Welcome back to Porto – it’s not often that we go to the same place twice but this is the second time we have been to this wonderful city. The last time was in 2005 when ISPIM was very different to what it is today and we remember being extremely happy with around 120 delegates. How times have changed! This year we will welcome around 450 innovation professionals from around 45 countries to Porto. Instead of a lunchtime visit to a beer company, when we got stuck in traffic on the way back to the conference venue, we will be visiting 4 different industry clusters on Wednesday. Delegates will be able to choose between Health, Food, Energy and Sustainable Mobility and each visit will include a discussion panel where different innovation challenges will be addressed. This builds on the successful cluster visits that took place at the ISPIM Innovation Forum in Boston earlier this year where we addressed the importance of engaging with the local innovation community.

On the subject of the local innovation community, delegates will also have the opportunity during this conference to meet with local businesses on Tuesday during the industry matchmaking session that runs in parallel to the main conference sessions for the entire day. If you have some time, why not go down to the Discovery room and find out for yourself what these innovative companies have to offer?

One of the highlights for a few of us in 2005 was experiencing the Festa de São João that takes place every year on the 23rd June. To put it in simple terms, the entire city empties out onto the streets and has a firework war with Vila Nova de Gaia on the other side of the Douro River. People eat sardines, dance to samba music and hit each other over the head with plastic hammers! It is something that has to be experienced. For those of you not staying until the 23rd, don’t worry as we will have our own festival on Tuesday night in a former port wine cave. The other main social evening takes place at the magnificent Palácio da Bolsa, the Stock Exchange Palace, on Monday evening where the various ISPIM awards will be presented and where we will welcome back the wonderful Sónia and her band who last played for us in Barcelona in 2012.

As in 2005, we are indebted to our good friend and former ISPIM Board Member, José Carlos Caldeira. Back then he was our host and now he is our partner in his capacity as President of ANI - Agência Nacional de Inovação (the National Innovation Agency of Portugal). We would like to thank José and his staff at ANI for their wonderful support in helping making this event a reality. We would also like to thank all our sponsors, invited speakers, hot-topic moderators, session facilitators, workshop leaders, the 130+ members of the ISPIM Scientific Panel and, of course, our Advisory Board led by Jens Leker, and the ISPIM Fellows.

After 11 years, the ISPIM Conference is back in Porto and we would like to welcome you all to this amazing city once again!

Successful innovation eco-systems call for an integration of diversified knowledge areas, including technological and social sciences, the development of sophisticated value chains, gathering large companies and SMEs, from both mature and emerging sectors, and the creation of clusters and networks, bringing together academia, business, consumers and the public sector, at regional, national and international level. This is precisely the ISPIM 2016 Conference Title – Blending Tomorrow’s Innovation Vintage.

Mobilizing different and, in many cases, complementary actors, knowledge and experiences, the programme includes a rich set of presentations, both from academia and practitioners, to be discussed by delegates. This is also an opportunity to connect delegates with some of the main national and regional initiatives and stakeholders. A parallel matchmaking event, organized on the Tuesday 21 June and four visits to clusters on the Wednesday 22 June provide the right framework and we would like to invite you all to actively participate.

Portugal and in particular the city of Porto is a great place to anchor this debate. The region of Porto is an innovation hub for multiple areas, including Smart Cities, Electric Mobility, Sustainable Manufacturing, Health, Creative and Cultural Industries and hosts several universities and polytechnic schools, a network of intermediary organizations, an business community composed of large companies and innovative SMEs, as well as relevant Portuguese clusters and a significant number of incubators.

With a focus on value-added knowledge and technology transfer, collaboration between academia and business, and the internationalization of the Portuguese innovation system, the National Innovation Agency (ANI) supports these communities and their initiatives, namely through a set of funding instruments to support R&D projects and investments, both financial and in other terms. Other public organizations and agencies provide complementary support to address the entire innovation cycle, creating a very competitive landscape to attract investments.

In this context, the 2016 ISPIM Conference and its community is very relevant for our objectives and it is with great expectations that we support the organization of this event in Portugal. We hope that you all can benefit from inspiring presentations, participate in exciting debates, know interesting people and establish new collaborations. And we also hope that you enjoy your stay in Porto.

José Carlos Caldeira
President
ANI - Agência Nacional de Inovação
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**ISPIM Members in Porto**

- Member Lounge
- Member Meeting & Port Wine Tasting on Monday @ 1900 before the Conference Dinner
- Proceedings on USB stick
- Collectable Porto Member Pin
- Priority places on Industry Cluster Visits on Wednesday

Join ISPIM at the Registration Desk or at ISPIM.ORG

- Individual - € 150 + VAT
- Group - € 125 + VAT
- Student - € 50 + VAT

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**XXVIII ISPIM INNOVATION CONFERENCE**

**Vienna, Austria • 18-21 June 2017**

**ISPIM VIENNA 2017**

**COMPOSING THE INNOVATION SYMPHONY**

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Join Europe's Premier Innovation Conference

- Hear from leading innovation thought leaders
- Choose from 250+ presentations and workshops on the latest thinking in innovation management
- Present your innovation research or tell your innovation story
- Vote for your favourite industry project in the ISPIM Grand Prize Final
- Visit Austrian innovation clusters and discuss their challenges
- Network with 500 innovation professionals from 50 countries
ISPIM Member Lounge

The Member Lounge (Challenger Room on the 1st Floor) is for ISPIM Members who need meeting, working or relaxing space.

ISPIM Members Meeting & Port Tasting

ISPIM Members are invited to an informal meeting and port tasting in the magnificent Arab Room at the Stock Exchange Palace (Palácio da Bolsa) on Monday at 1900 prior to the gala dinner. Come and meet the ISPIM Board & Advisory Board and find out how you can contribute to the ISPIM community.

ISPIM is recruiting

We have two part-time positions open for Innovation Management PhD students. We are looking for a Scientific Coordinator (to help us with our scientific processes) and a Junior Researcher Community Coordinator (to help us build our PhD and junior researcher community). It is your chance to get involved, so please reach out to us during the Conference.

HOUSEKEEPING

Stop Press

Although this book is correct at time of press, last-minute changes can occur. Such changes are listed at: http://conference.ispim.org/stop-press/

Venue

All sessions and breaks are at The Sheraton Porto Hotel & Spa, Rua Tenente Valadim 146, Porto, 4100-476

WiFi

All sessions are interactive and you are expected to contribute. Out of courtesy to other delegates, if you want to check email etc., please do not do so in session rooms. Network: connecting@sheraton Username and Password: ISPIM

Delegate Badges

Please wear your badge at all times, including evening events, where it is required to gain entry.

Industry Cluster Visits - Wednesday, 22 June

Visits will leave from the Ground Floor of the hotel – please check the departure times with the conference Registration Desk and do not be late. If you have not already selected your visit online, please sign up at the Registration Desk immediately.

• Food
• Health
• Energy
• Sustainable Mobility

ISPIM PhD STUDENT COMMUNITY

The ISPIM PhD Community provides activities and networking for students from around the world who are completing a PhD in Innovation Management. Our aim is to answer questions and solve problems faced by young scholars, and also encourage interaction and networking between our Community members and Innovation Management professionals from academia, industry, consulting and the public sector. The Community organises activities and events often referred to as “Labs”, coinciding with the ISPIM Conferences. The labs focus on:

• Exchanging knowledge and experiences between junior and senior scholars
• Networking and facilitating cooperation
• Sharing ideas and resources
• Staying up-to-date on new topics and trends in Innovation Management

We also co-operate with a number of universities and organisations, which enables Community members to take part in associated activities organised by our partners between ISPIM events.

We invite PhD students to join our Community, and to take an active role in it by participating in our events, keeping discussions going, and by providing us with feedback and ideas to shape our Community as it grows. You can find us on Facebook and LinkedIn under the name ISPIM PhD Student Community. Come and join the discussions! If you have any questions or comments, please contact Abayomi Baiyere, our Community Development Co-ordinator - baiyere@ispim.org.
# ISPIIM SPECIAL INTEREST GROUPS (SIGS)

ISPIIM Events now regularly attract submissions from more than 700 authors every year on a wide selection of topics. This has enabled ISPIIM to create Special Interest Groups within the Community to promote targeted specialist interaction. Each SIG has volunteer Co-ordinators who convene the SIG sessions at Events, co-ordinating output into Journals and bringing Academic, Consulting and Industry perspectives together within the SIG. Current SIGs include:

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<tr>
<th>Area</th>
<th>Participants</th>
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<tr>
<td>Business Model Innovation</td>
<td>Patrick Spieth - University of Kassel &amp; Dirk Schneckenberg - ESC Rennes School of Business</td>
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<tr>
<td>Early Stages of Innovation</td>
<td>Ceri Williams, John Egan - Medical Technologies Innovation and Knowledge Centre, University of Leeds; Paul Ellwood - University of Liverpool Management School</td>
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<tr>
<td>Living Labs</td>
<td>Dimitri Schuurman – iMinds MICT &amp; ENoLL; Seppo Leminen - Laurea University of Applied Sciences &amp; Aalto University</td>
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<td>Open &amp; Collaborative Innovation</td>
<td>Wim Vanhaverbeke – UHasselt, ESADE Business School &amp; National University of Singapore; Letizia Mortara – Institute for Manufacturing, University of Cambridge; Nadine Roijakers - Hasselt University; Kati Järvi - Hanken School of Economics, Irina Fiegenbaum – ISPIM</td>
</tr>
<tr>
<td>Strategic Foresight, Strategic Agility &amp; Future Orientation</td>
<td>René Rohrbeck – Aarhus University</td>
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<tr>
<td>Super Wicked Problems</td>
<td>Anton Kriz - University of Newcastle &amp; William Westgate of William Westgate &amp; Associates</td>
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<tr>
<td>Teaching and Coaching Innovation</td>
<td>Anna Trifilova – University of Exeter</td>
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If there is an area of innovation management that you would like to shape, contact Steffen Conn at conn@ispim.org to discuss what it means to form and manage an ISPIIM SIG.

# AWARDS & WINNERS

## The ISPIIM Scientific Panel Contribution Award

This award is made to a member of the 130-person ISPIIM Scientific Panel for excellence in scientific contribution.  

* Davide Chiaroni, Politecnico di Milano, Italy*

## The Knut Holt Award for Best Paper

The Knut Holt Award is named after the founder of ISPIIM and is awarded to the best paper at an ISPIIM event, as chosen by the Scientific Panel. The three papers that have been shortlisted by the Scientific Panel are:

- Nizar Abdelkafi, Sergiy Makhotin, Marina Thuns, Anna Pohle & Knut Blind: *To Standardize or to Patent? Development of a Decision Making Tool and Recommendations for Young Companies*
- Pia Hurmelinna-Laukkanen, Kwadwo Atta-Obuusu & Eeva-Lisa Oikarinen: *Are you serious? – Types of humor affecting innovative behavior and output*

## The Alex Gofman Award for Best Student Paper

The Award is named after Alex Gofman, a long-time member and supporter of ISPIIM and is made to the student with the best paper. The three papers that have been shortlisted by the Scientific Panel are:

- Christian Arnold, Daniel Kiel & Kai-Ingo Voigt: *How Industry 4.0 changes business models in different manufacturing industries*
- Mark A. Phillips & Jagjit Singh Srai: *Convergent innovation ecosystems: navigating, negotiating and nurturing*
- Mirjam Roessler, Dirk Schneckenberg & Vivek K. Velamuri: *Corporate Entrepreneurship and Business Model Design: Interacting Contradictory*

## 2016 ISPIIM Innovation Management Dissertation Award (sponsored by Innovation Leaders and John Wiley & Sons)

The ISPIIM Scientific Panel is pleased to announce that the top three dissertations in the 2016 ISPIIM Innovation Management Dissertation Award are:

- Aneesh Banerjee: *How to Choose What to do? Essays on Adoption of Organisational Routines*  
- Matthijs Jansen: *Service Innovation in an Evolutionary Perspective*  

## Best Paper on "Practical Implications for Technology" (sponsored by Nokia)

The Award is made to the best paper that emphasises a technology-related topic and provides valuable implications for corporate practice.

The winners of all awards will be announced during the Conference Dinner on Monday evening.
**Dominique Laousse**

**Head of Foresight and Innovative Group**

**SNCF**

Dominique Laousse is Head of the Foresight and Innovation Group at SNCF. Since 2011, Dominique and his team have been responsible for providing disruptive innovation to help structure future business activities. A trained economist, Dominique holds an MBA from Laval University in Quebec. Prior to SNCF, he was project manager for 10 years with the RATP (Paris Transport Authority).  

**Henry Etzkowitz**

**Senior Research Fellow**

**Stanford University H-STAR Institute**

Henry Etzkowitz is a scholar of international reputation in innovation studies as the originator of the ‘Entrepreneurial University’ and ‘Triple Helix’ concepts that link university with industry and government at national and regional levels. He is currently a Research Fellow at Stanford University, Visiting Professor at the University of Edinburgh Business School and General Adviser to the International Institute of Triple Helix (IITH) of Lasalle University in Spain. Prior to his appointment at Stanford, Professor Etzkowitz held the Chair in Management of Innovation, Creativity and Enterprise at Newcastle University Business School and served as Visiting Professor at Stony Brook University.

**Ramon Vullings**

**Cross-Industry Innovation Expert & IdeaDJ**

**RamonVullings.com**

Ramon Vullings is an inspirational speaker, a cross-industry innovation expert, author and ideaDJ. He believes that there are positive alternatives to the way we interact and how we shape our businesses for the better. He is also Chairman of the European Association for Creativity and Innovation for sharing, developing thought leadership and linking the international creative community. Ramon is the author of “Creativity in Business” and “Not Invented Here”.

**Tim Jones**

**Founder & Programme Director, The Future Agenda**

**Founder & Head of Research, Innovation Leaders**

Tim is Programme Director of The Future Agenda, Head of Research of the Innovation Leaders analysis and works with a number of companies in the areas of innovation and growth. He is a co-founder of a new global expert network, the Growth Agenda, which helps organisations around the world to identify and exploit emerging opportunities and is also an advisor to several small companies. Tim has worked with many of the world’s leading companies, building new innovation spaces, developing new ideas, leading development teams, defining new business models, designing new organisational structures and creating innovation-centric cultures to build new and improved innovation capability.

**Wim Vanhaverbeke**

**Professor of Strategy and Innovation Management**

**Hasselt University**

Prof Dr Wim Vanhaverbeke is professor at the University of Hasselt. He is also visiting professor at ESADE Business School and the National University of Singapore. He published in several international journals such as Organization Science, Research Policy, California Management Review, Journal of Management Studies, Small Business Economics, Journal of Business Venturing, Technovation. He was co-editor with Henry Chesbrough and Joel West of the books “Open Innovation: Researching a New Paradigm” (OUP, 2006) and “New frontiers in open innovation” (OUP, 2014). He is a dedicated open innovation researcher collaborating with different partners in universities and companies around the globe.

**José Carlos Caldeira**

**President**

**ANI - Agência Nacional de Inovação (National Innovation Agency)**

José Carlos Caldeira is currently the President of ANI - Agência Nacional de Inovação (National Innovation Agency). He is also member of the MANUFUTURE High Level Group and Chairman of its National and Regional Technology Platforms Group. He is also Board member of EFFRA – European Factories of the Future Research Association (as observer). Since 2012, he his RIS3 expert of DG REGIO. In the last 20 years, he participated as responsible and/or a collaborator in the preparation, development and execution of several R&D and innovation projects, in the industrial Management and Automation area, which received national and international funding, comprising different companies and sectors: metalworking, textile, footwear, wood and cork, injected foundry, food and beverage.
Daniel Nepelski serves as Scientific Officer at the Joint Research Centre-IPTS, European Commission. Working at the melting pot of policy making and academia, he provides science-based support to policy-making process in the field of technology-based innovation and entrepreneurship at European level. His main interests include commercialization of technology, the working of the European innovation and entrepreneurship ecosystem and the position of Europe in the global context of technology-based value generation. Before joining the JRC-IPTS, Daniel worked at the German Institute for Economic Research in Berlin (DIW Berlin). He holds a Ph.D. in Economics from the Humboldt University Berlin.
## PROGRAMME

### SUNDAY, 19 JUNE

**1300 – 1800 ISPIM JUNIOR RESEARCHER LAB**  
Venue: Apollo 1-2 – 1st Floor, Sheraton Porto Hotel & Spa  
The ISPIM PhD Student Community provides activities and networking for junior researchers from around the world. All junior researchers are invited to attend this Lab and must sign-up in advance.

**1830 – 2000 WELCOME RECEPTION & REGISTRATION**  
Venue: Câmara Municipal do Porto, Praça General Humberto Delgado  
Delegates are invited to the welcome reception at Porto City Hall (Câmara Municipal do Porto), one of Porto’s historical landmarks, situated in the heart of downtown Porto.  
1845 – 1915 Facilitator & Moderator Q&A session for facilitators and hot topic moderators. Led by Steffen Conn, Olga Kokshagina & Bruno Woeran  
1930 – 1945 Welcome to Porto by Rui Moreira, Mayor of Porto  
Dress Code: Casual

### MONDAY, 20 JUNE - MORNING  
Venue: Sheraton Porto Hotel & Spa

**0700 – 0800 ISPIM RUNNERS** Start the day with fresh minds and energy on a friendly, guided run exploring beautiful Porto. Limited places, reserve your place with Sabrina Schneider - schneider@ispim.org

**0800 – 0815 DELEGATE REGISTRATION** (1st Floor Foyer)  
**0800 – 0830 THE NEWCOMERS BREAKFAST** (Room: Discovery)  
Your first time at ISPIM? Start the first morning with a new set of friends to make you feel at home right away! Open to first-time ISPIM attendees only.

**0830 – 1030 OPENING SESSION** (Room: Apollo 1-4)  
Iain Bitran – Executive Director, ISPIM & José Carlos Caldeira – President, ANI - Agência Nacional De Inovação  
Dominique Laousse – Head of Foresight and Innovative Group, SNCF  
Conference Welcome  
Collaborative design to face unknown risks. Organization, processes & methods at SNCF  
Triple helix innovation in a crisis era  
Ramon Vullings – Cross-Industry Expert & ideaDJ  
Not Invented Here: Cross-industry Innovation

**1030 – 1100 COFFEE BREAK** (1st Floor Foyer)
**HOT TOPIC DISCUSSIONS** (Rooms: Apollo 1-2, Apollo 3, Apollo 4)
Discussions on innovation "hot topics" for groups of up to 10 per topic. Sessions last for 45 minutes and will be repeated once. Delegates are required to change topics half-way through the session. Seating is on a first-come-first-served basis.

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<td>Room: Apollo 1-2</td>
<td>Room: Apollo 3</td>
<td>Room: Apollo 4</td>
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1. **James Woudhuysen**: Could the internet of Things become the Internet of Apprehension?
2. **Marko Torkkeli**: What are the key challenges for financial services innovation?
3. **Menes Etingue Kum**: What matters more for surviving in uncertain environments: Strategic Agility or Corporate Foresight?
4. **Beryl Bellman**: How can pattern-based enterprise architectures help the adoption of innovation by industries and governments?
5. **Azim Pawanchik**: Digitizing innovation management - is there real value?
6. **Mikko Dufva**: Innovation management and the future of work: how will our jobs change?
7. **Eric Stevens**: Smart Cities: What streams of research do we need to pursue next?
8. **Ann Kedia**: How can we prepare for disruptive innovation? Is being an early-adopter enough?
9. **Kate Hammer**: How can we use storytelling, anecdotes and narratives for innovation?
10. **Gavin Smelius**: How should inventors navigate the IP maze and what can Open Innovation professionals learn from this?
11. **Byoung Soo Kim**: How can we innovate knowledge management to stimulate organisational innovation in an open innovation system?
12. **Nils Duelfer**: Is design thinking in the professional service industry a sustainable model to foster clients’ innovativeness?
13. **Klaus Fichter**: How do and should universities support sustainable entrepreneurship?
14. **Joanne Hyland**: Hype or Helpful: Is lean startup good, bad or inconsequential for corporate innovation?
15. **Rui Patricio**: Why and How to Gamify Innovation Processes?
16. **Frank Lillehagen**: How can we capture local context and tacit knowledge enabling cyclic innovation and learning?
17. **Bruno Woeran**: What are your ideas for joint collaborative project developments on innovation support mechanisms?
18. **Dianna Vitasovic**: How can we infuse innovation projects with more creativity?
19. **Gijs van Wulfen**: ISPIM Lonely Wolves: A club for lonely innovators who know how hard innovation can be!
20. **Allen Alexander**: Capturing value from your networks with active network visualisation & navigation – a core capability or nice idea?
21. **Christian Buchholz**: How can we improve teaching & coaching innovation?
22. **Olga Kokshagina**: Collaborating online to solve problems: myth or reality?
23. **Harvey Wade**: What is an innovation culture and how can you measure its development?
24. **Justyna Dabrowska**: Do companies need Open Innovation specialists? If yes, what should be their tasks?

**WORKSHOP**
(Room: Gemini 1)
Doing Qualitative Research in Innovation Management
This professional development workshop offers an opportunity both for aspiring qualitative researchers to learn about qualitative methodological approaches and for researchers with some experience on qualitative methods to strengthen their methodological capabilities.

**WORKSHOP**
(Room: Discovery)
ISPIM Seeks Solutions
All organizations have to innovate today in order to create new value in the market. But how do you select the best innovation management practices to implement in your company? How do you find the best resources to help you when you do not achieve the expected results? We all have problems related to innovation management and here is a way to find new solutions: the Seeks Solutions approach with the ISPIM crowd!

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1230 – 1330 **LUNCH** (Ground Floor)
### Session 1.1: Open Innovation: Reflections

**Marcin Baron:** Open Innovation in Old Industrial Regions: Does old mean closed?

**Tor Helge Aas:** Open versus closed innovation: Advancing the debate

**Daria Podmetina:** Open Innovation: Do you really do what you think you do?

**Urs Daellenbach:** Extending Theorisation for Open Innovation via a Social Capital Lens

**Session 1.2: BMI 1: Reflections**

**Dirk Schneckenberg:** Linking managerial thinking with theory on business model innovation

**Marianne Hock:** Knowledge Management, Strategic Flexibility and Business Model Innovation

**Irina Saur-Amara:** Business Model Innovation: Where Do We Stand?

**Alexander Claus Wenz:** Exploring the BMI Trade-off and proposing a Potential Resolution

### Session 1.3: Strategic Foresight, Agility & Future Orientation: 1

**Astrid Weiss:** Present and Future of Digitalization in South Tyrolean SMEs

**Cristina Guimaraes:** Technology Roadmapping in Research Institutes through Technology Readiness Level Assessment

**Chaminda Senaratne:** Barriers to Ambidexterity in UK Hi-Tech SMEs

**Alf Steinar Saetre:** Bringing new knowledge into the organization: Scanning, framing and connecting

### Session 1.4: Innovating in Traditional Sectors 1

**Andrea Urbiniati:** How Incumbents Manage Waves of Disruptive Innovation: An Empirical Analysis

**Koichiro Kodama:** An adaptive process of photo shop industry to digitization

**Paul Trott:** Innovation within the European food industry

**Juha Kytölä:** Sustainable innovation in practice: case shipbuilding

### Session 1.5: Enabling Innovation: Methods, Training, Coaching & Competence

**John Bessant:** Innovative innovation management teaching

**Stephanie Kaudela-Baum:** Learning through Paradox: Exploring Teaching Strategies for Innovation Management Educators

**Joris Hansen, Katja-Maria Prexl:** Intrapreneurship Reactor: Enable start-up culture in large company

**Nina Bozik Yams:** Integrated model of innovation competence

### Session 2.1: Open Innovation 2: Users & Customers

**Changiz Valmohammadi:** Collaborative innovation with customers in service sector

**Masaya Onuma:** Professional User as Innovator: Organizational Problems in Collaborative Projects

**Hari Suman Naik:** User Innovation in Open Design

**Tuju Rantala:** Identifying New Innovations in Diverse B-to-B Sales Meetings

**Session 2.2: BMI 2: Platform & Technological Opportunity**

**Nina Tura:** Value creation and capture in sustaining platform-based business

**Christian Arnold:** How Industry 4.0 changes business models in different manufacturing industries

**Daniel Moser:** Creating Strategic Scope using a Platform Perspective on Business Models

**Sven M. Laudien:** Uncovering Characteristics of Digitalization-based Business Models: A Qualitative-empirical Analysis

### Session 2.3: Strategic Foresight, Agility & Future Orientation: 2

**Jin Sung Jung:** Exploratory Research on the Dynamic Capabilities of Leading Firms

**Yoongun Min:** An ex-ante framework for the emergence of a dominant displays

**Natalie Sick:** Hot spots of convergence research

**Clara Mansilah:** Insights for innovation: combining patents pools and product portfolio analysis

### Session 2.4: Innovating in Traditional Sectors 2

**Julius Golovatchev:** The impact of the IoT on Product Development and Management

**Peter Nagler:** Leading Innovation - the Model of "Loose Coupled" Networks

**Ken Dovey:** The Socio-Political Antecedents of Technical Innovation

**Ashish Malik:** Transformative Co-creation of Value: The Case of Smart Work Hubs

### Session 2.5: Innovation for Economic, Societal & Environmental Sustainability 1

**Carol Lin:** Four Way Voice

**John Bessant:** Case studies in humanitarian innovation

**Miko Ching-Ying Yu:** Empathy Diffusion - The NGO Sustainable Development

**Ashish Malik:** Transformative Co-creation of Value: The Case of Smart Work Hubs

### Session 2.6: Bootcamp 2: Universities & the Innovation System

**Christiana Müller:** Entrepreneurial University applied to Universities of Technology in Austria

**Rogério Ferreira:** The Triple Helix Model and the Brazilian Army Strategic Projects

**Priscilla Kan John:** A Research Engagement Canvas tool to facilitate University-Industry Engagement

**Ana Markovic Cunko:** A New Perspective on Innovation Systems Evaluation: the Croatian Case
1535 – 1600 COFFEE BREAK (1st Floor Foyer)

1600 – 1730 THE GRAND PRIZE FINAL (Room: Apollo 1-3)
Moderated by Kevin McFarthing, Innovation Fixer Ltd (ISPIM Advisory Board)
1530 – 1615 Presentations by the three finalists – Huawei, Orange & SAP – followed by audience voting
1615 – 1645 Tim Jones - Founder and Programme Director, Future Agenda Six Challenges for Next Decade: New Innovation Opportunities
1645 – 1700 Presentations to the winner and runners-up
Prizes kindly provided by Swarovski

1730 END OF SESSIONS – DAY ONE

1900 – 1930 ISPIM MEMBERS MEETING & PORT TASTING
Venue: The Arab Room, 1st Floor, Palácio da Bolsa, R. de Ferreira Borges, 4050-253 Porto
ISPIM Members are invited to an informal meeting and port tasting in the magnificent Arab Room at the Stock Exchange Palace (Palácio da Bolsa). Come and meet the ISPIM Board & Advisory Board and find out how you can contribute to the ISPIM community. Non-members are not eligible to attend but can join ISPIM online at www.ispim.org or at the conference registration desk. Port kindly provided by Sandeman.

1930 – 2300 CONFERENCE DINNER
Venue: Palácio da Bolsa, R. de Ferreira Borges, 4050-253 Porto
All delegates are invited to the Stock Exchange Palace (Palácio da Bolsa). The palace was built in the 19th century by the city's Commercial Association (Associação Comercial) in Neoclassical style. It is in the historical centre of Porto, designated World Heritage Site by UNESCO. Live music will be provided by The Girl in the Other Room Jazz Quintet.
Awards: Knut Holt Award for Best Paper; Alex Gofman Award for Best Student Paper; Scientific Panel Award; The PhD Dissertation Award; The Technological Implications Award by Nokia
Dress Code: Smart Casual (i.e. ties not required). Please make your own way there and don't forget to bring your badge.
### 0900 – 1000 SHARING INNOVATION RESEARCH RESULTS & PRACTICE (10 mins per presenter & 20 mins discussion)

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<thead>
<tr>
<th>Room: Apollo 1+2</th>
<th>Room: Apollo 3</th>
<th>Room: Gemini 1</th>
<th>Room: Gemini 2</th>
<th>Room: Ariane 3</th>
<th>Room: Ariane 2</th>
<th>Room: Apollo 4</th>
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<tr>
<td>Facilitator: Katie Hyslop</td>
<td>Facilitator: Patrick Spiehi</td>
<td>Facilitator: Kristel Miller</td>
<td>Facilitator: Benoît Gaily</td>
<td>Facilitator: Peter Nagler</td>
<td>Facilitator: Kate Hammer</td>
<td>Facilitator: Florian Rustler</td>
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#### Session 3.1: Open Innovation 3: Suppliers
- Fang-Mei Tseng: Supplier Involvement and New Product Performance: Modulating Effects
- Marika Makkonen: Stimulating supplier innovation in a complex business environment
- Anna Aminoff: Driving supplier innovations towards digitization of infrastructure projects

#### Session 3.2: BMI 3: Start-ups & entrepreneurs
- Catarina Maia: Wearable devices startups business models: a multiple case study
- Mirjam Rössler: Corporate Entrepreneurship and Business Model Design: Interacting Contradictory Design Logics
- Tommi Rissanen: Business Model Experimentation in Incumbent and Startup Companies
- Wen-Ching Hsu: Why the growth of biopharmaceutical latecomer firms is more difficult?

