

**Programm und Abstracts**

# **TIE Tagung 2011**

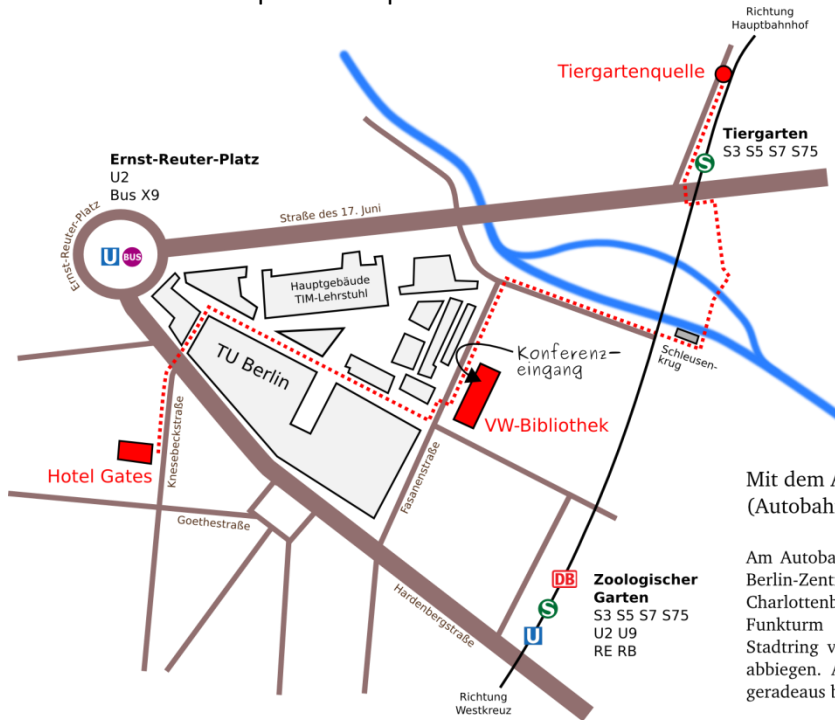
**der Wissenschaftlichen Kommission für  
Technologie, Innovation  
und Entrepreneurship**

**Technische Universität Berlin  
9. bis 11. November 2011**



**Universitätsbibliothek  
im Volkswagen-Haus  
Fasanenstr. 88  
D-10623 Berlin  
Telefon +49(0)30 314-76101**





## Lageplan Charlottenburg Tagungsort

### Hinweise zur Anreise

Mit dem Auto aus Richtung Hamburg/Rostock  
 (Autobahn A24)

Am Autobahndreieck Oranienburg auf die A111 Richtung  
 Berlin-Zentrum abbiegen, am Autobahndreieck  
 Charlottenburg auf die A100 (Stadtring) Richtung  
 Funkturm wechseln. Am Abzweig Kaiserdamm den  
 Stadtring verlassen und am Ende der Abfahrt nach links  
 abbiegen. Auf dem Kaiserdamm (später Bismarckstraße)  
 geradeaus bis zum Ernst-Reuter-Platz fahren.

Mit dem Auto aus Richtung Hannover (A2)  
 und Leipzig/Nürnberg (A9)

Auf der A10 (Berliner Ring) bis zum Autobahndreieck  
 Drewitz fahren, dort auf die A115 (AVUS) Richtung Berlin-  
 Zentrum wechseln. Am Autobahnkreuz Funkturm sich  
 Richtung Wedding halten, aber gleich die nächste Ausfahrt  
 Kaiserdamm nehmen und rechts abbiegen. Auf dem  
 Kaiserdamm (später Bismarckstraße) geradeaus bis zum  
 Ernst-Reuter-Platz fahren.

Mit der Bahn

Vom Hauptbahnhof mit der Regionalbahn oder mit der S-  
 Bahn (alle Linien in Richtung Charlottenburg, Westkreuz,  
 Potsdam oder Spandau) bis zum Bahnhof Zoologischer  
 Garten fahren.

Mit dem Flugzeug

Vom Flughafen Tegel mit der Buslinie X9 bis Ernst-Reuter-  
 Platz fahren.

Vom Flughafen Schönefeld entweder in den Regional-  
 express RE7 (Richtung Dessau) steigen oder in die S-  
 Bahnlinie 9 Richtung Pankow, umsteigen am Ostkreuz  
 Richtung Zoologischer Garten.

