What is the Role of the State in Entrepreneurship and Venture Performance?
Daniel Armanios, Carnegie Mellon University, Contact: darmanios@cmu.edu

Abstract
What is the role of the state in entrepreneurship and venture performance? I find three roles that the state plays during the venturing process. Public-private institutions play an intermediary role that connects private entrepreneurs to public resources. Public research organizations play an integrator role that develops and transfers public knowledge for private commercial use. Local governments play an implementer role that tailors national policies to local markets. In these three roles, I provide more nuance regarding the state’s role in entrepreneurship and advance institutional theory, especially its nexus to entrepreneurship and emerging markets.

Presentation 2 11:00 - 12:30 PM The Digital Commons: Tragedy or Opportunity? The Effect Of Crowdsourced Digital Goods On Innovation and Economic Growth
Frank Nagle, University of Southern California, Contact: naglef@marshall.usc.edu

Abstract
This dissertation is comprised of four studies that explore the transformative nature of the digital commons with a focus on crowdsourced digital goods (CDGs) and open source software. The first chapter explores how lower information costs are leading firms to increasingly engage with external digital communities. The second chapter examines the impact of CDGs at a macro-level and shows that GDP calculations do not properly account for “digital dark matter”. The third chapter empirically measures the productivity impact of using CDGs at the firm level. The final chapter investigates how firms that contribute to the development of CDGs enhance their ability to extract value from using them.

Presentation 3 11:00 - 12:30 PM Optimal Award Scheme in Innovation Tournaments
Ersin Korpeoglu1, Laurence Ales2, Soo-Haeng Cho3, 1. UCL School of Management, 2. Tepper School of Business, Carnegie Mellon University, Pittsburgh, PA, 3. Carnegie Mellon University, Pittsburgh, PA, Contact: e.korpeoglu@ucl.ac.uk

Abstract
In an innovation tournament, an organizer solicits innovative ideas from a number of independent agents. Agents exert efforts to develop their solutions, but their outcomes are unknown due to technical uncertainty/subjective evaluation criteria. We derive necessary and sufficient conditions under which the winner-take-all scheme that awards only the best solution is optimal. Under these conditions, the organizer should offer a larger winner prize when he seeks a higher number of good solutions, but interestingly the organizer need not raise the winner prize when anticipating more participants to a tournament. Finally, we compare rank-based compensation with other compensation rules.

Presentation 4 11:00 - 12:30 PM Demand Heterogeneity and the Adoption of Platform Complements
Joost Rietveld1, J P Eggers2, 1. Rotterdam School of Management, 2. New York University, New York, NY, Contact: rietveld@rsm.nl

Abstract
We offer a demand-based view on how platform evolution affects the sales of complements. Differences between early and late adopters of the platform create heterogeneous demand conditions that affect both average complement performance and variance in the types of complements that are more or less successful. Using a dataset of 2,921 console video games, we find that platform evolution has a negative effect on games’ sales. Furthermore, as the
platform evolves, the sales disparity between new intellectual property (IP) games and games based on existing game properties grows to the detriment of new IP games. The sales disparity between superstar games and flops also widens as the platform evolves.

**Presentation 5**  
**11:00 - 12:30 PM**  
**Extreme Performance in Creative Settings: Where Do Stars Come From?**

Haibo Liu¹, Jurgen Mihm², Manuel Emilio Sosa³, 1. University of California Riverside, Riverside, CA, 2. Insead, Boulevard de Constance, France; 3. INSEAD, Singapore, Singapore. Contact: Haibo.Liu@ucr.edu

**Abstract**

Despite being rare, stars make disproportionately influential contributions to their fields. This paper studies the role of inter-personal collaboration in the emergence of star designers. We examine how the quality of a collaborator (star vs. non-star) moderates the influence of two important contextual factors of collaboration: social network cohesion and expertise similarity. By distinguishing collaborators based on their quality, we reconcile contrasting results regarding those two contextual factors in prior literature. We test our predictions on a large longitudinal data set consisting of all designers who were granted a design patent in the United States from 1975 through 2010.

**Session MC53**  
**1:30 - 3:00 PM**  
**Emerging Themes in Startup Product, Supply Chain & Technology Management**

**MUSIC ROW 1 - OMNI**  
**Chair:** Nitin Joglekar, Boston University Questrom School of Business, Contact: joglekar@bu.edu

**Presentation 1**  
**1:30 - 3:00 PM**  
**Emerging Themes in Startup Product, Supply Chain & Technology Management**

Nitin Joglekar, Boston University Questrom School of Business, Contact: joglekar@bu.edu

**Abstract**

This panel showcases alternative themes and research approaches being pursued by a select set of emerging scholars in the startup product, supply chain & technology management research domain.