#### Session 3.3: University-Industry Innovation 1
- Csaba Deák: We Have Research Infrastructure - Can We Cooperate?
- Eduardo B. Pinto: Managing a Successful University-Industry Collaborative Funded Innovation Program
- Thomas Clauß: Managing University-Business-Collaboration through Formalisation: The Moderating Role of Fairness
- Philippe Gorry: Serendipity and university technology transfer: a case study

#### Session 3.4: Innovating in Traditional Sectors 3
- Päivi Karhu: Cognitive Ambidexterity in Marketing Management: Vicious and Virtuous Tensions
- Oda Ellingsen: Managing exploration and exploitation: commercialization case from advanced manufacturing
- Bill Russell, Allen Alexander: Fighting tradition: Developing ambidextrous capabilities across the innovation portfolio
- Gerrita Van der Veen: From Social Media to Social Business: The Growth to Maturity

#### Session 3.5: Innovation for Economic, Societal & Environmental Sustainability 2
- Maria Real Perdomo: Exploring the Insect Economy
- Stephan von Delft: Sustainability-orientation and competitiveness: Is supply chain consideration a missing link?
- Klaus Fichter: Influencing Factors of University Support for Entrepreneurship and Eco-innovation
- Erik Lindhult: Sustainability oriented innovation capacity in cities

#### Session 3.6 Bootcamp 3: Components of Innovation (Mixed session)
- Beryl Bellman, Prakash Rao, Reedy Ann: Enterprise Architecture Patterns for Innovation
- Christoph Haag: The Underlying Needs of Innovations - A Time Study
- Carola Guyot Phung: Prototyping Sustainable Systemic Innovation : Building Regime Change
- Pierre-Jean Barlatier: Exploiting Social Media potential to leverage innovation: a case study
| Room: 1005 | Session: 4.1: Open Innovation 4: SMEs | Facilitator: Dimitri Schuurman |
| Room: 1005 | Session: 4.3: University-Industry Innovation 2 | Facilitator: Sven Laudien |
| Room: 1005 | Session: 4.4: Teaching Innovation Management Invited Speaker Session on Knowledge Sharing | Facilitator: John Bessant |
| Room: 1005 | Session: 4.5: Innovation for Economic, Societal & Environmental Sustainability 3 | Facilitator: Christoph Kölller |
| Room: 1005 | Session: 4.6: Bootcamp 4: Aspects of Innovation Management | Facilitator: Daria Podmetina |
| Room: 1005 | Invited Speaker Session on Knowledge Sharing | Facilitator: Menes Kum |

Marc Steen: An 'Open Innovation Project Canvas' to support SMEs
Lawrence Dooley: Inter-organisational Innovation: Collaborative Breadth and Depth within the SME sector
Elena Casprini: Making Open Innovation in Family Firms Happen: the Loccioni case
Aineias Gkiikas: Open Innovation, SMEs and Regional Development

Session 4.2: BMI 4: Adoption & Implementation of Crowdsourcing
Marc G. Villinger: Crossing the Rubicon: Driving adoption of novel business models
Benjamin Echterhoff: Systematic Business Mode Implementation - From Concepts to Real Business
Sergey Yablonsky: Innovation Crowdsourcing - intermediaries: Input Supplier, Multi-sided Platform or Reseller?
Tsu-Tung Ku: Dynamic Boundary Spanning Process in Crowdsourcing Competition

Session 4.3: University-Industry Innovation 2
Dominique Philippe Martin: What scopes of intervention for Argentina University Transfer Offices?
Shino Iwami: Overlay map of funded research centers
Ekaterina Alibats: Innovation intermediaries in university-industry collaboration: analysis of the online platforms

Session 4.4: Teaching Innovation Management Invited Speaker Session on Knowledge Sharing
As Einstein put it "The only source of knowledge is experience". And because we also know that knowledge increases with sharing, rather than saving, we have created this session to share our practical experience in teaching innovation.

Session 4.5: Innovation for Economic, Societal & Environmental Sustainability 3
Elena Casprini: Making Open Innovation in Family Firms Happen: the Loccioni case

Session 4.6: Bootcamp 4: Aspects of Innovation Management
Christopher Simms: How line stretch contributes to product development within process industries
Päivi Timonen, Samuli Kortelainen: Value Creation in Public Service Transformation - Case Mobility
Patricia Lagun Mesquita: Analyzing Social LCA through the lens of Strategic Sustainable Development
Farley Nobre: Innovation for Sustainability: Creating Mutual Values

Experience 2: Impact of Corporate Foresight on Corporate Performance (CPD Session)
led by Menes Kum & Tynen Jissink Deloitte Consulting GmbH

Today, most of our organizations are built with a focus on operating the current business. Only 3% of a top manager’s time is devoted to creating future perspectives, leading to myopia. For answering the questions how companies can build a future preparedness we have built a maturity model that we regularly use to assess and benchmark multinational companies and SMEs.

1105 – 1130 COFFEE BREAK (1st Floor Foyer)
### 1130 – 1230 SHARING INNOVATION RESEARCH RESULTS & PRACTICE

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#### Session 5.1: Open Innovation 5: Ecosystems
- Ozgur Dedehayir: The Process of Ecosystem Genesis: A Tale of two Drugs
- Leena Aarikka-Stenroos: Innovation and business ecosystem research: the foci and future agenda

#### Session 5.2: Creativity in Innovation 1: Standards & Talent
- Ricardo Moreira: The approach to Creativity in European Innovation Management Standards
- Lydia Montandon: Unleash your Organization’s Talent Fostering Disruptive Ideas
- Jurate Cerneviute: Factors Influencing Productivity of Teamwork in Creative Industries

#### Session 5.3: University-Industry Innovation 3
- Leona Fitzmaurice: For the Public Good: The Bayh-Dole Act and Innovation Management
- Nabil Amara: Climbing the ladder of the patenting process
- Kristel Miller: Entrepreneurial Academic Entrepreneurs: understanding micro social factors and legitimacy

#### Session 5.4: Front End & NPD Themes
- Samuli Kortelainen: Launching a Next Generation Analytics Product - Case Industrial Maintenance
- Verena Joachim: Front End Activities: Insights from German Material Science and Engineering
- Teresa Tioajung Hsu: Strategic Orientation of the Firm and New Product Performance

### WORKSHOP

#### Session 5.5: Bootcamp 5: Innovation on a personal level
- Dimitra Chasanidou: Design thinking and innovation in companies
- Kristiane Lindland: Developing Learning Capability through EDI for Managing Ambidexterity
- Volker Koch: Rewarding of purchasing professionals in Austrian technology companies
- Christian Haslam: Developing apprentice skills for innovation through interdisciplinary training and education

#### Experience 3: Coaching Innovation Management (CPD Session)
- Florian Rustler – Creaffective
- Rob Sheffield – Bluegreen

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**Event Partners & Sponsors**

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<tr>
<th>1235 – 1335 SHARING INNOVATION RESEARCH RESULTS &amp; PRACTICE  (10 mins per presenter &amp; 20 mins discussion)</th>
<th>EU/FUNDED PROJECT SPARK</th>
<th>WORKSHOP</th>
<th>RESEARCH-IN-PROGRESS</th>
<th>EXPERIENCE INNOVATION</th>
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<td>Room: Apollo 1+2</td>
<td>Room: Ramon Vullings</td>
<td>Facilitator: Teemu Santonen</td>
<td>Room: Apollo 3</td>
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<td>Facilitator: Ramon Vullings</td>
<td>Facilitator: Tuija Hirvikoski</td>
<td>Facilitator: Bruno Woeran</td>
<td>Early-stage Innovation led by Paul Ellwood &amp; Ceri Williams</td>
<td>Experience 6: Spotlighting Innovation Tools (CPD Session)</td>
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<tr>
<td>Session 6.1: Open Innovation 6: Ecosystems &amp; Networks</td>
<td>Session 6.2: Creativity in Innovation 2: Ideas &amp; Interactions</td>
<td>Session 6.3: Positioning Living Labs in the Innovation Domain (Invited Speaker Session)</td>
<td>Session 6.4: Project Spark Session</td>
<td>Invited speakers will share their wide experience of using different creative methods of managing innovation in industry. Participants employ various idea creation methodologies to find out how different approaches suit for different challenges around training for innovation.</td>
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</table>
| Mark Phillips: Convergent innovation ecosystems: navigating, negotiating and nurturing | Mark Vandael: Idea Selection 2.0 | This session is for researchers, policy makers, innovation managers, and anyone involved and/or interested in Living Labs. As both of the Living Labs SIG leaders have recently finished a PhD on Living Labs and as ENoLL has created two publications based on best practices from their broad assembly of member Living Labs, this session will give novel insights from an academic as well as practical perspective. | Sara Medina: Science, Technology and Innovation (STI) Performance of China | Hans-Jürgen August – Siemens
Michael Dell – Ratio Strategy & Innovation Consulting |
| Ricardo Greenfield: Sustaining Innovation Networks through Network Commitment | Stephan Sonnenburg: Moments to Despair in the Co-Creative Process | Detyre Reis: How to move beyond conventional ideas in an innovation project? | Eva Diedrichs: Mastering the challenges of national and regional innovation strategy implementation | Karlien Blaauw:... |
| Eelko Huizingh: Co-creation in R&D Networks: Implications for Innovation Processes | | | Marta Begonja: PACINNO - Platform for trans-Academic Cooperation in Innovation |...|
| | | | Michael Hamwi: Business model innovation for energy transition in household sector |...|
| | | | |... |

---

**5 MINUTE TRANSIT TIME**

**ALL DAY INDUSTRY MATCH MAKING**

(Room: Discovery) A chance for delegates to meet with local Porto businesses.
### Networking Session: ISPIM Lonely Wolves Club Lunchtime Meet-up (Apollo 4)

#### 1430 – 1530 SHARING INNOVATION RESEARCH RESULTS & PRACTICE

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<tr>
<td>Facilitator: Mark Phillips</td>
<td>Facilitator: Sally Davenport</td>
<td>Facilitator: Abayomi Baiyere</td>
<td>Facilitator: Joanne Hyland</td>
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<tr>
<th>Session 7.1: Open Innovation 7: Technology &amp; R&amp;D</th>
<th>Session 7.2: Sources of Opportunity: Mixed Innovation Themes</th>
<th>Session 7.3: Living Labs 1</th>
<th>Session 7.4: Transferring Knowledge 1: Themes</th>
<th>Session 7.5: Bootcamp 7: Sustainability</th>
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#### WORKSHOP

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<td>Strategies to engage employees to innovate Led by Azim Pawanchik &amp; Suraya Sulaiman – Alpha Catalyst Consulting The rationale for innovating can range from maintaining market position, entering a new market, gaining access to unique resources or materials, meeting regulatory requirements, attracting talent, or simply meeting the expectations of diverse stakeholders. This means that innovation needs to occur in every corner of the organisation. The challenge however lies in getting every single talent on board the innovation journey!!</td>
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#### EXPERIENCE INNOVATION

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#### ALL DAY INDUSTRY MATCH MAKING

(Room: Discovery)
A chance for delegates to meet with local Porto businesses
### 1535 – 1635 SHARING INNOVATION RESEARCH RESULTS & PRACTICE (10 mins per presenter & 20 mins discussion)

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<td>Facilitator: Davide Chiaroni</td>
<td>Facilitator: Tor Helge Aas</td>
<td>Facilitator: Seppo Leminen</td>
<td>Facilitator: Heidi Olander</td>
<td>Facilitator: Paavo Ritala</td>
<td>Facilitator: Marko Torkkeli</td>
<td>Facilitator: James Woudhuysen</td>
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**Session 8.1: Open Innovation 8: Management Challenges**
- Pia Storvang, Majbritt Rostgaard Evald, Ann Højbjerg-Clarke: Industry-Mover Innovation based on External Collaboration
- Colin Cheng: Managing open innovation for radical innovation performance
- Martin Allmendinger: How do large firms realize innovation-oriented partnerships with start-ups?
- Justyna Dabrowska: Searching for common skills and competences of open innovation professionals

**Session 8.2: Managing Innovation 1: R&D**
- Ali Naef Mohammad: A Revised Model for Valuation and Selection of R&D Projects
- Ulla Saari: Exploring How Brand Experience Measurement Helps Integrating Marketing and R&D
- Vrana Motta, Lorenzo Antozzi: Different R&D Management Approaches: Multinational Large Company and Industrie DeNora
- Bruna Silva, Mariana Almeida: Efficiency evaluation of R & D projects fostered by government

**Session 8.3: Living Labs 2**
- Koen Vervoort: The WORTHCASE-matrix, one overview to flow living Lab panel
- Louise Savelkoul: A Structured Science Based Needfinding for Infrastructure Living Labs
- Kaisa Henttonen, Anne Horia: The co-creation of social innovations: a Living Lab case

**Session 8.4: Transferring Knowledge 2: Absorptive Capacity**
- Agne Paliokaitė: Innovation Policies and Firm Absorptive Capacities: Minding the Gap
- Nekane Aramburu: Absorptive Capacity and Innovation Performance in Mexican SMEs
- Chien-Chiang Lin: An Individual-Level Exploration of Absorptive Capacity
- Djerdj Horvat: Absorptive Capacity: Opening the Black Box from a Process Perspective

**Session 8.5: Innovation System Performance & Policy**
- Arho Suominen: Innovation Systems and Ecosystems: a Review and Synthesis
- Ana Silva: Regional Innovation Systems in Follower Regions: Assessing Innovation Policy Mix
- Klemens Joachim: Innovation intermediaries in the innovation system materials science and engineering
- Tibor Dory: How effectively serve intermediary organisations innovation in Hungary?
- Teemu Santonen: Sientometrics Analysis of ESF-Projects in Finland: Funding Period 2007-2013

**Session 8.6: Bootcamp 8: Financial Themes & BMI (Mixed Session)**
- Martin Gjelsvik: Developing business models in the emerging market for welfare technology
- Carlos DaSilva: Business Model Innovation: A Discourse Analysis Of CEOs
- Florian Rehm: Financing sources and performance metrics in early-stage start-ups
- Sujung Jee: Significant Features of Collateralized Patents on Successful Lending

**Room: Apollo 5**
- Facilitator: Paavo Ritala

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### 1635 – 1700 COFFEE BREAK (1st Floor Foyer)

### 1700 – 1800 OPEN INNOVATION IN SMEs - Learning Points for Managers and Academics

**Room: Apollo 1-3**
- Moderator: Marko Torkkeli

**Wim Vanhaverbeke – Professor of Strategy and Innovation Management, Hasselt University**

An increasing number of SMEs are embracing OI practices to gain competitive advantage. Yet, OI in SMEs has received scant attention in the research. In this session Wim will highlight the lessons from a new book, which examines how OI in SMEs is managed and implemented, including a framework on how to use OI strategies successfully.

**Room: Apollo 4**
- Moderator: Stephan Buse

We will discuss the relevance of Frugal Innovations for Western companies. We deal with the question whether and to what extent firms can afford to ignore this concept.

Invited speakers: Rajnish Tiwari - Centre for Frugal Innovation & Monika Petraite - Kaunas University of Technology

### 1800 END OF SESSIONS – DAY TWO

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### 2000 – 2300 FESTA DE SÃO JOÃO SOCIAL EVENING

**Venue: Herança Magna, R. de Serpa Pinto 239, 4400-307 Vila Nova de Gaia**

Delegates are invited to a special Porto-themed evening at Herança Magna, a former port wine cave built into the side of the granite hills of Vila Nova de Gaia. As well as a traditional Portuguese buffet dinner, delegates will experience the Festival of St John (Festa de São João) and be treated to live music from The Isabel Darque Band as well as the much-heralded fifth appearance of ISPIM Rocks!

**Press Code:** Casual. Don’t forget to bring your badge.
**Session 9.1: Service Innovation**

Peter Harengel: Perspectives of Service-dominant Logic for Innovation Management: A Bibliometric Analysis

Vessela Warren: Overcoming challenges to service innovation process implementation in an SME

Manuela Dias: Managing innovation in service industry: the role of consultants

**Session 9.2: Managing Innovation 2: Teams**

Mikael Johnsson: Important Innovation Enablers for Innovation Teams

Steve McGuire, Ellen Drost: Predictive and Concurrent Validity of a Model of Entrepreneurial Culture

Anders Wikström: Capturing the dynamics of innovation climate in organizations

Rui Patricio: ideaChef: A gamified approach for engaging teams

**Session 9.3: Transferring Knowledge 3: Networks & Knowledge**

Heidi Olander: Intentional or Not? The Nature and Dimensions of Knowledge Mobility

Maike Strudthoff: Knowledge networks based on technological distances

Kylie de Jager: Evolution of medical device innovation in South Africa: 2001-2013

**Session 9.4: Bootcamp 9: Themes in Open Innovation**

Mohammad Muzamil Naqshbandi: Organizational culture and open innovation: role of absorptive capacity

Matthias Guertler: Analysing the influence of planning-parameters on Open Innovation performance

Katie Hyslop: Open innovation activities and network competence as drivers of performance

**Session 9.5: Ideas Sandbox 1: Platforms & Ecosystems**

Jérémie Faham: A Dialogical Approach to increase “Matching” Efficiency before CBM

Pekka Berg: Transparency of the Platform Ecosystems Innovation Management

Jarkko Pellikka: Creating and capturing value in the business ecosystems

Anne-Laure Mention: Emergent collaborative innovation intermediaries: innovation hubs vs. innovation labs

---

**WORKSHOP**

storyFORMing: A story design workshop led by Kate Hammer

StoryFORMing is a visual thinking toolkit specifically designed to help people organize conversations and thoughts into coherent stories. The method galvanizes you to create and tell new stories. It will help you and your team see the big picture, by exploring and re-imagining the user/consumer insights and new product concepts that are fundamental to your innovation or new product development (NPD) work. Once you’ve learned to use the storyFORMing process, you’ll be a better storyteller with a clearer lens on change.
### 1130 – 1230 SHARING INNOVATION RESEARCH RESULTS & PRACTICE (10 mins per presenter & 20 mins discussion)

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<td>Maria Cristina Longo: Innovation-Hub Management For Value Co-Creation: The Centrality of Corporate Policies</td>
<td>Djerdj Horvat: Innovation ability as part of a forward-thinking supplier evaluation system</td>
<td>Sergiy Makhotin: To standardize or to patent? Decision tool for technology startups</td>
<td>Abayomi Baiyere: Exploring the role of IT Capabilities in Disruptive Innovations</td>
<td>Juan Campos, Guadalupe Calderon: Idea Management Initiative as a Catalyst for an Innovation Culture</td>
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</table>

### 1235 – 1330 SUPPORTING INNOVATION IN PORTUGAL (Room: Apollo 1-3)

Moderator: Irina Saur-Amaral
Find out about how innovation is supported at national and EU levels with presentations from two experts. This will be followed by an in-depth interview of both speakers including selected questions from the audience taken from Twitter – use #ISIPM. Session speakers: José Carlos Caldeira – President, ANI - Agência Nacional de Inovação (National Innovation Agency) Daniel Nepelski – Scientific Officer, European Commission, Joint Research Centre - IPTS

### 1235 – 1330 SOLVING WICKED INNOVATION PROBLEMS (Room: Apollo 4)

led by Anton Kriz & William Westgate
In this the latest in the series of Solving Wicked Problems Workshops, William and Anton, with the support of the Porto Community, help local partners address how Porto can develop a Citizen Centric approach that can scale-up to support sustainable economic growth.

### 1335 – 1435 CLOSING SESSION (Room: Apollo 1-3)

Iain Bitran – Executive Director, ISIPM
Awards for Outstanding Conference Contributions

### 1445 – 1600 VISITS TO LOCAL INDUSTRY CLUSTERS (meet the cluster hosts on Ground Floor)

- **Cluster 1: Food**
  - An Interactive Innovation tour with product tasting, hosted by Frulact’s Innovation & Technology team followed by a discussion panel to debate the role and impact of innovation in the Food sector.

- **Cluster 2: Health**
  - From knowledge to market, from bench to bedside: making innovation work in the Health sector. HCP – Health Cluster Portugal, and I3S – Institute for Research and Innovation in Health, will promote a Forum to debate the role and impact of innovation in the Health sector.

- **Cluster 3: Energy**
  - Sustainable Innovation Using Technology Transfer – The importance of strong partnerships. EFACEC Power Solutions and EnergyIN – Competitiveness and Technological Cluster for Energy will host a discussion on innovation processes in a technology company operating in the energy sector.

- **Cluster 4: Sustainable Mobility**
  - Decarbonising Urban Mobility – The Creation of a Cluster. CEIIA will host a forum related to the challenges and opportunities of creating a cluster around the development of Sustainable Mobility products and services.

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**CLOSE OF CONFERENCE**
ANI - The Portuguese National Innovation Agency

**MISSION**

Strengthening the Portuguese competitiveness through the promotion and commercialization of scientific and technological knowledge and its transformation into economic growth.

ANI embodies the growing alignment of the R&D, Innovation and technology-based entrepreneurship policies and programmes. The Agency’s main role is to promote knowledge valorization and transfer, particularly through an increased and better cooperation and coordination between business and academia.

**ACTIVITIES**

- Enhance collaborative innovation
- Leverage knowledge transfer to companies
- Increase the participation of the National S&T System, as well of national companies, in the Research & Innovation international networks
- Strengthen business investment in R&I
- Foster a social environment which favours technological entrepreneurship

**GOVERNANCE MODEL**

ANI is endowed with a Governance Model which enables it to take a central position in the science-economy relation, partnering with relevant stakeholders, structured in three main Directorates:

- Funding Incentives
- Projects & International Cooperation
- Innovation Policies and Promotion

---

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Tel.: +351 214 232 100  
Fax: +351 214 232 101

www.ani.pt/en  
ani@ani.pt
Lappeenranta University of Technology, LUT has throughout its history (founded 1969) combined expertise in technology and business. The university’s operation is based on cooperative, multidisciplinary and solution-based activity. We respond to future challenges in cooperation with our partners in the academic world and industries.

Our international community consists of 7000 students and experts. Since 2012 over 10,000 students have graduated from LUT with Master of Science degrees in engineering and business, as well as 450 Ph.D. degrees in technology and business.

LUT strategic focus areas are
- green energy and technology
- the sustainable value creation
- international role as a hub of Russian relations.

The strategy 2015 is supported by our values: courage to succeed, passion for innovation through science, and a will to build well-being.

Special features of innovation research at LUT:
- innovation is seen as requisite for the regeneration of enterprises and society and ultimately for sustainable value creation
- a broad view of innovation, considering the entire life cycle and different types thereof
- world-leading open innovation research
- expertise in the management of global, knowledge-intensive innovation and value chains
- special focus on research on innovation and business environments in Russia and transition economies
- breaking the traditional linear model of innovation and seeking innovation by breaking borders through "intellectual cross-fertilization"
- innovations are created and implemented in value networks, open innovation is the driving force of modern "creative destruction"
- the core competence is brokering, which means the skill to create worlds of intellectual cross-fertilization.
- innovations are mainly created in practical contexts, where many different sources of information are exploited in solution-centered processes; in these environments the customer is a subject, not an object, of innovation activities.
- organizations should not be seen as passive bystanders of innovation policy – instead, innovative capabilities needed in working life must be developed with the assistance of a solid toolbox.
- enhancing the principles of practice-based innovation activities by our own networked ways of action.
INTERNATIONAL JOURNAL OF INNOVATION MANAGEMENT (IJIM)

Official journal of the International Society of Professional Innovation Management (ISPIM)

http://www.worldscientific.com/worldscinet/ijim

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## Session Overview and Thematic Planner

**Monday**

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<tr>
<td>1435 - 1535</td>
<td>2.1: Open Innovation 2: Users &amp; Customers</td>
<td>2.2: BMI 2: Platform &amp; Technological Opportunity</td>
<td>2.3: Strategic Foresight, Agility &amp; Future Orientation: 2</td>
<td>2.4: Innovating in Traditional Sectors 2</td>
<td>2.5: Innovation for Economic, Societal &amp; Environmental Sustainability</td>
<td>2.6 Bootcamp 2: Universities &amp; the Innovation System</td>
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<td>5.1: Open Innovation 5: Ecosystems</td>
<td>5.2: Creativity in Innovation 1: Standards &amp; Talent</td>
<td>5.3: University-Industry Innovation 3</td>
<td>5.4: Front End &amp; NPD Themes</td>
<td>Workshop: Is it Possible to Innovate without Marketing?</td>
<td>5.5: Bootcamp 5: Innovation on a personal level</td>
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### SESSION 1.1: OPEN INNOVATION 1: REFLECTIONS

**FACILITATOR: IRINA FIEGENBAUM**

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<th>Author(s)</th>
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<td>Dabrowska, Justyna: Lappeenranta University of Technology, Finland</td>
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<td>Aas, Tor Helge: University of Agder, Norway</td>
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**MONDAY, JUNE 20, 1330 – 1430**

**APOLLO 3**

**Baron, Marcin: University of Economics in Katowice, Poland**

**OPEN INNOVATION IN OLD INDUSTRIAL REGIONS. DOES OLD MEAN CLOSED?**

The paper is focused on innovation management patterns in companies in old industrial regions, in particular on the open innovation capacity of companies and business networks located in (or originating from) such regions. These regions, undergoing several restructuring processes, maintain their innovativeness but very often within the fairly closed ecosystems. Three models are conceptualized in the study: closed ecosystems in traditional industries; opening advanced manufacturing ecosystems and open (opening) ecosystems in new industries. The conceptualization is based upon a study in Upper Silesia (Poland) which was cross-checked with outlooks on old industrial areas of the EU’s old member states (Midlands, Nordrhein-Westfalen, Nord-Pas-de-Calais, Basque, crossborder area of Belgium and the Netherlands) as well as on old industrial areas of former socialist countries.

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**OPEN INNOVATION: DO YOU REALLY DO WHAT YOU THINK YOU DO?**

Since first book on Open Innovation was published in 2003, concept caused extensive debates in academic community. While one scholars criticize Open Innovation for conceptual ambiguity and being merely repackaging existing practices, the proponents emphasize the novelty of the concept in systematic combination of inbound and outbound activities and tight linkage with company strategy. The paper address the research gap in structuring the open innovation activities and bringing more understanding on how companies associate the degree of engagement in OI with the level of open innovation adoption. In this research we perform cluster analysis use on data of the survey on open innovation conducted in 2014-2015 among 461 managers representing companies operating in Europe. The results revealed six types of open innovation strategies, based on combinations of various open innovation activities adopted by companies. We also identified and clarified the gap between the existing theoretical concepts and their business perception.

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**EXTENDING THEORISATION FOR OPEN INNOVATION VIA A SOCIAL CAPITAL LENS**

Social capital has long been argued to have important implications for innovation. Open innovation and absorptive capacity research address similar issues related to the transfer of knowledge in collaborations between organisations and individuals. The latter two areas, however, have traditionally emphasised a ‘firm’ and ‘commercial’ focus. Here, we argue that these literatures can be fruitfully combined to generate novel understanding of the relationships needed to acquire, assimilate and exploit knowledge from both internal and external sources. By drawing on Nahapiet & Ghoshal's (1998) framework highlighting three dimensions of social capital (structural, cognitive, relational) that are argued facilitate access to parties for combining/exchanging knowledge, suggest when value through these combinations and exchanges is anticipated, affect motivation to combine/exchange, and generate combination capability, there is strong potential to augment open innovation and absorptive capacity research findings.

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**Hock, Marianne:** Philipps University Marburg, Germany

**LINKING MANAGERIAL THINKING WITH THEORY ON BUSINESS MODEL INNOVATION**

The large-scale deployment of cloud computing infrastructures creates new options to reconfigure software. To seize market opportunities, software firms need to consequently develop business models which transform technological properties of software-as-a-service solutions into customer value. A central issue is the linkage between normative business model representations and managerial thinking during the development of software-as-a-service solutions. To address this issue, we inquire how and to which degree managerial thinking and enacted practices of software-as-a-service providers concur with essential theoretical positions for business model innovation. We identify normative business model components in the extant literature, and we investigate their enactment in a comparative study of eleven software-as-a-service solution providers. Findings reveal disruptive system properties, adaptive service provision, organizational redesign, developing technological capabilities, dynamic ecosystem architecture, evolving revenue flows, and cost structure optimization as factors undergirding reasoning in business model innovation. Our findings add understanding to the nascent theory on business model innovation.