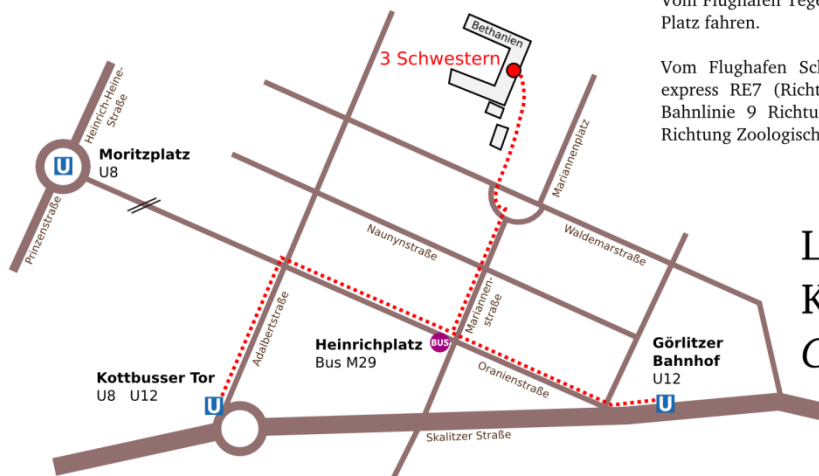
## Wichtige Adressen

Tagungsort VW-Bibliothek  
 Fasanenstraße 88  
 10623 Berlin

Hotel Gates  
 Knesebeckstrasse 8-9  
 10623 Berlin

Tiergartenquelle  
 Bachstraße, S-Bahnbögen 481 und 482  
 10555 Berlin

Restaurant "3 Schwestern"  
 Mariannenplatz 2  
 10997 Berlin



## Lageplan Kreuzberg Conference Dinner

**Mittwoch, 9.11.2011**

**16:00** **Nachwuchsworkshop (Raum BIB 012)**

**19:30** **Get Together im Restaurant „Tiergartenquelle“**, Bachstr. 6 / in den S-Bahnbögen 481 und 482 beim S-Bahnhof Tiergarten, 10555 Berlin (Tel. 030 / 392 7615)

**Donnerstag, 10.11.2011**

**09:30** **Eröffnung (Raum BIB 014)**

**10:00** **Pause**

<b>10:30</b>	<b>1.1: R&amp;D Cooperation (Raum BIB 012)</b> Session Chair: Ulrich Lichtenthaler	<b>1.2: Patent Management (Raum BIB 014)</b> Session Chair: Martin Kloyer
	1.1.1 Safeguarding R&D Coepetitions: The Interplay of Structural Governance and Communication <i>Sascha Walter, Achim Walter</i>	1.2.1 A new Instrument for Technology Monitoring: Novelty in Patents Measured by Semantic Patent Analysis <i>Jan M. Gerken, Martin G. Moehrle</i>
	1.1.2 Exploration and exploitation in network development: How ambidexterity affects new venture performance <i>Marc Ebers, Thorsten Semrau, Stefan Sigmund</i>	1.2.2 Patent Trolls on Markets for Technology – An Empirical Analysis of Trolls’ Patent Acquisitions <i>Timo Fischer, Joachim Henkel</i>
	1.1.3 The Role of Differences in Task Perceptions on University-Industry Collaborations <i>Carsten Schultz</i>	1.2.3 Are patent law firms intermediaries of knowledge spillovers? <i>Stefan Wagner, Karin Hoisl, Grid Thoma</i>

**12:00** **Mittagspause**

**13:30** **Plenarvortrag Prof. Dr. Wolf- Dieter Lukas: „Innovationsforschung – Anwendungsfall Hightech Strategie.“ (Raum BIB 014)**  
(Ministerialdirektor im Bundesministerium für Bildung und Forschung, Leiter der Abteilung 5 - Schlüsseltechnologien - Forschung für Innovationen)

**14:30** **Pause**

<b>14:45</b>	<b>2.1: Individual R&amp;D Collaboration (Raum BIB 012)</b> Session Chair: Martin Hoegl	<b>2.2: Roles in Innovation Processes (Raum BIB 014)</b> Session Chair: Christian Schade
	2.1.1 Labour Markets and Innovation: A Cross-Country Comparison in the Game Software Industry <i>Federico Riboldazzi, Cornelia Storz</i>	2.2.1 Antecedents of Entrepreneurial Intent: A Meta-Analytic Structural Equation Analysis <i>Christopher Schlägel, Michael König</i>
	2.1.2 Sharing Among Competing Researchers <i>Carolin Haeussler, Lin Jiang, Jerry Thursby, Marie Thursby</i>	2.2.2 Individuals’ Innovation Response Behavior - A framework of antecedents and opportunities for future research <i>Monique Goepel, Katharina Hölzle, Dodo zu Knyphausen-Aufseß</i>
	2.1.3 Networks of Promotors as Success Factor for Radical Innovations: Theoretical Considerations and Empirical Findings <i>Alexandra Rese, Daniel Baier</i>	2.2.3 Involvement of Middle Managers in Project Portfolio Management <i>Daniel Jonas, Alexander Kock, Carsten Schultz, Hans Georg Gemünden</i>