**Presentation 2**  
**1:30 - 3:00 PM**  
**Startup Operations: Investigating the Drivers and Consequences of Entrepreneurial Risk**

Jennifer Bailey, Babson College, Contact: jbailey@babson.edu

**Presentation 3**  
**1:30 - 3:00 PM**  
**Data Driven Innovation and Entrepreneurship**

Jianxi Luo, Singapore University of Technology & Design, Contact: luo@sutd.edu.sg

**Presentation 4**  
**1:30 - 3:00 PM**  
**Field Experiments in Innovation**

Joel Wooten, University of South Carolina, Contact: joel.wooten@moore.sc.edu

**Presentation 5**  
**1:30 - 3:00 PM**  
**Each Panelist Will Discuss the Themes and Approaches Pursued Over the Past Five Years**

Onesun Steve Yoo, University College London, Contact: onesun.yoo@ucl.ac.uk

**Presentation 6**  
**1:30 - 3:00 PM**  
**Startup Financing: Some Theoretical and Empirical Studies of Venture Capital Deals and Crowdfunding**

Meyyappan Narayanan, Lakehead University, Thunder Bay, ON, Canada. Contact: meyyappan.narayanan@lakeheadu.ca

**Session MD53**  
**4:30 PM– 6:00 PM**  
**Times Distinguished Speaker**

**MUSIC ROW 1- OMNI**  
**Chair:** Sinan Erzurumlu, Babson College, Contact: serzurumlu@babson.edu

**Abstract**

Phenomena in the scholarly field of entrepreneurship must often be studied as processes that involve assumptions of dynamism, nonlinearity, complexity, ambiguity, with multi-theoretical and multi-level analyses. While acknowledging these properties in the conceptual, formal or empirical framing of my research, I go over some findings from investigating the business investment process and entrepreneurial market process. I also offer some thoughts on research opportunities to further our understanding of such processes and their practical implications. I conclude with real-life examples where the knowledge of these practical implications has resulted in entrepreneurial achievements.

**Tuesday, November 15**

**Session TA53:**  
**8:00 - 9:30 AM**  
**Organizational Learning, Innovation and Knowledge**

**MUSIC ROW 1- OMNI**  
**Chair:** Leonardo Santiago, Copenhagen Business School, Contact: ls.om@cbs.dk

**Presentation 1**  
**8:00 - 9:30 AM**  
**Why Scale Matters in Social Network Analysis: the Case of Twitter Conversations about**
**Presentation 2**
8:00 - 9:30 AM
**Role of Firm Knowledge, Quality Conformance and Lean Practices on Product Development**

Vashkar Ghosh¹, Janice E. Carrillo², 1. University of Florida, Warrington College of Business, Gainesville, FL, 2. University of Florida, Gainesville, FL, Contact: vashkar.ghosh@warrington.ufedu

Abstract
We investigate the implementation of lean principles which constitutes value creation and waste elimination in a product development setting. We view a firm’s design knowledge creation and quality development as value creation and study its impact on product development. We also investigate a goal level of quality performance.

**Presentation 3**
8:00 - 9:30 AM
**The Impact of Learning on Cumulative Innovation**

Leonardo Santiago¹, JULIA COUTO², Nitin Joglekar³, 1. Copenhagen Business School, 2. BELO HORIZONTE, Brazil; 3. Boston University School of Management, Weston, MA, Contact: lsom@cbs.dk

Abstract
The ability to continuously innovate is a key asset to maintain a competitive advantage. A sequence of successful innovations can render a company not only a new product or technique but also a platform which could be used in future. This work investigates how knowledge is accumulated over time as a function of managerial decisions and the dynamics of firm’s knowledge. Our results show that an organization can actively select pivoting points to appropriately balance exploration and exploitation initiatives and successfully learn. Moreover, we show how companies improve their performance by reacting to environmental shocks or to turbulent environments.

**Presentation 2**
11:00 - 12:30 PM
**Supply Chain Contracts with Boundedly Rational Retailers**

Guangwen Kong¹, Tony H. Cui², Behroz Pourghannad³, 1. University of Minnesota, 2. University of Minnesota, Minneapolis, MN, 3. University of Minnesota, Minneapolis, MN, Contact: behroz.pourghannad@gmail.com

Abstract
We study supply chain contracts with consideration of information sharing and bounded rationality. We examine a dyadic supply chain where a supplier with more accurate demand information sells products to a bounded rational retailer. The research suggests that the supplier can be better-off by using a linear pricing contract than adopting a buy-back contract.