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**BUSINESS MODEL INNOVATION: WHERE DO WE STAND?**

Our submission focuses on the development of the field of business model innovation (BMI). We use the systematic literature review methodology based on a sample of papers indexed on ISI Current Contents, published between 2000 and 2015. Bibliometric results point towards a significant increase in the number of papers, journals, and authors, and lack of specialized journals/authors publishing regularly in the BMI field. Thematic analysis reveals that BMI has been extensively studied, however there is rarely any cumulative knowledge effect between authors. Most researches were conceptual or qualitative, however not many constructs have been defined and tested to enable quantitative studies. We conclude that there has been little evolution in terms of integrating and theoretically developing the BMI field. We argue that there is a need to adopt the existing conceptual models, develop constructs and validate them with primary quantitative data collection and statistical analysis (regression or structural equation modelling).

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**EXPLORING THE BMI TRADE-OFF AND PROPOSING A POTENTIAL RESOLUTION**

In today's times, business environments are increasingly volatile and conditions change rapidly. Established companies are obliged to innovate their business model (BMI) to sustain competitiveness. While being reluctant to abandon their established BM completely, enterprises raise new BM Innovation (BMI) units, to explore new sources of demands, next to the existing one. The paradoxical character of this explorative and exploitative endeavour is likely to provoke a trade-off. Debatably multiple types and degrees of conflicts are embodied in such a trade-off. Additionally, organizational ambidexterity (OA) is proposed to be advantageous to assess context of BMI and to provide favourable organizational designs to overcome emerging conflicts. Using in-depth data from 22 interviews in 12 companies, the paper adopts a grounded theory approach to develop a framework that interrelates the need to increased competitiveness through BMI, paradoxical exploring and exploiting strategies, conflicts caused by BMI trade-off, and the concept of OA solutions together.

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**Senaratne, Chaminda: Northumbria University, United Kingdom**

**BARRIERS TO AMBIDEXTERITY IN UK HI-TECH SMES**

The interaction between exploration and exploitation can affect firm performance. Ambidextrous firms possess higher exploratory and exploitative capabilities. The proposed trade-off between exploration and exploitation has not been empirically supported; it has been argued that two activities can have a co-evolutionary/cyclical relationship. To identify the nature of ambidexterity and the barriers to ambidexterity, we examine the possibility of achieving ambidexterity in high-tech SMEs. Our qualitative study includes 20 UK high-tech SMEs in five industries. High-tech SMEs, that are important in the current economic climate, possess advanced knowledge and technological capabilities. SMEs face competitive pressures to pursue exploration and exploitation concurrently. Our findings show that the proposed archetypes of ambidexterity may not hold for the high-tech SMEs, and it can be of contextual nature, and can occur within or across firms/organisations; there is a cyclical/reciprocal/co-evolutionary relationship between exploration and exploitation. We also identified some internal and external barriers to ambidexterity.

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**Weiss, Astrid: Fraunhofer Italia Research scarl, Italy**

**PRESENT AND FUTURE OF DIGITALIZATION IN SOUTH TYROLEAN SMES**

The digital transformation in the last decade increasingly changed the way we live and work as well as the way we are doing business. Highly dynamic business processes and worldwide customer relations require the use of computers and the internet in order to stay competitive. Therefore, this paper focuses on the recent trend topic of the Digital Economy, which currently is of high economic and political importance in the northern region of South Tyrol - Italy. The aim of this regional study on the one hand was to explore the actual situation of digitalization and its future development potential in South Tyrolean SMEs of the production and service sector based on five functional dimensions, on the other hand to identify significant digitalization levers for being able to leverage SME innovation capabilities.

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**TECHNOLOGY ROADMAPPING IN RESEARCH INSTITUTES THROUGH TECHNOLOGY READINESS LEVEL ASSESSMENT**

This paper aims to explore the need for technological maturity evaluation in R&D institutions, namely throughout technological readiness levels (TRL) assessment in pursuing corporate objectives and research strategic alignment. Through a case-study analysis of an R&D institution, it seeks to provide exploratory answers to two main research questions: 1) How may research center diversity/complementarity contribute to a solid presence in the research national and international environment? and 2) How can research performance assessment (TRL) create awareness and consolidation of an evolving Knowledge Value Chain Framework? One of the most important results we present in this paper is a strategic dashboard for technology road mapping, as a first step of a continuous process of this institution strategic alignment.

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**Sætre, Alf Steinar: NTNU, Norway**

**BRINGING NEW KNOWLEDGE INTO THE ORGANIZATION: SCANNING, FRAMING AND CONNECTING**

This conceptual paper explores how new knowledge is brought into an organization. It does this by exploring the front-end of absorptive capacity; proposing a continuum of scanning behaviors followed by either associative or bisociative framing. Organizational members engage in multiple forms of environmental scanning. What they notice depends both on the stimulus and on the scanner. When what is noticed is brought into the organization it is framed and connected to existing knowledge. This framing can either be associative or bisociative, depending on the novelty of the new information and knowledge. The creation of new frames help organizational members connect new information and knowledge from different knowledge domains to the organizations pre-existing knowledge. The ability to absorb knowledge from a broad range of knowledge domains through scanning and associative and bisociative framing has important implications for a firm’s absorptive capacity and subsequently for organizational performance.

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HOW INCUMBENTS MANAGE WAVES OF DISRUPTIVE INNOVATION: AN EMPIRICAL ANALYSIS

Innovation scholars have long looked into the managerial practices that incumbents should adopt to respond to disruptive innovations (see, e.g., Christensen, 1997; Birkinshaw and Gibson, 2004). These practices include, among the others, the use of an open innovation approach or the establishment of ambidextrous organizations. However, this body of research has not analysed how these practices develop and unfold over time, although very often incumbents are confronted with waves of disruptive innovations that cyclically take place along the lifecycle of an industry (Moreau, 2013). This paper investigates this issue through a historical analysis (Gottschalk, 1969) of the global music industry. For each wave of disruptive innovation that hit this industry over the last fifteen years (digital music distribution, permanent digital download and streaming), we analyse the reaction of incumbents and develop a model suggesting how incumbents develop over time managerial practices to respond to cycles of disruptive changes.

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Kytölä, Juha: Wärtsilä, Finland

SUSTAINABLE INNOVATION IN PRACTICE: CASE SHIPBUILDING

Innovation theories have traditionally focused on measuring innovation success via financial performance. According to sustainability viewpoint also success in environmental and social performance have to be taken into account when judging innovation and business success. This research focused on identifying theories for integrating sustainability into innovation management in practice, on how to manage the complexity in 'going sustainable' and how to identify and measure sustainability in real operations. Research of the literature show that sustainability of innovation is relatively recent research focus and has only been studied during this millennium. The drivers impacting sustainability in innovation according to other researchers were identified and visualised. A visual presentation was used to analyse the sustainability in innovations in shipbuilding. Despite being a traditional industry, a lot of innovations have been materialised in shipbuilding. Many sustainability initiatives were found to be implemented.

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INNOVATION WITHIN THE EUROPEAN FOOD INDUSTRY

Branded food producers are under pressure like never before. Firms such as Cadbury, Nestle, and Danone are facing the pressure of rising costs and consumers moving to lower priced alternatives. Our preliminary case study findings show that food retailers across Europe have a large influence on the nature of innovations. We show that food processing is the engine room of the food industry and the retailer's reach of influence penetrates deep into the relationship between food producers and brand owners. We uncover examples of poacher like behaviour by the retailer when it comes to the imitation of branded products. The dominant model of new product development within this mature industry shows how it is sometimes led and often orchestrated by the retailers. This paper contributes to innovation theory by illustrating the governing gatekeeper role played by food retailers. This also contributes to innovation theory in mature industries.

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<td>Bessant, John: University of Exeter, United Kingdom</td>
<td><strong>INNOVATING INNOVATION MANAGEMENT TEACHING</strong></td>
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<td>Trifilova, Anna: University of Exeter, United Kingdom</td>
<td>This paper explores a challenge in innovation around how you teach it and learn about it. While many organizations offer courses we know these often fail to stimulate a step change in student abilities. Learners know they should act, but training does not enable this and whilst they gain considerable 'explicit' knowledge, they fail to gain the 'TACIT' element that helps them to apply it. We suggest this is partly due to the mode of delivery and there is a need for different approaches. In this paper we report on continuing research around tacit knowledge. The objective of our project is to combine the efforts of business and university educators to create new learner-centred teaching methods, open up new learning opportunities and develop the practical application of entrepreneurial skills. This will be framed as an innovative training module.</td>
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<td>Alexander, Allen: University of Exeter, United Kingdom</td>
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<td><strong>INTRAPRENEURSHIP REACTOR: ENABLE START-UP CULTURE IN LARGE COMPANY</strong></td>
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<td>Schoenbeck, Julian: Deutsche Bank, Germany</td>
<td>For a couple of years we have witnessed start-ups as a probably ideal way to deliver quick and creative results. As a huge global corporation, Deutsche Bank wanted to find its own way to keep up with this development. Our approach to adapt was the &quot;Intrapreneurship Reactor&quot; based on Pinchot's model. To succeed with the implementation, we had to convince management to grant autonomy and freedom of choice to individuals as a stronger driving force behind the company, plus we had to identify and attract a critical mass of Intrapreneurs. While we found information about the Intrapreneurship model, we did not find guidelines or cases on how to implement the model and address our challenges. Thus, we developed the Intrapreneurship Reactor approach. To introduce the program, we hosted a competition for 60 employees from all over our multi-national company to develop their own ideas in a start-up like environment.</td>
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<td>Buescher, Matthias: Ruhr University Bochum, Germany</td>
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<td>Hensen, Joris: Deutsche Bank AG, Germany</td>
<td><strong>INTEGRATED MODEL OF INNOVATION COMPETENCE</strong></td>
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<td>This paper argues for the adoption of paradox theory-based approaches in innovation management education. The argument rests on the supposition that if innovation management research calls for embracing paradox, particularly in response to the profound changes that have occurred during recent years in the competitive environments of organizations, there is the need to develop innovation managers with a distinct affinity for the paradox, that is, managers more skilled in dealing with innovation paradoxes and the underlying managerial tensions. There is a rich body of literature available on teaching paradoxical thinking. However, it is quite difficult to see the links between the different approaches or evaluate them for selected teaching settings. A meta-synthesis is presented to gain a broad overview about current literature relevant to management education and the navigation of the paradoxes that exist in organizations. The authors conducted an extensive review of available literature for this study.</td>
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INNOVATION PROCESSES IN VIRTUAL COMMUNITIES

Communities involved in free and open source activities possess special structural and processual characteristics that are conducive to innovative product development on-line. We suggest that this form of innovative, knowledge-generating, community may benefit from being seen within the framework of virtual process research using Virtual Ethnography (VE). In order to analyse the virtual ethnographic observations, innovative software research tools, such as the 'IRC Conversation Map', had to be devised. The investigation explored the structural and temporal dynamics of the community through the examination of interactions between members, as they unfolded in virtual space. In this way, we show how the themes that constitute the innovation process emerge from everyday routines that members of the hacker community perform. This paper contributes to the methodology of process research by exploring strategies that allow qualitative researchers to examine virtual organized activities through a process lens.

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LINKED CROWDS IN OPEN SCIENCE

Open collaborative initiatives shift today from one-shot examples to multiple challenges organized by a single actor or hosted within an internet platform. In these cases, it is becoming crucial to deal with a series of projects simultaneously, ensure learning and participation across portfolios. Up to date, no studies are available regarding the series of open projects and on the effect of learning within them. The purpose of this research is to shed light on how these series can be organized and learning incorporated in the case of 11 polymath challenges. Polymath is an intermediary platform within different interconnected blogs that aim for collective problem solving by dealing with interdependent ill-structured subtasks. This research studies learning series within the 11 polymath projects to better reveal how problems were explored and resolved collectively. This research gives indications on how crowds are formed, learn and operate on a series of online problems.

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MAKING SENSE OF PLATFORM ECONOMY: PERCEPTIONS AND METAPHORS

Platform thinking is challenging the current operational environment of companies by providing a new logic of value creation and necessitating new business models. This has been claimed to lead to shift from industrial service economy to a networked platform economy. Since the discussion around platforms is fairly recent and the impacts of platform thinking are still uncertain, there are multiple views of what platforms are and what they mean for society. In this paper we aim to describe different perceptions of platforms and structure them using nine metaphors, which we hope will help to better make sense of platform thinking and platform economy, and ultimately support strategy development. The results are based on the interpretation of horizon scanning results.

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SUCCESSFUL OPEN INNOVATION INVOLVING SMES: NETWORK STRUCTURE AND NETWORK COORDINATION

Open Innovation offers many opportunities, in particular for SMES; collaboration with, e.g., potential customers, knowledge institutes and public partners can improve their innovation processes. Relatively little is known, however, on ways to successfully organize Open Innovation involving SMEs. There is a small but growing body of knowledge that we aim to contribute to. We conducted a case study of ten Open Innovation projects and focused on network structure (e.g., alignment of partners' goals, partner selection, and governance) and network coordination (e.g., leadership styles, cohesion and commitment, and experimentation and learning). Based on these cases we identified several 'success factors' and articulated a series of recommendations for managers of Open Innovation projects involving SMEs.

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<th>Session</th>
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| 2.1 | OPEN INNOVATION 2: USERS & CUSTOMERS | Valmohammadi, Changiz: Islamic Azad University-South Tehran Branch, Iran | COLLABORATIVE INNOVATION WITH CUSTOMERS IN SERVICE SECTOR  
This study explores the perception of Iranian experts and executive managers of sample organizations on the benefits and barriers of collaborative innovation with customers (CIC) in service sector of Iran. Based on the review of the related literature, drivers and barriers of CIC implementation were identified. Through a questionnaire which was collected from 71 Iranian service organizations the ranking and importance of drivers and barriers to CIC projects and initiatives implementation were determined based on the perception of the respondents of the survey organizations. The obtained results reveal that "Demand for customization" and "improved customer experience" are the most important drivers that motivates the surveyed organizations to implement CIC projects and initiatives, though the rate the implementation of such projects is low. Also," Lack of trust working with outside organizations "and "Lack of executive sponsorship" were ranked as the most challenging barriers to CIC projects and initiatives implementation.  
Author(s)  
Valmohammadi, Changiz: Islamic Azad University-South Tehran Branch, Iran |
| | | Onuma, Masaya: Yokohama National University, Japan | PROFESSIONAL USER AS INNOVATOR: ORGANIZATIONAL PROBLEMS IN COLLABORATIVE PROJECTS  
The purpose of this paper is to build and enrich theory around how professional users proceed with innovative activities, with special attention to organizational collaboration between professionals and firms. Prior research on user innovation has illustrated that some professional users such as scientists and doctors are innovators who apply specialized knowledge to new artefacts, and then recently highlighted the importance of professionals' external knowledge in corporate innovation. However, these studies fail to understand the detailed processes regarding professionals collaborating with firms to push innovations or how firms mobilize professional knowledge to realize innovation, because the mechanisms of success and failure of these activities have not been clarified. Therefore, we examined these processes using exploratory case study concerning the research and development process of medical devices and explored the theoretical framework of the innovation.  
Author(s)  
Onuma, Masaya: Yokohama National University, Japan |
| | | Naik, Hari Suman: Friedrich-Alexander University Erlangen-Nuremberg, Germany | USER INNOVATION IN OPEN DESIGN  
Digital fabrication and ICT technologies have further enabled users to innovate and design through open design of tangible products. It has led to the emergence of products created and driven by individual or small groups of users. This paper explores how users in online open design platforms develop their innovative tangible products. Through a multiple case study with six cases from the 3D design-sharing platform Thingiverse, it analyses the modularity of product design and the design process and outlines four stages of the innovation process followed by users. The results have implications on how users can be further encouraged to innovate in open design platforms through design of products and toolkits as well as community management.  
Author(s)  
Naik, Hari Suman: Friedrich-Alexander University Erlangen-Nuremberg, Germany |
| | | Rantala, Tuija: VTT Technical Research Centre of Finland Ltd., Finland | IDENTIFYING NEW INNOVATIONS IN DIVERSE B-TO-B SALES MEETINGS  
The purpose of the paper is to study the role of b-to-b sales meetings and related social media in the innovation process. The paper combines literature on innovation with customers and value co-creation in b-to-b sales. The study employed a qualitative case study approach and used qualitative data collected from four buyer and four seller interviews. The interviewed buyers sent a contact request to the seller through the Internet. The paper discusses the types of and routes for ideas that have emerged in sales meetings, as well as the use of these ideas. The results show that the interaction between the buyer and the seller provides rich knowledge and ideas for new innovations, and these ideas are triggered by both the salesperson and the customer. However, these ideas may not be used further in the organizations.  
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Rantala, Tuija: VTT Technical Research Centre of Finland Ltd., Finland |
| | | Hänti, Sirpa: Turku University of Applied Sciences, Finland |
ON BUSINESS MODELS

Value creation and capture aspects introduce specific requirements for sustaining a multi-sided platform-based system. The case studied is DORA, a platform-based information system for multimodal traveling optimization. Utilizing focus group methodology, we explain the requisite conditions for the emergence of an ecosystem and describe the attributes that enable the ecosystem to remain sustainably together. Analyzing positive and negative value elements for each stakeholder we find that to subscribe to the transformative effect that the platform has on their business stakeholders expect benefits in scaling up their business cost-effectively while also pursuing common goals related to platform development, fair sharing of the created value and improving the sustainability of the transport system. We also find that reorganizing into an ecosystem creates benefits especially for society and end users at the expense of traditional business models of service providers.

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VALUE CREATION AND CAPTURE IN SUSTAINING PLATFORM-BASED BUSINESS

Creating Strategic Scope Using a Platform Perspective on Business Models

Digitalization, connected products and services, and shortening innovation cycles are widely discussed topics in management practice and theory and demand for new concepts. Platforms are such a concept and find successively entry into a growing number of companies. However, research did not yet address how business models for platforms can be innovated. Thus, we build on a multi-case study and analyze how three major platform companies, Amazon, Apple and Google innovated their business models. We found out, that each company still runs its original platform business model, which got innovated through the addition of new business models, when the platform's scope got expanded. Strategically, this was done out of offensive, defensive and opportunistic reasons. Furthermore, each business model of a platform is interrelated with the core business model, being in a one-sided or mutually beneficial relationship to each other.

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How Industry 4.0 Changes Business Models in Different Manufacturing Industries

The Industrial Internet of Things (IIoT) poses large impacts on business models (BM) of established manufacturing companies within several industries. Thus, this paper aims at analyzing the influence of the IIoT on these BMs with particular respect to differences and similarities dependent on varying industry sectors. For this purpose, we employ an exploratory multiple case study approach based on semi-structured expert interviews in 69 manufacturing companies from the five most important German industries. Owing the lack of previous research, our study contributes to the current state of management literature by revealing the following valuable insights with regard to industry-specific BM changes: The machine and plant engineering companies are mainly facing changing workforce qualifications, the electrical engineering and information and communication technology companies are particularly concerned with the importance of novel key partner networks, and automotive suppliers predominantly exploit IIoT-inherent benefits in terms of an increasing cost efficiency.

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Uncovering Characteristics of Digitalization-Based Business Models: A Qualitative-Empirical Analysis

Although digitalization has become the main challenge for firms in the 21st century, detailed insights on its effects on the business level remain sparse. This paper tackles this shortcoming of current research as it is dedicated to an in-depth analysis of digitalization-based business process changes manufacturing firms employ in order to comply with the change necessities. Against the background of a multiple-case study we identify and characterize three archetypes of manufacturing firm digitalization-based business models. Our study considerably contributes to business model research and additionally bolsters up a strategic firm level perspective on digitalization. Thereby, our findings are not only of scientific but also of managerial relevance and contribute to a better understanding of digitalization effects.

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**HOT SPOTS OF CONVERGENCE RESEARCH**

Convergence research has a high relevance and impact for innovation management research and practice. However, due to a lack of conceptual clarity, an overview of the convergence research landscape including main actors and topics is missing so far. Therefore, we strive to identify hot spots of convergence research. Based on publication and social network analysis, we found that the convergence research landscape is still scattered, with numerous single authors and small clusters of two or three authors. In contrast, we identified three hot spots of convergence research: the German hot spot around Stefanie Bröring, the Swiss hot spot around Fredrik Hacklin and Christian Marxt as well as the Finnish hot spot around Matti Karvonen and Tuomo Kässi. We also provide information on the different focal areas of the hot spots as well as on the links between them.

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**AN EX-ANTE FRAMEWORK FOR THE EMERGENCE OF A DOMINANT DISPLAYS**

This paper uses a dominant design concept to explore the characteristics of a next - generation electronic display and proposes an ex-ante framework for identifying the determinants of its appearance. To ensure validity and reliability, we employ multiple methods, including in-depth interview and the Delphi method, with the participation of display experts. The results indicate that organic light-emitting diode (OLED) displays are more likely to become a mainstay in next - generation displays. The findings also highlight the importance of rapid technological innovation toward future displays and cost leadership to secure market share. We suggest an ex - ante framework to complement the existing literature and provide practical implications to establish a competition strategy.

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**EXPLORATORY RESEARCH ON THE DYNAMIC CAPABILITIES OF LEADING FIRMS**

Sources of a sustainable competitive advantage of market leading firms in a dynamic environment are major concerns for firm managers and academic researchers. Although the dynamic capability view is gaining popularity as a cornerstone for a firm’s success in a dynamic market, its underpinning concept remains unclear. This study investigates the sources of competitive advantages of leading firms under environmental volatility through the lens of the dynamic capability view. Our study first introduced a conceptual building block framework of the dynamic capabilities by systematic literature review. An empirical study of Samsung’s digital TV business indicates that the building blocks of the dynamic capabilities have positively influenced its sustainable performance, supported by the firm’s position factors such as financial, human resources and reputation.

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**INSIGHTS FOR INNOVATION: COMBINING PATENTS POOLS AND PRODUCT PORTFOLIO ANALYSIS**

Current technology forecasting methods rely mostly on conjoint analysis of patent pools and patent pool visualization methods, disregarding the commercial exploitation of patents through the product portfolio. To tackle this issue, we propose that the combined analysis of patents pools and product portfolios can produce insights about innovation, potentially uncovering patent vacuums associated with product features. As an illustration of the use of this new approach, we investigate the current patent landscape in the wearable medical devices, particularly for wearable electrocardiography (ECG) devices. Through this combined analysis, we shed light into the intellectual property strategy in the wearable devices industry. The innovation dynamics is also addressed, and we point out future avenues for product evolution.

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<td>Golovatchev, Julius: Detecon International GmbH / Deutsche Telekom Group, Germany</td>
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<td>THE IMPACT OF THE IOT ON PRODUCT DEVELOPMENT AND MANAGEMENT</td>
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<td>A rising complexity of products, an on-going digitization and an accelerated shift of market demands lead to a rapidly rising number of uncertainties in business and technology environments. The Internet of Things (IoT) offers many potential opportunities and benefits to both manufacturers and customers. The paper aims at integrating knowledge from the diverse fields into a comprehensive, practical approach for the development and implementation of the products and services using IoT technologies. The research focused especially on the needs and challenges of innovation and product managers who have to find ways to cope with rising uncertainties and the problem of increasingly complex business environments and digitalization. Therefore, this paper presents first learnings that guides practitioners through implementation of industrial IoT and its impact on new product development and management. It gives them guidance on how the company's IoT project could be linked with its new product development initiatives.</td>
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<td>Nagler, Peter: Evonik Industries AG, Germany</td>
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<td>LEADING INNOVATION - THE MODEL OF &quot;LOOSE COUPLED&quot; NETWORKS</td>
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<td>In a fast changing world with increasing complexity and speed, higher volatility and uncertainties, global innovation organizations need to be agile and flexible. Well-known hierarchical systems, i.e. closely linked systems, with their direct influence on people or departments, are not the right approach. Evonik started its &quot;Leading Innovation Initiative&quot; to further increase the value contribution of innovation, focusing on leadership based on the model of &quot;loose coupled systems&quot; to enhance flexibility and adaptability while keeping sufficient stability and continuity. Loose coupled systems are variable networks that adapt to necessities - considerably changing the roles of innovation leaders. Such systems require a more transformational leadership style by setting directions, and a more lateral, inclusive and systemic leadership. They allow to better balance contradictory positions in innovation management. One important success factor are &quot;shared values&quot; - like the vision: &quot;Evonik is one of the most innovative companies in the world&quot;.</td>
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<td>Hannola, Lea: Lappeenranta University of Technology, Finland</td>
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<td>SOCIO-TECHNICAL CHALLENGES IN KNOWLEDGE-INTENSIVE PRODUCTION ENVIRONMENTS</td>
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<td>Increasing demands for innovative products and rising competition lead manufacturing companies to design more flexible and efficient production environments. Thus, factory work becomes increasingly knowledge intensive. Recent developments of digital technologies including social software, mobile technologies and augmented reality offer promising opportunities to empower knowledge workers, but lead also to sociotechnical challenges, i.e. digitally augmented human work, worker-centric knowledge sharing, self-learning manufacturing workplaces and in-situ mobile learning for factory workers. We explore opportunities and challenges and show that they are applicable for a wide range of production strategies and manufacturing companies. Our study suggests genres of technologies to support knowledge work for tomorrow's flexible production. It also extends the knowledge related to current trends and emerging technologies in advanced manufacturing environments to empower workers and to improve job satisfaction, efficiency and productivity.</td>
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<td>Stocker, Alexander: Virtual Vehicle Research Center, Austria</td>
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<td>Dovey, Ken: University of Technology, Sydney, Australia</td>
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<td>THE SOCIO-POLITICAL ANTECEDENTS OF TECHNICAL INNOVATION</td>
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<td>The paper reports on a management initiative within an iconic global high-tech company to facilitate technical innovation within two teams (situated in different global locations of the company) that had been unable to produce any form of technical innovation over a period of several years. Experimenting with an action research strategy, this initiative had the practical goal of generating technical innovation and the research goal of gaining insight into the social dynamics that may facilitate such innovation. The two-year process delivered novel insights into the circumstances that enabled these teams to deliver four company-lauded technical innovations. The principal finding of the research - that social innovation is an antecedent of technical innovation - highlights the importance of alternative research methodologies (to that of the dominant research approach involved in R&amp;D facilities) in addressing the politics of innovation within large organisations.</td>
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This case reports how a social innovation satisfies the social needs of about half million migrants in Taiwan and created a Vietnamese language newspaper in 2006. Up to 2011, four more languages were added, Thai, Cambodian, Indonesian and Tagalog (local Philippine language). The newspaper invites the migrants to contribute articles and paintings. By sharing their secrets in mind and showing their skills, immigrants and foreign labors calm their uneasy feeling, knowing they are not alone thus regaining their confidence in a foreign land. With the publications of the Four Way Voice, local Taiwanese become more receptive to the migrants. This case provides a reference for how to handle the recent large scale refugee migration to Europe. In addition, a LERP-PEARL transition model is proposed.

This paper focuses on a service innovation by exploring a novel work-design initiative driven by the New South Wales (NSW) State Government in Australia that seeks to address the commuter-congestion issue. The NSW Government’s pilot program of innovative work design of smart-work-hub (SWH) services in regional areas provides an opportunity for value co-creation in the SWH context. Transformative value co-creation that has received little attention to date in the context of SWHs. This paper identifies the constellation of actors in the SWH ecosystem and the forms of co-creation in the SWH context, with a focus on SWH users. An online sample featured 231 NSW commuters interested in using a SWH. Using SmartPLS, a hierarchical model of anticipated transformative value to come from SWH use—which comprised business-work and family-life dimensions—was found to have a strong, positive influence on attitudes towards SWHs, which then positively influenced SWH usage intentions.

Innovation is often presented as a survival issue and this provides a powerful metaphor to focus attention on the need to manage it effectively. But in the humanitarian context it takes on a very literal meaning. Crises, whether natural or man-made, require rapid problem solving if agencies and aid workers are to avoid the huge negative impacts of such disasters. That makes consideration of how innovation takes place in this sector an urgent challenge. How can the humanitarian sector best organize to enable innovation and what are the roles for key actors - donors, agencies, and most importantly ‘users’? Our paper summarizes the nature of the challenge and reviews experience so far in humanitarian innovation (HI) through a series of case studies across the innovation spectrum.