Fortsetzung Donnerstag, 10.11.2011		
<b>16:15</b>	<b>Pause</b>	
<b>16:45</b>	<b>3.1: Entrepreneurial Intent (*)</b> <b>(Raum BIB 012)</b> Session Chair: Marc Gruber	<b>3.2: User Innovation (*)</b> <b>(Raum BIB 014)</b> Session Chair: Frank Piller
	3.1.1 How to Educate Entrepreneurs? <i>Georg von Graevenitz, Richard Weber</i>	3.2.1 Forecasting the attractiveness of user-generated designs via online data: An empirical study within the LEGO user community <i>Morten Berg-Jensen, Christoph Hienerth, Christopher Lettl</i>
	3.1.2 Entrepreneurs from Low-Skilled Immigrant Groups in Knowledge-intensive Industries – Company Characteristics, Survival and Innovative Performance <i>Elisabeth Müller</i>	3.2.2 Why Individuals Contribute to Crowdsourcing – or Not: The Role of Perceived Fairness <i>Nikolaus Franke, Katharina Klausberger, Peter Keinz</i>
	3.1.3 National culture and modes of entry into entrepreneurship <i>Joern H. Block, Sascha G. Walter</i>	3.2.3 Identification of individuals with special qualities – Assessing the performance of pyramid-search <i>Christoph Stockstrom, René Chester Goduscheit, Jacob Høj Jørgensen, Christian Lühje</i>
<b>20:00</b>	<b>Konferenzdinner &amp; Verleihung des Jürgen Hauschildt Preises</b> im Restaurant „Drei Schwestern“ im Künstlerhaus Bethanien, Mariannenplatz 2, Berlin-Kreuzberg (Tel. 600 318 600), U-Bhf. Kottbusser Tor (U1, U8) oder Görlitzer Bahnhof (U1)	

(*) Paralleler Programmpunkt	
<b>16:45</b>	<b>Meet the Editors (Raum BIB 018)</b>
	Möglichkeit der Diskussion mit Mitgliedern des Editorial Boards der Journals Research Policy, Creativity Innovation Management und IEEE Transaction on Engineering Management

Freitag, 11.11.2011		
<b>09:00</b>	<b>Plenarvortrag Prof. Georg Von Krogh: „Motivation in open source software: Insights and future research paths“ &amp; Diskussion (Raum BIB 014)</b> (ETH Zürich, Chair of Strategic Management and Innovation)	
<b>10:30</b>	<b>Pause</b>	
<b>11:00</b>	<b>4.1: Organizing R&amp;D (Raum BIB 012)</b> Session Chair: Sören Salomo	<b>4.2: Innovation Strategy (Raum BIB 014)</b> Session Chair: Katrin Talke
	4.1.1 Existence and Performance Implications: A Contingency View on the Chief Technology Officer <i>Holger Ernst, Alexander Götz</i>	4.2.1 Sources of Strategic Flexibility in Emergent Organizations: A Matter of Resource Endowments or Resource Management? <i>Jan Brinckmann, Dietmar Grichnik, Luv Singh</i>
	4.1.2 The Integration between Strategy and Portfolio Management – Overcoming the Implementation Gap <i>Alexander Kock, Sasha Meskendahl, Hans Georg Gemünden</i>	4.2.2 The impact of foreign competition on cost-reducing process innovations of domestic firms <i>Jan Hendrik Fisch, Emanuel Varga</i>
	4.1.3 Firm Search for External Knowledge: How Institutions Matter for Innovation Performance <i>Wolfgang Sofka, Christoph Grimpe</i>	4.2.3 Business Model Innovation: Current Research Streams and Future Research Agenda <i>Patrick Spieth, Sabrina Schneider</i>
<b>12:30</b>	<b>Mittagspause</b>	
<b>13:30</b>	<b>Mitgliederversammlung &amp; Ausklang (Raum BIB 012)</b>	
<b>15:00</b>	<b>Ende der Veranstaltung</b>	

## **Session 1.1: R&D Cooperation (BIB 012)**

### Vortrag 1.1.1

#### **Safeguarding R&D Coopetitions: The Interplay of Structural Governance and Communication**

R&D collaborations with competitors (coopetitions) typically bear great benefits and risks. Our study examines the efficacy of structural safeguards in mitigating partnership risks (strategic manipulation and knowledge leakages), per se and in interaction with communication norms. A sample of 82 R&D coopetitions between technology ventures and established firms is used to test the efficacy of three safeguards, including contractual agreements, formalization, and goal congruence. The findings suggest that some safeguards are sufficient in themselves, while others are reinforced by high communication norms. Surprisingly, knowledge leakages increased with the level of formalization. The findings have important implications for theory building as well as for the practice of R&D coopetitions.