**Presentation 3**
11:00 - 12:30 PM
**Milking the Quality Test: Improving the Milk Supply Chain Under Competing Collection Intermediaries**

Liying Mu¹, Milind Dawande², Xianjun Geng², Vijay Mookerjee³, 1. University of Delaware, 2. University of Texas at Dallas, Richardson, TX, 3. University of Texas at Dallas, Richardson, TX, Contact: muliying@udel.edu

Abstract
We examine operational and incentive issues that conspire to reduce the quality of milk -- under deliberate adulteration by milk farmers -- under competing collection stations in developing countries. Two recommendations are provided to reduce the milk adulteration using minimal testing. Both solutions achieve a socially-beneficial equilibrium outcome: All the farmers provide high-quality milk and each competing station only conducts one mixed test and no individual testing.

**Presentation 4**
11:00 - 12:30 PM
**3D Printing Vs. Traditional Flexible Technology: Implication on Manufacturing Strategies**

Lingxiu Dong, Duo Shi, Fuqiang Zhang, Washington University in Saint Louis, St. Louis, MO, Contact: dshi@wustl.edu

Abstract
In this paper, we study a firm's manufacturing strategies under two types of flexible technologies: traditional flexible technology and 3D printing. The firm adopts dedicated technology and one type of flexible technology, either the traditional one or 3D printing. It has to choose an assortment from a potential set of variants, assigns each variant to a production technology, and finally invests in resource capacities. We find that traditional flexible technology and 3D printing can have distinct technology assignment structures. Contrary to common wisdom, the adoption of traditional flexible technology can reduce product variety. 3D printing,
however, always enhances product variety.

**Session TC53:** 1:30 - 3:00 PM

**Management of Service and R&D Portfolios**

**Music Row 1 - OMNI**

**Chair:** Juliana Hsuan, Copenhagen Business School,
Contact: jh.om@cbs.dk

**Presentation 1** 1:30 - 3:00 PM

**Linking the Firm’s Internal Innovation Context with Commercialization Choices**

Lee Davis¹, Karin Hoisl², Jerome Davis³, 1. Copenhagen Business School, 2. University of Mannheim, Mannheim, Germany; 3. Copenhagen Business School, Copenhagen, Denmark. Contact: ld.ino@cbs.dk

Abstract

This paper investigates the linkages between the firm’s internal innovation context and how the innovation is commercialized (by the firm itself or an external third party). By analyzing these linkages at the level of the individual innovation, we add to the literature on how firms profit from R&D. We base our study on original survey data comprising 3,773 commercialized innovations from 23 countries in all major industries. We find that three aspects of the innovation context - external knowledge inputs, encouragement of creativity, and high autonomy - are positively related to external commercialization. Sufficient resources are negatively related to external commercialization.

**Presentation 2** 1:30 - 3:00 PM


Charles Weber¹, Farshad Madani², Nitin Mayande³, 1. Portland State University, 2. Portland State University, Portland, OR; 3. Nike, Hillsboro, OR, Contact: webercm@pdx.edu

Abstract

Historically, intellectual capital from outside the firm has been derived from patent metadata. This paper presents a potentially much more effective approach, which automatically analyzed the body text of patents.

**Presentation 3** 1:30 - 3:00 PM

**Logistics Service Performance in Nova Scotia: Facilitators, Barriers, and Measurement**

M. Ali Ulku¹, Horand I. Gassmann², Michael Foster², 1. Rowe School of Business, Dalhousie University, Halifax, NS, Canada; 2. Rowe School of Business, Dalhousie University, Halifax, NS, Canada. Contact: ulku@dal.ca

Abstract

Logistics plays a pivotal service role in efficient management of supply chains. Building on the extant literature and company-survey results, we explore the facilitators and barriers logistics companies face at the level of the province of Nova Scotia, Canada. We also propose key metrics for measuring the performance of regional logistics services.

**Presentation 4** 1:30 - 3:00 PM

**Management of Service and R&D Portfolios**

Kai Basner, Thomas Frandsen, Jawwad Raja, Juliana Hsuan, Copenhagen Business School, Frederiksberg, Denmark. Contact: kba.om@cbs.dk

Abstract

Managing technological innovation is critical to the continued success of industrial companies, which in recent years have been observed to expand their business models by complementing their products with services. For manufacturers with a strong focus on product technology, we explore the challenges of introducing service innovation in R&D portfolios.

**Session TD53** 4:30 - 6:00 PM

**Management Product Development and Collaboration**

**Music Row 1 - OMNI**

**Chair:** Wenli Xiao, University of San Diego, Contact: wenlixiao@sandiego.edu

**Presentation 1** 4:30 - 6:00 PM

**A Behavioral Analysis on the Use of an Intermediary in Manufacturing Outsourcing**

Qiong Chen¹, Aleda Roth², Gulru F. Ozkan-Seely³, Fred Switzer⁴, 1. University of Science and Technology of China, 2. Clemson University, Seneca, SC, 3. University of Washington Bothell, Bothell, WA, 4. Clemson University, Clemson, SC, Contact: qcchen@ustc.edu.cn

Abstract

In this paper, we examine how the level of outsourcing competence of the firm, the amount of time-to-market pressure and the buyer’s perceived incentive alignment with the agent, act to systematically influence the decision to outsource the new product directly or indirectly through an intermediary.