In this study, and was based on the charity and disaster relief in 2011 earthquake off the Pacific coast of T?hoku by the Taiwan based charity group, Buddhist Compassion Relief Tzu-Chi Foundation. During the disaster relief, the focused action should not only be the emergency services (disaster relief) itself, but the psychological, panicking and depression to victims should also be in the priority when providing reliefs. Therefor, to discuss empathy diffusion in this study will be based on the disaster relief should first help victims “psychologically”, and follow up the discussion for grow NPO/NGO sustainable operation in long term as in whole for this study. Here, this study will demonstrate social distance in consumer psychological study as a guild, also collaborate the dictator game theory to see how tester consider the social distance in distributing donation.

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<td><strong>ENTREPRENEURIAL UNIVERSITY’ APPLIED TO UNIVERSITIES OF TECHNOLOGY IN AUSTRIA</strong></td>
<td><strong>THE TRIPLE HELIX MODEL AND THE BRAZILIAN ARMY STRATEGIC PROJECTS</strong></td>
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<td>The concept of the Entrepreneurial University is now recognised as a major driver for self-development, innovation and as an appropriate response to succeeding in highly turbulent and unpredictable markets. This paper outlines and evaluates the current situation of the implementation of this concept at the Technical Universities (TU) in Austria. For the evaluation of the status quo, first, a review of existing programmes and initiatives at the TU Austria (consisting of TU Graz, TU Vienna and MU Leoben) was undertaken. Second, a questionnaire was designed on the basis of the HEInnovate Framework and sent to representatives of the universities. The results underscore that the model of the Entrepreneurial University represents the next step of development in higher education. Moreover, it demonstrates that there is still room for improvement at the TU Austria, especially in terms of fostering an entrepreneurial spirit among students.</td>
<td>This study aims at designing and validating a model of criteria for the selection of the beneficiary university of technology transfer, based on the Triple Helix theory and on experts’ assessment, in a context of netting agreements in strategic projects of the Brazilian Army. The model proposes four mainstays (entrepreneurial nature; institutional interaction; capacity for technology absorption and transfer; capacity in terms of human resources) that group the criteria, wherein each criterion lists three evidence. To attain this goal, a research is performed in relevant literature to design the model of criteria of the beneficiary university. The proposal of the model is built on the identification of best practices, aligned with the Helix Triple theoretical model, and of the indicators regarding technology transfer. In a subsequent step, the Delphi technique was used, so as to achieve a consensus on the model. For this, the sample includes 20 experts.</td>
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<th>Markovic Cunko, Ana: Faculty of Medicine University of Rijeka, Croatia</th>
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<td><strong>A RESEARCH ENGAGEMENT CANVAS TOOL TO FACILITATE UNIVERSITY-INDUSTRY ENGAGEMENT</strong></td>
<td><strong>A NEW PERSPECTIVE ON INNOVATION SYSTEMS EVALUATION: THE CROATIAN CASE</strong></td>
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<td>This paper presents preliminary work on the design and development of a visual tool, the Research Engagement Canvas (REC) to assist academics in collaborating with industry. A Design Science Research approach is used whereby contribution is made to the existing knowledge base through the design of an artifact (the REC) with a clear goal and utility. While it is generally recognised that University-Industry Collaboration is important for innovation, researchers lack clear guidance in how to go about developing collaborations. Our work aims to start addressing this gap through the REC. We present a rough sketch of a first version of the REC, which we intend to refine over time as we carry out further evaluation and collect feedback.</td>
<td>This paper aims to identify, classify and analyze the innovation chain of enablers and inhibitors in Croatia in the context of the Adriatic Region. To this end, we present a series of indicators across ten innovation dimensions that constitute an important and integral part of a national innovation system, and which were previously compiled by the PACINNO project consortium. Another important objective of the study is the analysis of the Croatian national innovation system and innovation policies. Here we rely on the qualitative data obtained through interviews with key informants, identifying the role of the system components as innovation enabling or inhibiting. This research contributes to the literature on national and regional innovation systems by providing the first comprehensive set of data focusing on the Adriatic Region and novel analytical framework for the study of national and regional innovation systems.</td>
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<td>Tseng, Fang-Mei; Wang, Cheng-Ming; Weng, Ju-Yin; Melese, Yen</td>
<td>SUPPLIER INVOLVEMENT AND NEW PRODUCT PERFORMANCE: MODERATING EFFECTS</td>
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<td>COLLABORATION WITH SUPPLIERS IN GREEN MANAGEMENT PRACTICES: INSTITUTIONAL THEORY ANTECEDENTS</td>
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<td>Aminoff, Anna</td>
<td>DRIVING SUPPLIER INNOVATIONS TOWARDS DIGITIZATION OF INFRASTRUCTURE PROJECTS</td>
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**Session 3.1: Open Innovation 3: Suppliers**

In a rapidly changing global business environment with vigorous competition, it is becoming increasingly important for companies to continuously develop successful new products (NPs). Recent studies have indicated that when suppliers are involved in the development of NPs, it enhances the competitive advantage of enterprises and the performance of NPs. However, some studies have produced contradictory results. Therefore, we focus on whether moderating effects exist between supplier involvement in NPD and NP performance. We target high-tech business-to-business manufacturers and use hierarchical regression to test our hypotheses. A survey of 151 high-tech business-to-business R&D managers in Taiwan showed that the relationship between supplier involvement and new product development performance is contingent upon the moderating effects of organizational market position.

**Author(s)**

Tseng, Fang-Mei; Wang, Cheng-Ming; Weng, Ju-Yin; Melese, Yen

**Green management practices**

Green management practices are increasingly considered critical for enhancing firm innovation and business performance. Though some external and internal drivers to green supply chain management practices are proposed by previous research, the influence mechanism of buyer-supplier collaboration in green management practices is not fully discussed. The research purpose and contribution of this study are to disclose the drivers of and their influence mechanism to buyer-supplier collaboration in green management practices. The research data was collected by questionnaires from purchasing managers in Taiwanese listed electronic firms and analyzed by structural equation modeling to examine the proposed model. The findings show that customer pressure and top management commitment have direct and positive influences on green collaboration with suppliers. Competitor pressure, regulatory pressure, and customer pressure have also indirect influences through the mediation of top management commitment.

**Author(s)**

Yen, Yu-Xiang & Xiang

This paper contributes to the research on open innovation, and especially on stimulating suppliers to innovate. The purpose of this paper is to empirically investigate ways to stimulate suppliers towards outside-in open innovation in a business environment in which the buyer is reliant on external resources in R&D. Specifically, the main objective is to identify ways of increasing the supplier’s willingness to contribute to the buyer’s development process. A qualitative, embedded case study methodology is applied based on dyadic data collection. The material was collected in 18 semi-structured interviews in Finland, at the case company Posiva and three of its key suppliers in mechanical engineering and manufacturing. The results indicate that Posiva’s current practices may even prevent innovativeness.

**Author(s)**

Makkonen, Marika

Digitalization offers huge possibilities in the infrastructure industry, and there is an increasing need for rapid development of digitalization. Innovation collaboration with suppliers and other external organisations is an important means to complement an organisation’s knowledge base. The aim of this study is to explore how a public client can drive supplier innovations towards digitalization of infrastructure projects. To research the phenomenon empirically, an in-depth single-case study was conducted. Based on the data, a three level framework to drive supplier innovations was developed. The client should be active in influencing the supplier market by early interaction with potential suppliers. Innovation can also be procured. As the whole industry is built up in a project-based mode of delivery, it is important to understand how to enhance innovations developed as part of infrastructure projects. Here, the results directly support the investment project’s goals.

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<td><strong>WEARABLE MEDICAL DEVICES STARTUPS BUSINESS MODELS: A MULTIPLE CASE STUDY</strong></td>
<td><strong>CORPORATE ENTREPRENEURSHIP AND BUSINESS MODEL DESIGN: INTERACTING CONTRADICTORY DESIGN LOGICS</strong></td>
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<td>Innovation can reside not only in the product itself, but also in the business model. Wearable medical devices companies are a new paradigm: a technology-based, electronics company, which merges characteristics from software startups (e.g., speed and iterative process of software development) with characteristics from classical medical devices companies (a highly regulated market, subject to the approval of Government agencies, and for which the users - the patients - may not make the purchasing decision). These companies are different from traditional software companies, as their products must comply with a highly regulated environment. In this study, we access whether there is business model innovation, by understanding the characteristics from these two different types of companies these startups are incorporating in their business models.</td>
<td>Literature increasingly emphasizes the role of managerial cognition in developing new business models. Building on behavioural theory that suggests organisational routines and beliefs to originate in past experiences; we infer that incumbent and entrepreneurial firms substantially differ in the way they enact new business models. Business models can be understood as reflections of managerial mental models. We relate to this conceptualisation by investigating how the interplay of the dominant logic of incumbents and the emergent logic of entrepreneurial firms influences the design of new business models in the context of corporate entrepreneurship initiatives. By indicating a mutual linkage of both incumbent and entrepreneurial logics in joint business model design, we contribute to the understanding of cognition research in business model innovation. In particular, we provide evidence highlighting distinct cognitive processes that guide managerial reasoning in the design of new business models in the context under study.</td>
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| **BUSINESS MODEL EXPERIMENTATION IN INCUMBENT AND STARTUP COMPANIES** | **WHY THE GROWTH OF BIOPHARMACEUTICAL LATECOMER FIRMS IS MORE DIFFICULT?** |
| All companies are facing toughening global competition in rapidly digitalizing business environment. In order to stay competitive they must be ready to challenge, adjust and even change their business models constantly. This applies to both incumbent and startup companies. Traditionally incumbent companies have been perceived as unable to stay innovative. Currently, they do not have other choice. This paper present research on the differences between incumbent and startup companies on how they change their business model through a process of experimentation. Incumbent companies have imitated the startup business model experimentation methods but they still lack the agility and courage of startup companies in business model change. However, the incumbents excel in business model validation processes. This study confirms previous research on the importance of managerial skills and managerial choices. | Distinguished from the prior studies focused on the industry-level driving forces, this study offered the firm-level perspective to examine why the growth of biopharmaceutical firms in the latecomer country such as Taiwan is more difficult. We identify the unique drivers based on the latecomer’s resource-based theory and institutional theory. Using DEMATEL method, our empirical results demonstrate that the growth driving forces of Taiwan’s biopharmaceutical firms are overwhelmingly relied on the internal institutional factors, namely the ‘leadership and governance’ (internal informal institution), followed by the ‘organizational support mechanism’ (internal formal institution) while the adaption to the external institutions and utilization of resource are relatively weaker, demonstrating the disconnection with external industrial dynamics and misalignment of strategic resources. We also compare and contrast our empirical findings with that of the ICT latecomer firms in Taiwan in order to capture the theoretical and practical insight. |
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<th>Deák, Csaba: University of Miskolc, Hungary</th>
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<td>WE HAVE RESEARCH INFRASTRUCTURE - CAN WE COOPERATE?</td>
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<td>We examine one of the tools which can help in business-academia cooperation but that is usually overlooked: the role of research infrastructure. It has great scientific impact, though its socio-economic importance is not yet studied in depth; the need to measure this importance is becoming more and more necessary from both the policy and societal side. There are certain characteristics that have to be taken into account when studying research infrastructures. While most of them are designed for scientific use, economic impact is expected through their usage - this problem should be solved with their involvement in the already existing technology transfer activities, which research infrastructures can improve through their presence. Based on current data we propose to use the Pareto-principle for determining the industrial usage of a research infrastructure in general; however, the characteristics of different scientific branches have to be taken into consideration as well.</td>
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<th>Pinto, Eduardo B.: CCG/ZGDV Institute - University of Minho, Portugal</th>
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<tr>
<td>MANAGING A SUCCESSFUL UNIVERSITY-INDUSTRY COLLABORATIVE FUNDED INNOVATION PROGRAM</td>
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<td>This paper describes the results of a qualitative study to identify the key programme and project management practices in a successful university-industry collaborative funded innovation programme between the University of Minho (UMinho) and Bosch Car Multimedia Portugal (BOSCH), named - HMIExcel. While the literature provides some advice on managing programs and projects, the specific context of university-industry R&amp;D collaboration is being scarcely reported, demanding a strong research effort to produce effective guidelines. HMIExcel programme embraced an investment of 19.2 MEUR and involved around 300 people during two years (2013-2015). HMIExcel is considered a successful programme for several reasons, namely the decision of the UMinho and BOSCH partnership for developing a second programme named - IC-HMI - which foresees an investment of 54.7 MEUR. The success of the HMIExcel programme was partially due to the programme and project management practices adopted.</td>
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<th>Clauß, Thomas: Philipps-University of Marburg, Germany</th>
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<tr>
<td>MANAGING UNIVERSITY-BUSINESS-COLLABORATION THROUGH FORMALISATION: THE MODERATING ROLE OF FAIRNESS</td>
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<td>Innovation-based university-business collaboration (UBC) is becoming more and more relevant for both universities and businesses. Due to the particularities of this specific kind of inter-organisational relationship featuring actors with partially differing foci and objectives, the organisation of such collaboration requires several specific measures to be taken. Two core issues with respect to fruitful long-term collaboration are the degree of formalisation and the perception of fairness. Our large-scale survey among German professors collaborating with businesses finds a positive impact of UBC formalisation on joint innovation outcomes. The results furthermore reveal that procedural fairness and distributive fairness each increase the positive effect of formalisation on joint innovation outcomes. The joint innovation outcomes eventually positively influence the specific UBC outcomes for both businesses (e.g. increased market share) and universities (e.g. scientific publications).</td>
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<th>Gorry, Philippe: University of Bordeaux, France</th>
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<tr>
<td>SERENDIPITY AND UNIVERSITY TECHNOLOGY TRANSFER: A CASE STUDY</td>
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<tr>
<td>Technology transfer office (TTO) core activities are the management of public-private partnerships through: sponsored research contracts, patents licensing, and spin-off companies. In their typology of transactions, it has been suggested to include an informal mechanism: serendipitous discovery. Serendipity is defined as the art of discovering, an unsought finding. It is one of the most important aspects of science, generating radical and disruptive innovations. Serendipity has been discussed in several academic fields but the topic has been under-research in management science. We seek to fill the gap through one case-study: a serendipitous drug discovery made by academics from Bordeaux's university and its successful launch on the market. We will share with academics, TTO managers and policymakers the issues that a university TTO could face in front of such unpredictable opportunity, figure out &quot;anti-serendipity&quot; factors, identify the main success factors and draw some conclusions on university technology transfer management.</td>
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**COGNITIVE AMBIDEXTERITY IN MARKETING MANAGEMENT: VICIOUS AND VIRTUOUS TENSIONS**

Marketing managers under constant pressure to pursue exploitative and explorative goals, or in other words, to embrace the present while creating new and innovative solutions. In this task, they are faced with cognitive challenges which may be perceived as vicious and virtuous, and to cope with these negative and positive dynamics cognitive ambidexterity is required. By conducting 18 semi-structured interviews with marketing managers in the traditional beverage industry, we aimed to discover the cognitive tensions companies contend with by empirically testing the framework of tensions by Smith and Lewis (2011). Additionally we label their experience of the tensions negative or positive. The findings show that managers cognitively encounter both types of tensions but yet often lack systematic procedures - or cognitive ambidexterity - of addressing them optimally, i.e. manage and leverage the tension when needed for the aimed outcome.

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**FIGHTING TRADITION: DEVELOPING AMBIDEXTROUS CAPABILITIES ACROSS THE INNOVATION PORTFOLIO**

The study assesses the presence of four NPD capabilities in 10 firms with an average age of 178 years, publishing 9,000 journals. Through interviews with 63 individuals the project assesses whether the case companies are guided by a high level strategic plan considering core, adjacent and breakthrough opportunities. The degree of ambidexterity within the sample is explored through evaluating the operationalization of structured search and select processes across the NPD portfolio. The recruitment and learning from individuals outside the core industry is considered. The majority of the incumbent case companies did not operationalize structured search and select processes across the portfolio. The three companies with the most structured search and select processes confirm the literature that firms need both structures and routines to support ambidextrous search and select activities in both core, and beyond the core environments. The study found the leading companies focusing on jobs-to-be-done to identify opportunities.

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**MANAGING EXPLORATION AND EXPLOITATION: COMMERCIALIZATION CASE FROM ADVANCED MANUFACTURING**

In order to sustain in today’s hostile business environment, it is essential to reduce both cost of non-quality and time to market on new product introduction. In this study, we perform an exploratory case study of a multinational organization ongoing industrialization of two new technology development projects. The overall objectives of this study is to provide insight into the operational side of how companies can manage the industrialization of new technology and complex-products within the context of advanced manufacturing. Organizations need to manage both exploration and exploitation, but it is problematic to engage in both. Studying two different types of innovation projects in-depth within the same organization through a value stream mapping, has facilitated a review of the challenges of transition from exploration to exploitation.

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**FROM SOCIAL MEDIA TO SOCIAL BUSINESS: THE GROWTH TO MATURITY**

While most businesses concur that social media has the potential to innovate their operations, the question remains when and how they will fulfill that promise. Therefore, in the learning curve to social maturity, the role of social media should shift from a phenomenon in itself to a means of achieving organizational goals. This is a question of organization. Insight into the organisational innovation adoption process and the accompanying success and failure factors help organizations to make a success out of social media. We have used triangulation in this regard, combining case studies with (expert-)interviews and desk research. Our study was firstly intended for organizations that wish to take the initiative or next step with social media in their business operations. Conversely, we are able to use our practical findings to add substance to and expand our knowledge on innovation adoption in relation to social business.

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Real Perdomo, Maria: Heilbronn University, Germany

**EXPLORING THE INSECT ECONOMY**

Insects as bioresources open up potential for radical and incremental innovation of products and processes, and for the creation of new value networks - a potential that can further be leveraged by employing biotechnology as a converging technology. We identified 5 industry sectors that hold this innovation potential. Using insects does at the same time pose staggering opportunities for sustainable development because they potentially are a sustainable bioresource which can be a solution to address multiple global challenges such as food security, malnutrition and waste production. To address the latter, we introduce insects as bioresources into the context of industrial symbiosis where insects can be used as enablers to create novel industry networks that harness new value-added activities.

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Lindhult, Erik: Mälardalen University, Sweden

**SUSTAINABILITY ORIENTED INNOVATION CAPACITY IN CITIES**

How can sustainability oriented innovation capacity in cities be assessed? There is a lack of research which develops innovation capacity analyses and assessment for cities. Based on experiences with assessments of sustainability oriented innovation capacity in six cities this paper develops perspectives and models for such innovation capacity assessment. Best practice approaches to innovation is problematized as well the importance to work systemically in innovation management in city context. The city innovation capacity assessment has pinpointed a number of innovation challenges for enhancing innovation in cities related to different innovation dimensions. The finding shows that city planning need to deal with a number of concrete challenges experienced to be considered in innovation and transition work in the energy innovation area.

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### Environmental Concerns

Environmental concerns are an expression to attempt to reverse entropy. Acting on technological regime structuring processes and more sustainably-oriented trajectories has become a major issue. Technological transition is the interplay between three analytical levels (the sociopolitical landscape, the sociotechnical regime, the technological niche). The niche is a protected space where innovations are nurtured before connecting to existing regimes and making them evolve. We bring into light innovation dynamics within niches. We compare three innovation cases supported by an industrial innovator, a social innovator, and a territorial innovator. We demonstrate that niches nurture radical, incremental and architectural innovations. We analyze the resources and asset orchestration process, the degree of dependency on these resources and modes of hybridization or accumulation processes. Doing this, we deepen multilevel perspective analysis from the agency’s point of view.

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### Innovation Management for Effective Incorporation of Change

Innovation management requires a holistic strategy for effective incorporation of change. We use enterprise architecture patterns reflecting the business, socio-cultural, and architecture aspects of the enterprise. This is based on architecture principles including loose coupling, separation of concerns, decomposition, and relaxation of constraints. Architecture elements across these aspects are normalized using scaffolding comprised of six dimensions. Previous approaches to EA are based on IT governance relying on IT models for representation. The lifecycle of this detailed enterprise architecture cannot keep the pace needed for innovation, transformation, and emergence. EA techniques have mostly been focused on engineering concerns. Our approach uses a pattern library for enterprise classes to provide rapid instantiation for specific individual enterprise architectures. This holistic approach with a systematic planning strategy is consistent with the development of a methodology that allows innovation managers effectively insert innovations into the enterprise.

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### The Underlying Needs of Innovations - A Time Study

There are three archetypes of innovating companies: Need Seekers who are first-to-market and ascertain the needs of consumers; Market Readers which are the second mover, watching market trends and innovating opportunistically; and Technology Drivers who leverage their technological capabilities. What differentiates them mostly is their nucleus for innovation. For the need seekers one might call this impulse a “market pull”, whereas for the technology drivers a “technology push”, and for the market readers just a deliberate financial calculus. In any case, there must be an underlying need to satisfy, in order to bring a new product or service innovation successfully to market. This paper investigates, based on a set of historical innovations, the types of needs that innovations address, and how they change over time. It furthermore tries to identify differences between technology push and market pull innovations, with regard to their addressed needs types.

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### Exploiting Social Media Potential to Leverage Innovation: A Case Study

Social media (SM) has revolutionized the way organizations interact with actors both inside and outside their boundaries. SM makes intensive use of web-based and mobile applications to create interactive platforms where individuals and communities can co-create and modify user-generated content. The new channels and modalities of communication enabled by the emergence of SM promise a tremendous potential for innovation. However, few companies manage to successfully leverage and exploit benefits of SM usage for innovative endeavours. We propose through an illustrative case study of a multinational company in the energy and environment industry to shed light on the relevant use of these new media on innovation and explore a number of related issues. Contributions of this research are twofold, i.e. conceptual and managerial. The conceptual contribution lies mainly in the analysis of the impact of SM use on innovation processes. The managerial contribution involves identifying organizational best practices regarding SM use.

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**SESSION 4.1: OPEN INNOVATION 4: SMES**

**FACILITATOR: DIMITRI SCHUURMAN**

**TUESDAY, JUNE 21, 1005 – 1105**

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<th>Author(s)</th>
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<tr>
<td>Steen, Marc: TNO, Netherlands</td>
<td><strong>AN ‘OPEN INNOVATION PROJECT CANVAS’ TO SUPPORT SMES</strong></td>
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<td>Vanhaverbeke, Wim: Hasselt University, Belgium</td>
<td>There are tools available to support innovation processes, e.g., for Business Model Generation and for Value Proposition Design. These tools typically focus on a single company and on creating a viable business model for deployment. As a consequence, these tools are less appropriate for Open Innovation projects that involve a heterogeneous network of SMEs, public partners and knowledge institutes, and for R&amp;D projects, which are concerned with the first phases of innovation. In order to better support SMEs to manage such projects, we developed the ‘Open Innovation Project Canvas’, as a complement to other tools. It is distinctive in several ways: it focuses on organizing collaboration (rather than on one company), on the first phases of innovation, from idea to a prototype (rather than on deployment), on practical, short-term project results (a ‘minimum viable product’), and on identifying parties that will value these results (and further business development).</td>
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<td>Dooley, Lawrence: University College Cork, Ireland, Republic of</td>
<td><strong>INTER-ORGANISATIONAL INNOVATION: COLLABORATIVE BREADTH AND DEPTH WITHIN THE SME SECTOR</strong></td>
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<td>O’Sullivan, David: National University of Ireland, Galway, Ireland, Republic of</td>
<td>Low and medium-low tech (LMT) industries still remain an important part of modern economies and account for significant economic wealth creation through their innovation efforts. However the legacy of innovation research has largely concentrated on industries and firms engaged in ‘more traditional’ R&amp;D intensive activity, resulting in claims that the LMT is a forgotten sector and calls for better understanding of innovation management within the sector. Modern innovation management not only harnesses internal capabilities but also complementary capabilities of other organizations to nurture innovation activity and give that LMT industries are dominated by SME’s, then such practice is of particular relevance. Thus, this research explores the nature of innovation within four LMT cases and the extent to which open innovation modes are leveraged to support their innovation activity.</td>
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<td>Casprini, Elena: Scuola Superiore Sant’Anna, Italy</td>
<td><strong>MAKING OPEN INNOVATION IN FAMILY FIRMS HAPPEN: THE LOCCIONI CASE</strong></td>
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<td>De Massis, Alfredo: Lancaster University, United Kingdom</td>
<td>Bridging family firms and open innovation literatures, this paper explores the activities and capabilities that allow a family firm to achieve a fit between the distinctive characteristics of this governance archetype and the open innovation processes. From the literature reviewed, a theoretical framework that links family firms’ idiosyncratic characteristics and three types of open innovation barriers (namely cognitive, intra- and inter-organizational barriers) is introduced. Through an in-depth, illustrative and exploratory case study on Loccioni Group (an Italian high tech family firm), the paper describes how a family firm has been able to reach a fit between its family firm characteristics and its open innovation process. From the data analyses, three main capabilities, namely imprinting capability, orchestrating capability and relational capability, emerged as important to successfully implement open innovation in the context of family firms.</td>
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<td>Gikias, Aineias: Birmingham City University, United Kingdom</td>
<td><strong>OPEN INNOVATION, SMEs AND REGIONAL DEVELOPMENT: EVIDENCE FROM THE UK</strong></td>
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<td>Jones-Evans, Dylan: University of the West of England, United Kingdom</td>
<td>This paper seeks to contribute to the literature on open innovation via the development of an index of open innovation. The analysis is conducted using Community Innovation Survey (CIS) data for UK regions. The UK regions fall into four performance groups. The first group of open innovation leaders includes firms located in the regions of South East England, East England, and Wales, with innovation performance well above that of the UK average. The second group of open innovation followers includes firms located in the regions of East Midlands, West Midlands, South West England, and North East England, with an open innovation performance close to that of the UK average. The third group of moderate open innovators includes firms located in the regions of Northern Ireland and Yorkshire and The Humber. The final group of modest open innovators includes firms located in the regions of London and Scotland.</td>
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<tr>
<td>VILLINGER, Marc G.: University of St. Gallen, Switzerland</td>
<td>CROSSING THE RUBICON: DRIVING ADOPTION OF NOVEL BUSINESS MODELS</td>
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<td>YABLONSKY, Sergey: Graduate School of Management, St. Petersburg University, Russia</td>
<td>INNOVATION CROWDSOURCING INTERMEDIARIES: INPUT SUPPLIER, MULTI-SIDED PLATFORM OR RESELLER?</td>
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<td>KU, Tsu-Tung: Yuan Ze University, Taiwan</td>
<td>DYNAMIC BOUNDARY SPANNING PROCESS IN CROWDSOURCING COMPETITION</td>
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Villinger, Marc G.: University of St. Gallen, Switzerland

Business model innovation is crucial for established firms, as they need to be able to adapt to increasingly dynamic market environments and foster innovation proactively. However, many incumbent managers struggle with inertia and cognitive barriers hindering adoption of forward-looking business models. Extant business model literature offers methods, which promote breakthrough thinking when designing business models. However, there are little insights yet on how to avoid falling back into the trap when converting novel designs into an operative business. By building on a recently emerging cognitive view on business models as well as on theory from cognition in strategy and psychology, we design a process model. The approach aims at mitigating cognitive barriers while assessing required actions for the commercialization of novel business models, which typically needs to be supported by middle management. We evaluate the artifact based on an in-depth case study with a large firm from the software industry.

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In this work, we investigate existing crowdsourcing innovation platform business models by analysing innovation intermediaries providing innovative collaboration for value creation. We argue that the general set of possible business models could be increased by including internal innovators. At the same time the set of crowdsourcing business models could be generalised and reduced to a variety of well-known 4 types of business models: multi-sided platform, reseller, input supplier, and vertical integrator. We propose new definition of the innovation crowdsourcing multi-sided platform and crowdfunding multi-sided platform. Based on conceptualization, combined with empirical evidence, we propose a strategic framework for innovation crowdsourcing intermediaries' management. The evaluation logic presents a tool that managers, company owners and investors can use for identifying innovation crowdsourcing business models to interact with different groups of contributors in order to receive new ideas, feedback and solutions.

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After Web 2.0 technologies came out, more and more companies started to develop new products through design competition by their own websites or a third-party platform. Participants are not familiar enough with the company that may let the feasibility decrease. At the same time, cultural and knowledge boundary would lead to conflict of ideas. In previous research, boundary theory is used to explain how to span the boundary between departments within the company. However, the emergence of crowdsourcing increased the interaction between people and companies and there are more boundaries exist. Therefore, this research figures out how the company spans the boundary and increase the value of the results as the purpose of this study.

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**WHAT SCOPES OF INTERVENTION FOR ARGENTINA UNIVERSITY TRANSFER OFFICES?**

The purpose of this paper is to study how the universities of Argentina reply to the same institutional demand on transfer of knowledge and technology. In this sense, we suggest a framework based on an integrated view of 16 channels of transfer organized around 4 core competences and in relation to their relational and contractual form of governance. The empirical analysis is based on data gathered through a questionnaire administered to a sample of 29 Argentina Universities. The findings emphasized 4 types of strategy - integrated, networking, ad hoc strategy and embryonic or undetermined - and 2 main types of trajectories of evolution. The results have also implications for universities as well as for policy makers.

