An Alternative Way to Make Knowledge Sharing Work in Online Communities? The Effects of Hidden Knowledge Facilitators

Some firms use hidden knowledge facilitators (HKFs) to facilitate knowledge sharing among employees within intrafirm online communities. These firms hope for enhanced knowledge sharing outcomes within their organizations without letting employees know that HKFs exist. Yet, the extent to which HKFs’ interventions are effective remains unknown to researchers and managers. Built on the knowledge sharing (KS) literature, this study explores the unique roles of HKFs as moderators between a company and its employees. We develop several hypotheses to test the impact of the quantity and quality of HKFs’ online interventions on several KS outcomes. By analyzing log data of a Chinese corporation’s online R&D community, we find that (1) the quantity of HKFs’ intervention has a mostly positive impact on KS outcomes; (2) the quality of HKFs’ intervention has a mixed impact on several KS outcomes, depending on which aspect of quantity is considered; and (3) the quality of HKFs’ intervention also moderates the positive impact of the quantity of HKFs’ intervention in different ways on different intended KS outcomes. This study makes a clear contribution to the literature on knowledge sharing and knowledge facilitation by demonstrating the impact of HKFs on KS outcomes in a Chinese context.
Designers’ identity: skills’ self-perception and expectation in design students

Designers’ Professional Identity (DPI) combines social- and self-perceptive awareness through which one is able to identify as a designer. However, self-perception can be different from the expectations associated with an ideal designer, especially during education. Thus, this paper reports a survey where self-perceived design skills and expectation are compared at different points in a design education. Findings indicate that changes in mindset modify the alignment between self-perception and expectations, which provides implications for education and for a broader understanding of DPI.

From potential to real threat? The impacts of technology attributes on licensing competition

The market for technology has gained popularity among organizations to access external technologies. Prior studies have revealed a great deal regarding firms’ propensity of licensing under different levels of competition. This study clarifies the differences between potential technology competition (PTC) and actual licensing competition (ALC) and investigates the relationship between these two types of competition in the context of Chinese patent licensing landscape. The findings suggest that when an organization licenses out a patent, the chance that it faces actual competition on the licensing market increases with licensing demand and the crowdedness within a specific technology field. The positive impact of PTC on ALC is contingent upon the generality, complexity and newness of the licensed patent. Managers who actually make licensing decisions can develop a framework to monitor the likelihood of licensing competition by following the findings in this study.
Linking forms of inbound open innovation to a driver-based typology of environmental innovation: Evidence from French manufacturing firms

Environmental innovation research has not yet clarified how different forms of inbound innovation might exert effects. The current article proposes four driver-based EI types according to two main dimensions: compliance versus voluntary and own value capture versus customer value capture. With a problem-solving perspective, we develop links from different forms of inbound innovation to various types of EI and test the related hypotheses with two waves of the French Community Innovation Survey. On a short-term basis, R&D cooperation and technology acquisition correlate positively with all four types of EI, but over time, persistent R&D cooperation and technology acquisition are associated with EI only at the production stage, according to voluntary/strategic or compliance drivers. Inbound innovation enables quick responses to market demands for EI in the final use stage.

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Université Savoie Mont Blanc, Luxembourg Institute of Socio-Economic Research (LISER)
Contributors: Li-Ying, J., Mothe, C., Nguyen, T. T. U.
Number of pages: 13
Pages: 51-63
Publication date: 2018
Peer-reviewed: Yes

Publication information
Journal: Technological Forecasting and Social Change
Volume: 135
ISSN (Print): 0040-1625
Ratings:
BFI (2018): BFI-level 1
Scopus rating (2018): CiteScore 4.32 SJR 1.422 SNIP 1.745
Web of Science (2018): Impact factor 3.815
Web of Science (2018): Indexed yes
Original language: English
Keywords: Environmental innovation, Inbound open innovation, R&D acquisition, R&D cooperation, Technology sourcing, Value creation and capture
Electronic versions:
Li_Ying_et_al._2017_TFSC.pdf. Embargo ended: 16/06/2019
DOIs: 10.1016/j.techfore.2017.05.031
Source: FindIt
Source-ID: 2371787675
Research output: Contribution to journal › Journal article – Annual report year: 2018 › Research › peer-review

The reverse tragedy of the commons: an exploratory account of incentives for under-exploitation in an open innovation environment

This paper presents an empirical account of a phenomenon that we refer to as the 'reverse tragedy of the commons' in open innovation. The name signifies the 'under-exploitation' of intellectual property (IP) under weak appropriability. The name is this graphic because the tragedy is costly, and can also render IP effectively worthless and block innovation in the short to medium term. We propose that the tragedy is borne out of the interaction between enterprise characteristics, a competitive setting and the framework that is set by the policy intervention. This finding is pertinent to policy-makers with regard to the design of research, development and innovation instruments, as well as managers who must determine how to implement open practices in innovation.

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Gaia Consulting, Prime Minister's Office
Contributors: Piirainen, K. A., Raivio, T., Lähteenmäki-smith, K., Alkaersig, L., Li-Ying, J.
Number of pages: 14
Pages: 268-281
Publication date: 2018
Peer-reviewed: Yes

Publication information
Journal: Technology analysis and Strategic Management
Volume: 30
A configurational analysis of success factors in crowdfunding video campaigns

Recent discussions on success factors on crowdfunding campaigns highlight a plentitude of diverse factors that stem from different, partly contradicting theories. We focus on campaign videos and assume more than one way of creating a successful crowdfunding video. We generate data of 1000 randomly chosen Kickstarter projects from the technology and design domain, and analyze those 715 campaigns that contain a video applying a fuzzy-set configuration analysis. Our results suggest that there are indeed several configurations of elements in videos that are correlated with different levels of success (equifinality) and that conditions leading to success are conceptually different from failure (causal asymmetry).

Designer's identity: Development of personal attributes and design skills over education

Designers' Professional identity (DPI) is a social- and self-perceptive construct through which designers are able to identify themselves. To understand the development of DPI, not just as a profession but also as an educational process, there is a need to consider the designer as both individual and trained professional. These interactions become also a necessary foundation for professionalism that is especially important for design activity. For this study, a psychometric survey was developed by taking in consideration both aspects of DPI, making use of a set of elements distilled from literature as conceptual parameters for Personal Attributes and Design Skills. The survey evaluated professional selfawareness of design students at bachelor and master level; also providing a first profile model of the two groups. The dynamics of the relations between the DPI elements changes and develops very slowly due to the process of identity consolidation over the educational period. Further, DPI consolidates through a lifelong learning process. These results provide an initial insight into the development of DPI and the challenges of measuring this subjective aspect over education.
Team cohesion in intensive care nursing: at the interface of nurse self-concept and unit structure

Team cohesion is a critical factor in the provision of high-quality care, yet its antecedents remain understudied, particularly in the context of some healthcare professional groups where structural and individual constraints coexist, and demand for high quality performance is prevailing. In this study, we focus on the nursing group in intensive care units (ICU). Not researched, yet important for employee attitudes towards their workplaces and workgroups, is the interface between the characteristics of individual care providers and those of the teams and organizations in which they are employed. This study examines the effects of three levels of self-concept—individual, relational, and collective—and ICU structural characteristics such as size (number of nurses), nurse training profile, and number of beds. These factors are investigated as they jointly shape the degree to which nurses perceive their teams as cohesive. A multi-source and multi-level study of approximately 140 nurses employed in 20 ICUs across Denmark demonstrates the critical role of self-concept in easing and enhancing the constraints workplaces impose on team cohesion. Furthermore, the study confirms the positive relationship between overall team member-rated cohesion and manager-rated quality of care. Hence, understanding the interplay among self-concept, ICU structural characteristics, and team cohesion is highly relevant to enhancing quality of care.