**Presentation 2** 4:30 - 6:00 PM

**Managing Supplier Incentives for Key Component Testing**

Timofey Shalpegin, The University of Auckland Business School, Contact: t.shalpegin@auckland.ac.nz

Abstract

Suppliers of a key component for a new product are often required to perform testing of the key component. However, they might not have sufficient incentives to perform a sufficient number of tests if they do not fully internalize the risks of new product failure. We examine different contracts, such as reward and residual claimant contracts, and analyze their influence on the supplier incentives for component testing. Finally, we design a contract ensuring the suppliers keep to the efficient component testing level.

**Presentation 3** 4:30 - 6:00 PM

**Optimal Product Launch Times for a Firm With a Niche Product**

Jacqueline Ng¹, Izak Duenyas², Seyed Iravani³, 1. North-
western University, Evanston, IL, 2. University of Michigan-Ann Arbor, Ann Arbor, MI, 3. Northwestern University, Evanston, IL, Contact: jacqueline.ng@northwestern.edu

Abstract
We consider the optimal production introduction policy for a technology firm that produces a single niche product that progresses through a series of product generations over time. The novel part of this problem is that the firm’s niche product is a subset or peripheral part of a larger product offering from a multi-product firm. We develop a dynamic programming model to analyze the small firm’s new product introduction strategy, and prove the optimality of a threshold policy. We then compare and contrast the optimal policy with the common time-pacing and event-pacing product introduction policies used in practice.

Presentation 4 4:30 - 6:00 PM
Student Perceptions of the Entrepreneurial Mindset Within Capstone Design Projects

Ahad Ali, Lawrence Technological University, Contact: sali@ltu.edu

Abstract
For many engineering curricula, student teams are formed to complete a capstone design project. Besides technical knowledge, capstone projects can foster team building skills, leadership skills, problem-solving skills, opportunity recognition, project planning and budgeting, innovation, tolerance for uncertainty/ambiguity, and risk management among other attributes of the entrepreneurial mindset. This paper provides an expanded analysis of student perceptions of the entrepreneurial activity and the recognition of the entrepreneurial mindset associated with capstone design projects.

Wednesday, November 16, 2016
Session WA53: 8:00 - 9:30 AM
New Product Development and Process Development in Healthcare

MUSIC Row 1 - OMNI

Chair: Zhili Tian, Florida International University, Contact: zhili.a.tian@gmail.com

Presentation 1 8:00 - 9:30 AM
An Empirical Analysis of the Barriers to and Optimal Use of Clinical Decision Support Systems in Health Care

Xiaojin Liu¹, Susan Goldstein¹, Karen Soderberg², Kingshuk K. Sinha¹, 1. University of Minnesota, Minneapolis, MN, 2. Minnesota Department of Health, St Paul, MN, Contact: iliu1591@umn.edu

Abstract
Clinical Decision Support (CDS) systems provide critical clinical information for health care processes, and development of capabilities related to their use enable provide knowledge related to both the current workflow and for process improvement. Yet, little is known about the barriers and outcomes of the development of these capabilities. We empirically investigate the barriers to CDS use and the consequences of using CDS features, controlling for organizational characteristics in the clinical setting.

Presentation 2 8:00 - 9:30 AM
Management of Cancer Drug Shortage Under Demand and Supply Uncertainty

Shanling Li¹, Dali Zhang², Xiaowen Chang³, Huifu Xu⁴, 1. McGill University, 2. Shanghai Jiaotong University, Shanghai, China; 3. McGill University, Montreal, QC, Canada; 4. University of Southampton, Southampton, United Kingdom. Contact: shanling.li@mcgill.ca

Abstract
In this research, we aim at developing an optimization model that characterizes the supply chain disruption of a generic cancer drug resulted from operational problems. We consider the trade-off between generic and brand name drugs and uncertainties in demand and supply. The cancer drug shortage problem is formulated as a chance-constrained model. Our aim is to investigate the severe impact of short supply of the generic cancer drug on supply chain decisions and to propose optimal purchasing plans to mitigate the drug shortage risk.

Presentation 3 8:00 - 9:30 AM
Outsourcing Strategy for Intermediate Production Steps

Philip Kaminsky¹, Yang Wang², 1. University of California-Berkeley, 2. UC Berkeley, Berkeley, CA, Contact: yangwang0803@berkeley.edu

Abstract
Small biopharmaceutical firms often outsource their final filling and labeling operations to a third party, but these firms use a variety of different outsourcing strategies. In particular, we consider two types of strategies. In the first, the firm orders when inventory position is low, so that its order is triggered by inventory level. In the second, the firm reserves a limited amount of capacity at the outsourcer at repeated fixed intervals, so that its order is triggered by time. These strategies impact inventory management at the biopharma firm, as well as capacity utilization at the outsourcer, and we develop models to explore the trade-off between these two types of strategies.