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**OVERLAY MAP OF FUNDED RESEARCH CENTERS**

The purpose of this research is to identify deficient and inactive academic fields, where the Japanese government has not built research centers, and to discover Japanese unique academic fields against the world. The methodology is to match between world academic field's keyword and Japanese research center's report, using natural language processing. Consequently, we found that academic fields concentrating the specific fields and blank fields for the funding of Innovation Centers for Advanced Interdisciplinary Research Areas. The Japanese research centers concentrate on stem cells, nano chemical, nano physics and quantum physics. By contrast, particle physics, cosmology, environment, botany, immunology, neuroscience, and mathematics are less interesting by this funding. This research and the methodology will contribute as objective evidence to funding research fields.

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**INNOVATION INTERMEDIARIES IN UNIVERSITY-INDUSTRY COLLABORATION: ANALYSIS OF THE ONLINE PLATFORMS**

The importance of intermediation in university-industry collaboration (UIC) has been widely acknowledged, however, the phenomenon of UIC online tools is not yet studied in detail. In this paper, we examine fifteen UIC online platforms, identify their functions and role that they play in UIC. By combining secondary data with interviews with platform developers and users, we identify five main archetypes of collaborative online platforms: education-focused, knowledge transfer platforms, crowdsourcing platforms, networking tools and platforms for innovation marketing. We also present a number of the benefits the platforms bring. These tools reduce the time and resources spent establishing and managing collaborations; they help to make networking more targeted; they help to reveal the value that university research has for business and increase the adoption of university education. Our findings suggest that whilst facing some challenges, the platforms analysed represent a scalable, rapidly growing and more importantly demand-led business opportunity.

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CONSUMER ACCEPTANCE OF NOVEL SUSTAINABLE CIRCULAR SERVICES

We know that we have to move towards a circular economy (CE) in order to tackle the challenges derived from diminishing non-renewable resources, global warming, growing consumption, unemployment and urbanisation. The change towards CE needs to be at a systemic level, affecting consumers, companies, universities and legislators. Active consumers are at the centre of the closed loop in CE. In order to make consumers change their practices and support CE business models in their choices, these models need to be attractive. In this paper, we concentrate on consumer exploration of the factors influencing consumer acceptance of novel sustainable circular services. The data was collected during a group interview session of 42 consumers held in February 2016. As a result we found several factors that accelerate or inhibit consumer acceptance towards CE services.

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INNOVATION FOR SUSTAINABILITY: CREATING MUTUAL VALUES

This article analyzes whether and how partnerships between Sustainable Ventures (SV) and Base of the Pyramid (BoP) communities can enhance and develop innovations that support the creation of mutual values that involve economic, social and environmental dimensions of sustainability. For this purpose, we investigate two cases in Brazil which include operations between SV and BoP communities. Findings in both cases indicate the partnerships between the SV and the BoP communities can produce mutual values and innovations associated to economic, social and environmental benefits. Therefore, SV can be perceived as leading and disseminating agents of sustainable and mutual values in BoP ecosystems. In such a perspective, Sustainable Entrepreneurship (SE) can play an important role to complement or expand the first traditional model of BoP initiatives as much as the relationship between them create not only profits but also socioeconomic and environmental values for both parts.

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Lagun Mesquita, Patricia: Blekinge Institute of Technology, Sweden
ANALYZING SOCIAL LCA THROUGH THE LENS OF STRATEGIC SUSTAINABLE DEVELOPMENT

In recent years several approaches to Social LCA have been proposed. Despite recognized shortcomings of those, recent development has focused more on testing existing approaches and less on finding a unifying framework that can support Social LCA to deliver on its promise: to aid decision making regarding social issues related to product life cycles. This paper offers an analysis and evaluation of the potential contribution of the body of work on Social LCA to sustainable development using the Framework for Strategic Sustainable Development. A number of strengths and weaknesses from a strategic sustainability perspective are identified and recommendations to improve the support for how to deal with social issues in the product innovation process are provided.

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VALUE CREATION IN PUBLIC SERVICE TRANSFORMATION - CASE MOBILITY

A disruptive approach at public service could assist a transformation of public service offerings and raise productivity. In this paper, we adopt a concept of mass customization of public transport as a complex system. The Kutsuplus service pilot for public transport in the Helsinki Metropolitan Area in Finland is used as a case to study the disruptive features of mass customization in public services. In order to analyze a complex system, the focus was turned to individual member of a system as their collective behavior creates the holistic behavior of the system. As such, the Kutsuplus service was developing as expected from the system dynamic analysis. It is expected that the operational efficiency would have continued to increase during following years, but it is not self-evident that the service would have been able to be profitable.

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<th>Simms, Christopher: University of Portsmouth, United Kingdom</th>
<th>Darouichi, Oussama: Université de Neuchâtel, Switzerland</th>
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<td><strong>HOW LINE STRETCH CONTRIBUTES TO PRODUCT DEVELOPMENT WITHIN PROCESS INDUSTRIES</strong></td>
<td><strong>R&amp;D AND INNOVATION MATURITY MODELS: REVIEW AND IMPLICATIONS</strong></td>
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<td>Within process industries innovation is commonly constrained by a firm's preceding capital investments in the production line. As a result, firms commonly become constrained by their current technical trajectory. The line stretch mechanism is proposed by Aylen (2014) as a potential solution to the constraint. Firms are able to modify their existing line and 'bolt on' new equipment to provide them with new production capabilities. In particular, this can enable them to produce new products. Through two detailed case studies of food packaging innovations this paper explores the concept of line stretch and examines the mechanisms through which firms are able to develop new products. We uncover a number of factors that are required in order for firms to benefit from line stretch. A number of recommendations are made for firms in order to ensure they do not overlook new product opportunities due to a failure to exploit line stretch.</td>
<td>The study presented in this research in progress articles tries to analyse the existing literature on R&amp;D and Innovation maturity models. Over the years various models were developed each measuring the sophistication degree of specific R&amp;D capabilities and/or an innovation process. Reviewed models are characterized by a heterogeneity of theoretical backgrounds, a gap between recent R&amp;D and innovation literature advances and model's reference literature, a variety of level of analysis as well as a lack of integrative multi-level approaches. Author differ in terms of measured object (capabilities vs best practices) as well as a lack of empirical evidence. We conclude by exposing important research and practical questions that emerged from the study to be discussed during the presentation.</td>
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<td><strong>Author(s)</strong> Simms, Christopher: University of Portsmouth, United Kingdom Trott, Paul: University of Portsmouth, United Kingdom Ford, Nicholas: University of Portsmouth, United Kingdom Hullova, Dusana: University of Portsmouth, United Kingdom</td>
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<th>Tiky, Abdissa Yilma: Seoul National University, Korea, Republic of</th>
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<td><strong>ETHIOPIAN MANUFACTURING SECTOR</strong></td>
<td><strong>MANAGING INDUSTRIAL SERVICE INNOVATIONS - A DETAILED PROCESS FRAMEWORK</strong></td>
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<td>Innovation positively affects different aspects of firm performance. More specifically, innovative firms are likely to enjoy production, market and revenue growth, irrespective of the industry in which they operate. However, firms face obstacles while carrying out innovation and also face constraints that deter innovation activities. This paper investigates the effect of innovation hampering factors on the decision to abandon or not start innovation activities in Ethiopian manufacturing sector. The Ethiopian innovation survey data collected for the year 2012 to 2014 is analyzed using recursive bivariate probit model. The model determined simultaneously the probability of facing financial constraint and decision to abandon or not to start innovation projects. The research revealed that obstacles to innovation have different influence at different stages of abandoning innovation. The result of the study will contribute to make informed policy decision.</td>
<td>Many business-to-business companies are shifting their offering from products to product-related services or solutions. The underlying rationale is to achieve a sustainable differentiation in their market segments and to increase profitability. Managing industrial services is a key challenge for these companies. Our research focusses on developing a detailed process framework for service product management. The approach is based on the findings of current literature that were integrated by conducting a meta-analysis on process-related success factors for industrial services. Seventeen (service) product managers from leading German B2B companies evaluated the framework. We distinguish between strategic and operational processes. For the latter we provide detailed process descriptions (objectives, responsibilities, inputs, outputs, methods and templates). Therefore, our approach enables companies to successfully manage their industrial services over their whole lifecycle from ideation to phase out.</td>
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<td><strong>Author(s)</strong> Tiky, Abdissa Yiilma: Seoul National University, Korea, Republic of Hwang, Junseok: Seoul National University, Korea, Republic of Yoon, Hyunyoung: Seoul National University, Korea, Republic of Kim, Hana: Seoul National University, Korea, Republic of</td>
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### Great Responsibility: Innovation Ecosystems

**Hengstler, Monika:** Zeppelin University, Germany  
**INNOVATION ECOSYSTEMS: "WITH GREAT POWER COMES GREAT RESPONSIBILITY"**

An innovation ecosystem is a type of inter-organizational network where multiple partners such as product or service suppliers, providers, and distributors are committed to jointly creating and delivering innovations. Because both cooperative and competitive structures exist among ecosystem members, mechanisms are necessary to enable successful cooperation and decrease opportunistic behavior of partners. Drawing on the literature on the nexus of trust and control, this research examines how orchestrating firms build trust and control in innovation ecosystems. Based on empirical research using nine case studies, this study illustrates that in innovation ecosystems, both trust and control constitute mechanisms of governance. Furthermore, the results reveal that orchestrating firms build trust and control at two distinct levels: first, at the firm level between the orchestrating organization and a partner and second, at the level of the innovation ecosystem.

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### A Tale of Two Drugs

**Dedehayir, Ozgur:** Queensland University of Technology, Australia  
**THE PROCESS OF ECOSYSTEM GENESIS: A TALE OF TWO DRUGS**

This paper aims to identify the roles that come to prominence during innovation ecosystem genesis, and the activities that these roles enact over time as the process of genesis unfolds. We employ an inductive research design to examine the cases of Taxol and Herceptin, two ground-breaking drugs used in the treatment of ovarian and breast cancer, using a wide spectrum of archival data sources, including books, corporate announcements, news articles, scientific publications, videos, and company websites. In addition to the roles identified in prior literature, our results suggest four new roles that deserve recognition during ecosystem birth, namely, the 'communicator', 'entrepreneur', 'regulator', and 'lobbyist'. Furthermore, our analyses indicate that the 'expert', 'regulator', 'ecosystem leader', and 'champion' roles come to prominence more often than others in driving the genesis process.

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### The Case of Natura Cosmetics

**Garnica, Leonardo:** Natura Cosmetics, Brazil  
**INNOVATION ECOSYSTEMS AND COLLABORATION STRATEGIES: THE CASE OF NATURA COSMETICS**

There is a growing interest in the interaction process involving external cooperation, sharing of knowledge, sharing risks and policies in the context of leveraging innovation capacity of enterprises. This paper brings a brief review of the literature on innovation ecosystems and network theory, with the application of a case study of the Natura cosmetics company, a Brazilian multinational personal care and cosmetics industry. We propose that both approaches are part of an incipient open system, yet while the ecosystem seeks to formalize this system, network theory brings a contribution on predicting the next change. The ecosystem helps in the limits setting of network borders from a certain criteria. To apply these concepts we conducted a mapping and developed a methodology to scale Natura Company’s innovation ecosystem focusing on the development of collaborative strategies and institutional relationship with research institutions, innovation funding agencies and businesses.

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### The Foci and Future Agenda

**Aarikka-Stenroos, Leena:** Tampere University of Technology, Finland  
**INNOVATION AND BUSINESS ECOSYSTEM RESEARCH: THE FOCI AND FUTURE AGENDA**

An ecosystem approach to innovation and business has become increasingly relevant in contemporary research but research knowledge is scattered across divergent disciplines. The aim of this study is thus, through an extensive, multidisciplinary literature review to integrate the extent knowledge on innovation and business ecosystems and analyze how they are conceptualized, analyzed, captured and depicted. By conducting a systematic multi-phase content analysis of over 230 articles selected from the Web of Science, we will build a comprehensive picture on the research streams of innovation/business ecosystem research, the used methods, foci, illustrations/visualizations of business/innovation ecosystems and build a future research agenda. This article contributes by providing a structured analysis on this multi-disciplinary research area, aggregating the current knowledge and generating a research agenda on innovation/business ecosystems - a theme that is emergent, multifaceted, and crucial to innovative companies as well as researchers in the fields of innovation, management, technology and marketing.

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FACTORS INFLUENCING PRODUCTIVITY OF TEAMWORK IN CREATIVE INDUSTRIES

The companies of creative industries usually use a new paradigm in innovation development. They more willingly invest into solutions based on the existing knowledge, rather than in the development of R&D-based innovation. The important question of how to manage creative teams to achieve a high productivity with limited resources and time arises in innovation management both from the theoretical and practical points of view. There is still no clarity which factors affecting productivity of teamwork are more important than others. The study was aimed at the identification most important factors for the productivity of teamwork. The survey of 113 student creative teams in 8 counties (Lithuania, Poland, Canada, China, France, Italy, Russia, and Denmark) was performed. Based of the findings the hierarchy of the significance of the factors influencing the productivity of teamwork is established and described in the article.

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CLIMBING THE LADDER OF THE PATENTING PROCESS

Most studies on academic patenting either focus on patent applications or granted patents by adopting the university as their unit of analysis. This study adopts the individual academic as its unit of analysis and focuses on three stages of the patenting process: patent applications, patents granted at the national level and patents granted by the US Patent Office. Three econometric models were estimated. We find a positive relationship between academics who forge strong ties with industry at the patent application level, but no such relationship for the later stages of the patenting process. Furthermore, we find that knowledge assets and organizational factors (university research intensity, laboratory size and use of services provided by the TTO) are positively associated with all three stages of the patenting process. Our results also highlight the importance of controlling for research field and seniority when explaining the involvement of academics in the patenting process.

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FOR THE PUBLIC GOOD: THE BAYH-DOLE ACT AND INNOVATION MANAGEMENT

The U.S. government awarded more than nine percent of its entire 1968 budget to universities and nonprofit entities for research and development. Although such awards are now less than three percent of the federal budget, they continue to be the primary source of support for basic research in the United States. Effective management of resulting innovations is essential for economic development. Public Law 96-517 (the Bayh-Dole Act), enacted December 2, 1980, granted institutions the right to assert ownership in inventions created with federal funding. The planned study will examine development and implementation of policies and procedures by U.S. universities to comply with the Bayh-Dole Act and manage federally funded inventions. This paper focuses on the University of Wisconsin at Madison, Stanford University, and the University of Michigan System identified recently by Reuters as among the top ten most innovative universities worldwide.

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ENTREPRENEURIAL ACADEMIC ENTREPRENEURS: UNDERSTANDING MICRO SOCIAL FACTORS AND LEGITIMACY

As universities transition toward being increasingly entrepreneurial there is, according to their emerging strategies, a call for a new breed of Entrepreneurial Academic. Academic Entrepreneurs, who spin-out or start-up new ventures, have been studied since the inception of academic capitalism in the late 1980s; however, recently, policy and now research recognises less formal modes of business engagement attracts academics with an Entrepreneurial modus-operandi. In reality, we know little about the distinctions between these two types of academics; the challenges they face and how microsocial factors impact upon their motivations and legitimacy. This exploratory research reports on 5 interviews comparing traditional and second career academics in a leading UK Business School. We find that career stage and pathway affects the motivation to become an entrepreneurial academic and that the prevalence of organisational reward and recognition processes, support, norms and role models all impacted upon the perceived legitimacy of Entrepreneurial Academics.

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**LAUNCHING A NEXT GENERATION ANALYTICS PRODUCT - CASE INDUSTRIAL MAINTENANCE**

We present our experiences from development and commercialization of a revolutionary cloud based analytics service for management of industrial maintenance. The tool is meant for optimizing preventive maintenance schedules by utilizing massive amounts of operation data with modern computational capabilities. Development of scalable analytics tool is challenging with significant challenge in productizing and simplifying a complex product suitable for large volume sales. As the product is currently being sold and tool has first significant reference customer, it is safe to say that so far these problems have been overcome. The development journey has not been easy as there is limited amount of previous advanced analytics services to benchmark during presentation. We will present our solutions and experiences from this case in our presentation.

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**PASSIVE INNOVATION REJECTION: REJECTION BEHAVIOR PRIOR NEW PRODUCT EVALUATION**

Since decades, new product adoption research has confirmed high new product failure rates around 50%. Recent empirical studies highlight that adoption may begin only after initial resistance offered by the consumer has been overcome. Yet, there is always some resistance before adoption, and many new products get even rejected without deliberated evaluation. Previous conceptual research, suggest that nonpurchase behavior without deliberate new product evaluation (i.e. passive innovation rejections) account for a major share of new product failures. However, empirical evidence on the existence and determinants of passive innovation rejection behavior is still lacking. Consequently, this study strives to systematically explore whether passive innovation rejections really exist and to shed light on the nature and determinants of this phenomenon. Our findings from an experimental study (n=153) indicate high relevance of passive innovation rejections in the new product adoption context, such that many products are indeed rejected prior new product evaluation.

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**FRONT END ACTIVITIES: INSIGHTS FROM GERMAN MATERIAL SCIENCE AND ENGINEERING**

The front end of innovation is crucial for a firm’s success. Within this research stream, the concept of FE activities has become central. They describe how to implement the process, comprising finding and assessing new product opportunities. We build on results that FE processes should be flexible and context specific. We address the current need to understand how organizations can influence FE activities to be more efficient. Therefore, we qualitatively explored the navigating effect of organizational FE characteristics. By conducting semi-structured interviews with 24 FE experts from German Material Science and Engineering companies, we outline that organizational FE characteristics can be derived in organizational capabilities, strategic orientation, and organizational culture. Furthermore, we explore that organizational capabilities and strategic orientation have an effect on the intensity of FE analysis, whereas organizational culture as well as soft skills have a moderating and the degree of initial uncertainty a mediating effect.

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Hsu, Teresa Tiaojung: Cheng Shiu University, Taiwan

**STRATEGIC ORIENTATION OF THE FIRM AND NEW PRODUCT PERFORMANCE**

The success in new product development of a firm can bring about competitive advantage. According to Knowledge-based View (KBV), the ability to integrate resource and knowledge is the potential source of competitive. Many studies indicate that the ability of the firm is its strategic orientation, which guide the firm to create proper behaviors through a deeply rooted set of values and beliefs to achieve superior performance. There are an increasing number of studies suggesting that the dimensions of strategic orientation (market orientation, technology orientation, entrepreneurial orientation, and learning orientation) are related to and complementary to each others, and that the organizations which strongly focus on a single orientation tend to perform poorly than those who combined several dimensions of orientations simultaneously. This study adopts Hakala’s (2011) complementary view and proposes a framework that simultaneously incorporates all four dimensions of strategic orientation and then examines the effects of these orientations on new product performance.

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DESIGN THINKING AND INNOVATION IN COMPANIES

This paper presents the results of an ongoing qualitative study with employees working with innovation in a Scandinavian company. Using Design Thinking as an approach, the paper analyses how different tools are used to initiate innovation processes. Issues like innovation drivers, team structure, creativity, information flow among teams, usefulness and challenges of using the methods and tools are discussed. The role of different design tools in innovation processes opens the discussion for possible future directions. The results suggest that many methods and tools could generate value in regards with the innovation processes, while there are many challenges that need to be considered. The findings could be beneficial primarily for companies that facilitate DT methods, designers, developers, managers and other involved members in innovation activities could gain insights on how to implement DT methods and tools.

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REWARDING OF PURCHASING PROFESSIONALS IN AUSTRIAN TECHNOLOGY COMPANIES

Reward systems are a tried and trusted tool in propelling the motivation by incentive of employees - especially in finance, accounting and sales. Reward systems could support trigger changes and growth through innovation, however rewarding for purchasing departments is rarely witnessed. This paper aims to identify the field of practice of rewarding systems in seven Austrian technology companies and evaluate the use of rewarding systems as it is to current understanding unclear why industry implementation has been limited. The great impact purchasing processes have on companies and how it could be heighten in technology companies are the leaders of this research. Purchasing departments have a high potential to generate profit for technology companies and thus to pursue important business objectives. The paper further aims to point out how to fulfill rewarding systems in purchasing departments and to what gains.

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DEVELOPING LEARNING CAPABILITY THROUGH EDI FOR MANAGING AMBIDEXTERITY

Innovation ambidexterity is crucial for companies to survive long-term. Traditional companies often excel in incremental innovations, based on their core competence, but are less able in using this core competence for more radical innovations bringing new products to new markets. Through a case study of a traditional, yet ambidextrous company, we raise the question of whether companies characterized by Employee Driven Innovation (EDI) are likely to develop stronger learning capabilities and consequently, stronger innovation ambidexterity. As this by far is research-in-progress, we here merely raise the question as a working hypothesis and welcome views, questions and suggestions for how to take these ideas further. EDI has often been connected to the Nordic Model, characterized by a three-part collaboration between leaders/owners, employee representatives and employees. However, leaning capabilities are also found in other cultures. Hence, research on learning capabilities and EDI needs further exploration.

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DEVELOPING APPRENTICE SKILLS FOR INNOVATION THROUGH INTERDISCIPLINARY TRAINING AND EDUCATION

This paper is concerned with training students of vocational education programs; specifically, tradesmen and skilled workers to better utilise value networks and knowledge hubs, set up through government initiatives, as an innovation platform. The study indicates that massively interdisciplinary innovation workshops originally designed for university students can be adapted to vocational programs demonstrating similar effects on this demographic. Collaboration around solving real-world problems across various trades and, in some cases also coupled with academic disciplines, seems to influence participants’ attitude towards not only interdisciplinary collaboration but also entrepreneurship in general. Combining trades directly with academic disciplines also appears to, mostly, dispel any preconceived notions about one another. The study is based on two years of experimentation running six independent workshops across ten different disciplines and trades and four educational institutions.

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### SESSION 6.1: OPEN INNOVATION 6: ECOSYSTEMS & NETWORKS

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<td>CONVERGENT INNOVATION ECOSYSTEMS: NAVIGATING, NEGOTIATING AND NURTURING</td>
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<td>Ritala, Paavo: Lappeenranta University of Technology, Finland</td>
<td>DISRUPTIVE INNOVATION IN THE ECOSYSTEM LEVEL: PATH-CREATION AND INSTITUTIONAL BARRIERS</td>
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<td>Greenfield, Ricardo: INESC-TEC, Portugal</td>
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<td>Huizingh, Eelko: University of Groningen, Netherlands</td>
<td>COOPETITION IN R&amp;D NETWORKS: IMPLICATIONS FOR INNOVATION PROCESSES</td>
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New developments such as 'Precision Medicine', 'Regenerative Medicine' and 'Digital Health' are emerging as important areas, underpinned by the concept of 'convergent' or 'cross-industry' innovation, resulting in greater uncertainty and influence from new knowledge and actors, including previously disparate technologies and capabilities. There has been limited empirical research to understand the capabilities required in such nascent and convergent ecosystems. Focussed on early stage medical technology innovation, this research explores the ecosystem and five longitudinal cases, using a combination of semi-structured interviews, field observations and, company and public documents. A conceptual model for early stage convergent innovation is developed, built upon the need for co-evolution of the innovation, business model, and value network within an evolving ecosystem. Micro-processes, forming an 'activity system', underpinning this are suggested. The research makes a contribution to convergent innovation and nascent ecosystems, and provides practical proposals for innovators in this field.

Disruptive innovations create fundamental, transformative shifts in markets and technologies. Existing research has provided understanding over the nature of disruptive innovation, and suggested implications for emerging and established actors. However, we know less about how disruptive innovations relate to the emergence of business ecosystems within which they are embedded, as well as of the institutional barriers and drivers involved. To this end, we develop a framework of ecosystem emergence through institutional disruption. We utilize the insights from institutional theory and particularly organizational field approach to explain how emerging ecosystems confront barriers and possibilities in the organizational field, and how they disrupt and connect to existing actors and institutions in the field. We conduct an illustrative multiple case study focusing on disruptive innovation in the context of co-evolution of ecosystems and institutions. Our empirical analysis provides evidence of the path-creation and path-breaking mechanisms and institutional barriers of disruption.

SMEs in German industry are known for being naturally innovative and active in networking activities for innovation. Due to the benefits of networks for innovation, measures have been taken by German policy to implement additional top-down innovation networks. It has been however acknowledged that networks implanted by policy from a top-down approach have a higher failure rate when compared to networks solely supported by the network partners. The purpose of this work is to analyze seven top-down networks that were funded by policy-incentives over a period of three years. After this period the network either collapsed or evolved to a sustained form, supported by committed network partners. The focus of the study is on how these networks, which resulted in either committed or uncommitted partners, were created and managed over time.

R&D Networks comprise of different actors with different goals and motivations. Thus, such networks are filled with tensions that emerge from simultaneously existing competing or contradictory organizing elements. In this study we examine Dutch aerospace sector and the knowledge search and integration behaviour of firms in participating R&D networks. We find evidence of several tensions that have implications to knowledge processes of firms in the network. In particular, we find evidence of both paradoxical and dialectical tensions that create specific managerial challenges and opportunities. Paradoxical tensions require often simultaneous attention to the different organizing elements, while dialectical tensions create either/or situations that need to be carefully managed. The results provide interesting insights to the design of R&D networks and knowledge search and integration outcomes.

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IDEA SELECTION 2.0

We use a lot of techniques in order to generate ideas. However, after generating creative ideas, we must also select some ideas for implementation. Often the idea selection is run through very quickly, or even ignored. I firmly believe idea selection is equally important to idea generation and that the whole creative process is as strong as its weakest link. Several years ago the Centre for Development of Creative Thinking (COCD) developed a technique to select ideas, the COCD-box, which is widely used nowadays. But they wanted to go a step further. Little research had been done on idea selection, and the few studies that were done showed that people are very poor in selecting creative ideas. COCD cooperated with the organizational psychology department of Ghent University. This research resulted in new insights in idea selection! I am happy to share some of the findings with you.

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MOMENTS TO DESPAIR IN THE CO-CREATIVE PROCESS

Collaborative creativity is highly dynamic, turning the creative process into a multidimensional phenomenon, where it is impossible to exclude negative emotions. However, the effect of negative emotions on co-creativity is ambiguous and mostly seen as harmful for the team performance. This paper examines despair in project teams to be able to (re-)enter into the group flow. Based on empirical data in the form of diaries, a typology of moments leading to despair is elaborated. It is highlighted that inter-personal problems should not be underestimated. The paper contributes not only to a more profound understanding of the relationship between constraints, affective reactions and co-creativity but it also enables managers and team leaders to understand their teams’ behavior in order to stimulate creativity. Negative emotions might not be as bad as they seem when experienced in collaboration and could lead to the ‘rebirth of the phoenix’ during the co-creative process.

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HOW TO MOVE BEYOND CONVENTIONAL IDEAS IN AN INNOVATION PROJECT?

X-IDEA is an awards-winning innovation process method enabling organisations to reliably produce meaningful deliverables in innovation projects. One key distinguishing feature of X-IDEA is its separation of the creative phase into two distinct stages, Ideation and Development. I structure my paper into five parts. Part 1 establishes the desire of organisations moving beyond conventional ideas. The second part reviews the literature on how selected innovation process methods approach the creative process phase. After briefly discussing the chosen research approach for this paper in part 3, I explain the creative stages of X-IDEA in detail in the fourth part, thereby describing how the two creative stages Ideation and Development distinctly differ and build upon each other to enable more novel, original, and meaningful idea outputs. The final part discusses how X-IDEA’s approach of two separate creative process stages may inspire business practitioners and researchers alike.

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SCIENCE, TECHNOLOGY AND INNOVATION (STI) PERFORMANCE OF CHINA

This paper is based on the study funded by the European Commission "Science, Technology and Innovation (STI) Performance of China". This study was carried out by Sociedade Portuguesa de Inovação (SPI), The United Nations University - Maastricht Economic and Social Research and Training Centre on Innovation and Technology (UNU-MERIT) and the Austrian Institute of Technology (AIT), with the support of Tsinghua University and Renmin University of China. The objective of the STI China study was to assess the evolution of the country's STI Performance and analyse its economic impact on Chinese productivity and competitiveness and on the global markets, taking into account the differences between various Science and Technology fields, economic sectors and types of actors involved.