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Copenhagen Business School
Contributors: Paunova, M., Li-Ying, J.
Number of pages: 6
Publication date: 2017

Host publication information
Title of host publication: The Academy of Management Annual Meeting 2017
Publisher: Design Society
(Academy of Management Proceedings).
Electronic versions:
10720_Paunova_Li_Proceedings_JLY.pdf. Embargo ended: 01/01/2018
DOIs:
10.5465/AMBPP.2017.20
Research output: Chapter in Book/Report/Conference proceeding > Article in proceedings – Annual report year: 2017 > Research > peer-review

Technological Innovation and Beyond: Exploring Public Value of University Inventions Based on Contingent Effectiveness Model

University inventions are traditionally seen as significant input into development of new technologies and innovations in the market as they generate growth and regional development. Yet, these inventions developed into new technologies can simultaneously create public values such as those that are related with sustainability goals. In this paper, we apply the Contingent Effectiveness Model by Bozeman et.al. (2015) as a framework to consider the effectiveness of technology transfer from university to industry via licensing, and examine what values derive during the commercialization process of university inventions. We define four main values: technological, economic, social and environmental, and place the latter two under the concept of public value. The aim of this paper is to expand the understanding of public value and incorporate it into technology transfer literature. We assign to the concept of public value a measurement tool, thus, making public value a measurable concept. Therefore, this study not only extends conceptual and theoretical considerations of public value (Jørgensen and Bozeman 2007), but it also provides evidence based on collected data. A unique data set from survey of university licensee companies reveals that university inventions that are accomplished technologically, often create added public value, social or environmental, or both.

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Contributors: Milana, E., Li-Ying, J., Faria, L.
Number of pages: 13
Publication date: 2017

Host publication information
Title of host publication: International Conference on Innovation and Management
**Designer's Identity: Personal Attributes and Design Skills**

A designer's professional identity (DPI) develops through both education and professional experience, building on core personality traits and innate skills. In this paper a systematic literature review and a secondary narrative review were developed in order to map personal attributes and design skills that comprise the DPI. Just a few works in literature dealt with these two elements holistically. Thus, in order to address this gap a holistic understanding of these elements, in context, is proposed as a cohesive framework where a DPI can be described as it evolves over time.

**General information**

Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Contributors: Kunrath, K., Cash, P., Li-Ying, J.
Number of pages: 12
Pages: 1729-1740
Publication date: 2016

**Host publication information**

Title of host publication: 14th International Design Conference - Design 2016
Publisher: Design Society
Keywords: Designer, Identity, Personality, Skills, Competencies
Source: PublicationPreSubmission
Source-ID: 123869242
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2016 › Research › peer-review

**Dual boundary spanning: Toward a typology of outside-in open innovation in the Canadian context**

The extant literature runs short in understanding openness of innovation regarding and the different pathways along which internal and external knowledge resources can be combined. This study proposes a unique typology for outside-in innovations based on two distinct ways of boundary spanning: whether an innovation idea is created internally or externally and whether an innovation process relies on external knowledge resources. This yields four possible types of innovation, which represent the nuanced variation of outside-in innovations. Using historical data from Canada for 1945–1980, this study unveils different implications of these innovation types for different levels of innovation novelty.

**General information**

Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Contributors: Li-Ying, J.
Number of pages: 15
Publication date: 2016
Peer-reviewed: Yes

**Publication information**

Journal: Canadian Journal of Administrative Sciences
ISSN (Print): 0825-0383
Ratings:
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.5 SJR 0.257 SNIP 0.498
Web of Science (2016): Impact factor 0.268
Web of Science (2016): Indexed yes
Original language: English
Keywords: Open innovation, Resource-based view, Outside-in innovation types, External knowledge
Electronic versions:
CJAS_2016_Jason_Li_Ying.pdf. Embargo ended: 01/12/2017
DOIs:
10.1002/cjas.1428
Source: FindIt
Source-ID: 2349432487
Research output: Contribution to journal › Journal article – Annual report year: 2017 › Research › peer-review
How do dynamic capabilities transform external technologies into firms' renewed technological resources? – A mediation model

How externally acquired resources may become valuable, rare, hard-to-imitate, and non-substitute resource bundles through the development of dynamic capabilities? This study proposes and tests a mediation model of how firms' internal technological diversification and R&D, as two distinctive microfoundations of dynamic technological capabilities, mediate the relationship between external technology breadth and firms' technological innovation performance, based on the resource-based view and dynamic capability view. Using a sample of listed Chinese licensee firms, we find that firms must broadly explore external technologies to ignite the dynamism in internal technological diversity and in-house R&D, which play their crucial roles differently to transform and reconfigure firms' technological resources.

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, University of London, Sichuan University
Contributors: Li-Ying, J., Wang, Y., Ning, L.
Number of pages: 28
Publication date: 2016
Peer-reviewed: Yes

Publication information
Journal: Asia Pacific Journal of Management
Volume: 33
Issue number: 4
ISSN (Print): 0217-4561
Ratings:
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.41 SJR 1.369 SNIP 1.284
Web of Science (2016): Impact factor 2.024
Web of Science (2016): Indexed yes
Original language: English
Keywords: Resource-based view, Dynamic capabilities, Technological diversification, In-house R&D, Patent licensing, Technological innovation
Electronic versions:
Personal_version_APJM_2016.pdf. Embargo ended: 05/05/2017
DOIs: 10.1007/s10490-016-9469-9
Source: PublicationPreSubmission
Source-ID: 123738684
Research output: Contribution to journal › Journal article – Annual report year: 2016 › Research › peer-review

Improving Creativity Training: A Study of Designer Skills
Creativity is widely accepted to be a crucial element in design, and design has traditionally been a popular domain for creativity studies. Moreover, creativity has repeatedly been shown to be an important element for design and innovation e.g. [Christiaans 1992], [Amabile et al. 1996], [Dorst and Cross 2001]. Establishing that creativity is important for design and innovation implies that identifying ways of improving creativity is a relevant research area within design studies. Creativity is a basic human skill and multiple studies have been published showing that creativity is a skill that can be trained (see e.g. [Scott et al. 2004] for a review of these). Despite establishing that creativity training works, it is though not yet clear how individual creativity skills can influence the creative process, although many studies have been published on different types of creativity training formats e.g. [Scott et al. 2004], [Robbins and Kegley 2010]. The aim of this study was therefore to investigate how individual creativity skills influence the creative process of design teams working within the fuzzy front end (as defined in [Koen et al. 2002]) of innovation; an important first step in identifying which individual creativity skills should be trained in designers. An exploratory study was designed, using participatory observation of two design teams in a six-month case study in two major organizations, with individual skills being the unit of analysis. The focus of the study was to observe the process the teams operated within and its progress when individuals applied their creativity skills to advance its progress, while the intent was not to assess the creative product or output as such. Design is a collaborative effort and creativity has to be understood both on an individual and on a team level. In creativity research, the ‘standard definition of creativity’ [Runco and Jaeger 2012] defines creativity as the production of something new and appropriate for a specific context, thus bringing value to its prospective users [Stein 1953]. Onarheim and Friis-Olivarius [2013] suggest that ‘new’ is related to divergent thinking, the process of coming up with multiple solutions, while ‘appropriate’ coincides with convergent thinking, the process of taking those multiple ideas and converging them into an appropriate solution. Divergent thinking is here considered somewhat a ‘solo sport’, as producing ideas is often considered as a cognitive individual task [Onarheim 2011], whereas convergent thinking could be thought of as a ‘team sport’ – teams are good at selecting ideas and are likelier to successfully complete the task [Singh and Fleming 2010]. Thus, creativity training for
designers should not only be directed at the individual level by enhancing individual creativity skills, but also improvement at the team level, rendering it important to first improve the understanding of both these levels of creativity in the design process. There are multiple ways to train creativity, although currently most creativity training is directed at enhancing individual creativity skills, usually measured through the ability to generate ideas, i.e. divergent thinking [Guilford 1959]. However, as individually focused as creativity training might seem, DESIGN INNOVATION Scott et al. [2004] concluded that the most optimal way of training creativity is through a combination of (1) educating individuals about creativity, thereby building a solid theoretical understanding, and (2) providing them with a real world case where they are trained in the use of creative tools and processes[Scott et al. 2004]. The latter point has great implications for creativity training for designers, as in the real world designers rarely work in a void but in teams and thus the team interactions should be taken into account in creativity training for designers. Here we understand the team as an entity, independent from, yet influenced by the organization, however largely dependent on individuals; the individuals that make up the team (following [Woodman et al. 1993]). With that in mind the current study was designed to investigate individuals and how they operate in the team, thus focusing both on the individual level as well as the team level and their respective importance and contribution to the creative process of design teams. In the following chapters a theoretical overview is first provided about the individual- and team level in regards to creativity literature. Next, a description of the case study and the methods deployed in the context of the case study is given. Chapter four contains the findings of the study and chapter five provides a discussion and subsequent conclusions drawn from the

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Contributors: Valgeirsdóttir, D., Onarheim, B., Li-Ying, J.
Pages: 1175-1184
Publication date: 2016

Host publication information
Title of host publication: 14th International Design Conference - Design 2016
Publisher: Design Society
Keywords: Creativity, Creativity training, Creative process, Design creativity, Designer skills
Research output: Chapter in Book/Report/Conference proceeding » Article in proceedings – Annual report year: 2016 » Research » peer-review

Knowledge sharing behavior and intensive care nurse innovation: the moderating role of control of care quality

Aims
This study investigates the influence of intensive care unit nurses’ knowledge sharing behaviour on nurse innovation, given different conditions of care quality control.