Presentation 4 8:00 - 9:30 AM
Clinical Trials and New Drug Development: Optimal Investment Policies and Application

Zhili Tian, Florida International University, Miami, FL, Contact: zhili.a.tian@gmail.com

Abstract
Firms conduct Phase 3 trials by enrolling and treating patients who meet certain conditions. Opening test centers and finding patients to participate in trials are expensive and time consuming, with a great deal of uncertainty around these. We develop a dynamic recruitment policy for clinical trials, which depends on the available information on drug quality, potential market size, and likelihood of FDA approval. It also takes into account the costs of the clinical testing and the current success in enrolling patients. We consider cases with and without interim analysis of the clinical data. We develop structural results and provide conditions for accelerating or suspending a clinical study.
Sunday, November 13

Session SA38  8:00-9:30 AM
Product Development and Competition
206A-MCC

Chair: Morvarid Rahmani, Georgia Institute of Technology,
Contact: morvarid.rahmani@scheller.gatech.edu

Chair: Karthik Ramachandran, Georgia Institute of Technology,
Contact: karthik.ramachandran@scheller.gatech.edu

Presentation 1  8:00 - 9:30 AM
Knowledge Search in Mobile App Development

Bilal Gokpinar¹, Nilam Kaushik², 1. UCL, 2. UCL School of Management, London, United Kingdom. Contact: uceikau@ucl.ac.uk

Abstract
The process of search, identification, and acquisition of new knowledge is essential for the success of new products. We explore how firms search for ideas in sequential product development through the highly competitive and dynamic setting of mobile application development. Using novel text-mining techniques, we derive measures of similarity between a focal app’s update and updates made by competitor apps and study performance implications thereof. We also explore the performance implications of the distance of an app’s update with respect to its past updates.

Presentation 2  8:00 - 9:30 AM
Decision Options at Project Gate Reviews: Beyond the Go/Kill Model

Alison Olechowski¹, Steven D. Eppinger¹, Nitin Gogglekar², 1. Massachusetts Institute of Technology, Cambridge, MA, 2. Boston University School of Management, Weston, MA, Contact: alisono@mit.edu

Abstract
Most current academic models of project gate reviews represent the gate decision as a simple choice between go and kill. In reality, product developers often reach the gate with incomplete or unacceptable deliverables, and managers consider more than just the kill option if a go is not appropriate. We have created a simple model which adds options of: waiver, waiver with re-review, delay and switch to back-up plan. This decision tree model compares the value of this more realistic set of options based on costs, payoffs and confidences. We demonstrate the application of this model to complex project development gate decisions via multiple case examples from industry.

Presentation 3  8:00 - 9:30 AM
Capacity Investment for Product Upgrades Under Competition

Ram Bala¹, Milind Sohoni², Sumit Kunnumkal², 1. Santa Clara University, 2. Indian School of Business, Hyderabad, India. Contact: ram.bala@gmail.com

Abstract
Firms often introduce a vertical line extension of an existing product to consolidate their market position after loss of monopoly status. However, introducing a line extension is fraught with uncertainty as it may fail to be technically feasible as originally intended. We analyze a two stage competitive game between an incumbent and an entrant where the firms make capacity investment decisions before uncertainty resolution and then set production quantities. We uncover conditions on innovation level which determine whether the incumbent will continue to offer the existing product once the new product succeeds. We also determine the innovation level beyond which competitive entry is deterred.

Presentation 4  8:00 - 9:30 AM
Institutional Design and the Creative Process: An Experimental Study

Lakshminarayana Nittal¹, Sanjiv Erat¹, Viswanathan Krishnan¹, 1. University of California San Diego, La Jolla, CA, 2. University of California, La Jolla, CA, Contact: nittalra@ucsd.edu

Abstract
The process of Innovation often takes the form of problem solving and requires creative insights for achieving success. In an experimental setting we use tasks that are representative of such problems and study the role of institutional design on the creative output and the underlying search process.

Session SA48  8:00 - 9:30 AM
Social Media Analysis I
210—MCC
Chair: Chris Smith, Air Force Institute of Technology, Wright-Patterson AFB, OH.

Presentation 1  8:00 - 9:30 AM
User Reward Programs in Online Social Media

Fouad H. Mirzaei¹, Fredrik Odegaard², Xinghao Yan², 1. Santa Clara University, Santa Clara, CA, 2. Ivey
Abstract
Online social media (OSMs) have become a popular and growing Internet phenomenon, as exemplified by the millions of followers of websites like YouTube, Twitter, and Facebook. Given the Internet's ease of access and the high degree of competition to attract users to these sites, a question arises as to whether OSMs should develop revenue-sharing programs as a way to reward their contributing users. We present an ex ante asymmetric duopoly OSM game, where heterogeneous users are either active or passive with respect to each OSM. In this study, we explore how online users' actions and perspectives impact the outcome of the competition among OSMs.