*Sascha Walter, Achim Walter*

### Vortrag 1.1.2

#### **Exploration and exploitation in network development: How ambidexterity affects new venture performance**

In this paper, we focus on exploration and exploitation in the structural domain of inter-organizational networks. We propose that network exploration, as the decision to form new ties, as well as network exploitation, as the reliance on recurrent ties, independently foster new ventures' economic performance. Additionally we argue that ventures achieve superior economic success when they ambidextrously balance both activities. Drawing on PSED II data we find large support for our hypothesis. In particular we find that both activities independently enhance a new ventures' economic performance. Moreover we find support for the hypothesis that new ventures achieve better economic success when they equally balance their exploration and exploitation activities.

*Marc Ebers, Thorsten Semrau, Stefan Sigmund*

### Vortrag 1.1.3

## **The Role of Differences in Task Perceptions on University-Industry Collaborations**

A firm's collaboration with universities plays an important role in its new product development process, especially if the firm is targeting highly innovative endeavors. However, in addition to the enormous possibilities offered by such collaborations, university-industry projects face many barriers. Because of the potential collisions of these institutions' thought worlds, the differences in their perceptions of the innovation task may hamper their relationship and the coordination of their inter-organizational development teams. The innovation task is characterized by the degree of innovativeness of the joint project. Using survey data of 160 university-industry project leaders from 80 dyads, this study focuses on the planning intensity and the social interactions that occur within the planning process as antecedents of the differences in the partners' task perceptions. Furthermore, this paper analyzes perception differences' influences on project performance, based on hierarchical and polynomial regressions. If both partners are involved in an intensive planning process, then the partners will share the same understanding of the project's innovativeness. Otherwise, the differences in the partners' task perceptions will increase. Additionally, the data show that if both partners have equal perceptions of the tasks, then innovativeness has an inverted U-shaped effect on performance.

*Carsten Schultz*

## **Session 1.2: Patent Management (BIB 014)**

### Vortrag 1.2.1

## **A new Instrument for Technology Monitoring: Novelty in Patents Measured by Semantic Patent Analysis**

Given that in terms of technology novel inventions are crucial factors for companies, this paper contributes to the identification of inventions of high novelty in patent data. As companies are confronted with an information overflow, and having patents reviewed by experts is a time-consuming task, we introduce a new approach to the identification of inventions of high novelty: a specific form of semantic patent analysis. Subsequent to embedding the concept of novelty into a framework, the classical method of semantic patent analysis will be adopted to support novelty measurement. By means of a case study from the automotive industry, we corroborate that semantic patent analysis is able to outperform available methods for the identification of inventions of high novelty. Accordingly, semantic patent information possesses the potential to enhance technology monitoring while reducing both costs and uncertainty in the identification of inventions of high novelty.

*Jan M. Gerken, Martin G. Moehrle*

## Vortrag 1.2.2

### **Patent Trolls on Markets for Technology – An Empirical Analysis of Trolls' Patent Acquisitions**

Patent trolls appropriate profits from innovation solely by enforcing patents against infringers. They are often characterized as relying on low-quality patents, an assessment that, if correct, would imply that eradicating such patents would effectively terminate the troll business. In this paper, we shed light on this issue by empirically analyzing trolls' patent acquisitions. We draw on a unique dataset of 392 U.S. patents acquired by known patent trolls between 1997 and 2006, which we compare to three control groups of 784 U.S. patents each acquired by practicing firms. Our findings regarding patent characteristics support recent theoretical propositions about the troll business model. The probability that a traded patent is acquired by a troll rather than a practicing entity increases in the scope of the patent and in the patent density of its technology field. Remarkably, and contrary to common belief, we find that this probability also increases in the patent's technological quality. On a descriptive level, we find that troll-acquired patents are of significantly higher quality than those in the control groups. This result implies that elevating minimum patent quality will not put an end to the patent troll business, and suggests that this business is sustainable in the long run. Furthermore, we discuss the fact that trolls are peculiar players on markets for technology insofar as they are solely interested in the exclusion right, not in the underlying knowledge. We posit that transactions involving patent trolls may only be the tip of the iceberg of "patent-only" transactions, a conjecture with strong implications for the efficiency of markets for technologies. Managerial and policy implications are discussed.