Background
Health-care organisations face an increasing pressure to innovate while controlling care quality. We have little insight on how the control of care quality interacts with the knowledge sharing behaviour of intensive care nurses to affect their innovative behaviours.

Methods
We developed a multi-source survey study of more than 200 intensive care nurses at 22 intensive care units of 17 Danish hospitals. Two versions of the questionnaire were used – one designed for nurse employees and the other for the managing nurse(s). An ordinary least squares regression analysis was used to test the hypotheses.

Results
Different aspects of knowledge sharing affect innovation differently, depending on the strength of the control of care quality within the unit.

Conclusions
The increasing pressures to implement the control of care quality and innovate may be conflicting, unless handled properly.

Implications for nursing management
Process control at intensive care units should be loosened, when personal interaction between intensive care nurses is encouraged to stimulate nurse innovations. Alternatively, managers may develop a climate where helping others, especially with younger colleagues, offsets the negative effects of strong process control.

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Copenhagen Business School, University of Copenhagen
Contributors: Li-Ying, J., Paunova, M., Egerod, I.
Pages: 943-953
Knowledge Sharing, Control of Care Quality, and Innovation in Intensive Care Nursing

This study investigates the influence of nurse knowledge sharing behavior on nurse innovation, given different conditions of control of care quality within the intensive care unit (ICU). After conducting a number of interviews and a pilot study, we carried out a multi-source survey study of more than 200 nurses employed in 22 ICUs at 17 Danish hospitals. Overall, we find that knowledge sharing among individual ICU nurses has a positive impact on their innovation. Meanwhile, strong control of care quality makes this positive impact less effective. However, different aspects of knowledge sharing affect innovation differently, depending on the strength as well as type of control of care quality within the unit. Healthcare organizations face an increasing pressure to innovate while controlling and accounting for care quality. This study demonstrates that the increasing pressures to implement control of care quality and innovate may be conflicting, unless handled properly.

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, University of Copenhagen, Copenhagen Business School
Contributors: Paunova, M., Li-Ying, J., Egerod, I. E.
Number of pages: 31
Publication date: 2016

Host publication information
Title of host publication: The Academy of Management Annual Meeting 2016
Volume: 2016, 1
Publisher: Academy of Management (Academy of Management Proceedings).
DOIs: 10.5465/ambpp.2016.10326abstract
Source: FindIt
Source-ID: 2349368815
Research output: Chapter in Book/Report/Conference proceeding – Article in proceedings – Annual report year: 2017 – Research – peer-review

Reactive or proactive approach towards sustainability? A conceptual framework based on sustainable business models to increase stakeholders' sustainable value capture

Indications towards the need for development and implementation of solutions for more sustainable development are not recent. However, the world is still struggling to tackle these challenges, and sustainability is not an optional agenda, but rather it is an obligatory and necessary issue for the various actors in society. This is also valid for organizations, which are expected to assume a more proactive and entrepreneurial posture towards tackling sustainable development challenges. In this sense, sustainable business model approach can support organizations to be more sustainable, serving as instrument to help companies describe, analyze, manage and communicate their sustainable value proposition, creation, delivery and capture mechanism. In particular, this research focuses on value capture dynamics, aiming to explore how companies can increase their contribution to sustainable development by fostering sustainable value capture of their stakeholders. Thus, we bring a literature review to discuss the mechanism of two approaches: the reactive and proactive approach. The first logic is about satisfying stakeholders’ needs and wants, reacting to their demands. A more reactive approach to stakeholders’ expectations is supported by motivations derived from marketing, corporate social...
responsibility, international standards, sustainability reporting, labelling, etc. However, these demands are not always aligned with sustainability, creating tensions between stakeholder satisfaction and corporate sustainability. In this sense, a proactive approach to foster sustainable value capture can complement the reactive approach by delivering value beyond stakeholders’ expectations. In this case, companies use their capabilities to identify opportunities to create and deliver sustainable value that stakeholders were not expecting or demanding, but that are positive in terms of sustainability. The proactive approach on managing stakeholders finds its justification on questioning companies about their institutional role in society, demanding sustainability innovation in companies' business models and challenging companies to seek for business opportunities with an entrepreneurial attitude to help solving sustainable development challenges. By combining both approaches, organizations have the opportunity to increase sustainable value capture by its stakeholders, acting on their institutional responsibility as actors in the societal system. Thus, future researches are invited to contribute to further theoretical and empirical discussions to explore the potentials of fostering sustainable value capture.

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Universidade Federal de Sao Paulo, Universidade de Sao Paulo
Contributors: Rosati, F., Morioka, S., Monteiro de Carvalho, M., Li-Ying, J.
Publication date: 2016
Peer-reviewed: Yes
Event: Abstract from 22nd international sustainable development research society conference, Lisboa, Portugal.

Bibliographical note
page 233
Source: PublicationPreSubmission
Source-ID: 125449225
Research output: Contribution to conference › Conference abstract for conference – Annual report year: 2016 › Research › peer-review

The EU in 2040: Envisioning an Inclusive Powerhouse for Innovation and Economic Growth
The EU and its leadership is often criticized as lacking a coherent long-term vision on Europe’s future. Thus far, EU policy in the area of innovation and economic growth has been primarily framed as an effort to close the so-called innovation gap with USA, South-Korea, and other countries. In this discussion paper, a group of EuroTech Universities professors in the area of Innovation and Entrepreneurship address and highlight several key challenges in the transformation towards an inclusive and sustainable European economy. In the absence of along-term systemic perspective on Europe’s challenges in the area of innovation and economic growth, we propose such a perspective here.

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Swiss Federal Institute of Technology Lausanne, Eindhoven University of Technology, Technical University of Munich
Number of pages: 7
Publication date: 2016

Publication information
Electronic versions:
EuroTech_Professors_Discussion_on_EU_Innovation_version_3.0.pdf
Source: PublicationPreSubmission
Source-ID: 124318148
Research output: Working paper › Working paper – Annual report year: 2016 › Research

The hidden moderator – Exploring the roles of tuo'er in intra-firm R&D online communities
“Tuo'er” in a market place are those who are hired by a seller and attempt to push the sales by exaggerating the advantages of a product in a direct and persistent approach. More recently, it is to our observation that some large firms start deploying tuo'er on their intranet to facilitate knowledge sharing and innovation within intra-firm online R&D communities. Just like those in a market place, tuo'er in online knowledge sharing communities also have a mandate to mislead other regular community members by creating a bandwagon effect. However, their intention to facilitate online knowledge sharing and innovation within a firm might serve a good purpose and their practice stands in a gray area of management ethics. This study explores the special roles of tuo'er as a hidden moderator between a company and its employees, investigates under which conditions they work, and the implications for the effective use of online knowledge sharing communities by firms. An in-depth case study with multiple data sources is conducted in China in a longitudinal fashion.

General information
University’s Commercialization Landscape: linking industry, license agreement and licensee

The purpose of this paper is to shed a new light and provide new empirical evidence in research commercialization literature by reviewing contracts of technology commercialization agreements and by mapping the landscape of commercial technology transfer in Denmark. We explore the tendencies and patterns as well as the geographical horizon of licensed technologies. Our analysis of technology licensing landscape has showed stable increase in university's commercialization activities in the period from 2000-2015. To take a step further, we extend the classical research of patenting activity to the commercialization activity. We find that most of university’s patents are sold and not licensed; most of the licensees are incumbent firms, however, the amount of commercialization contracts signed with academic spin-outs are not lagging far behind in the total numbers. Geographically, there is a clear pattern that most of the technologies are sold to Danish companies within Denmark indicating that university’s main contribution is primarily for regional and national markets, especially around the capital area. Based on that, we make conclusions and suggestions for university managers and policy makers.