Presentation 2  
8:00 - 9:30 AM
Research on the Influence of Microblog Advertising of Theatre Chain on its First Week Box Office Revenue

Jiayin Qi1, Jiaqi Liu2. 1. Shanghai University of International Business and Economics, Shanghai, China; 2. Beijing University of Posts and Telecommunications, Beijing, China. Contact: qijiyin@139.com

Abstract
With the participation of enterprise in social network, a question arises of how enterprise can gain more real profit from social network advertising. This article analyzes the relationships among contents of enterprise's online post, consumer's participation on microblog, and short-term product sales. Taking movie market as research set, this research finds that short-term product sales is positively influenced by the information quantity of enterprise's post, and the influence is mediated by the "repost" of other users of Sina microblog. The mechanism examined in this research on the influence of microblog advertising on short-term sales can be guidelines of social network advertising.

Presentation 3  
8:00 - 9:30 AM
Social Media Use and New Product Development Performance

Debasish N. Mallick, University of St. Thomas, Minneapolis, MN, Contact: dnmallick@stthomas.edu

Abstract
Use of social media is becoming increasingly popular in new product development (NPD). Yet, the performance impact of social media use in NPD remains inconclusive. Using a cross industry survey of new product development projects, we explore the factors affecting the relationship between social media use and NPD performance.

Session SC38  
1:30 - 3:00 PM
Collaborative New Product Development
206A—MCC
Chair: Niyazi Taneri, Singapore University of Technology and Design, Contact: niyazitaneri@sutd.edu.sg

Presentation 1  
1:30 - 3:00 PM
The Role of Operations in Alliances for New Product Development
Right of First Negotiation (ROFN) and Right of First Refusal (ROFR) contracts are popularly observed in practice. From an agency theory point of view, it is not clear which contract should be preferred from each party’s perspective. This paper will shed some light on the efficacy of such contracts.

**Presentation 2**

1:30 - 3:00 PM

***Not Registered*** Rights of First Negotiation and First Refusal in R&D Contracts

Shantanu Bhattacharya¹, Sameer Hasija², Niyazi Taneri³, Guangyu Wan⁴, 1. SMU, Singapore, Singapore; 2. Insead, Singapore, Singapore; 3. Singapore University of Technology and Design, Singapore, Singapore; 4. SUTD, Singapore, Singapore.

Contact: sameer.hasija@insead.edu

Abstract

Right of First Negotiation (ROFN) and Right of First Refusal (ROFR) contracts are popularly observed in practice. From an agency theory point of view, it is not clear which contract should be preferred from each party’s perspective. This paper will shed some light on the efficacy of such contracts.

**Presentation 3**

1:30 - 2:30 PM

Optimal Sequential Investments in Product Development with Exogenous Technologies and Learning

Shantanu Bhattacharya¹, Stylianos Kavadias², Sameer Hasija³, 1. Singapore Management University, 2. University of Cambridge, Cambridge, United Kingdom; 3. Insead, Singapore, Singapore.

Contact: shantanub@smu.edu.sg

Abstract

We investigate trade-offs between risk and return in multi-period new product development (NPD) portfolio selection problems, where new development projects become periodically available. Our analytical and computational results show that, paradoxically, a risk-neutral NPD portfolio selection approach provides higher return and lower risk than a risk-averse selection approach. This result can explain why leading innovators tend to employ a risk-neutral NPD selection approach. The risk of the NPD portfolio can be mitigated by (i) reviewing portfolios more frequently and (ii) increasing the proportion of derivative products instead of platform products.

Sebastian Schiffels¹, Thomas Fliedner¹, Rainer Kolisch², 1. Technical University of Munich, Munich, Germany; 2. TU Munich, Contact: sebastian.schiffels@wi.tum.de

Choosing the right set of projects is a key driver of success and failure in new product development. We conducted experimental studies based on the knapsack problem to address the question which decision rules individuals apply to select a portfolio as well as how cognitive limitations influence their selection. Grounded in portfolio selection practice, we investigate subjects’ adherence to four heuristics. Decision making is partially explained by adherence to two simple rules, but problem complexity limits the application of such rules as subjects apply a local search. Furthermore, decision-makers prefer projects with low risk resulting in portfolios with few high risk high impact projects.

**Presentation 1**

4:30 - 6:00 PM

Zooming in on the Innovator’s Bias Within Organizations

Fabian Sting¹, Christoph Fuchs², Maik Schlickel³, 1. Erasmus University Rotterdam, Rotterdam School of Management, 2. Erasmus University, Rotterdam, Netherlands; 3. Independent, Paderborn, Germany.