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STAKEHOLDER ENGAGEMENT IN THE INNOVATION PROCESSES OF SUSTAINABLE PRODUCTS

The goal of sustainable innovations is to minimize the negative impacts of production while simultaneously creating business benefits and value for customers and other stakeholders. Stakeholder engagement can be identified as a valuable source of innovation, due to the resources stakeholders offer, and integrating stakeholder groups into innovation processes prove highly valuable. The main contribution of this presentation is to emphasize the significance of stakeholders for sustainable innovations. Stakeholders can be involved in different phases of the innovation process, starting with environmental scanning, generating and evaluating ideas right through to jointly creating and reworking prototypes and launching a new product, service or process. Benefits of interacting with stakeholders in the innovation process are manifold, including external knowledge exploration and exploitation, cost savings as well as gaining stronger credibility and partnership opportunities along with a better approach to emerging consumer concerns.

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BUSINESS MODEL INNOVATION FOR ENERGY TRANSITION IN HOUSEHOLD SECTOR

This paper focuses on Business Model (BM) innovation practices within a specific field: the household sector energy transition. In recent years, the value chain between the stakeholders involved in this field has been modified due to recent technological changes, which poses a threat for current companies and an opportunity for outsiders. This research work is carried out within the Greenplay project, which is an EU funded Horizon H2020 project. This project aims to develop new business models that reduce energy consumption in the household sector and can be successfully implemented. In this study, a systematic literature review is conducted related to energy business models. Furthermore, the proposed framework is a crossing classification based on criteria concerning innovation targets and various energy production, distribution and consumption BMs. In the second phase of the Greenplay project the authors will apply the proposed framework to the use cases identified in the project.

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PACINNO - PLATFORM FOR TRANS-ACADEMIC COOPERATION IN INNOVATION

The IPA Adriatic CBC programme-funded project PACINNO (Platform for trans-Academic Cooperation in Innovation) was initiated with the aim to create and enable a regional innovation eco-system, tackling the issue of poor economic development of the Adriatic Region of Europe as well as weak industry-academia cooperation. Through the project three core activities were implemented: research on innovation and national innovation systems enablers and inhibitors as well as individual-level creativity factors (micro enablers) and the organizational setting enablers and inhibitors; education of scientists and researchers in entrepreneurial/business skills and the development of technology transfer activities. The project provided inputs for policy makers and realized concrete activities that support the innovation system and its stakeholders (policymakers, scientists and entrepreneurs). One of the successful activities was the implementation of startup trainings in order to enable young startups and high growth teams to present their products in front of a network of investors.

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HOLISTIC DESIGN FOR CYCLIC INNOVATION AND LEARNING

Industry and public sectors are facing novel challenges, and need to move from horizontal and vertical activity-sliced information flows to instant data- and situation-driven collaboration and work and knowledge management. The major European trends are set by the circular economy and the single digital market strategies and policies. To stay competitive, meet emergent customer needs, and support life-cycle services all actors involved must deliver sustainable results and adaptive services. Novel knowledge assets, design methods, and ICT capabilities must be designed and implemented while work is progressing. Companies must be able to simultaneously participate in many diverse networks, performing R&D in parallel with innovation and learning, business operations, and customer services delivery. Pragmatic applications, design and configuration rules, parameter dependencies, and working contexts cannot be prescribed and coded, so emergent visual networking platforms are dependent on novel symbolic languages and visual knowledge modelling.

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MASTERING THE CHALLENGES OF NATIONAL AND REGIONAL INNOVATION STRATEGY IMPLEMENTATION

In many countries especially in Europe, innovation strategies exist to create economic and social wealth. However, they usually only focus on the "what": the objectives and key areas that are considered to be the "wealth engines". Most of the innovation strategies lack the implementation part, the "how". This creates the risk that they will not deliver the expected results. This presentation will highlight the key success factors for innovation strategy implementation: continuity of an effective support infrastructure and support services, alignment of supply and demand of innovation management support, and the qualification of the support providers. As innovation often requires longer-term investment, companies need security that the innovation support will continue beyond the current election period. Innovation policies address the need of SMEs, however, in many cases not their demand as a recent survey shows. Best practice examples will provide a roadmap to effective innovation strategy implementation.

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**PROBLEM SETTING IN INNOVATING AND STRATEGIZING FOR A FUTURE UNKNOWN**

Organizations that are resilient and stay competitive over the long-haul are those that continually put forth into the world innovations that are a good-fit to the novel conditions that they help to create. These innovations are an outcome of a purposeful and deliberate front-end process that interactively creates new meaning and constructs problems to be solved. We call this purposeful and deliberate front-end process "problem setting". It is defined by Donal Schön as "a process in which, interactively, we name the things we will attend and frame the context in which we will attend to them" (Schön, 1983, p. 40). In this paper we identify two primary antecedent factors (top management team future orientation and organizational legacy burden) that on the one hand may drive this process or hinder it. From this, we derive theoretical propositions and research questions for a forthcoming empirical study.

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**MANAGERS’ FUTURE ORIENTATION AND CORPORATE STRATEGY UNDER CHANGING ENVIRONMENTS**

A key to long-term organizational success is the ability to adapt. During times of rapid technological change, future uncertainty, as well as the need for adaptation, increases. Treating the individual component of corporate foresight, we explore the relationship between top managers' future orientation and their companies' strategies, looking specifically at strategic diversification in times of uncertainty. Through a multiple-case study, we explore this relationship in incumbent Norwegian electric power companies. They represent a traditional industry that is currently facing a complex and uncertain future. We observe heterogeneity in which and how many strategic dimensions top managers' consider when they assess the future and develop corporate strategies. We find that top managers' future orientation influences the boundaries of organizational identity. Managers that are highly future oriented expand the perception of the company's self-image: what are we and what can we become?

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**TRANS-DISCIPLINARY BOUNDARY SPANNING: KNOWLEDGE TRANSFER FROM PETROLEUM TO BIOMEDICINE**

In the current situation with a significant decline in the petroleum industry, there is a need for an industrial transformation process in Norway. Several initiatives have been taken to facilitate this transformation by transferring and applying knowledge gained in the petroleum sector to new industry areas. This study will focus on the development of biomedical technology. A problem to be solved is how to transfer knowledge between disciplines as different as petroleum and biomedicine. Existing literature has focused on knowledge transfer mainly across boundaries within a firm or an industry. There is therefore a need for more research on how one can efficiently transfer knowledge between highly different disciplines. This research will develop a classification framework for the relevant theoretical approaches and apply this framework on empirical data to clarify how knowledge transfer between the petroleum and biomedical disciplines can be understood through a variety of theoretical lenses.

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Douglas, Tania: University of Cape Town, South Africa

**CROSS-SECTOR COLLABORATION FOR ORTHOPAEDIC DEVICE INNOVATION IN SOUTH AFRICA**

We investigate the orthopaedic device development network in South Africa by performing a bibliometric study. The objective is to identify the actors participating in orthopaedic device development, the sectors to which they belong and to characterise the intra- and inter-sectoral collaboration. Journal and conference articles on orthopaedic device development in South Africa, extracted from the Scopus database for the period 2000-2015, were used to draw the network. Social network analysis metrics (density, degree and betweenness centrality) were applied. The network was largely disconnected, having a density of 0.057. Actors from the university and healthcare sectors accounted for over 80% of the network, with local universities contributing most to the network. The actors with highest influence on the propagation of information in the network were local healthcare facilities. The strongest ties were between local universities and local healthcare facilities.

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| Beck, Matthias: University of Zurich, Switzerland |
| **DIVERSITY AND INNOVATION PERFORMANCE: FIRMS’ RESEARCH-AND DEVELOPMENT-ORIENTATION** |

This study examines how diversity in R&D collaboration partners affects the innovation performance, as measured by each firm's sales share of innovative products taking into account the research versus development orientation of firms. To address this question, a large-scale sample of firm-level data from six waves (1999, 2002, 2005, 2008, 2011 and 2013) of the Swiss innovation survey is examined using a heteroscedastic-robust Tobit regression method. Results suggest that diversity positively affects the innovation performance of both firm types, but that the effects are strongest for research-oriented firms. In line with theoretical reasoning, a clear inverted U-shaped relationship between partner diversity and innovation performance is detected only for development-oriented firms and differences in effects are most pronounced for new-to-the-market innovations. In light of our findings, the study stresses the importance of partner diversity for research-oriented firms and (vertical) partner selectivity for development-oriented firms.

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| Wilson, Mark: GlaxoSmithKline Pharmaceuticals, United Kingdom |
| **IP MANAGEMENT IN TECHNOLOGY ALLIANCES: AN EXAMPLE OF CAPABILITY DEVELOPMENT** |

On initiating collaborative open innovation activities, firms often encounter challenges in agreeing complex intellectual property provisions in alliance negotiation situations. In technological domains of activity, IP rights are of considerable significance, affecting how technologies can serve the firm’s business strategy, and the viability and cost of different options. Many companies develop competences in the management of IP terms as an experiential learning process, over a period of years. This presentation will address GlaxoSmithKline’s development of competence in this area, with reference to technology management, over a 15-year period, and will summarise the best practices that were developed, and the underpinning rationales. The establishment of IP skills within a group charged with developing and commercialising formulation and pharmaceutical manufacturing approaches, which was initiated in the late 1990s, may provide useful lessons for practitioners in firms that are initiating open innovation activities, and for academics who are interested in IP management.

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| Dingler, Annika: Zeppelin Universität, Germany |
| **MANAGING TECHNOLOGICAL DISTANCE IN COLLABORATIVE INNOVATION: AC-ROUTINES AND SOCIAL INTEGRATION** |

While high technological distance to project partners outside of the established value chain can positively influence innovation performance, project goals can only be achieved if the social integration of project members is improved in terms of coordination and communication. This paper draws on absorptive capacity literature to explore how social integration mechanisms translate into different learning outcomes in distant collaborations within and across organizational boundaries. Drawing upon expert interviews as our primary source of data, we conducted an in-depth multiple case study analysis of inter-organizational projects. Our findings indicate that the effect of different types of social integration mechanisms on learning outcome also affects distance in process and product technology. Moreover, they suggest that it is not just the extent, but also the interplay of social integration mechanisms surrounding internal and external absorptive capacity routines that enable project members to engage in the absorption of distant knowledge.

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| Coelho Rodrigues, José: INESC TEC and FEUP, Portugal |
| **ALIGNING INNOVATIONS AND NETWORKS IN IMPLEMENTATION PROJECTS: SYSTEMATIC LITERATURE REVIEW** |

This paper systematizes current understanding about efforts to align technology and adopters in implementations taking place in interorganizational networks. For several decades, researchers have been conceptualizing implementations as processes of mutual adaptation, or alignment, but only recently has an interest on interorganizational networks as locus of adoption started to develop. Nevertheless, the volume of existing relevant literature already justifies a review, especially considering that research on this topic is significantly scattered across journals and disciplines. Findings from a systematic literature review contribute to conceptualize alignment efforts in network implementations and understand their impact on the implementation outcome. The review shows that knowledge about alignment management is still scarce and weakly supported, and provides directions for future research, supported by a conceptual framework, which also offers useful guidance for practitioners.

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Claro, João: INESC TEC and FEUP, Portugal  
Barros, Ana Cristina: INESC TEC, Portugal
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<th>Author(s)</th>
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<tr>
<td>Ribeiro de Oliveira, André: Rio de Janeiro State University, Brazil</td>
<td>SPORTS INNOVATION: AN OPPORTUNITY FOR TECHNOLOGICAL COMPANIES BASED ON OLYMPICS</td>
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<td>The aim of this project is to evaluate the innovation degree and the innovation environment of the Brazilian technological based companies, which produce sports devices, with support of business incubators and government encouragement. Specifically aimed to: 1) expand the mapping of devices; 2) analyse the trajectory of the introduction of these devices on the market; 3) measure the innovation degree of these devices and to observing the innovation environment of such enterprises. The research analyses 384 incubators and showed 22 Brazilian technological based companies, operating in sport industry segment, motivated by the Olympic Games, that will take place at Rio de Janeiro State in 2016. The innovation degree was obtained by the Innovation Radar methodology, which uses 12 dimensions to assess multi criterions. In addition, there was analysed the innovation environment through university-industry-government interaction. The results indicate low level of innovation in spite of an adequate environment to stimulate innovation.</td>
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<td>Author(s)</td>
<td>HOW TO UNLOCK INNOVATION IN PROFESSIONAL SERVICES: AN EMPIRICAL STUDY</td>
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<td>Robbins, Peter: Maynooth University, Ireland, Republic of SSH</td>
<td>Despite a substantial body of work in the areas of both organizational culture, and innovation, limited research on these topics exist within the context of professional service firms.. Human actors alone create the service delivery processes that characterize professional services (Løwendahl et al., 2001). This highlights the importance of managing individuals and professionals in ways that support innovative enterprise. Joas and Beckert (2002) also stress the importance of creativity to continued innovation and highlight it as being 'central to economic growth'. It is for this reason, that the ability to enhance and exploit its creative and innovative abilities is a crucial competitive weapon in the arsenal of a modern organisation. Our survey investigates how a Top 6 law firm encourages creativity across different levels of the organization. This survey will contribute to the knowledge about enhancing innovation in professional services.</td>
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<td>Santonen, Teemu: Laurea University of Applied Sciences, Finland</td>
<td>SOCIAL NETWORK ANALYSIS BASED KEYWORD ANALYSIS OF ISPIM RESEARCH TOPICS</td>
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<td>The usefulness of keywords and keyword networks as a fundamental carrier of knowledge has been recognized but the prior studies identifying and analyzing innovation management research topics and their evolution at ISPIM have not addressed the Social Network Analysis (SNA) viewpoint. Therefore this study evaluates the network structure of ISPIM research topics from the SNA point of view. By applying SNA to the ISPIM keyword and research topic data from 2009 to 2014 full academic paper publications (N=1084), this study is explicitly modelling how the different keywords and keyword derived research topics are interlinked with each other. By analyzing various centrality measures, the importance of a particular keyword and research topics within the whole ISPIM network are determined. As a result the contemporary body of knowledge of innovation management research is described and visualized as a keyword and research topic network. Implications for future innovation management research are discussed.</td>
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<td>FROM SOCIAL SCIENCES AND THE HUMANITIES</td>
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<td>Köller, Christoph: Görgen &amp; Köller GmbH, Germany</td>
<td>FOSTERING INNOVATION FROM SOCIAL SCIENCES AND THE HUMANITIES</td>
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<td>There is a vast amount of findings in social sciences and humanities (SSH) with potential to add value to current developments and to address societal challenges. But SSH research is often not getting beyond the academic sphere. This may be due to the kind of research created in SSH, as it is often more diffuse and cannot be attributed to one researcher alone. But SSH research is also often not patentable and thus classic instruments of K/TTOs are not applicable. The talk will present challenges and opportunities with valorizing research from SSH. It will furthermore aim at making more people aware of the innovation potentials that can be found in SSH research and how to exploit them in order to create opportunities arising with this widely unexplored field for innovation.</td>
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**SESSION 7.3: LIVING LABS 1**

**TUESDAY, JUNE 21, 1430 – 1530**

**GEMINI 1**

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**Kim, Yun:** Sungkyunkwan University, Korea, Republic of Korea

**FACTORS INFLUENCING LIVING LAB ACTIVATION IN KOREA USING SEM**

Living Lab is a user-driven open innovation ecosystem where users themselves partake in the R&D and innovation process. With its mature ICT environment, South Korea has great advantages in effective deployment of Living Lab. Despite having this key prerequisite for Living Lab, however, its deployment remains slow and few in Korea. Existing studies are insufficient to explain this phenomenon, as they cover only the general motivation of participants in pre-existing Living Lab that are already well developed. This study seeks to identify in finer detail the key influential factors that drive the activation of Living Lab. Sociotechnical, internal and external factors from various existing theoretical frameworks are assessed and integrated into our model, which is then validated via structural equation modelling with data collected 100 professional respondents. This study provides a deeper insight into Living Lab's development process, as well as managerial strategies for effective new deployment of Living Labs.

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**IMPACT ASSESSMENT OF INTERACTIVE COUPLED OPEN INNOVATION IN LIVING LABS**

Within Open Innovation in general, and for Living Labs, an organizational form for implementing and facilitating Interactive Coupled Open Innovation, there is a lack of clear measurement and impact assessment studies (Enkel et al., 2009). Therefore, this paper gathers evidence and proposes an impact assessment model for Interactive Coupled Open Innovation. The basis of the model consists of assessing the value the Living Lab generates on three different levels of analysis (Schuurman, 2015). The macro level uses Open Innovation indicators, the micro level from the User Innovation literature, whereas the meso level uses indicators from both literature streams. Different than most papers that approach Living Labs from a theoretical or democratic perspective, we propose an economic perspective instead (Greenbaum, 1993). This way, the paper contributes to the understanding in terms of impact assessment and measurement models for Open Innovation practices in general, and Living Labs in particular.

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**Haukipuro, Lotta:** University of Oulu, Center for Ubiquitous Computing, Finland

**END USER INVOLVEMENT IN PUBLIC PROCUREMENT THROUGH LIVING LAB APPROACH**

This paper examines public procuring, aiming to increase understanding on how living lab approach and end-user involvement create innovativeness and enhance public procurement results, providing effectiveness and better solutions. Empirical findings are based on a real-life unique public procurement in the healthcare field where living lab approach was used through product testing phase. Perceived quality of the product formed on the basis of product testing was in significant role for the first time in public healthcare related procurement of City X; the winning solution was not the most affordable but the one obtaining highest quality scores by users. Findings of the study suggest that product testing as part of public procurement should be more widely taken into use, however, carefully considering the right balance of price-quality ratio to ensure innovativeness. Based on the study, we propose a framework for product testing as a part of public procurement through open procedure.

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**Leminen, Seppo:** Laurea University of Applied Sciences, Finland

**INNOVATION TOOLS IN LIVING LABS**

This paper examines innovation tools and subsequent tooling in living labs. Besides offering a new mode of open innovation for practitioners, living labs is an under researched and emerging scholarly research area. In particular, there is a substantial need to examine innovation tools in living labs. This study focuses on the link between different innovation processes and the usage of tools in living labs. So doing, it develops a framework based on the living lab literature and analyzes 40 living labs in different countries. The study contributes to the literatures of living labs and open innovation by introducing four new types of living labs: linearizer, iterizer, mass customizer, and tailor. Moreover, the study proposes three ways to organize innovation activities in living labs. The paper concludes with theoretical and managerial implications and suggests directions for future research.

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We contribute to the on-going discussion in innovation literature to enhance the organizational perspective of co-creation research. Based on organizational learning, we argue that the co-creation expertise of innovation managers who frequently conduct co-creation projects is a valuable source for organizations to foster and strengthen their co-creation activities generally - if the innovation managers share their gained co-creation expertise within their organization. A qualitative exploratory research design was chosen to gain in-depth and rich insights into the research gap identified. We conducted semi-structured interviews with both European innovation intermediaries and European innovation managers. With the exploration and comparison of sharing measures that are used by the innovation managers and factors that influence their sharing behaviour during co-creation projects, we identify adjusting levers with which organizations can support the co-creation knowledge transfer internally.

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KNOWLEDGE INTEGRATION METHOD DEVELOPMENT FOR MULTI-STAKEHOLDER INNOVATION PROCESS

This paper addresses the development of a knowledge integration method for multi-stakeholder innovation. Specifically, it focuses on the piloting in the early stage of the knowledge integration method development process according to design science approach. This study is based on knowledge integration as the ability to put knowledge into action in organizations, and therefore reports the development of a method for knowledge integration. The empirical study includes one case with multi-stakeholder innovation sessions in R&D-project context. This paper presents both the process of the method development along with the outcomes and describes the boundary objects used within the method. Additionally, it reveals the feedback received from the pilot. Presenting conclusions for both academics and industry, the paper fills a gap in the literature of putting expert knowledge, an essential feature of individual creativity and organizational innovation, into action with the help of a knowledge integration method.

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INTERNAL TECHNOLOGY SCOUTING: A NEGLECTED APPROACH IN SUPPORTING TECHNOLOGY TRANSFER

Eliciting invention disclosure through proactive scouting of inventions within organizations remains relatively unexplored by technology transfer offices in academia and other R&D organizations. Given the critical role of the disclosure in kickstarting the technology transfer process, this paper proposes that such an anticipatory initiative holds an untapped potential to extract value from knowledge produced inside the organization. Considering the scarcity in the current literature on this topic, this paper introduces a methodology to elicit invention disclosures in technology R&D organizations, and assesses its performance towards promoting an increase in the quantity and quality of disclosures, using as a case study an R&D organization in Portugal. The application of this methodology, simply called Internal Technology Scouting, resulted in the disclosure of one high quality invention and three pending submissions by the end of the study. Suggestions for improvement are discussed.

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SUSTAINABILITY-ORIENTED INNOVATION: IDENTIFYING ITS IMPACT ON FINANCIAL PERFORMANCE

The linkage between sustainable business and financial performance is a debated topic that has offered mixed results in the past. Some argue that they are not easy to combine, while others say that it is possible in some contexts. Our study examines whether sustainability-oriented innovation is associated with low or high financial performance, looking at the development of process, product or service sustainability-oriented innovation in groups of financially high and low performing companies. Based on a sample of 170 Spanish firms, our survey-based study finds that financially high performing firms engage into more sustainable product and process innovation than low performing ones. Our results suggest that sustainability-oriented innovation in services is guided by different rules.

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Exploring the Financial "Biographies" of Early-Stage Green Companies in Germany

Sustainable entrepreneurship and entrepreneurial finance are areas that have experienced increasing research interest in the last decades. Few studies have, however, yet looked at green start-up finance and the related challenges and opportunities. This empirical study uses a case study design to look at success factors and barriers of financial access in green start-ups in the energy sector in Germany. Although similar success factors and barriers can be found as in other start-ups, some specificity exists for green start-ups in the energy sector. These include, amongst others, the need for a high level of sector knowledge on the part of the investor as well as an ability to stomach the relatively long R&D periods and rather instable regulatory framework surrounding such start-ups.

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Knowledge Search Strategies and Sustainability-Oriented Innovation

Knowledge search is a fundamental issue for firms pursuing to improve their innovation outcomes. Existing research has provided a lot of evidence of strategies utilizing internal and external knowledge sources. For sustainability-oriented innovation (SOI), knowledge search is especially important since sustainable solutions require broad stakeholder and system-level understanding. This study empirically examines the knowledge search strategies of 170 firms in Spanish Basque region, and provides novel evidence of how knowledge search strategies contribute to three different types of SOI outcomes. Our study shows that firms that lean on market and R&D related strategies yield more product SOI, suggesting that these two search strategies are particularly useful in maximizing the product SOI outcomes. Market-related strategies help to avoid risk in commercialization, while R&D related strategies provide firms with the necessary knowledge to advance the technicalities of developing sustainable products.

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### Session 8.1: Open Innovation 8: Management Challenges

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<td>Storvang, Pia: University of Southern Denmark, Denmark</td>
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<td><strong>HOW DO LARGE FIRMS REALIZE INNOVATION-ORIENTED PARTNERSHIPS WITH START-UPS?</strong></td>
<td>Allmendinger, Martin: University of Hohenheim / Department of Entrepreneurship, Germany</td>
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<td><strong>MANAGING OPEN INNOVATION FOR RADICAL INNOVATION PERFORMANCE</strong></td>
<td>Cheng, Colin: National Yunlin U. of Science and Technology, Taiwan</td>
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<td><strong>SEARCHING FOR COMMON SKILLS AND COMPETENCES OF OPEN INNOVATION PROFESSIONALS</strong></td>
<td>Dabrowska, Justyna: Lappeenranta University of Technology, Finland</td>
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Often, when researching innovation focus is on focal companies or, value chain partners in a single industry. Recently OI-researchers have shown that innovation also happens through cross-industry innovation. But even a more extreme form of OI occurs: Industry-mover innovation - stepping into a new unknown industry to create a new market or product. How companies actually handle the process of moving into a new industry is under researched. To understand the process two streams of literatures are combined: OI focusing on how firms open up their innovation process and design thinking literature concerned with intense forms of collaboration. The findings, based on a qualitative in-depth case study of four firms, show that continuous learning of external collaborators is central for the firms to make successful industry-mover innovation. More, for the firms to get tacit knowledge of the external collaborators it requires of them to use different types of design methods.

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While early OI studies tended to focus on its effects on new product/service innovativeness and new product/service success, recent research endeavours have begun to identify OI as a unique resource to enhance radical innovation. However, the OI literature is somewhat inconclusive regarding the effects of OI inbound and outbound activities on radical innovation. These inconsistent findings suggest the need for considering additional factors in the OI-radical innovation relationship. To address this issue, this study focuses on the research question: how do knowledge sharing and acquisition capabilities influence the effects of OI inbound and outbound activities on radical innovation performance? Based on survey data, the statistical results indicate that the effectiveness of OI inbound and outbound activities is contingent on the presence of knowledge acquisition and sharing capabilities.

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This paper focuses on understudied human side of open innovation. It explores the roles and responsibilities and related to them skills and competencies of open innovation specialists. Moreover, it analyses the differences in competences profiles across organizations and differences of organizational functions, where open innovation professionals are needed based on analysis of 100 job offers collected worldwide from the beginning of 2014 and 2016. Findings indicate that open innovation functions do not refer to R&D departments only but companies seek open innovation specialists to other functions like Strategic Management; Marketing and Sales; Corporate Communications, IT or Purchasing. Also, ability to influence others and prior start-up experience become a basic requirement to apply for position of open innovating specialist.

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<th>Author(s)</th>
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<td>Mohammad, Ali Naef: Aalborg university, Denmark</td>
<td><strong>A REVISED MODEL FOR VALUATION AND SELECTION OF R&amp;D PROJECTS</strong>&lt;br&gt;Our research proposes an R&amp;D project selection model which has been developed through a comprehensive literature review on financial valuation and selection of R&amp;D projects. The findings contribute directly to the understanding of optimal choices for project compositions in firms’ innovation project portfolio. We describe an R&amp;D selection model which integrates valuation and selection through a multi-stage approach. We develop an integrated model of R&amp;D selection and discuss the four subsequent stages of R&amp;D project valuation and selection. Our consolidated effort on R&amp;D project valuation brings about a comprehensive understanding of the consequences for optimal project selection for portfolios, and our propositions add numerous insights on what areas should be considered for R&amp;D portfolio optimization.</td>
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<td>Mohammad, Ali Naef: Aalborg university, Denmark Kristiansen, Jimmi Normann: Aalborg university, Denmark</td>
<td><strong>DIFFERENT R&amp;D MANAGEMENT APPROACHES: MULTINATIONAL LARGE COMPANY AND INDUSTRIE DENORA</strong>&lt;br&gt;Manage R&amp;D resources and measuring R&amp;D performance over time can be quite complex due to inherent uncertainty. The main aim of an efficient Portfolio Management is to align projects with the company’s objectives to obtain a balance among the opportunities that the market may offer. Many companies develop their own methods rather than use one taken from the literature. The work shows how Industrie De Nora (medium-large Italian chemical company), and Pirelli Tyre (big manufacturing Multinational tyre company) have approached this topic setting an integrated portfolio management system using a balanced scorecard method to measure the efficiency of R&amp;D function. This work aims showing their path, underlining the common issues met and suggesting a plan of actions to link R&amp;D resources and activities with firm’s strategic objectives. This report describes tools and processes that might be used as part of the project portfolio management and evaluation process.</td>
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<td>Saari, Ulla: Tampere University of Technology, Finland</td>
<td><strong>EXPLORING HOW BRAND EXPERIENCE MEASUREMENT HELPS INTEGRATING MARKETING AND R&amp;D</strong>&lt;br&gt;Based on a brand experience survey done on global mobile phone brands, we have analysed how brand experiences impact brand loyalty and are associated to prior product selections. We have created two conceptual models after doing exploratory factor analysis (EFA) on data collected from Finland (N=468). Our findings indicate that brand experiences of mobile phone brands consist of intellectual, sensory, behavioural, and eco-friendliness related aspects, and that the affective dimension that has earlier been linked to brand experiences is in fact associated more with brand loyalty. Also the perception of eco-friendliness in the brand experience can have an impact on brand loyalty and it is reflected in the product selection. Thus we suggest that integrated marketing and innovation management concentrate on improving the emotions consumers have towards a brand and measure this dimension to track how the brand has succeeded to deliver intellectual, sensory, behavioural and eco-friendliness related brand experiences.</td>
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<td>Saari, Ulla: Tampere University of Technology, Finland Mäkinen, Saku J.: Tampere University of Technology, Finland</td>
<td><strong>EFFICIENCY EVALUATION OF R &amp; D PROJECTS FOSTERED BY GOVERNMENT</strong>&lt;br&gt;The present study aimed to measure the innovation performance of companies subsidized with public funds arising from government programs in developing R&amp;D projects. They were measured through a quantitative and qualitative analysis represented by analyses of efficiency and exogenous factors in order to examine whether there is any relationship between these factors and the different levels of efficiency achieved by the investigated companies. The results showed that 31.25% of the analyzed companies stood out in conducting research in technological innovation, thereby making better use of financial resources made available by the supplying organ in the form of economic subsidy. This indicates that most of the companies supported by the program failed to transform their R&amp;D projects into successful products/technologies. The presence of barriers in the process of innovation development can be considered as exogenous factors to the proposed model, influencing companies’ performance.</td>
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<td>Silva, Bruna: Universidade Federal Rural do Semi-Árido, Brazil Almeida, Mariana: Universidade Federal do Rio Grande do Norte, Brazil</td>
<td><strong>GOVERNMENT</strong></td>
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THE WORTHCASE-MATRIX, ONE OVERVIEW TO FLOW A LIVING LAB PANEL

Communication between actors in a Living labs is never easy and managing the expectations of all different stakeholders is the main challenge of panel management. Therefore creating a clear view on the panel activities and expectations, the research methods used and resources needed/available can be a good way to tackle these issues. Facing these issues iMinds Living Labs developed the WORTHCASE-matrix. It’s an overview - available for all different stakeholders - of all panel related activities throughout a project. By making this overview available to all stakeholders (research, business development, instigators, panel management,...), everyone get better insights on the impact of the undertaken steps to achieve the goals and everyone can find a tool to facilitate their efforts.