Find Them Home or Abroad? The Relative Contribution of International Technology In-licensing to "Indigenous Innovation" in China

Innovation policy in China has been promoting "indigenous innovation" by urging Chinese firms to strengthen their internal research and development (R&D) expenditures and to actively acquire external technologies only if they are advanced and necessary. This policy aims to gradually achieve technology excellence and reduce China’s reliance on foreign key technologies. But, it is still unclear how international technology in-licensing by Chinese firms, compared with domestic technology in-licensing, has contributed to the indigenous innovation of Chinese firms during the last decade, and whether indigenous innovation policy will continue to make sense in the next decade. This study uses a unique dataset containing information on 178 Chinese firms that were active in technology in-licensing during 2000-2004 - and their patenting activities up to 2009 - to investigate this question. Our findings suggest that, given the importance of R&D, Chinese firms that in-licensed international technologies have performed better with regard to indigenous innovation than those that mainly inlicensed domestic technologies, even though the national innovation policy suggests otherwise. The strategic implications based on the findings for Chinese firms, foreign firms, and policy makers are discussed in detail. © 2014 Elsevier Ltd. All rights reserved.
How does external technology search become balanced? A three-dimensional approach

Firms need to search for external knowledge in a balanced way as over-search entails too much risks and uncertainty and local-search does not promise novel opportunities, as the literature has suggested. We conceptually position firms' search behavior within a three-dimensional knowledge search space, including cognitive, temporal, and geographic dimensions. We suggest that the balance is no longer a matter of finding optimal search distance along a single dimension. Instead, it becomes an art to maintain balance in a dynamic manner across three dimensions. Using empirical evidence from Chinese licensee firms, we show that such a three-dimension balance does exist among firms' practice. The findings in this respect provide promising opportunities for future research, which will significantly contribute to our understanding of how firms search for external knowledge and the implications thereof.

Knowledge sharing and affective commitment: the mediating role of psychological ownership

Purpose – The purpose of this paper is to investigate the mediating role of psychological ownership which includes both organisation-based psychological ownership (OPO) and knowledge-based psychological ownership (KPO) on the relationship between affective commitment and knowledge sharing.

Design/methodology/approach – This paper is an empirical study based on structural equation modelling, with a sample of 293 employees from 31 high-technology firms in China.

Findings – The result indicated that affective commitment had a significant positive effect on OPO but no effect on KPO; OPO was positively related to both common and key knowledge sharing, while KPO exerted a negative impact on both; common knowledge sharing was positively related to key knowledge sharing; the relationship between affective commitment and key knowledge sharing was multi-mediated by OPO and common knowledge sharing.

Originality/value – OPO and KPO play an essential role in transferring the effect of employees' affective commitment to common knowledge sharing and key knowledge sharing, which unravels the blackbox of how effective commitment affects knowledge sharing.
Licensing Foreign Technology and the Moderating Role of Local R&D Collaboration: Extending the Relational View

The relational resource-based view posits that performance differences among firms can be explained not only by the possession of internal resources but also by maintaining and developing relationships with external partners. However, studies in the extant literature usually address the separated roles of various external relationships of focal firms, but the literature has not addressed how relationships with different sets of knowledge partners are related to each other and influence focal firms’ performance. Therefore, to fill this research gap, this study focuses on how technological resources acquired from one set of partners (licensing foreign technologies) may generate subsequent internal and relational rents in terms of technological innovation in the context of collaboration with an entirely different set of knowledge partners (local R&D partners). Specifically, we propose that local R&D collaborations need to be large in scale and broad in scope. The empirics are based on the analysis of a sample of 160 high-tech Chinese firms observed from 2000 to 2011. Consistent with our predictions, our findings contribute to extending the relational view by addressing the relations among the relationships of focal firms.

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Contributors: Wang, Y., Li-Ying, J.
Number of pages: 17
Pages: 997–1013
Publication date: 2015
Peer-reviewed: Yes

Publication information
Journal: Journal of Product Innovation Management
Volume: 32
Issue number: 6
ISSN (Print): 0737-6782
Ratings:
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 3.29 SJR 2.392 SNIP 1.898
Web of Science (2015): Impact factor 2.086
Web of Science (2015): Indexed yes
Original language: English
Electronic versions:
JPIM_2015_Jason_Li_Ying.pdf. Embargo ended: 01/01/2016
DOIs:
10.1111/jpim.12667
Self-identity and regulatory focus in governance of online communities

A fast growing stream of literature has shown tremendous interests in the 'wisdom of crowds', which is embedded in various forms of online communities (OCs). However, studies on the governance of OCs are rather scattered. Our knowledge on how key governance mechanisms are interrelated is very much limited to date. Thus, the purposes of this paper are to: (1) highlight the unique exchange relationships within OCs based on theories of transaction cost economics, social exchange, and transactive memory system; (2) identify in OCs and link key governance mechanisms with two key constructs in the social psychology domain, i.e., self-identity and regulatory focus.

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Contributors: Li-Ying, J.
Number of pages: 38
Publication date: 2015
Peer-reviewed: Yes
Keywords: Online communities, Governance mechanism, Self-identity, Regulatory focus
Source: PublicationPreSubmission
Source-ID: 116532198
Research output: Contribution to conference › Paper – Annual report year: 2015 › Research › peer-review

Strategizing for sustainability in a changing world: a dynamic capability approach

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Contributors: Mazzero, M. F., Rosati, F., Andersen, M. M., Li-Ying, J.
Number of pages: 1
Publication date: 2015

Host publication information
Title of host publication: Book of Abstracts. DTU's Sustain Conference 2015
Place of publication: Lyngby
Publisher: Technical University of Denmark (DTU)
Article number: G-8
Electronic versions: G8_DTU_Sustain_2015.pdf

Bibliographical note
Poster presentation
Research output: Chapter in Book/Report/Conference proceeding › Conference abstract in proceedings – Annual report year: 2015 › Research › peer-review

Technology licensing in China

We explore the landscape of technology licensing among Chinese entities in the period 2000–12, using a unique database on technological licensing from the State Intellectual Property Office of China. We find that: first, among Chinese licensee organizations, firms have dominated in terms of the number of licensed technologies; second, the geographical distribution of licensed technologies among the provinces has gradually reached a new quantitative balance; third, utility models are the most popular technologies to be licensed and the majority of technology licensing in China has been between Chinese entities, and most transactions have been local within provinces; and finally, Chinese firms have gradually in-licensed newer and newer technologies, but the technologies in-licensed from foreign sources are by no means state-of-the-art. We make several suggestions for innovation policy-making and for directions for future research.

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Tsinghua University, Sichuan University
Contributors: Wang, Y., Li-Ying, J., Chen, J., Lu, Z.
Pages: 293-299
An inquiry on dimensions of external technology search and their influence on technological innovations: evidence from Chinese firms

A central part of technological innovation for industrial firms involves search for new external knowledge. A well-established stream of literature on firms’ external knowledge search has demonstrated that firms investing in broader search may have a great ability to innovate. In this paper, we explore the influences of technology search on firms’ technological innovation performance along three distinctive dimensions: technical, geographic, and temporal dimensions, using a unique panel data set containing information on Chinese firms that were active in technology in-licensing and patenting during the period 2000–2009. Our findings reveal that Chinese firms’ technological innovation performances are related to external technology search in quite different ways from the ones suggested in the extant literature using evidence from developed countries. We find that Chinese firms searching ‘locally’ along the technical dimension have better technological innovation performance than those searching ‘distantly’. However, when a Chinese firm in-license relatively old (mature) technologies or those from geographically nearby areas, it will be less bounded to searching familiar technical knowledge.

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Sichuan University
Contributors: Li-Ying, J., Wang, Y., Salomo, S.
Pages: 53-74
Publication date: 2014
Peer-reviewed: Yes

Publication information
Journal: R & D Management
Volume: 44
Issue number: 1
ISSN (Print): 0033-6807
Ratings:
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.98 SJR 0.745 SNIP 1.244
Web of Science (2014): Impact factor 0.848
Web of Science (2014): Indexed yes
Original language: English
DOIs:
10.1111/radm.12038
Source: dtu
Source-ID: n:oai:DTIC-ART:blackwell/427829025::36416
Research output: Contribution to journal › Journal article – Annual report year: 2014 › Research › peer-review
'Closed Open Innovation' or 'Openly Closed Innovation' – Which way is for world-first innovations?