*Timo Fischer, Joachim Henkel*

## Vortrag 1.2.3

### **Are patent law firms intermediaries of knowledge spillovers?**

We investigate to what extent patent law firms that work as contracted service agents with patentees are knowledge brokers in the sense that they enable knowledge flows between different patent applicants. In a first attempt we address this research question by employing an empirical framework that models the likelihood of knowledge flows by analyzing whether citations between pairs of patents occur or not. A novel large scale dataset containing not only information on patent characteristics and patent citations but also information on the patent law firms that processed the patent application is used for the analysis. The results from a multivariate Probit analysis show that knowledge spillovers are significantly more likely to occur between patent applicants that contract the same law firm. This finding implies that patent law firms do act as knowledge brokers and are a channel of knowledge transmission that has so far not been identified.

*Stefan Wagner, Karin Hoisl, Grid Thoma*

## Session 2.1: Individual R&D Collaboration (BIB 012)

### Vortrag 2.1.1

#### **Labour Markets and Innovation: A Cross-Country Comparison in the Game Software Industry**

**Abstract.** This paper focuses on the effects of labour market structures on innovation. The game industry is an interesting case since it is structured differently between the best performing countries, contrasting to the expectation that innovation is in need of open labour markets. This raises two issues: Why can different patterns of labour markets be observed? How do they affect innovation? We first introduce contrasting approaches on the systematic relations between the structure of labour markets and the dynamics of innovation. We secondly present an empirical case which is based on mixed methods: The analysis of the individual market mobility was depicted from the product credits of 20.944 games created from 1977 to 2009 for home consoles and personal computers. Among these games we selected a random sample of 1183 titles (and computed diversity measures of the career experience of their creators (a total number of 39.439 individuals) in terms of number of different development companies they have worked for from 1977 to 2009. This research is supplemented by field research.

*Federico Riboldazzi, Cornelia Storz*

### Vortrag 2.1.2

#### **Sharing Among Competing Researchers**

We provide a game theoretic analysis of information sharing among competing researchers in two contexts: sharing when one researcher is asked by another to share specific information or materials and sharing involving presentation of new results in an open forum. The models are tested based on a survey of German and UK bioscientists. The theory and empirics both suggest that academia is less open than one might think, and sharing is highly context dependent. Sharing in both specific and general contexts is negatively related to competition and the importance of patents in scientific reputation. In other respects, such as career stage, they differ markedly, with nontenured faculty are less likely to respond to specific requests. Scientists in larger labs are more likely to do so, but they are less likely to share in open forums. Keywords: Information sharing, open science, scientific competition, knowledge diffusion, misappropriation.

*Carolin Haeussler, Lin Jiang, Jerry Thursby, Marie Thursby*

### Vortrag 2.1.3

## **Networks of promoters as success factor for radical innovations: Theoretical Considerations and Empirical Findings**

Empirical research in innovation management has shown that cooperation and efficient networks represent a central explanation for innovations in (nearly) all innovation processes. Therefore innovative cooperation has been investigated particularly intensively in innovation research. At the same time key actors and their relevance for initiation and implementation of innovations have been analyzed within companies. However, so far only little empirical evidence exists about the cooperation of innovative players across organizational borders as well as their role and significance for the innovation process. This study extends well-known studies on key actors of innovation projects with the help of a cross-company perspective. The focus lies on the importance of the group of key actors for project performance. As a result a current overview about innovation networks is given regarding network characteristics, distribution of roles and effects of group dynamics on project performance. It can be shown that the presence of a group of key actors interacting intensively and showing a high identification with the group – a so-called innovation community and here defined using a theory-based measurement model – has a significant positive effect on project performance especially in radical innovation projects.

*Alexandra Rese, Daniel Baier*

## **Session 2.2: Roles in Innovation Processes (BIB 014)**

### Vortrag 2.2.1

## **Antecedents of Entrepreneurial Intent: A Meta-Analytic Structural Equation Analysis**

Although previous research has contributed to our knowledge by identifying the determinants of entrepreneurial intent, the literature in this field has emerged as a collection of studies with little empirical integration. Researchers utilized a variety of theoretical frameworks to understand the determinants of individuals' intent to found an own venture. Extending previous research, we undertook a meta-analysis comparing the theory of planned behavior and the entrepreneurial event model using meta-analytic structural equation modeling. Analyses of 49 samples from 28 studies with an N of 21,638 individuals for the theory of planned behavior and 12 samples from 11 studies with an N of 10,010 individuals for the entrepreneurial event model indicated that both models have adequate explanatory power but are no substitute for each other. Recommendations for future research are developed.