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A STRUCTURED SCIENCE BASED NEEDSFINDING FOR INFRASTRUCTURE LIVING LABS

Living Labs increasingly enable innovations to be facilitated and implemented in a fast and efficient way. Key element is the active involvement of users. This case presents the needsfinding phase of an infrastructure Lab within the context of cycling. Since effectuation costs are high (roads and buildings are capital intensive), the need for focus (tackling the right user needs) is essential for funding of the lab. The needsfinding phase aims to generate user needs and requirements, which is researched by investigating bicycle commuting intention. This is tested using the Theory of Planned Behavior (TPB). The results show convincingly that bicycle commuting intention can be explained by the variables of the TPB model (R2=.808). Within the context of a Living Lab, this model can be used as a very effective tool to instigate behavioral change. The insights can be generalized and are readily applicable in other areas.

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THE CO-CREATION OF SOCIAL INNOVATIONS: A LIVING LAB CASE

Participative processes and empowerment of citizens are seen as central aspects of social innovation that involves collaborative activities between the private, public, and third sectors. Therefore, it is important to identify the factors influencing social participation. Thus, we investigate how can we encourage people to contribute to improving societal well-being and enhance partnerships between citizens, region, as well as the profit and non-profit sectors. Our study results reveal factors influencing organisational and citizen co-creation in different roles. We also discuss participant motivation and perceived value from co-creation. Furthermore, we also describe specific shareholder-related outcomes of co-creation process missing from most of the previous studies (Voorberg et al., 2015). Finally, we also identify actions that can be taken to enhance co-creation and overcome the potential barriers of co-creation of social innovations.

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### MINDING THE GAP

The paper addresses ‘regional innovation paradox’ referring to the lower capacity to absorb public funds earmarked for the promotion of innovation in the lagging regions. The focal interest of this paper is - what policy instruments and policy mixes are most effective in building absorptive capacities of firms to facilitate innovation and growth. Literature analysis helps to distill determinants of absorptive capacity at firm and system levels. Analysis of policies applied by the new EU Member States in 2007-2013 is used to determine the gap between mainstream innovation policies and business capacity building needs. The paper presents an integrative conceptual ‘stairway of competence’ mapping technology consumers, emerging, potential and mature innovators types with alternative policy routes.

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### AN INDIVIDUAL-LEVEL EXPLORATION OF ABSORBPTIVE CAPACITY

In order to increase the knowledge stock of a specific company, sharing knowledge among employees to cultivate absorptive capacity is advocated as promising deed for securing market position. Absorptive capacity was traditionally considered as an organizational level concept; however, the current study argues that, through a proper manipulation of the knowledge management mechanism, knowledge sharing intention, and knowledge sharing behaviour, companies could successfully improve the absorptive capacity of employees and upgrade its competitive edge. Based on the quantitative investigation, it is concluded that, knowledge management mechanism has a positive effect on knowledge sharing intention, knowledge sharing behaviour, and absorptive capacity; knowledge sharing intention has a positive effect on knowledge sharing behaviour; knowledge sharing behaviour has a positive effect on absorptive capacity; knowledge sharing intention plays a mediating role on the relationship between knowledge management mechanism and knowledge sharing behaviour. Discussion, implication, and direction for further inquires are provided.

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### ABSORBPTIVE CAPACITY: OPENING THE BLACK BOX FROM A PROCESS PERSPECTIVE

In a dynamic and turbulent environment, the capacity of firms to absorb new knowledge from a variety of external sources becomes an increasingly important factor of their innovation capability. This article makes an additional contribution to the literature and management practice by opening the “black box” of absorptive capacity process. Based on an in-depth, single-case study of a highly innovative company from the drive technology industry in Germany, we present a process model with three main turning points and describe how these can result in different linear and non-linear process flows. Furthermore, we describe the links between various organizational mechanisms and the effectiveness of identified process flows. This contributes to the literature by elucidating why firms may have different absorptive capacities.

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Innovation Systems and Ecosystems: A Review and Synthesis

The ecosystem approach to innovation and business ecosystem has emerged as prominent research avenue departing from the extant literature on innovation and management. The broad adoption of ecosystem terminology has increased the conceptual ambiguity of the terminology to where ecosystems are used fairly loosely, even as buzz or decoration to the core message. This study tackles the use of ecosystem terminology and structures the conceptual frame for the field, identifying definitions of an innovation ecosystem and how the concept has been founded in previous literature. Our results highlight how the ecosystem theory, while showing value adding elements, rests heavily on a few seminal works, but both empirical and conceptual advancements are needed before a coherent theory.

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Innovation Intermediaries in the Innovation System: Materials Science and Engineering

This article attempts to fill in the gaps in the literature about intermediaries’ contribution in innovation systems. We look at intermediaries’ which activities and services they provide, what of this can be interpreted as intermediary function in a narrower sense and how this contribute to the innovation systems performance. Furthermore, we analyze how efficient this activity is and in how far potentials for improving collective benefit can be identified. The article investigates the necessary capabilities that the intermediaries develop, and activities that the intermediaries conduct and institutionalize such capabilities. In particular, this article aims at investigating the contribution of intermediaries in Germany. In particular, the role of scientific technical non-profit associations as key intermediaries in the system, were examined. The multiple-cases study was conducted through 20 semi-structured and in-depth interviews with management of intermediaries, university researchers and industrial companies.

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Scientometrics Analysis of ESF-Projects in Finland: Funding Period 2007-2013

European Social Fund (ESF) is among the largest funding instruments in the EU. However, less is known how collaboration networks in ESF-programs are formed at the regional level. Therefore, this Finnish case study evaluates what kind of collaboration relationships are existing among ESF-project actors in Finland during the funding period 2007-2013. In all the dataset included 2.773 ESF-projects and 1.092 different business IDs in four regional and one nationwide programs in five thematic topics areas. In all only 2 percent of organisations have had funding to 40 or more projects, whereas about half of the organisations had participated only in one project and less than forth in two projects. As a result only handful of organisations are actively collaborating and taking part in Finnish ESF-programs. Nationwide funding program has most widespread collaboration, which outperform clearly all four regional programs, in which collaboration is characteristics by fewer but more intensive collaboration.

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Regional Innovation Systems in Follower Regions: Assessing Innovation Policy Mix

Public funding of R&D is widely implemented in national innovation policies. R&D policy instruments include public performed research, government funding of business R&D. Each instrument has its own merits and they can be seen as complementary. There is an ongoing debate about the driving forces of innovation, opposing the "science and technology push" and the "demand pull" models. This debate can be translated to innovation and R&D policies but the assessment about the effectiveness of policy choices is sensitive to context. We consider the specificities of follower countries and we discuss the effectiveness of two main instruments of R&D policy in Portugal during recent years: S&CTN, oriented to support research in S&T public or non-profit organizations; and S&I&DT, oriented to support firms’ R&D projects. From this analysis we draw conclusions with particular relevance for follower countries.

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How Effectively Serve Intermediate Organisations in Hungary?

Innovation intermediary organizations play a significant role in national systems of innovation and they attract a particular attention of national and EU policy makers. Usually, innovation intermediaries provide a wide range of services for the actors of the innovation chain in which cooperation and trust based connections are emphasised. So far, no assessment of the efficiency and effectiveness of these organisations was carried out in Hungary, in a country with low evaluation traditions. Having this idea in mind, the paper presents the main results of our empirical investigation that focused on the analysis of the effectiveness of services offered by Hungarian innovation intermediary organisations. Our results demonstrate that there is room for improvement both at management level of individual organizations and at the level of research and innovation policy making to leverage the expected impact of innovation intermediaries.

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### Developing Business Models in the Emerging Market for Welfare Technology

The ageing of the population, the growing burden of chronic diseases, and the limited access to healthcare personnel are all threats to the sustainability and equity of health and care systems throughout Europe. A growing number of firms have seen these opportunities. We hypothesize, however, that a narrow technological focus hinders diffusion and implementation of new solutions. Part of the reason is that firms are reluctant to invest sufficiently due to high perceived risks and lack of standards. Abernathy and Utterbach (1978) use the term “fluid” to characterise this initial phase of a new market. In this context of an emergent market without standards, managers have difficulties in developing viable business models or are unwilling to invest in more advanced models. The study is based on deep interviews with top managers in eleven Norwegian firms that develop products and services related to welfare technology.

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### Financing Sources and Performance Metrics in Early-Stage Start-Ups

On the one hand, a crucial component of every entrepreneurial firm and its performance is the access and availability to sufficient capital. On the other hand, various scientists from different disciplines have devoted themselves to answer the question of how the performance of a business can be measured. However, little work exists on the relationship between the access to external financing sources and the performance of an early-stage start-up. The most important determinants of performance in the literature are financial performance measures such as sales growth or employee growth. Nevertheless, these metrics are not suitable if applied to an early-stage start-up. This paper aims to present a start-up performance metric framework, that allows to assess start-up performance in the different investment stages. The results show that not only the amount of raised capital is important, but also that particular sources of finance have an advantageous impact in boosting start-up performance.

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### Significant Features of Collateralized Patents on Successful Lending

Although the early stage new technology based firms (NTBFs) have difficulty in borrowing money from traditional banks due to their uncertainty, there exists quite large and robust US industry of specialized venture lenders providing debt to the early stage NTBFs. Because these NTBFs have few tangible assets, they increasingly tend to use patents as collateral for debt financing. The patents used as collateral are major asset and knowledge that can significantly affect young venture’s future innovation performance. Based on the early stage ventures’ collateralized patent portfolio, we investigate the relationship between radicalness of young ventures’ collateralized patents and their future innovation performance measured in terms of amount, quality, and innovativeness of patenting activity. Understanding such relationship can enhance the efficiency of patent backed venture financing, which greatly contributes to the economic development when it is successful.

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PERSPECTIVES OF SERVICE-DOMINANT LOGIC FOR INNOVATION MANAGEMENT: A BIBLIOMETRIC ANALYSIS

Originally stemming from the field of marketing, the service-dominant logic concept has gained broad interest in many areas of management research during the last ten years. However, the concept is still in its infancy and lacks a solid anchoring in extant theory as well as a traceable integration in well-established research fields. In this paper, we analyze the current state of service-dominant logic influenced research and identify future research directions against the background of a bibliometric analysis. This allows for identifying the core fields of impact of the service-dominant logic and helps to uncover overlaps between the different research areas. Our findings provide a first holistic picture of service-dominant logic research and help to pave the way for a future development of this concept as we highlight research potential that is inherent in this concept.

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OVERCOMING CHALLENGES TO SERVICE INNOVATION PROCESS IMPLEMENTATION IN AN SME

This case study research reports on a small and medium-sized (SME) business-to-business (B2B) services firm implementing a novel new service development (NSD) process. It provides accounts of what occurred in practice in terms of the challenges to NSD process implementation and how the firm overcame these challenges. It also considers the implications for NSD in this and other firms' innovation practices. This longitudinal case study (18 months) was conducted "inside" the case organization. It covered the entire innovation process from the initiation to the launch of a new service. The primary method may be viewed as participant observation. The research involved all those participating in the innovation system in the firm, including decision-makers, middle managers and employees at lower hierarchical levels and the firm's external networks. Implications for researchers and managers focusing on structured innovation models for the services sector are also presented.

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Dias, Manuela: FEP - UP, Portugal

MANAGING INNOVATION IN SERVICE INDUSTRY: THE ROLE OF CONSULTANTS

Innovation intermediaries are organizations or groups within organizations that work to enable innovation, bridging the gap between internal and external know-how, and reducing the time to market and to know-how. Much of the existing literature regarding this topic is focused on manufacturing, and little is known about the role of innovation intermediaries in service industry. The growing importance of the service industry, as well as its specificities, stress the importance of contributions to the current understanding of service innovation. There is a great diversity of intermediaries, and consultants are included in this group, due to their extensive services, and their flexibility in modes of operation and interaction. Services are more likely to involve consultancies than other specialist knowledge providers. This paper aims to understand the role of consultants as innovation intermediaries in service industry. Our research will benefit the development of existing theory on service innovation and innovation intermediaries.

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<th>Author(s)</th>
<th>Mcguire, Steve: California State University, Los Angeles, USA Drost, Ellen: California State University, Los Angeles, USA</th>
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<td>Title:</td>
<td>PREDICTIVE AND CONCURRENT VALIDITY OF A MODEL OF ENTREPRENEURIAL CULTURE</td>
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<td>The purpose of the study was to examine the validity of a measure of entrepreneurial organizational culture (EOC). Data were collected from 1,941 organizations. First, we examined the EOC model using confirmatory factor analysis both at the individual-level, and for: for-profit companies, non-profit organizations, and governmental agencies, and at the multiple-group level of analysis. We then examined convergent and discriminant validity. Results indicate that a revised, more parsimonious model with 6 factors and 25 items was a good fit with the data (GFI =0.939, RMSEA =0.053). Evidence of convergent validity was found by a positive, significant relationship between EOC and &quot;intrapreneurship&quot; (R2 = 0.383).</td>
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Olander, Heidi: LUT School of Business and Management, Finland

INTENTIONAL OR NOT? THE NATURE AND DIMENSIONS OF KNOWLEDGE MOBILITY

Even if knowledge exchange in general generates benefits, it may have opposite effects if it happens unintentionally from the knowledge holder’s point of view. Knowledge leaving may cause knowledge loss if it involves key employees, and in the hands of outsiders, some knowledge assets may hurt competitiveness of the firm. As the overall knowledge mobility related dynamics are rather abstract and difficult to grasp, this study tries to dissolve some of the debates that exist especially in open innovation literature, around the relevance of knowledge protection for innovation management. The study aims at showing that sharing and protection are two sides of the same coin. We approach the identification of dimensions by the questions: how and why knowledge moves, what kind of knowledge moves, and where and how knowledge flows happen. Through theoretical and qualitative empirical investigation we develop a categorization of dimensions of knowledge mobility.

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KNOWLEDGE NETWORKS BASED ON TECHNOLOGICAL DISTANCES

Interdisciplinary and cross-industry R&D-activities are a promising path to get new solutions for emerging technologies like energy storage and battery systems. As battery research collaborations are formed across the entire value chain, partners with different knowledge bases are to be expected. In this context, technological distance (TD) has proven to be an applicable measure for the description of the variety of knowledge within collaborations. As a suboptimal transfer of knowledge can decrease the likelihood of collaboration success, we show our approach of visualizing and examining a knowledge network based on TD by investigating a recently founded battery research institute. Furthermore, we share the finding that the perception of TD deviates from calculated TD and provide an explanation approach.

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EVOLUTION OF MEDICAL DEVICE INNOVATION IN SOUTH AFRICA: 2001-2013

Medical device innovation in South Africa was investigated using collaboration networks derived from a bibliometric study. Collaborating institutions originated from four sectors: academia (A); healthcare (H); industry (I); and science & support (S). A longitudinal study (5-year moving window) of the networks was carried out to investigate their evolution over time. Centrality measures identified dominant institutions. New actors entering the networks either exhibited preferential attachment to these institutions, or joined the network as part of an isolated cluster. Of the new institutions, foreign collaborators seldom stayed beyond 5 years, while local institutions seldom left after entering the field. Over the 13-year period considered, local collaboration activity persisted while local foreign collaborations were seen to decline.

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Chimhundu, Chipo: University of Cape Town, South Africa
Saidi, Trust: University of Cape Town, South Africa
Tania, Douglas: University of Cape Town, South Africa
**Naqshbandi, Mohammad Muzamil: University of Dubai, United Arab Emirates**  
**ORGANIZATIONAL CULTURE AND OPEN INNOVATION: ROLE OF ABSORPTIVE CAPACITY**

Using data collected from 259 middle and top managers across different industries in the United Arab Emirates, this paper tests an integrated model to examine the relationship between two contrasting organizational culture types with two types of open innovation. It also takes into account the mediating role of realized absorptive capacity between these associations. Results obtained through multiple linear regression show that highly integrative culture relates positively while hierarchy culture relates negatively to the two types of open innovation. Results also establish the mediating role of realized absorptive capacity in these relationships. These findings contribute theoretically to open innovation and organizational culture literature while providing insights for practitioners on how to succeed or avoid failure in their open innovation initiatives. A discussion of the findings along with limitations of the study and future research directions are given.

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**Guertler, Matthias: Technical University of Munich, Institute of Product Development, Germany**  
**ANALYSING THE INFLUENCE OF PLANNING-PARAMETERS ON OPEN INNOVATION PERFORMANCE**

Outside-in Open Innovation (OI) allows to use the experience and expertise of external partners to develop new or improved products. In contrast to traditional cooperation approaches, it particularly focuses on the involvement of large number of different partners, so called crowds. An established crowdsourcing method is an ideation contest. However, when applied for the first time, companies tend to commission external service providers or to use a trial-and-error approach that often does not lead to insufficient results, for instance, in terms of ideas quality, cost-benefit ratio or success of incentives. Methodical support is limited so far. Thus, this paper analyses two series of community-based ideation contests concerning the effect of different planning activities and parameters. This lays the basis for further analyses and the development of a methodical planning approach enabling effective and efficient ideation contests.

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Lindemann, Udo: Technical University of Munich, Institute of Product Development, Germany

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**Hyslop, Katie: WU University of Economics and Business Vienna, Austria**  
**OPEN INNOVATION ACTIVITIES AND NETWORK COMPETENCE AS DRIVERS OF PERFORMANCE**

The paradigm of open innovation has sparked increasing scholarly interest. However, the concept has largely been studied from the perspective of large, technology-based MNCs. Therefore, there is a need to build a more fine grained understanding of the potential of open innovation practices for SMEs as they look to overcome their liability of smallness. In particular, there is need for more empirical investigations of SME innovation performance as a function of open innovation implementation; as well as the competencies required for its successful execution. From this background, this proposed, quantitative study aims to answer the following research question: What is the role of network competence and open innovation practices in explaining the innovation performance of European SMEs?

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CREATING AND CAPTURING VALUE IN THE BUSINESS ECOSYSTEMS

In a new economic landscape, firms need to access external knowledge sources due to their incapability of generating all necessary knowledge on their own. This network of linkages can be considered as an ecosystem. Previous studies have shown that a firm's ability to successfully commercialize a new product depends not only on its own technology strategy, but also its capabilities to manage an innovation ecosystem strategy. Dynamic markets, digitalization, and open innovation models drive intense competition and shorter product life cycles. Well-defined and executed innovation ecosystem strategies can help companies to develop new markets and business opportunities for the different types of innovations and enable business to grow. Therefore this study provides a new insight on how an ecosystem strategy can be formed based on the traditional strategy literature and provide a conceptual framework for senior leaders to form an ecosystem strategy.

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Berg, Pekka: Aalto University, Finland

TRANSPARENCY OF THE PLATFORM ECOSYSTEMS INNOVATION MANAGEMENT

At the moment many traditional industries are facing lots of open questions and uncertainties related to the utilization of digitalization and the ways to manage innovation environment in order to create growth through platform economy. In this project proposal we introduce four research questions dealing with the mentioned topic. First, how digitalization will transform the traditional sectors innovation ecosystems and what are the relevant objectives to assess? Second, what kind of criteria and attributes we should use in order to understand and make more transparent the status of our innovation ecosystem risks and maturity level? Third, how the current innovation strategy will be developed and how to ensure its competitiveness during the business life-cycle of the ecosystem? And fourth, what kind of new competences, processes and practices needs to be developed in order to create new value in a changing environment?

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Pellikka, Jarkko: Nokia Technologies , Finland

A DIALOGICAL APPROACH TO INCREASE “MATCHING” EFFICIENCY BEFORE CBM

The 2014-2020 European Union cohesion policy settled the obligation to establish "Research and Innovation Strategies for the Smart Specialization" (RIS3) to build competitive advantages for each region. The originality of RIS3 is the "bottom-up" identification of regional priorities through the "Entrepreneurial Discovery" (ED) process which stresses the need to involve all the regional "entrepreneurs" (RE) - companies, research, consulting, public authorities etc. - into the design of territorial orientations. However there is a lack of recommendations to implement it into heterogeneous regions. The Collaborative Business Models (CBM) approach has probably a role to play within this process as a suitable strategic tool to set up regional "value networks". However, the preparatory stage of CBM and especially the identification and the matching processes among potential RE partners is often not addressed. This work is a proposition to answer this issue of matching in order to improve the CBM efficacy within RIS3.

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Mention, Anne-Laure: Luxembourg Institute of Science and Technology, Luxembourg

EMERGENT COLLABORATIVE INNOVATION INTERMEDIARIES: INNOVATION HUBS VS. INNOVATION LABS

Alongside traditional innovation intermediaries such as science parks, incubators, and technology transfer offices, novel forms of innovation hubs and labs have been causing a stir in practitioner communities. Despite their unquestioned popularity, thus far both the hubs and the labs have gone largely unnoticed in mainstream innovation management research. Ostensibly, both aspire to facilitate collaborative, participatory, open, social-impact-oriented innovation, but how do they compare to each other and to traditional innovation intermediaries? We propose a qualitative, exploratory research drawing on our database on 10 hubs and 11 labs from 8 countries, including 102 semi-structured interviews and observation notes from 18 hub and lab events. As a result, we hope to provide sharper definitions of innovation hubs and labs, their in-depth comparison along 5-10 relevant dimensions, a list of illustrative innovation practices applied by hubs and labs and a set of conclusions for innovation management theory and practice.

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### SESSION 10.1: DESIGN THINKING FOR INNOVATION

**FACILITATOR:** URS DAELLENBACH  
**APOLLO 4**

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<th>Author(s)</th>
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| Vagn, Anna Rose: DTU Engineering Management, Denmark  
Jensen, Christian Schou: DTU Management Engineering, Denmark | **PARTICIPATORY METHODS FOR INITIATING MANUFACTURING EMPLOYEES’ INVOLVEMENT IN PRODUCT INNOVATION** |

Employee-driven innovation has the potential to improve product innovation by involving employees as innovative resources. However, it can be a challenge to turn the potential into a reality of collaboration practices across organizational structures and culture. Through an interactive research approach that we apply to two case companies, this paper presents an empirical study of how to initiate involvement of manufacturing employees in R&D activities. We have used participatory methods from design thinking that has the ability to create relations between employees from different backgrounds and through a series of facilitated workshops we have investigated how these methods can initiate employee involvement. We see that participatory methods can improve understanding and relation between R&D and manufacturing departments, and thereby support a creative collaboration and emergence of employee-driven innovation practices.

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| Vagn, Anna Rose: DTU Engineering Management, Denmark  
Jensen, Christian Schou: DTU Management Engineering, Denmark  
Brobjerg, Ole: DTU Engineering Management, Denmark | **PATTERNS OF INDUSTRIAL DESIGNS: EVIDENCE FROM AUSTRIA** |

Design is increasingly seen as an important ingredient to the competitiveness of firms. Although innovation processes are increasingly open, we also know that appropriability of knowledge is key to maintaining a competitive advantage. In the light of the above we ask the following research questions. What is the the significance of industrial designs as a protection mechanism over the Austrian firm population? What characterizes firms that chose designs to protect their innovation processes and results? We use data on industrial designs registered at the Austrian patent office for national protection in the period from 2004-2014 and match them with Aurelia firm data. We estimate a Poisson model, showing that firm size and export ratios positively influence the propensity to apply for designs, while firm age has a negative effect.

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| Barber, Michael: AIT Austrian Institute of Technology GmbH, Austria  
Schartinger, Doris: AIT Austrian Institute of Technology GmbH, Austria | **DISCURITY STRATEGIES FOR LEGITIMIZING THE FIELD OF STRATEGIC DESIGN** |

Recently we have seen the upsurge of a new academic and professional field, Strategic Design, which offers itself as a new way of working within business at a strategic level by utilizing designers’ approach to problem solving. Inherent in the rise and growth of an academic and professional field is the pursuit of differentiation from other fields and later re-establishment of contact with other fields. In this explorative study we show that participants in the field of Strategic Design, in their effort of legitimization, make use of in-group/out-group distinctions, stereotypes and de-legitimization of outgroups. However, we find that this serves as source of not only frustration for novice design consultants but also as an obstacle for the whole process of legitimization of the field.

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| Storgaard, Marianne: University of Southern Denmark, Denmark  
Brandi Sørensen, Elin: University of Southern Denmark, Denmark | **DESIGNING FOR SUCCESS** |

The paper examines the impact of design thinking on teamwork during the early stage of the innovation process and on the quality of the resulting ideas. Empirical data stems from an experimental investigation among six innovation teams. The design thinking process appears to enhance teams' internal communication and their exploitation of external sources. In turn, internal communication drives group cohesion and ultimately group cohesion drives shared understanding among team members. The findings also demonstrate that novelty, relevance and specificity of the developed ideas are positively influenced by the design thinking process. The present study provides managers with a better understanding of how design thinking drives teamwork and idea quality and with key factors for successfully implementing the design thinking process among novice teams. This paper provides theoretical considerations on and initial empirical support for the impact of the design thinking process on teamwork and idea quality.

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Mahr, Dominik: Maastricht University, Netherlands  
Gericke, Maike: Océ Technologies B.V., Netherlands  
Wetzels, Martin: Maastricht University, Netherlands | **THE IMPACT OF DESIGN THINKING ON TEAMWORK** |

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### PROCESS MANAGEMENT

**Primus, Dirk:** Bryant University, USA  
**Osswald, Marc:** University of Ulm, Institute of Technology and Process Management, Germany  
**Müller, Thomas:** University of Ulm, Institute of Technology and Process Management, Germany

**Process Management, Germany**

This investigation is concerned with the relationship between development practices and the effectiveness of frugal innovations. The term frugal refers to innovations that target emerging markets with resource constrained customers. Emerging markets are attractive growth targets, because they are largely untapped. However, it is unlikely that existing product development practice will succeed in emerging markets, because they fundamentally differ from developed regions. For example, frugal innovations require a deep understanding of how a new product will interact with the local conditions, as well as development of localized business infrastructure. Thus, they can likely benefit from non-traditional, multidisciplinary development approaches, such as design thinking practices. For the empirical part, I will collect and analyze multi-region data from separate sources for development practices and performance. Overall, this study aims to inform research and practice concerned with innovation in emerging markets about the effect of non-traditional, multidisciplinary development practices on frugal innovation performance.

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### HOW SUCCESSFUL ARE YOUR PRODUCT LAUNCHES?

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To finish the new product development process, a product has to be launched in a market. A lot of published articles show, that the product launch is not only one of the most expensive processes within the product’s lifecycle but also one of the most critical ones for the success of a new product. Unfortunately, most of the published articles focused on analysing the factors influencing the success or failure of a market launch. Only a few articles developed tools and models to evaluate the quality of a market launch. To further close this gap, we developed an easily applicable quantitative model, based on the Data Envelopment Analysis (DEA). To apply the DEA, we identified four input factors and four output factors which are important to evaluate the quality of a market launch together with eight big German and Swiss B2B-companies and tested the model in a Case Study.

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### QUANTIFYING PROJECT EFFICIENCY IN NEW PRODUCT DEVELOPMENT: BENEFITS AND PITFALLS

**Müller-Stewens, Benedikt:** University of St.Gallen, Switzerland

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**Process Management, Portugal**

New product development is a major determinant of a company's competitive advantage. However, the complex product environment aggravates objective performance assessments. Relying on decision heuristics, managers give space to subjectivity. Prior research finds that these decisions are subject to optimistic bias that leads to escalation of managerial commitment. We aim at reducing the subjective leeway in decision making by developing an efficiency-based tool that systematically guides managerial attention based on objectified information. In an in-depth case study we demonstrate that the data envelopment analysis (DEA) represents a method that can be reasonably implemented in a product development context complementing existing metrics. A promising implementation is required to address potential pitfalls: homogeneity of the project base; reliability of the estimated output metrics; consistent data availability on project-level; thoughtful interpretation of the results by experts; promotion of organizational acceptance of metric.