'Open innovation' strategy suggests the purposive use of knowledge inflows and outflows to accelerate internal innovation, and expand the markets for external use of innovation. The literature on 'open innovation' tends to agree that there are two dimensions of R&D projects can be used to evaluate their openness: (1) how much it relies on external knowledge resources; and (2) if it is internally or externally developed. To date, the literature on 'open innovation' has neither deliberated theoretically on nor tested empirically the effects of these two dimensions simultaneously in relation to innovation outcome measures. Therefore, the aim of this paper is to fill in this research gap in both theory and empirics. My typology is theoretically based on the Schumpeterian innovation types (Mark I and Mark II) on the one hand and the rich literature on firms' external knowledge searching on the other hand. The Closed Open Innovation refers to those innovations that are internally developed but draw heavily on external scientific/technical knowledge. The Openly Closed Innovation refers to those innovations that are externally developed but meanwhile draw mainly on internal scientific/technical knowledge. The dataset used in this study is the Canadian Technological Innovation Dataset, which was obtained from a population survey for 1635 major industrial innovations in Canada during the period from 1945 to 1980. Based on a binary logistic regression model, the results show that totally closed innovation modes were positively associated with the likelihood of an innovation being worldfirst; meanwhile, the findings reveal an overall trend that innovation modes for world-first innovation had become less and less closed and a mix of open modes had become equally effective as the closed ones.

How do the BRIC countries play their roles in the global innovation arena? A study based on USPTO patents during 1990–2009

This paper proposes a new taxonomy for the internationalization patterns of innovation of the BRIC countries within the global innovation landscape during the period 1990–2009. Based on the BRICs’ patents granted by the USPTO, we find (1) the BRICs gradually increased their roles in the global innovation arena with various degrees of internationalization; (2) the domestic-dominant pattern has widely countered the foreign dominance of innovation, while the collaborative multi-dominant pattern has increased; (3) a divergence of the BRIC’s global innovation output growth emerged, while their internationalization pattern portfolios evolved towards greater similarity; and (4) China has differentiated itself by increasing its global innovation influence.
When does inward technology licensing facilitate firms' NPD performance? A contingency perspective

Many firms find inward technology licensing (ITL), as a means to access external technological knowledge, an effective and relatively inexpensive way for new product development (NPD). However, although the literature has suggested some advantages and disadvantages of ITL with respect to NPD, the relationship between ITL and licensee firms' subsequent NPD performance has not yet been found convincingly evident. Sharing with many other likeminded scholars and practitioners, we believe that the dynamics between external knowledge, internal capability, external environment, and firm performance should be investigated through a contingency perspective. Thus, this study posits that a firm's propensity to develop new products through ITL is contingent upon two categories of contingency factors that are internal and external to firms. Using a dataset containing information about Chinese firms' licensing activities, we find support for our hypotheses: the positive relationship between ITL and NPD performance of a licensee firm is moderated by firms' absolute and relative absorptive capacity and the knowledge endowment in the region where the licensee firm operates.
Chinese multinationals in Denmark: Testing the eclectic framework and internalization theory

Purpose – The purpose of this paper is to explain in detail the strategic asset-seeking OFDIs of Chinese firms in Denmark through a theoretical lens that combines the updated OLI (Ownership, Location, Internalization) paradigm and the internalization theory. Meanwhile, the authors hope to unveil the unique characteristics of firm specific advantages (FSAs, including O and I advantages) and country specific advantages (CSAs, including L advantages).

Design/methodology/approach – The authors chose two case firms that just started investing and a third one that was in the process of preparing investment in Denmark. Primary data were collected by semi-structured interviews in English at various locations in late 2009 and early 2010. The three Chinese firms in this study share a common primary objective in their strategic orientation of OFDIs. That is to seek strategic assets that are complementary and critical to augment their existing FSAs.

Findings – Rugman stated that strategic asset-seeking OFDIs are supposed to have high levels of FSAs and CSAs. This study presents a more detailed analysis regarding the O, L and I advantages that Chinese investing firms in Denmark are perceived to possess. It was found that these Chinese investing firms had high levels of Oa and Oi but Ot was largely absent; furthermore, although Lr was obviously appreciated in Denmark, Li presented a mixed picture. The paper also found that internalization advantages were only able to be realized when investing firms were good at utilizing networking and guanxi, which were largely derived from their prior Oi advantages.

Originality/value – Few have analyzed strategic asset-seeking OFDIs made by emerging markets based on the FSA/CSA matrix that combines the OLI paradigm and the internalization theory. This study pursued this research endeavor by enriching a refined framework that connects the OLI paradigm, which recognizes multiple dimensions of O advantages and an institutional perspective, to the internalization theory, which converts O and I advantages into FSAs and associates L advantages with CSAs.

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, DAMVAD Analytics A/S, Accenture Denmark
Contributors: Li-Ying, J., Stucchi, T., Visholm, A., Solvig Jansen, J.
Pages: 65-86
Publication date: 2013
Peer-reviewed: Yes

Publication information
Journal: Multinational Business Review
Volume: 21
Issue number: 1
ISSN (Print): 1525-383X
Ratings:
Scopus rating (2013): CiteScore 0 SJR 0.452 SNIP 0.46
ISI indexed (2013): ISI indexed no
Original language: English
Keywords: China, Denmark, Direct investment, Institutions, Internalization theory, OLI paradigm, Outward foreign direct investment, Strategic asset-seeking
DOIs:
10.1108/15253831311309492

Research output: Contribution to journal › Journal article – Annual report year: 2013 › Research › peer-review

Design of governance in virtual communities: definition, mechanisms, and variation patterns
A fast-growing stream of literature has shown tremendous interests in the 'wisdom of crowds', embedded in various forms of Virtual Communities (VCs). However, it is difficult to design an appropriate governance structure for VCs because: (1) it is not clear what governance exactly is in VCs; (2) our knowledge on how key governance mechanisms differ among various types of VCs is limited to date; (3) the variation
patterns of governance mechanisms are far from fully explored to guide the design of governance in VCs. Therefore, this paper seeks to propose a working definition for governance in VCs, illustrate how governance mechanisms differ in various types of VCs, and explore testable variation patterns of governance mechanisms. We categorise various types of VCs, building on two unique dimensions: how and with whom VC participants exchange information. Several design principles are proposed to underpin the theoretical and practical implications of our research endeavour.

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Contributors: Li-Ying, J., Salomo, S.
Pages: 225-251
Publication date: 2013
Peer-reviewed: Yes

Publication information
Journal: International Journal of Collaborative Enterprise
Volume: 3
Issue number: 4
ISSN (Print): 1740-2085
Ratings:
ISI indexed (2013): ISI indexed no
Original language: English
Keywords: Virtual communities, Governance, Relational transactions, User innovation
DOI:
10.1504/IJCENT.2013.058619
Source: dtu
Source-ID: u::10404
Research output: Contribution to journal › Journal article – Annual report year: 2013 › Research › peer-review

Have Chinese firms learned from their prior technology in-licensing? An analysis based on patent citations
With the rapid rise of Chinese economy, now ranking as the second largest economy in the world in 2010, many Chinese firms have started taking technological lead in the global market. Nevertheless, whether Chinese firms have learned from their prior inlicensing technologies and accumulated technological capabilities in sustaining their economic growth remains underexplored. This paper aims to fill this void. Using a unique dataset containing the information on licensing for 83 large Chinese firms in the electronic sector during 2000–2004, we find that these firms have successfully learned from the international technologies that they previously licensed-in when subsequent patent citations made by these Chinese licensee firms to their licensed patents are used to identify these successful learners.

General information
Publication status: Published
Organisations: DTU Executive School of Business, Department of Management Engineering, Hasselt University, Sichuan University
Contributors: Li-Ying, J., Wang, Y., Salomo, S., Vanhaverbeke, W.
Pages: 183-195
Publication date: 2013
Peer-reviewed: Yes

Publication information
Journal: Scientometrics
Volume: 95
Issue number: 1
ISSN (Print): 0138-9130
Ratings:
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.81 SJR 1.346 SNIP 1.549
Web of Science (2013): Impact factor 2.274
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
Original language: English
Keywords: Technological learning, Technology license, Patent citations, China, Patent citation
DOI:
10.1007/s11192-012-0802-x
Source: dtu
Source-ID: u::5991
The dual role of external technology sourcing in technological exploration

We refine the concept of boundary-spanning exploration, by making a distinction between explorative learning from partners and from non-partners (Partners are organizations with whom a focal firm has some kind of external venturing relations, i.e. technological alliances, corporate venturing capital, or M&As). These partners play a dual role: in explorative learning from partners, a firm teams up with external venturing partners to co-develop or transfer technology. Partners' technology base (what they know) is driving explorative learning from partners. In contrast, in explorative learning from non-partners, partners may play a role because of whom they know. That is, they inform the firm about technological opportunities beyond its corporate venturing network. The empirical analysis supports the dual role of venturing partners in facilitating the two types of explorative learning.