Contact: fstown@nl

Abstract

Firms in competitive industries strive for process innovations, and one source of such ideas is the firm’s workforce. In the selection process, firms rely on input from ideating employees - input that might contain systematic errors (biases) and/or unsystematic errors (noise). We study such errors by analyzing the process innovation ideas considered by an automotive manufacturer. Our data set is unique in that it includes information on idea generation, employee evaluation, standardized value calculation, selection, and implementation. Overall, our findings contribute to a more differentiated yet theoretically coherent understanding of the innovator’s bias in organizations.
Presentation 4  4:30 – 6:00 PM
Initiating Supplier New Product Development Projects: A Behavioral Investigation

David Wuttke¹, Karen Donohue², Enno Siemsen³, 1. EBS University, Wiesbaden, Germany; 2. Carlson School of Management, 3. University of Wisconsin-Madison, Madison, WI, Contact: david.wuttke@ebs.edu

Abstract
Using a combination of analytical models and laboratory experiments, we study the effectiveness of buyer contract mechanisms, including breach penalties and profit sharing, on incentivizing product innovation at the supplier level. Our results provide insight into how the mechanisms can be altered to better account for supplier-specific behavior.

Session SD38  4:30 - 6:00 PM
Innovation and Entrepreneurship
206A—MCC
Chair: Raul Chao, University of Virginia, Contact: ChaoR@darden.virginia.edu

Presentation 1  4:30 – 6:00 PM
Risk Aversion and Joint Problem Solving: Experimental Evidence

Marc Christiaan Jansen¹, Nektarios Oraiopoulos², Niyazi Taneri³, 1. Cambridge Judge Business School, Cambridge, United Kingdom; 2. Cambridge University, 3. Singapore University of Technology and Design, Singapore, Singapore. Contact: mcj32@cam.ac.uk

Abstract
We examine the effect of risk aversion on collaborative problem solving between two partners. We design an experiment that measures subjects’ risk aversion and allocates subjects to treatments accordingly. We show that subjects perform relatively well in sharing the risk between them, but underperform relatively to the optimal investments levels.

Presentation 2  4:30 - 6:00 PM
Strategic Positioning in Global Entrepreneurship Ecosystems

Rahul C. Basole¹, Hyunwoo Park², Raul Chao³, 1.Georgia Institute of Technology, Atlanta, GA, 2. Georgia Institute of Technology, Atlanta, GA, 3. University of Virginia, Charlottesville, VA, Contact: hwpark@gatech.edu

Abstract
Strategic positioning is particularly critical for entrepreneurial ventures, which face a difficult trade-off in balancing legitimacy through similarity versus innovativeness through differentiation. Using a computational approach based on data mining, text analytics, and network visualization, we seek to gain an understanding of the structure of strategic positioning of nearly 60,000 companies in 35 global entrepreneurial ecosystems.

Monday, November 14

Session MA25  8:00 - 9:30 AM
Modern Project Management
110A—MCC
Chair: Nicholas G. Hall, Ohio State University, Contact: hall.33@osu.edu

Presentation 1  8:00 - 9:30 AM
Opportunities for Behavioral Research in Project Management

Enno Siemsen, University of Wisconsin, Contact: esiemsen@wisc.edu

Abstract
Behavioral research in operations management is on the rise. The field of Project Management seems ripe for more applications of behavioral research. How do team members react to deadlines and reminders? How are projects selected and abandoned? What is the impact of multi-tasking, and how does assigning new resources change team dynamics? These are all important research topics, and I will both highlight past and current work in these areas, as well as opportunities for future research.
Presentation 2  8:00 - 9:30 AM
Information Protection in New Product Development Projects

Xiaojin Wen\(^1\), Nicholas G. Hall\(^2\), 1. Shanghai University, 2. Ohio State University, Columbus, OH, Contact: wenxq_8@163.com

Abstract
Motivated by the threat of industrial espionage during new product development, a project company minimizes information leakage by using decoy work. The competitor validates the information it observes in a cost-effective way, based on three alternative prior assumptions about its validity. We model this problem as a two stage Stackelberg game, identify an equilibrium solution, and obtain managerial insights. Coordinated setting of the project deadline and budget is needed to protect the project. Counterintuitively, it benefits the project company to announce that it uses decoy work.

Presentation 3  8:00 - 9:30 AM
Research Challenges in Project Management

Ted Klastorin, University of Washington, Contact: tedk@u.washington.edu

Abstract
A great deal of previous project management research has focused on scheduling problems. But the research issues faced by project managers are far more complex and just as challenging as those faced by supply chain managers. In this talk, I will explore many of these issues and directions for future research studies, with an emphasis on problems associated with decentralized projects.