*Christopher Schlägel, Michael König*

## Vortrag 2.2.2

### **Individuals' Innovation Response Behavior - A framework of antecedents and opportunities for future research**

Innovation response behavior (IRB) is defined as individuals' novelty-promoting or novelty-impeding behavior when navigating innovative initiatives through the organizational innovation process. It has been shown that within organizational contexts individuals often fail to implement their ideas due to factors that are beyond their control. Based on the theory of planned behavior, we show how these factors influence the individual intentional and the executed behavior. Furthermore, in line with the argument that people engage in any behavior with differing levels of proactivity, a typology of innovation response behavior is developed. This typology is valid for both positive as well as negative, i.e. corrective, contributions of organizational members, distinguishing between active and passive modes of conduct. The antecedents of the innovation response behavior are delineated based on West and Farr's five-factor model of individual innovation. Furthermore, we derive propositions about proximal and distal antecedents for individuals' innovation response behavior. Proposing a research framework to study the organizational innovation process from an actor-based perspective, this paper intends to link past research on individual innovative workplace behavior with the process of innovation at the organizational level, explicitly acknowledging the socio-political dynamics and arising managerial problems associated with it. Implications for research in innovation management are discussed and avenues for future research outlined.

*Monique Goepel, Katharina Hölzle, Dodo zu Knyphausen-Aufseß*

## Vortrag 2.2.3

### **Involvement of Middle Managers in Project Portfolio Management**

In response to a rising number of simultaneously conducted projects, many firms design and implement explicit project portfolio management (PPM) processes, which aim to achieve transparency and strategic orientation among all of their projects. In these processes, new managerial tasks and roles are introduced. Our paper addresses the lack of sound empirical evidence (beyond findings from case studies) with regard to three major research gaps in the literature. First, we define the substantial tasks and sub-processes comprising PPM and test their impact on performance using a large sample of 194 firms. We then measure to what extent different middle management roles are involved in PPM. Finally, we analyze how the involvement of different roles affects portfolio performance. Derived from organizational control theory, our study identifies the involvement of line managers as the critical component for the effectiveness of task execution in PPM. We find a negative moderating impact of the degree of line managers' involvement on the relationship between task execution and performance. This finding is surprising because the literature generally depicts PPM as an explicit task for middle managers. Based on our findings, we argue for role-contingency of control means and specifically make a case for a more differentiated review of middle management involvement in future organizational control research.

*Daniel Jonas, Alexander Kock, Carsten Schultz, Hans Georg Gemünden*

## **Session 3.1: Entrepreneurial Intent (BIB 012)**

### Vortrag 3.1.1

#### **How to Educate Entrepreneurs?**

Entrepreneurship education has two purposes: To improve students' entrepreneurial skills and to provide impetus to those that are suited to entrepreneurship while discouraging those that are not. This second aspect helps students in making a vocational decision. The two purposes of entrepreneurship education may conflict for students not suited to entrepreneurship. This study shows that the vocational and the skill formation effects can be identified empirically by drawing on the Theory of Planned Behavior. This is embedded in a structural equation model which we estimate and test using a robust 2SLS estimator introduced by Bollen (1996). It is shown that the attitudinal factors posited by the Theory of Planned Behavior are significantly and positively correlated with students' entrepreneurial intentions. While the conflicting effects of vocational and skill directed course content are observed in some individuals, on average these types of content are weak complements. This finding contrasts with previous results in the literature. We reconcile the conflicting findings and discuss implications for the design of entrepreneurship courses.

*Georg von Graevenitz, Richard Weber*

### Vortrag 3.1.2

#### **Entrepreneurs from Low-Skilled Immigrant Groups in Knowledge-intensive Industries – Company Characteristics, Survival and Innovative Performance**

This paper analyzes how companies of immigrant entrepreneurs in knowledgeintensive industries differ from companies of native entrepreneurs with respect to start-up characteristics, firm survival and innovative performance. I focus on immigrants from the "recruitment countries" of south and southeast Europe, who arrived in Germany mainly in the 1970s to fill labor shortages. They are the largest immigrant group in Germany and can be reliably identified via ethnic name coding. Immigrant entrepreneurs are less than half as likely to found a company in a knowledge-intensive industry as native entrepreneurs. Firms owned exclusively by immigrants tend to be smaller and have higher exit rates. After controlling for resources, I found no differences in patenting activity compared to firms owned exclusively by natives. Firms in mixed immigrant/native ownership have no size disadvantage. In that group, exit rates are higher in services but not in manufacturing, and, again, there are no differences in patenting when resources are taken into account. The lower participation of immigrant entrepreneurs in knowledge-intensive industries can be explained by lower education levels, while smaller firm sizes suggest more limited access to capital.