The impact of licensed-knowledge attributes on the innovation performance of licensee firms: evidence from the Chinese electronic industry

In this article, we provide a compelling case for demonstrating "learning-by-licensing," and we further investigate the moderating effect of specific licensed-knowledge attributes on the innovation performance of licensee firms. This case is based on a unique dataset from the China State of Intellectual Property Office regarding technology-licensing activities and spanning the years 2000–2010. Using this dataset we make a longitudinal analysis of the lagging learning effect that transferee firms experience when they in-license technology. The empirical results from 71 Chinese electronic-industry firms reconfirm the concept of "learning-by-licensing." Moreover, the results also indicate that both technology complexity and technology generality, which are attributes of licensed knowledge, have positive moderating effects on the relationship between technology in-licensing and the subsequent innovation performance of licensee firms. However, such a positive moderating effect was not found for the newness of technology.
The impact of partnership network stability on new product development cost in the pharmaceutical industry

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Production and Service Management, Engineering Systems Group, Christian Albrechts University of Kiel, Universität Hamburg
Contributors: Buonansegna, E., Li-Ying, J., Maier, A., Salomo, S., Schultz, C., Stargardt, T.
Number of pages: 4
Publication date: 2013
Peer-reviewed: Yes
Keywords: Partnership network, Pharmaceutical industry, new product development process

What makes Chinese firms to choose international external technology sources? An inquiry on internationalization, innovation and institutions

External technology sourcing from developed countries has been one of the most important vehicles by which emerging market firms (EMFs) sustain competitiveness. Foreign advanced technologies offer EMFs opportunities to gain access to state-of-the-art technologies and upgrade their competitiveness. However, we have also witnessed an emerging trend of external acquisition of technology by EMFs firms in both international and domestic markets. Why some EMFs are active in sourcing both domestic and international technologies instead of being significantly in favour of foreign technologies from developed countries? We argue that exploring the determinants of EMFs’ choice with regard to EMFs’ strategic choice of souring domestic or foreign technology becomes the key to understanding why EMFs are increasingly gaining prominence in the global competitive landscape. Thus, this paper tends to advance our understanding of EMF competitiveness by adding a crucial link of EMFs strategic choice regarding the origin of technology sourcing from different origins and exploring the determinants for such a choice through the lens of internationalization, innovation and institutions (3 I’s) within a coherent framework. Based on a unique sample of 389 Chinese firms on their inward technology licensing activities through an observation period from 2000 to 2005, it is found that (1) firms’ international market orientation; (2) firm’s technological capability; (3) regional innovation capability; and (4) institutional change (China’s concession to WTO) are positively associated with these firms’ preferences for in-licensing foreign technology.

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Sichuan University
Contributors: Li-Ying, J., Wang, Y.
Number of pages: 37
Publication date: 2013

Host publication information
Title of host publication: Proceedings of 13th Annual Conference of the European Academy of Management (EURAM)
URLs:
http://www.euram2013.com/r/default.asp?id=FGKGEL
Source: dtu
Source-ID: u::7973
When does inward technology licensing facilitate firms' NPD performance? Evidence from China

Increasingly, many firms have found inward technology licensing a relatively quick and inexpensive way for new product development (NPD) as compared to internal R&D started. Although the literature on NPD has suggested some advantages and disadvantages regarding NPD by means of inward technology licensing, the relationship between inward technology licensing and licensee firms’ subsequent NPD performance has not yet found convincing evidence. Since our understanding, shared with many other likeminded scholars and practitioners, about the dynamics between resource, institutions and firm performance has reached a stage that is way beyond simple linear relationships, the appropriate question to ask is perhaps not whether inward technology licensing has a positive effect on firms’ NPD performance; instead, it is more sense-making to ask under what conditions inward technology licensing better facilitates firms’ NPD. Drawing on a contingency perspective, the study posits that a firm’s propensity to develop new products through inward technology licensing is dependent on three categories of contingency factors: the characteristics of the licensed technology, the absorptive capacity of the licensee firms, and factors regarding licensees’ external environment. Using a unique longitudinal dataset containing information about 141 Chinese firms’ licensing activities, we find support for our hypotheses that there is a positive relationship between inward technology and NPD performance. This positive relationship is moderated by technology origin (foreign versus domestic), firms’ absorptive capacity, and the appropriability regime and knowledge endowment of the region where the licensee firms operate.

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Sichuan University
Contributors: Li-Ying, J., Wang, Y., Salomo, S.
Number of pages: 27
Publication date: 2013

Host publication information
Title of host publication: Conference proceeding of the XXIV ISPIM Conference - Innovating in Global Markets: Challenges for Sustainable Growth
Keywords: Inward technology licensing, New product development, Contingency factors, Absorptive capacity, Appropriability regime
Source: dtu
Source-ID: u::7753
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2013 › Research › peer-review

External Knowledge Acquisition Needs a Hand? The Dual Effects of Industry-University Collaborations on High-Tech Firms’ Innovation Capability in China

Purpose Firms have been increasingly investing in external knowledge acquisition to enhance their competitiveness and innovative performance. Among different external partners, universities have become one of the most important ones (Cohen et al., 2002). Collaborating with universities is especially imperative for firms innovating in the technology frontier (Baba et al., 2009). However, the rapid development of industry-university collaboration in some developing countries (e.g., China) has demonstrated some unique characteristics that are different to those presented in developed countries. These unique characteristics urge scholars to re-exam the role of industry-university collaboration for firms’ innovation in developing countries. We propose that industry-university collaboration in developing countries has dual roles with regard to firms’ innovation capability: 1) to serve as a direct source of knowledge input, i.e. some indigenous technological inventions, and, 2) to facilitate firms’ technological learning with respect to absorbing, adapting and diffusing acquired foreign technologies to local market. The purpose of this paper is to test the effect of these two roles on firms’ innovation.

Research question How can Chinese industrial firms’ collaboration with universities directly contribute knowledge inputs and at the same time effectively facilitate innovation through external technology acquisition?

Methodology Our study uses patent counts to measure innovation capability. In line with prior research, we use negative binomial regression model together with a Hausman specification test to determine whether a random- or fixed-effects model should be employed.

Data We employ a unique dataset on technology in-license from the Chinese Intellectual Property Office (SIPO) in this study. According to the ‘Administration of Record Filing of Technology Licensing’, the SIPO is authorized to fill the records of technology licensing in China. A record contains more valuable information: names of licensor, licensee, and licensed technology. So far, the available licensing data to public starts from 2000 to 2009. We limit our sample to those firms who engaged in foreign technology licensing-in activities during 2000 to 2003, which resulted in a sample of 91 Chinese licensee firms in high-tech sector. This period is chosen in order to obtain an appropriate duration that allows learning to take effect. In other words, a 5-year moving window is used to observe the effect of licensing and industry-university collaboration on firms’ innovation capability.

The results show that industry-university collaboration not only has a direct positive effect on but also positively moderate the effect of inward foreign technology licensing on firms’ technology capability.
Foreign vs. domestic: What determines the origin of Chinese firms' inward technology licensing?

The increasing prominence of cross-border technology sourcing urges us to ask a question: what factors and conditions may influence firms' decisions of sourcing technology domestically or internationally? Research on this topic is scattered in the literature but a comprehensive understanding of these factors and conditions on this issue is still lacking. The aim of this paper thus is to establish a comprehensive framework that integrates factors affecting a firm's propensity to make technology sourcing decisions regarding foreign or domestic origins of technologies. We identify four distinct categories of factors that are relevant in this respect: (1) technology supplier's characteristics; (2) technology seeker's characteristics; (3) features of technology itself; and (4) external contextual factors. We test our hypotheses based on Chinese firms' inward technology licensing. We found well-established incumbent firms that are export-, and high-tech-oriented with strong absorptive capacity are more likely to in-license foreign technology rather than domestic ones if the in-sourced technology is mature, the technology suppliers have strong desorative capacity, and the external knowledge environment is innovative.

Have Chinese firms learnt from their prior technology in-licensing?