Presentation 4  8:00 - 9:30 AM
Research Opportunities in Project Scheduling

Rainer Kolisch, Technical University of Munich, Contact: rainer.kolisch@turn.de

Abstract
Operations Research has been applied in project scheduling for more than half a century. This talk summarizes achievements and outlines research opportunities.

Session MA38  8:00 - 9:30 AM
Meet the Editors Panel—NPD, Innovation, and Technology

206A-MCC
Chair: Sanjiv Erat, University of California-San Diego, Contact: seral@ucsd.edu

Presentation 1  8:00 - 9:30 AM
Meet the Editors Panel—NPD, Innovation, and Technology

Joel Wooten, University of South Carolina, Columbia, SC, Contact: joel.wooten@moore.sc.edu

Abstract
This interactive session aims at assisting readers and researchers in staying informed on the most important topics and the latest development in New Product Development, Technology, and Innovation Management.

Presentation 2 Panelist  8:00 - 9:30 AM
Panelist: Cheryl Gaimon, Georgia Institute of Technology, Atlanta, GA, Contact: cheryl.gaimon@scheller.gatech.edu

Presentation 3  8:00 - 9:30 AM
***Not Registered***
Panelist
Panelist: Stylianos Kavadias, University of Cambridge, Cambridge, United Kingdom. Contact: s.kavadias@bs.cam.ac.uk

Presentation 4 Panelist  8:00 - 9:30 AM
Panelist: Moren Levesque, York University, Toronto, ON, Canada. Contact: mlevesque@schulich.yorku.ca

Session MB07  11:00 - 12:30 PM
New Product Development

102B—MCC
Chair: Jeremy Kovach, TCU, Contact: j.j.kovach@tcu.edu

Presentation 1  11:00 - 12:30 PM
An Economic Model of Knowledge Outsourcing

Jaeseok Lee, Cheryl Gaimon, Karthik Ramachandran, Georgia Institute of Technology, Atlanta, GA, Contact: jaeseok.lee@scheller.gatech.edu

Abstract
We introduce a game-theoretic model of knowledge outsourcing. We study how the interaction between a knowledge buyer and supplier is affected by two distinctive aspects of knowledge outsourcing: absorptive capacity and the ability to leverage prior knowledge. We also investigate how uncertainty and information asymmetry influence the equilibrium outcomes.

Presentation 2  11:00 - 12:30 PM
Effect of Incentive Design on Location Decision of Collaborative Product Development Teams

Sara Rezaee Vessal\(^1\), Svenja C. Sommer\(^2\), 1. HEC Paris, 2. HEC Paris, Jouy-en-Josas Cedex, France. Contact: sara.rezaee- vessal@hec.edu

Abstract
To successfully compete on an international scale, multinationals increasingly turn towards globally dispersed product development teams, both to draw on a diverse set of expertise and to access more accurate local market knowledge. However, dispersion also creates additional challenges for collaboration, which can have negative effects on project performance. In this study,
we compare dispersed and co-located teams and address the question how to incentivize them. We show that despite the current trend among firms, geographically dispersed teams are not always the optimal structure, especially when collaboration is in the form of information sharing.

Presentation 3  
11:00 - 12:30 PM
Optimal Price and Customization of a Conspicuous Product

Cheryl Druehl¹, Jesse Bockstedt², 1. George Mason University, 2. University of Arizona, Tucson, AZ,  
Contact: cdruehl@gmu.edu

Abstract
Technology has reduced the cost of mass customization, while the availability of design tools has allowed users to easily customize products. The mass customization of conspicuous goods, where utility rises from displaying the product to others, allows consumers to create uniqueness and exclusivity. The firm trades-off the cost vs the demand-enhancing impact of customization. Consumers trade-off the cost to customize vs a good that better fits their preferences and their desire for exclusivity. The firm considers: How much customization to have at a given additional marginal cost? What should prices be for the standard and custom goods? Is a monopolist better off with both product offerings?

Presentation 4  
11:00 - 12:30 PM
Modeling Product Demand Using Customer Review

Hallie Cho¹, Sameer Hasija², Manuel Sosa³, Chi Xu⁴, 1. INSEAD, 2. Insead, Singapore, Singapore; 3. INSEAD, Singapore, Singapore; 4. Singapore Institute of Manufacturing Technology, A*STAR, Singapore, Singapore. Contact: hallie.cho@insead.edu

Abstract
Review sites have become a popular destination for consumers seeking product information such as general consensus about a product’s quality or tales of other’s first hand experience with a product. These online reviews offer from personal bias, which makes them unreliable for potential buyers. However, this collection of personal biases can be of interest to manufacturers since reviews often highlight consumers’ preferences and perceptions of product quality. We explore in what ways these customer reviews are useful for manufacturers using data from the U.S. automobile industry.

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