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**Caetano, Isabel:** ISCTE-IUL, Portugal  
**Brecht, Leo:** University of Ulm, Institute of Technology and Process Management, Germany  
**Gentner, Daniel:** University of Ulm, Institute of Technology and Process Management, Germany  
**Mahanke, Thomas:** University of Ulm, Institute of Technology and Process Management, Germany
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<th>Brun, Eric: University of Stavanger, Norway</th>
<th>Wallin, Arto: VTT, Finland</th>
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<tr>
<td><strong>STARTUP DEVELOPMENT PROCESSES IN BUSINESS INCUBATORS</strong></td>
<td><strong>CONCERNS AND AMBITIIONS OF ENTREPRENEURIAL INNOVATORS</strong></td>
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<td>Business incubators have important roles in helping small companies develop through their initial startup phases. However, there is little research literature available to help incubator managers’ better understand the process of developing the startups as incubatees. In this study, qualitative content analysis from case studies of 15 startups in a Norwegian incubator identified a blend of 3 incubatee development approaches: causation, effectuation and learning. Two frameworks were developed; Firstly, a general framework to identify the appropriate approach for an incubatee. Secondly, a process framework for incubatee development incorporating a blend of the 3 approaches. The reported research enhances our theoretical understanding of startup development processes within an incubator. Also, the frameworks represent tools that will be useful for incubator management to guide incubatees through their venture creation process.</td>
<td>This paper aims to increase understanding on the start-up innovation process from the perspective of entrepreneurial growth ambitions. Based on the findings we suggest that growth-ambitions should be seen as a more complex socially constructed concept that just an easily observable value defining the level of ambition. Growth-ambitions are influenced at least by the type of the market where start-up is focusing on, the scalability of the business model, personal characteristics of entrepreneurs, entrepreneurial and international experience of the founders and their perceptions of the barriers and constraints of the field, and finally the social context to which they are embedded in. We claim that different types of start-up companies have different needs and therefore the support provided to those start-ups should be different.</td>
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<td>Brun, Eric: University of Stavanger, Norway</td>
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<th>Marques, João Paulo: Polytechnic Institute of Coimbra, Portugal</th>
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<tr>
<td><strong>DEVELOPMENT OF INNOVATION IN INCUBATING COMPANIES: THE CASE OF PORTUGAL</strong></td>
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<td>This article focuses on the study of innovative activity and its impact on the creation and sustainability of Portuguese micro-businesses in incubation. As Schumpeter has indicated innovation to be the main economic driver of economic development and a critical factor in the development and performance of companies, a number of authors have discussed this phenomenon but there is still no consensus on how it behaves. We used statistical analysis to study a sample of 243 Portuguese companies based in incubators linked to or promoted by universities. It was concluded that product innovation is most significant in an incubation environment, and also that the origin of businesses and the development of R&amp;D activities determine the type of innovation generated. However, most of the companies surveyed are not engaged in R&amp;D activities. They propose some policy measures and lessons for management.</td>
<td>This article focuses on the study of innovative activity and its impact on the creation and sustainability of Portuguese micro-businesses in incubation. As Schumpeter has indicated innovation to be the main economic driver of economic development and a critical factor in the development and performance of companies, a number of authors have discussed this phenomenon but there is still no consensus on how it behaves. We used statistical analysis to study a sample of 243 Portuguese companies based in incubators linked to or promoted by universities. It was concluded that product innovation is most significant in an incubation environment, and also that the origin of businesses and the development of R&amp;D activities determine the type of innovation generated. However, most of the companies surveyed are not engaged in R&amp;D activities. They propose some policy measures and lessons for management.</td>
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<td>Cravo, José Pedro: Polytechnic Institute of Coimbra, Portugal</td>
<td>Cravo, José Pedro: Polytechnic Institute of Coimbra, Portugal</td>
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The innovation adoption research has indicated that several factors may influence customers’ ‘adoption’ or ‘non-adoption’ decision. However, most studies only consider the adoption of single innovation and based on the questionnaire to survey customers’ intention in a state, which seems missing research of innovation in a bundle and lack real data to verify the customer’s actual behavior. This study tries to fill this gap by examining the adoption behavior of innovation in a bundle, which customers upgrade to the new telecommunication service also need adopt a new smartphone in a period through customers’ actual adoption behavior from the database of Taiwan’s telecommunication company. Consumers’ intention to adopt innovation and understanding customers’ consideration are important issues to technology providers.

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A NEW QFD MODEL FOR STRATEGIC RESOURCE BASED PRODUCT INNOVATION

The development of new products requires key technologies, including software and hardware, to satisfy customer expectations while still being advanced enough to meet customer demands. However, product innovation should not merely imitate other products; the strategic resource elements of innovation should be lasting (in terms of time), relevant (in terms of value), irreplaceable, and provide a competitive advantage. Therefore, the authors, with the above theory in mind, propose a three dimensional Quality Function Deployment (QFD) model, which can be used to measure strategic resource importance. Measuring the degree of the compliance of core technology that meets customer demands for product innovation with the QFD model, this study uses the example of Tire Pressure Monitoring System (TPMS), where the empirical results show that this method can more accurately measure weighted values between technology and market demand.

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INTEGRATION OF TRM AND QFD FOR SECTORAL FORESIGHT: RUSSIAN EXPERIENCE

One of the grand and ongoing challenges in the STI sphere is the searching for balance between market needs and production possibilities. This task can be solved by applying different methods, including technology roadmapping (TRM) and quality function deployment (QFD), which are one of the most essential approaches. Even though these two methods have been widely investigated in the literature both separately and under integration, there is the lack of comprehensive QFD-TRM studies that consider market-product perspective as well as global and national agenda and provide the basis for decision-making. To fill in the gaps we developed a methodological approach transforming “customer voice”, global challenges and trends into strategic actions system at the sectoral level. In this paper integrated QFD-TRM approach for particular sector is presented.

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### SESSION 10.5: IDEAS SANDBOX 2: INNOVATION METHODS & USERS

**FACILITATOR: MICHAEL DELL**

**WEDNESDAY, JUNE 22, 1005 – 1105**

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<tr>
<th>Author(s)</th>
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<tr>
<td>Sanchez Mejia, Myriam: Corporacion biotec, Colombia</td>
<td>INNOVATION MANAGEMENT FOR BIOBASED LOCAL SUSTAINABLE DEVELOPMENT</td>
<td>Colombia is recognized as one of the potential global breadbasket countries, based on its agricultural diversity. Nevertheless, agrodiversity is not integrated, nor remunerated within the development dynamics in the territories. And rural areas present significant gaps of quality of life in their communities, which have become a strategic issue for the country. Literature shows three main trends related to the use of agrodiversity: 1) a subject for the poor: subsistence strategies, 2) related to added value industries, food and other agro industries(a) and bioenergy (b), 3) conservation. With the focus on the second trend: sustainable food and income generation for the population, the main question of research is how to integrate (and remunerate) agrodiversity from a territory, to dynamics of local sustainable development? Bench marking from successful cases worldwide, as reference, and case studies implemented in Colombia, will generate tools, skills and governance, from a perspective of innovation management.</td>
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<tr>
<td>Nyborg, Sophie: Technical University of Denmark, Denmark</td>
<td>USER INNOVATORS IN THE SMART ENERGY TRANSITION</td>
<td>Notions of “smart energy systems” are pervasive in discussions of a low carbon transition and much work is devoted to developing “smart energy technologies” and analyzing their economic potential. However, users, i.e. civil society receive only little attention and are mainly described as &quot;energy consumers&quot;. The aim of this research project is to explore how civil society can get a more active role in the transition towards a low carbon energy system. Through qualitative case-study methods and scenario work, we explore the role of “energy users” for the innovative design and development of large technological systems. We ask whether the envisioned smart energy systems have potential to support more active innovation roles for the individuals using energy systems than what have been described by previous studies. Moreover, we discuss whether and how such roles allow for a democratic as well as socially, economically, and environmentally sustainable development of energy provision.</td>
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<td>Hsieh, Kuo-Nan (Nick): Yuan Ze University, College of Management, Taiwan</td>
<td>CUSTOMER COLLABORATION MECHANISM IN OPEN SERVICE INNOVATION</td>
<td>Customers can be identified as important knowledge source to contribute to the possibilities of innovation success, such as generating innovation ideas and sharing information. The research design consists of case studies and draws on empirical evidence from Taiwanese service sectors to explore the issue of how firms design appropriate mechanisms to interact with customers and associate with interaction process/ incentive mechanism to motivate them to be involved for knowledge sharing across different development stages. The research would offer better insights into the connection between the mode of customer interaction and open innovation approach in the specific context (i.e. the development stage). Moreover, the proposed research would further provide a better understanding of the connection between the design of customer interaction and motivation in the research of user involvement.</td>
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<td>Thurnes, Christian: OPINOMETH - University of Applied Sciences Kaiserslautern, Germany</td>
<td>CONTRADICTION-BASED INNOVATION LIBRARY: CREATING AND SHARING INNOVATION IMPULSES</td>
<td>Challenges in innovation management often can be formulated as contradictions - and to resolve this contradiction will lead to an innovative idea or solution. Some tools and methods like TRIZ (Theory of inventive problem solving) are specialized on using contradictions to generate innovative ideas. But these tools are not very easy to grasp – so the concept of a contradiction-based innovation library allows using contradictions as a source for innovation stimuli to a broader innovation management community (instead of just TRIZ-experts). The library discussed in the article will have a growing base of innovation cases, that encompassed the resolution of serious contradictions. The cases will also show the specific innovative solution and the usage of TRIZ-tools to resolve the contradiction. For data retrieval and research, data structures for the description of the cases and user services have to be developed. The article describes the research idea based and first steps.</td>
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**SOURCES OF INNOVATION IN FINANCIAL SERVICES COMPANIES**

The financial services sector is significant for the overall economy and specifically for small and open economies where it can be a major contributor. This provides an interesting and fruitful research setting for innovation research dealing with financial services. A dedicated survey was created and launched to gather insights about the perceived importance of external sources of information for innovation. Preliminary statistical analyses have shown that consultants are regarded as an important external source of information, while the CEO and supporting front line employees are important internal sources for innovation. Regarding the use of customers, High Net-Worth Individuals (HNWI), SMEs and large customers were found to be important for new or improved service development initiatives.

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Smeilus, Gavin: University of Wolverhampton, United Kingdom

**MAPPING THE INVENTOR NEW PRODUCT DEVELOPMENT PROCESS**

This paper seeks to build an understanding of how independent inventors navigate through their development programme and license their intellectual property (IP) rights to a business. While inventors are identified within open innovation literature as potential suppliers of externally generated IP their integration within the Open Innovation Model (OIM) is not adequately considered. This paper seeks to address this gap by presenting a validated model that describes the inventor IP in-licensing process. The results of this inquiry suggest that successful inventors steer through a new product development (NPD) process that has structural similarities with the StageGate process deployed at an organisational level. Independent inventors are seen to be resource dependent and draw upon their personal resources and capabilities, supplemented by external resources, to navigate this process.

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**INNOVATION-HUB MANAGEMENT FOR VALUE CO-CREATION: THE CENTRALITY OF CORPORATE POLICIES**

The paper affords the topic of value co-creation within firms based on open collaboration models, which adopt the innovation-hub to develop new products. The paper examines appropriate corporate policies for hub’s management, aimed at regulating collaborative actions and at mitigating opportunistic behaviours, based on information asymmetry and moral hazard risk. We believe the agency theory can be useful to explain the conflict between principal and agents on the appropriability of innovation and on the allocation of intellectual property rights, even within a flat, open and informal context. Starting from an exploratory case study, first we recognize the monitoring and control mechanisms to discourage opportunistic behaviours not aligned to the firm’s innovative goals. Second, we examine the motivational factors, especially the psycho-social compensations, driving the spontaneous participation. Then, we analyze rules for access and orchestration mechanisms to mobilize knowledge and oversee interactions.

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**FINTECHS’ AS SERVICE INNOVATORS: ANALYSING COMPONENTS OF INNOVATION**

What is at the core of FinTech companies? What is the innovation behind their business logic? In the context of FinTechs, we will analyse the locus of innovation through the lens of service model by Edvardsson and Olsson (1996). We chose this model as it enables to approach the service innovation both in theoretical and in practical terms. Based on 10 interviews, we used the model to analyse the presence of three components of service innovation. We showed how renewal in the service concept, process and system of service was present in the analysed innovations-with concept innovation dominating. Furthermore, we synthesized the results to a framework to support understanding of FinTechs as service innovators, emphasizing the fact that technology is not seen to be at the core of it.

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**INNOVATION MEASUREMENT: PRACTICES, INDICATORS AND LESSONS AT FIRM LEVEL**

Innovation is recognized as a difficult domain to assess and to measure. Companies are eager to develop and apply methodologies contributing to capture innovation results. A problem in innovation management is how to do it. A cluster analysis was developed to identify management practices and indicators, based on SPSS as well as a MCA analysis. It was demonstrated the questionnaire validity and its adequacy to the research, complemented with focus groups and interviews with business senior managers. A framework model was proposed and applied, considering three levels of evaluation of innovation activities and projects, following a ROI approach. This research aims to analyse how companies are managing innovation, which practices have been implemented and what framework could be designed to promote their capabilities to evaluate and measure innovation. It will contribute to the understanding of innovation measurement at firm level and to a more systematic approach for innovation management.

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**INNOVATION ABILITY AS PART OF A FORWARD THINKING SUPPLIER EVALUATION SYSTEM**

To provide innovative solutions for firms’ future challenges and to strengthen its innovativeness, the innovation ability of its strategic supplying partners will become increasingly important to succeed in future competition. Based on the example of one of the world’s largest mobility provider, the contribution shows how the innovation ability of supplying firms can be assessed. The tool entails a set of 60 indicators covering seven areas of innovation management. Different functional roles of suppliers were developed and specific target values for each of them were defined. Individual scores for each of these different supplier types are calculated and built a basis for measures of subsequent supplier development. Based on an example of good practice, participants from industry and innovation management will learn how the innovation ability of supplying firms can be systematically assessed by an online tool that can easily be integrated into existing supplier evaluation systems.

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**CREATING AN INNOVATIVE CULTURE: A FRAMEWORK FOR INCREASED ABSORPTIVE CAPACITY**

For maturing, successful organizations there is both a struggle to maintain the status quo and to be more innovative. Following earlier works on Absorptive Capacity of Organizations, the authors use a framework concept in order to increase the ability of the work unit to be more innovative. For close to four decades the concept of the absorptive capacity of an organization and innovation has been studied. In 1990, Cohen and Levinthal argued that: "... the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends is critical to innovation capabilities." They labeled this the organization’s ‘absorptive capacity’. Using the four key elements of Absorptive Capacity: Acquisition, Assimilation, Exploitation, and Transformation, the authors show the ability to increase this capacity with an innovation framework approach.

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**FIRM INNOVATIVENESS RELOADED - DEVELOPMENT OF A MULTIDIMENSIONAL AND FORMATIVE CONSTRUCT**

Firm innovativeness is a rich and complex intangible phenomenon that captures an organization’s overall potential to innovate and is acknowledged as a key success factor for the organizational performance. In the light of both the large fragmented and inconsistent body of research as well as the under-researched non-manufacturing and increasingly mutating manufacturing industries, a more comprehensive and generalizable concept is needed. Based on a review of prior literature, the present work synthesizes research insights by taking them onto a higher level of abstraction and develops an enhanced conceptual framework of theoretical nature. It pursues a holistic concept that integrates a comprehensive dimensioning of the overarching aspects of firm innovativeness and an advanced construct specification. To serve a coherent and compelling conceptualization of firm innovativeness, a reflective first-order and formative second-order construct is suggested.

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**SEMANTIC MAPPING OF COGNITIVELY DIVERSE START-UP TEAMS: DYNAMIC CREATIVE INTEROPERABILITY**

How do small firms in different sectors collaborate to innovate? A possible explanation is that of network structural holes and their bridging (Burt, 1992). Conversely, Stark (2009) argues that solely bridging or brokering does not necessarily lead to the generation of new knowledge, and that successful innovations occur rather via folded diversity, that is, where two firms have some shared membership as well as distinct cognitive diversity. But what happens when cognitively diverse firms without the advantage of overlapping membership nevertheless seek to co-create an innovation to mutual commercial advantage? Using Leximancer we built semantic network maps for three interventions in which small digital creative firms each formed new knowledge with a group from one of three other sectors: education, mining and manufacturing. We argue the semantic enabling of the interventions acted as both broker and "structural fold", enabling social legitimation and a shared language that made innovation possible.

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**Dos Santos Paulino, Victor: Toulouse Business School**

**TAKING ADVANTAGE OF DISRUPTIVE INNOVATIONS IN THE SPACE SECTOR**

The aim of the paper is to better capture the challenges that arise from being simultaneously an entrant and incumbent and help these firms to respond to disruptive threats. Using case studies, the paper analyses two innovations: individual small satellites and small satellite constellations in the space sector. It focuses on the key dimensions of performance/costs, time to market and appeal to new customers. Disruptive innovations do not succeed in isolation, and the idea behind the phrase "disrupt-or-be-disrupted" does not fully capture the dynamics we observed. We found that under conditions of disruptive change, the ability of firms to develop a good understanding of different scenarios in terms of the overall supply chain is key in influencing and taking advantage of future opportunities. This ability enables firms to decide on the roles they want to play; the collaborations they need to establish and may point to necessary internal changes.

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**Fiegenbaum, Irina: ISPIM, Germany**

**KEY PERFORMANCE INDICATORS OF STARTUPS: EXTERNAL VIEW**

SMEs are often considered the drivers of modern economy, and the recent technological and business trends has led to the startup boom around the globe. Many startup support programs are focused on selecting the most promising out of created startups and supporting their quick and successful market entry and growth. But how is this evaluated? The issue of what criteria are to be used for assessing a startup becoming of utmost relevance for both Accelerators/Incubators and the startups themselves and is also an important topic in academia as it has hardly been touched upon. This paper’s goal is to shed the light on the issues of evaluating the startup performance and find which key performance indicators have a substantial weight. We analyse both KPI applied to enter the acceleration programs and to graduate from it through a series of interviews with managers of Accelerators/Incubators.

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<tr>
<td>Baiyere, Abayomi: University of Turku, Finland</td>
<td><strong>EXPLORING THE ROLE OF IT CAPABILITIES IN DISRUPTIVE INNOVATIONS</strong></td>
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<tr>
<td>Kristiansen, Jimmi Normann: Aalborg University, Denmark</td>
<td><strong>UNDERSTANDING THE TYPOLOGICAL EVOLUTION OF RADICAL INNOVATION</strong></td>
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<td>Santonen, Teemu: Laurea University of Applied Sciences, Finland</td>
<td><strong>CREATE SPACE FOR INNOVATIONS</strong></td>
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<td>Narasimhalu, Desai: Singapore Management University, Singapore</td>
<td><strong>INNOVATION OPTIONS</strong></td>
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<td>Gertsen, Frank: Aalborg University, Denmark</td>
<td><strong>FUTURE-ORIENTED CONSOLIDATION OF PRODUCT PORTFOLIOS</strong></td>
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<td>Eckelt, Daniel: University of Paderborn, Germany</td>
<td><strong>ADJACENT INNOVATION MATRIX</strong></td>
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<td>Friebe, Milena: University of Paderborn, Germany</td>
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<td>Gausemeier, Juergen: University of Paderborn, Germany</td>
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**Baiyere, Abayomi: University of Turku, Finland**

Dynamic capabilities, agility and resource based views are key voices in the discussion about handling Disruptive Innovations (DI). Typically organisations are composed of different resources and capabilities. Due to the pervasive and ubiquitous nature of IT, IT capability is arguably one of the capabilities needed in disruptive situations. This paper aims to fill the divide between existing knowledge about IT capability and what value it could bring to the DI discussion. Information Systems research have shown that IT is a platform that enables the creation of different types of innovations; at the same time IT is also considered an important leverage when responding to threats of innovations. Hence, based on this dual premise of IT Capability, we advance a duality framework of "Disrupt-Ability" (ability to disrupt) and "Disruptability" (ability to be disrupted) to contribute a conceptual synthesis of the role of IT Capabilities in disruptive innovation.

**Kristiansen, Jimmi Normann: Aalborg University, Denmark**

This paper addresses a key issue of typological confusion in relation to radical innovation management research. Previous research has emphasized the need for a more parsimonious understanding of innovation typology, where a myriad of types are still present. We use a dataset of the radical innovation typology created through a systematic literature review to map and understand the typological evolution in the field. By following a scientometric research methodology and utilizing "popularity-based" and Social Network Analysis (SNA) research approaches, this study is empirically evaluating the evolutionary process of "radical innovation" as an innovation type. We comment and discuss critical points in time where the typology evolves. This allows us to precisely determine if an added innovation type or attribute indeed was a novel contribution. We discuss the novel contributions made over time, and also which innovation types did very little to contribute to our current understanding of the typology.

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Management of successful companies often struggle to find an answer to the question "What our next innovation ought to be?". Quite often they end up being content with their current product / service offerings. At best some of them try to create new products and services for the current customer base. Adjacent innovations are defined to be new products and services to current customers and adapted current product and services to new customers. Currently there is no systematic approach to identifying adjacent innovations that companies could evaluate to select their next innovation offerings. We define Adjacent Innovation Matrix as a framework to help companies generate adjacent innovation opportunities in a systematic manner. We expect this framework to be used by companies to expand their revenues and profits.
Creativity techniques are procedures and heuristics for enhancing creativity in the idea generation process. So far, empirical studies on creativity techniques in business practice are scarce. The present study is one of the first to interview innovation experts, 68 in number, concerning their creativity technique application behavior. We reveal that creativity techniques are far away from being systematically applied and integrated in innovation management. Brainstorming is, against all empirical findings on its disadvantages, still the most commonly used technique. The application of electronic techniques is rare. However, in almost all projects investigated, creativity techniques positively affect idea generation. Furthermore, we show that the selection of a creativity technique is mainly influenced by a technique’s prominence, practicability and time exposure. Prospectively, the interviewees predict an increasing use of creativity techniques.

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With the emergence of new digital tools, and in a value co-creation perspective, companies are using internet tools and platforms to support interaction and design attributes. However, many authors underlined that the way co-creation is implemented and operationalised remain unexplored. The paper aims at exploring the reasons why co-creation leads to reframing the development processes with the implications for learning processes. After having detailed the research methodology adopted, results will detail the way development and learning loops occurred. Four main observations are proposed: a- Co-creation requires including new actors in the systems, resulting in organizational change b- Development processes are separated in two parts. c- The issue of product coherence and image is central to the elaboration of the interactive dispositions with the clients. d- The Design of co-creation encounter is not based on co-creation principles. Discussion follows on the way co-creation transforms existing « learning while innovating » frames.

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BUSINESS MODEL INNOVATION: A REMEDY FOR SMES' SURVIVAL AND GROWTH

Shedding light on small and medium-sized enterprises (SMEs)' survival issues, this study attempts to propose business model innovation (BMI) as a practical, reasonably efficient solution to SME’s scarcity of resources, funds, expertise, etc. Accordingly, a literature review led us to develop several propositions highlighting the potential linkages between innovating a firm’s business model elements including value creation, value proposition, value delivery, and value appropriation and its survival capabilities in terms of investment absorption, adaptive, networking, and absorptive capabilities. Drawing on proposed interconnections, an integrative framework is presented suggesting the potential relationships between value proposition and investment absorption capabilities, value creation and adaptive/networking capabilities, value delivery and absorptive/networking capabilities, and finally, value appropriation and investment absorption capabilities. The proposed framework opens up new avenues for further research extending the innovation management literature into the domain of survival capabilities.

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IMPACT OF CORPORATE FORESIGHT ON INNOVATION PERFORMANCE

This project contributes to our understanding of practices enabling firms to adapt to future environments. While the practices for adapting to current environments have been well understood, our understanding about prospective adaptation to uncertain future environments is still limited. Corporate Foresight represents a forward-looking search practice enabling firms to identify factors driving future change, determine implications and trigger responses. It has been proposed, that Corporate Foresight practices are potent in laying the foundation for future superior performance. However, empirical evidence on Corporate Foresight value creation is still scarce. In our study, we demonstrate the value of Corporate Foresight for superior performance, using longitudinal data of 85 European companies. Our results show that firms with an appropriate level of Corporate Foresight maturity adapted towards their environment exhibit higher profitability and market capitalization growth compared to their industry peers. Corporate Foresight preparedness seems to be a predictor for future performance.

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OPPORTUNITY IDENTIFICATION USING INVESTMENT DATA

Most methodologies exploring new business/product opportunities depend on experts, and opportunities based on emerging technologies have experienced greater than expected time. Our model provides a new way measuring and identifying opportunities. In order to make the monitoring as well as identifying opportunities more effective and efficient, we propose S-V-A (Size-Velocity-Acceleration) model using venture investment data. Increases in total investment over time can be measured by using the concept of velocity. Acceleration measures differences in velocity over time. Using our model, we calculate average and variance of investment velocity and acceleration of some promising opportunities to measure expected return and risks by investors. Investors already evaluate these opportunities, and made investment. Thus, our model is less dependent on expert evaluation. Companies can use our approach to identify opportunities out of their sensing and foresight scope. Also, companies can compare their identified opportunities with those identified by our model.

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Enabling Innovation: Methods, Training, Coaching & Competence
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Innovation 4: SMES

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Vervoort, Koen: iMinds Living Labs, Belgium: Session 8.3: Living Labs 2
Villinger, Marc G.: University of St. Gallen, Switzerland: Session 4.2: BMI 4: Adoption & Implementation & Crowdsourcing (Mixed Session)
Vishnevskiy, Konstantin: National Research University Higher School of Economics, Russia: Session 10.4: Bootcamp 10: Customers, Users & Innovation
von Delft, Stephan: University of Glasgow, United Kingdom: Session 3.5: Innovation for Economic, Societal & Environmental Sustainability 2
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Weiss, Astrid: Fraunhofer Italia Research scarl, Italy: Session 1.3: Strategic Foresight, Agility & Future Orientation: 1
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Wilson, Mark: GlaxoSmithKline Pharmaceuticals, United Kingdom: Session 7.1: Open Innovation 7: Technology & R&D
Woeran, Bruno: Merinova Oy AB, Finland: Session 11.6: Ideas Sandbox 3: Finance & Performance
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Yu, Miko Ching-Ying: Kyoto University, Japan: Session 2.5: Innovation for Economic, Societal & Environmental Sustainability 1
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<td>Aarikka-Stenroos, Leena</td>
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ISPI M Special Interest Group: Teaching and Coaching Innovation

News about an EU-funded Project
on training for innovation inside organisations

Project idea
At the 2014 ISPIM conference in Dublin delegates from industry shared their challenges and expressed their interest to learn more about training employees around the themes represented by the Teaching & Coaching SIG.

Project question
With this idea, a consortium was built consisting of industrial partners and academics to research the question of: “How do we improve on current innovation management and entrepreneurship teaching, coaching and training?”

Project funding & design
A proposal titled “Teaching and Coaching Innovation & Entrepreneurship InnovaTively” (TACIT)” was selected out 200 Knowledge Alliance submissions to the EU’s Erasmus Plus Programme. It is a three year, €1 million project designed as a ‘Knowledge Alliance’ involving research groups led jointly by academic and industrial partners.

Project research areas
The partners focus on eight innovative methods of innovation training:
- Storytelling
- Peripatetic learning
- Futures-based learning
- Entrepreneur laboratory
- Innovation theatre
- Design making
- Innovation games
- Project-based learning

To join & find out more
The Erasmus Knowledge Alliance programme allows organizations to join TACIT as an associated partner. For inquiries, please contact Anna Trifilova, Leader of ISPIM Teaching SIG & TACIT project coordinator via anna@thefutureofinnovation.org
Our thanks are due to those people who contributed from the ISPIM Scientific Panel.

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Forthcoming Events

Forthcoming Publications

ISPIM Special Issue on "Charting the Future of Innovation Management (Boston and Porto)" in International Journal of Innovation Management. Editors: Joe Tidd of SPRU University of Sussex, Eelko Huizingh of University of Groningen and Steffen Conn of ISPIM.

Special Issue in International Journal of Technology Management. Editors: Pia Hurmelinna-Laukkanen of University of Oulu and Heidi Olander of Lappeenranta University of Technology.


ISPIM Special Issue on "Changing the Innovation Landscape" in International Journal of Innovation Management. Editors: Joe Tidd of SPRU University of Sussex, Eelko Huizingh of University of Groningen and Steffen Conn of ISPIM.