Pharmaceutical R&D Process - Why do clinical trials fail?
Towards a framework of success factors for clinical trials

Clinical trials in the pharmaceutical industry are the most critical part of the drug development process with respect to obtaining the market approval from the authorities. Clinical trials are highly expensive, time-consuming and often unsuccessful. While new product development (NPD) literature has extensively investigated success factors in R&D projects, it has not directly addressed success factors in clinical trials, as the late testing stage of a NPD yet. The aim of this paper is to enhance our understanding of the clinical trial management by creating a new conceptual framework of success factors. This paper creates the new framework by combining success factors from NPD literature and from empirical evidence collected through 11 semi-structured interviews with experts in clinical trials. The framework of success factors provides managerial guidelines for practitioners to optimize clinical trials reducing failures and increasing profits. The framework directs managerial focus on the most important factors for success and helps managers in decision-making of operational tasks. The framework can also be applied as a checklist for assessing the status of a clinical trial and later as a benchmarking tool to compare clinical trial processes. Dependencies among the identified factors seem to exist, thus a set of propositions, can be developed from the success factors and be the basis for future empirical testing.

What do we need from intermediaries for technology transfer to China? A European firm perspective

Cross-national technology transfer has been one of the most important vehicles by which firms in developed countries exploit the value of their technological innovations, and firms in developing countries gain access to technological and organizational knowledge from developed economies. To facilitate technology transfer between technology providers and recipients and to compensate for the weakness in the system of innovation, the role of technology intermediaries as bridging organizations has been widely recognized and discussed. This study deepens our understanding of the role of intermediaries by, first, reconciling the role and functions of technology intermediaries in the literature to a competence level based on a resource-based view in a specific context of technology transfer between Europe and China; and second, investigating whether certain competences of intermediaries are of more importance than others for European technology holders in relation to three different types of intermediaries – governmental agencies, private commercial agencies and web-based marketplaces.

Publication information

General information
Publication status: Published
Organisations: DTU Executive School of Business, Department of Management Engineering, Production and Service Management, Engineering Systems Group, Christian Albrechts University of Kiel
Contributors: Buonansegna, E., Salomo, S., Maier, A., Li-Ying, J., Schultz, C.
Publication date: 2012
Governance of Virtual Communities: A Literature Review and a Conceptual Framework

Researchers have shown growing interests in the governance of virtual communities, especially in the open source software communities. Many issues concerning the governance of virtual communities have been discussed in the literature, e.g., motivations to participate and contribute, openness of participation architecture, control, open source license, ownership and appropriation of intellectual property, communication patterns, goal setting, decision-making, role of trust, etc. However, research areas in the extant literature on the governance of virtual communities are rather scattered. There has yet no systematic approach towards a clear definition of governance in virtual communities and our knowledge on what key governance mechanisms are and how they differ in various types of virtual communities is very much limited to date. A lack of holistic framework on this issue prevents scholars from fully understanding the functions of governance in virtual communities, which in turn also rends difficulties to probe the performance of virtual communities.

For these reasons, the purposes of this paper is to: (1) propose a working definition of the governance in virtual communities based on the extant literature; (2) identify key governance mechanisms in virtual communities; and (3) finally develop a typology for virtual communities in which distinctive governance features prevail in each type of virtual communities.

General information
Publication status: Published
Organisations: DTU Executive School of Business
Contributors: Li-Ying, J., Salomo, S.
Publication date: 2011

Host publication information
Title of host publication: 18TH INTERNATIONAL PRODUCT DEVELOPMENT MANAGEMENT CONFERENCE proceeding
Keywords: user-innovation communities, Virtual communities, governance
URLs:
http://www.eiasm.org/frontoffice/event_announcement.asp?event_id=670#2672
Source: orbit
Source-ID: 279413
Research output: Chapter in Book/Report/Conference proceeding - Annual report year: 2011 - Research - peer-review

International vs. domestic technology in-licensing: How do Chinese firms build their technological capabilities?

This paper investigates the different impacts of international and domestic technology in-licensing for Chinese firms as licensees on their technological capability building. The evolution of firms in developing countries and development of their technological capabilities has received increasing attention in the extant literature on both innovation management and international business. However, little has been done to reach a clear understanding on whether Chinese firms can benefit from international or domestic technology in-licensing and improve their own technological capabilities. This study, therefore, pursues this endeavor by using a unique dataset from China State of Intellectual Property Office (SIPO) containing information on large Chinese firms. The findings of this empirical study indicate that firms with international technology in-licensing possess stronger technological innovation capabilities than those who license from domestic technology sources. Furthermore, international technology in-licensing improve licensees’ international innovation capabilities in terms of triadic patent applications.

General information
Publication status: Published
Organisations: DTU Executive School of Business, Hasselt University
Contributors: Li, Y., Wang, Y.
Publication date: 2011
Patent transactions with China in a new era: a European perspective

Purpose – This study aims to present a timely description of the experience and intentions of EU firms regarding patent licensing and/or selling to China in a new era, where EU firms are taking a more open approach toward innovation and the Chinese institutional environment has been recently changed. The paper finds that large and small EU firms are different regarding the openness of innovation measured by patent transactions; for those EU firms that are not interested in licensing or selling patents, most of them are not employing an open innovation model and IP infringement is still the primary concern. EU firms are most interested in selling obsolete technologies and licensing state-of-art technologies to China.

General information
Publication status: Published
Organisations: DTU Executive School of Business, Eindhoven University of Technology, Duke Forest Capital
Contributors: Li, Y., Meyer, E., Duysters, G., de Richemont, M.
Pages: 136-156
Publication date: 2011
Peer-reviewed: Yes

Publication information
Journal: Journal of Knowledge-Based Innovation in China
Volume: 3
Issue number: 2
ISSN (Print): 1756-1418
Ratings:
ISI indexed (2011): ISI indexed no
Original language: English
Keywords: IP protection, Patents, Open innovation, Licensing, Technology transfer, China
DOIs:
10.1108/17561411111138973
URLs:
Source: orbit
Source-ID: 278211
Research output: Contribution to journal › Journal article – Annual report year: 2011 › Research › peer-review

Patent licensing and selling to China as a strategy of technology transfer in a New Era: A perspective of European firms

International technology transfer enables firms in developed countries to exploit the value of their technological innovations, and provides firms in developing countries with access to technological and organizational knowledge. This study aims to present a timely description of the experience and intentions of EU firms with regard to patent licensing and/or selling to China in this new era. Firms from 12 European countries in various industries were surveyed by an online questionnaire. We found that (1) large and small EU firms are very different with regard to the number of non-commercialized patents and activeness in patent transactions; (2) for those EU firms that are not interested in licensing or selling patents in the future, most of them are not employing an open innovation model; (3) for those EU firms that are interested in patent licensing/selling to China, IP infringement is still the primary concern despite the recently adaption of the new Patent Law in China; (4) EU firms are most interested in selling obsolete technologies and licensing state-of-art technologies to China.

General information
Publication status: E-pub ahead of print
Organisations: DTU Executive School of Business, Eindhoven University of Technology, Duke Forest Capital
Contributors: Li, Y., Meijer, E., Duysters, G., de Rochemont, M.
Publication date: 2010

Host publication information
Title of host publication: European Academy of Management Conference 2010 proceeding
Understanding the joint effects of Cognitive Distance and Competition on Pioneering Innovations through the Dynamics between Suppliers and Competitors

The relationships between cognitive distance, competition and innovation have drawn great attention from economists and management researchers. First, with regard to cognitive distance and innovation, it is suggested that a moderate level of cognitive distance between firms is associated with an optimal innovation performance, because a too small cognitive distance provides the focal innovating firm with too little novelty value, while a too large cognitive distance makes it difficult for firms to learn and collaborate with each other. Second, the empirical evidence for the relationship between competition and innovation remains inconsistent. On the one hand, the Schumpeterian viewpoint credits that firms with substantial market power, which implies a low level of competition intensity, master resources and incentives to innovate. On the other hand, it is also possible for such firms to have incentives to suppress subsequent innovation. Therefore, a perfectly competitive market is more likely to foster innovation. If cognitive distance allows potential external learning opportunities for firms to innovate, then the competitive environment where firms operate provides incentives and motivations for firms to take these potential opportunities. As far as innovation is concerned, the joint effects of cognitive distance and competition have only been roughly discussed and rarely investigated in an empirical setting in the literature. Thus, the aim of this study is not only to empirically test the individual effects of cognitive distance and competition on innovation but also try to understand their joint effects in a coherent way based on a resource-based view and through the product life cycle as a link of cognitive distance and competition. Competition is multidimensional and innovation has many types. The inquiry on the relationship between competition and innovation will be relevant and meaningful only when the content of competition and the type of innovation activities are specified. In this study, competition is specified as the number of competitors, and pioneering innovation is defined as an exploratory innovation that is technologically new to the innovating focal firm and introduced first to the world. The result of the empirical tests using a Canadian innovation dataset, which contains information on product/process innovations across four decades, confirms an inverted U-shaped relationship between cognitive distance and pioneering innovations, and a negative effect of competition on pioneering innovations. It also suggests that the relationship between cognitive distance and pioneering innovations is negatively moderated by competition. These findings and the research design in this study advance our understanding why and how firms take potential external learning opportunities to undertake pioneering innovations under various levels of competitive pressure.