*Elisabeth Müller*

### Vortrag 3.1.3

#### **National culture and modes of entry into entrepreneurship**

Previous research has focused on national culture as a determinant of entrepreneurship. However, little is known regarding the effect of national culture on modes of entry into entrepreneurship. Using a large data set from 34 countries, this paper analyzes the cultural determinants of two distinct modes of entry into entrepreneurship: business takeovers versus new venture starts. Our hierarchical regressions show that a country's levels of power distance, individualism and uncertainty avoidance influence the preferred path to entrepreneurship in that country. The implications of our findings for theory and practice are discussed.

*Joern H. Block, Sascha G. Walter*

## **Session 3.2: User Innovation (BIB 014)**

### Vortrag 3.2.1

#### **Forecasting the attractiveness of user-generated designs via online data: An empirical study within the LEGO user community**

The publishing of user-generated content and reactions to this content from the user community have attracted increasing attention from academics and practitioners alike. We develop a framework based on various theories (including creativity theory, information processing theory and design theory) and employ a two-level model to reflect the typical feedback behavior found in Web 2.0 settings: On its first level, the model predicts whether a user-generated design will receive positive initial feedback at all, while on the second level it predicts whether a user-generated design will accumulate positive feedback. In an analysis of 1,533 user-generated designs from the LEGO DesignByMe platform, we find inverted U-shaped relationships for the composition of a user-generated design and the centrality of a user-designer within the user community on both levels (initial and accumulated positive feedback), and inverted U-shaped relationships for the description length of a user-generated design and the breadth of activities of a user-designer within the user community for the first feedback level (initial feedback only). Contrary to theoretical reasoning, we find a U-shaped relationship for the proficiency status of a user-designer. We compare our model empirically to a number of other models which have been proposed to address key features of count data.

*Morten Berg-Jensen, Christoph Hienerth, Christopher Lettl*

### Vortrag 3.2.2

#### **Why Individuals Contribute to Crowdsourcing – or Not: The Role of Perceived Fairness**

“Crowdsourcing” is an emerging organizational form in which a company broadcasts problems to an unknown group of potential problem-solvers in the form of an open call for solutions and then makes commercial use of the best solutions generated. What motivates users to contribute to these initiatives and how can firms design crowdsourcing systems responsive to these motives? We test the prediction that perceived fairness is a key factor. Two experimental simulations reveal that distributive and procedural fairness perceptions are influenced by the organization of the crowdsourcing system. In turn, both dimensions of fairness have a clear impact on the individuals’ decisions to submit designs, even after accounting for self-interest, which has been the primary focus of previous research. Fairness perceptions are interrelated with the individuals’ general trust in the organizing firm: Higher levels of prior trust in the company lead to more favorable fairness perceptions of the crowdsourcing business model. Fairness perceptions also have an effect on future trust in the company. This means that if individuals perceive the crowdsourcing system as unfair, it will not only prevent them from submitting design solutions, it may even cause a problematic loss of trust in the company as a whole.

*Nikolaus Franke, Katharina Klausberger, Peter Keinz*

### Vortrag 3.2.3

#### **Identification of individuals with special qualities – Assessing the performance of pyramiding search**

Companies need to consistently gather external information in order to stay competitive. Important sources of information are special users and customers, who often play key roles during the different phases of the marketing process. As these special users are typically hidden within a considerably larger population, traditional screening searches for their identification are often inefficient. Pyramiding, a variant of snowball sampling, has been advocated as comparatively more efficient search strategy when target persons are very rare. However, little empirical work has been done on investigating this acclaimed superiority of pyramiding relative to screening. This study aims at contributing to the literature on pyramiding search by empirically investigating the performance of pyramiding search in varying settings. Firstly, we study how pyramiding efficiency is influenced by the visibility of the special quality being sought, i.e. how easy it is for people to know if and to what degree others possess a special quality. Secondly, we examine the impact of the size of the population being searched on the efficiency of pyramiding, i.e. if pyramiding performs relatively better or worse compared to screening in populations of different sizes. To extend initial findings on the efficiency of pyramiding, we analyzed data from a field experiment involving some 470 pupils in 20 school classes. First, in line with previous results, we find pyramiding search to be significantly more efficient in identifying rare individuals with special qualities. Second, we analyzed the efficiency of pyramiding search for (1) search attributes of varying levels of visibility and in (2) networks of different sizes and find both variables to significantly affect the performance of pyramiding search. We find that the level of visibility of the focal search criterion is positively associated with the efficiency of pyramiding. Further, the relative efficiency of pyramiding vs. screening increases with an increasing population size.

*Christoph Stockstrom, René Chester Goduscheit, Jacob Høj Jørgensen, Christian Lüthje*

## **Session 4.1: Organizing R&D (BIB 012)**

### Vortrag 4.1.1

#### **Existence and Performance Implications: A Contingency View on the Chief Technology Officer**

We investigate factors associated with the choice of a firm to have a chief technology officer in its top management team. Based on contingency theory, we suggest that factors associated with uncertainty and complexity in the technology domain will influence the decision to have a CTO as well as its effect on performance. Using a large 9-year sample, we find that environmental uncertainty, industry R&D intensity, market concentration, firm size and the complexity of the firm's products are associated with the likelihood of CTO presence. Furthermore, CTO existence has a significantly positive impact on Tobin's Q but not on ROA.

*Holger Ernst, Alexander Götz*

### Vortrag 4.1.2

#### **The Integration between Strategy and Portfolio Management – Overcoming the Implementation Gap**

Firms face more difficulties with the implementation of strategies than with its formulation. This paper investigates how successful firms overcome this implementation gap by project portfolio management which has emerged as new means for executing strategies. We identify and analyze three critical elements for strategy implementation on the portfolio level: (1) a stable strategy giving long-term orientation, (2) a clear strategy being transparent and comprehensible, and (3) the vertical integration of strategy and portfolio processes. Moreover, we investigate how strategy implementation is affected by senior management. The empirical analysis is based on a multi-informant survey of 199 large and medium-sized firms from the German-speaking countries. Results show that although all strategy elements are positively correlated to portfolio performance, the effects of clarity and stability of strategy are mediated by vertical integration. Therefore, all three strategic factors are essential to the successful strategy implementation on the portfolio level. The pivotal element is however the vertical integration of strategy formulation and strategy implementation processes. We also find that senior management involvement strongly affects all three strategic factors. The interaction between senior management and middle management both in strategy formulation and implementation is therefore critical for success.

*Alexander Kock, Sascha Meskendahl, Hans Georg Gemünden*

### Vortrag 4.1.3

#### **Firm Search for External Knowledge: How Institutions Matter for Innovation Performance**

The innovation performance of modern firms is increasingly determined by their ability to search and absorb external knowledge. However, after a certain threshold firms “oversearch” their environment and innovation performance declines. In this paper, we argue that prior literature has largely ignored the institutional context that provides or denies access to external knowledge at the country level. Combining institutional and knowledge search theory, we suggest that the market orientation of the institutional environment and the magnitude of institutional change influence when firms begin to experience the negative performance effects of oversearch. Based on a comprehensive sample of almost 8,000 firms from ten European countries, we find that institutions matter considerably for firms’ search activity. Higher market orientation of institutions increases the effectiveness of firms’ search for external knowledge while higher magnitudes of institutional change decrease it. Our results provide important insights for management on how to adapt search strategies to the institutional context.

*Wolfgang Sofka, Christoph Grimpe*

## **Session 4.2: Innovation Strategy (BIB 014)**

### Vortrag 4.2.1

#### **Sources of Strategic Flexibility in Emergent Organizations: A Matter of Resource Endowments or Resource Management?**

In this article, we analyze the effects of resource management and resource endowments on the strategic flexibility of emergent organizations. We find that a greater degree of resource management activity, containing innovative and resourceful actions for acquiring and deploying resources, leads to greater strategic flexibility. Moreover, our results indicate that human and social capital endowments are positive antecedents of strategic flexibility whereas financial capital endowment does not enhance strategic flexibility. Theoretical and practical implications are discussed.

*Jan Brinckmann, Dietmar Grichnik, Luv Singh*

#### Vortrag 4.2.2

### **The impact of foreign competition on cost-reducing process innovations of domestic firms**

Recent studies point to the importance of cost reduction as a strategic reaction to inward foreign competition. Cost reduction through process innovations requires irreversible investments. Real option theory suggests that market uncertainty plays an important role for such investments. In particular, uncertainty influences the investment decision by inducing a waiting option value and a growth option value. Applying this logic to process innovations, we argue that firms hesitate about implementing cost-reducing technologies in order to parry foreign attacks under uncertainty. However, high uncertainty creates an incentive to develop new technologies in order to gain future growth opportunities and pre-empt competitors. Our panel study of 573 product divisions of German manufacturing firms shows that, while foreign competition generally increases expenditures for process innovations, market uncertainty imposes a U-shaped direct and moderating effect on this relation. Foreign competition from low- and high-wage economies seem to reinforce each other.

*Jan Hendrik Fisch, Emanuel Varga*

#### Vortrag 4.2.3

### **Business Model Innovation: Current Research Streams and Future Research Agenda**

We develop a theory of the distinctive elements and processes of business model innovation and strategic agility as an enabler, with strategic flexibility as an effect. Although business model innovation literature is still in its infancy, our tentative theoretical framework extends research on business model innovation by broadening and evaluating different views on business model innovation. In addition, we provide a future integrative research agenda to explore the business model innovation phenomenon.

*Patrick Spieth, Sabrina Schneider*