The dual role of external corporate venturing in technological exploration

Innovating firms can not only explore new technologies from its innovation partners, but also explore new technologies from the organizations to which the innovating firm has had no prior relationships. Prior studies have mostly focused on a firm's exploratory learning from its venturing partners ("exploration from partners" or "EFP"). There has been little insight on how external corporate venturing may affect the exploratory learning beyond the venturing partnerships ("exploration beyond partners" or "EBP"). We claim that prior venturing relations have a dual role: First, the innovation firm can learn from knowledge embedded in its partners. Second, it can also learn from through its partners about knowledge developed by other firms or organizations with whom the innovating firm had no external venturing relations before. In this paper, we are interested how external corporate venturing partnerships plays a dual role and may help innovating firms exploring new technologies through EFP and EBP.
The effects of inter-industry and country difference in supplier relationships on pioneering innovations

Innovations are critical driving forces for firms to engage in corporate growth and new business development. Innovating firms are increasingly generating new knowledge in collaboration with partners. In this paper, we analyze how the knowledge differences between the innovating firms and their suppliers in Canada are likely to result in pioneering innovations. The knowledge difference is decomposed into two dimensions: the inter-industrial dimension and the geographic dimension in national context. Using the Canadian Innovation database, we found the inter-industry difference has a positive effect and the country difference has a negative effect on the likelihood of generating pioneering innovation. The findings of this paper suggest that for generating pioneering innovation, it is important not only to search for suppliers from different industries to get access to various complementary external knowledge sources but also to find suppliers from the same or nearby countries for the sake of communication and coordination.

The relationships between foreign competition, absorptive capacity and pioneering innovation: An empirical investigation in Canada

This study investigates the likelihood that firms generate pioneering innovations under different levels of foreign competition in domestic market, meanwhile taking the effects of technological distance between the focal innovative firms and their suppliers into account. We argue that the relationship between foreign competition and pioneering innovation has a U-shaped relationship. On the one hand, when foreign competition is low, firms may seek new technological and market opportunities based on organizational slack. When foreign competition intensifies, domestic firms will immediately be engaged in the competition by reducing the cost, improving efficiency or quickly adapt latest practices in the industry in reaction to the foreign competition, which will distract firms' incentive to bring about pioneering innovation. On the other hand, when foreign competition is fierce, firms have to undertake pioneering innovation to "escape the competition". In this case, the possibility of undertaking pioneering innovation may again increase. We also predict that the U-shaped relationship between foreign competition and pioneering innovations will be more evident and the slope will be steeper when technological distance between the innovative focal firms and their suppliers is large.

Keyword: Competition; foreign competition; pioneering; innovation; absorptive capacity
Exploration and Exploitation in Innovation: Reframing the Interpretation

There has been a burgeoning literature about exploitation and exploration since March's seminal article in 1991. However, in reviewing the extant literature we find different interpretations of both concepts leading to ambiguity and even some inconsistency. This paper focuses in particular on the interpretation of exploration and exploitation in the literature on technological innovation. It addresses two critical research questions. First, what are the different interpretations of exploitation and exploration? Second, how can we set up a framework that reconciles these differences and reduces the ambiguity that we find in the literature? To answer these two questions, we first explain what the root causes of these different viewpoints are. Second, we provide a theoretical framework that integrates the different perspectives, sets up a new typology to define exploration and exploitation, identifies white spaces in the current research and provides guidance for future research.

Keyword: exploration, exploitation

General information

Publication status: Published
Organisations: Technical University of Denmark
Contributors: Li, Y., Vanhaverbeke, W., Schoenmakers, W.
Pages: 107-126
Publication date: 2008
Peer-reviewed: Yes

Publication information

Journal: Creativity and Innovation Management
Volume: 17
Issue number: 2
ISSN (Print): 0963-1690
Ratings:
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.57 SNIP 0.918
Original language: English
DOI:
10.1111/j.1467-8691.2008.00477.x
URLs:
http://www3.interscience.wiley.com/journal/119411596/abstract
Source: orbit
Source-ID: 258623
Research output: Contribution to journal › Journal article – Annual report year: 2008 › Research › peer-review

Projects:
Smart cities, networks and innovation
Figenschou, T., PhD Student, Department of Management Engineering
Li-Ying, J., Main Supervisor
Tanner, A. N., Supervisor
Bogers, M., Supervisor
01/06/2019 → 31/05/2022
Project: PhD

Transcalar Innovation and Sustainability Agents in the High North and Arctic
Olsen, M. M., PhD Student, Department of Management Engineering
Li-Ying, J., Main Supervisor
Lomberg, C., Supervisor
Blaxekjær, L. Ø., Supervisor
01/12/2018 → 30/11/2022
Project: PhD

Digital Business Model Innovations in Nordic Small and Medium-Sized Firms
Trischler, M., PhD Student, Department of Management Engineering
Li-Ying, J., Main Supervisor
Bækgaard, P., Supervisor
01/11/2018 → 11/02/2022
Project: PhD

Impact Assessment of University Research
Woltmann, S., PhD Student, Department of Management Engineering
Alkærsig, L., Main Supervisor
Ersbøll, B. K., Supervisor
Li-Ying, J., Examiner
D’Este, P., Examiner
Gulbrandsen, M., Examiner
Technical University of Denmark
01/09/2015 → 02/05/2019
Award relations: Impact Assessment of University Research
Project: PhD

Building a business case for ecodesign implementation based on a system dynamics simulation model
Rodrigues, V. P., PhD Student, Department of Mechanical Engineering
McAlonee, T. C., Main Supervisor
Pigosso, D. C. A., Supervisor
Li-Ying, J., Examiner
Bhamra, T., Examiner
Storga, M., Examiner
Science Without Borders
01/02/2015 → 08/11/2018
Award relations: Building a business case for ecodesign implementation based on a system dynamics simulation model
Project: PhD

Analysis of the role of designers self-identity and behavior on design teams for performance improvement
Kunrath, K., PhD Student, Department of Management Engineering
Cash, P., Main Supervisor
Li-Ying, J., Supervisor
Alkærsig, L., Examiner
Snelders, D., Examiner
Kleinsmann, M. S., Supervisor
Törlind, P., Examiner
Science Without Borders
01/02/2015 → 06/06/2019
Award relations: Analysis of the role of designers self-identity and behavior on design teams for performance improvement
Project: PhD
Enhancing Creativity - Metacognitive Training for Innovation Practitioners?
Valgeirsdo\l, D., PhD Student, Department of Management Engineering
Onarheim, B., Main Supervisor
Li-Ying, J., Supervisor
Hansen, J. P., Examiner
Ball, L., Examiner
Runco, M. A., Examiner
Technical University of Denmark
01/12/2014 → 16/04/2018
Award relations: Enhancing Creativity - Metacognitive Training for Innovation Practitioners?
Project: PhD

Explaining how process formalization affects new product performance
Tandrup, T., PhD Student, Department of Management Engineering
Salomo, S., Main Supervisor
Murdock, K., Supervisor
Schultz, C., Supervisor
Li-Ying, J., Examiner
Hölzle, K., Examiner
de Weerd-Nederhof, P. C., Examiner
Technical University of Denmark
01/02/2012 → 30/09/2015
Award relations: Explaining how process formalization affects new product performance
Project: PhD

Design methods for supporting the adaption and design of products for emerging markets
Li, X., PhD Student, Department of Management Engineering
Li-Ying, J., Main Supervisor
Hansen, J. P., Examiner
Jensen, T. A., Examiner
Daalhuizen, J., Supervisor
Kandachar, P., Examiner
Eksternt finansieret virksomhed
01/12/2013 → 07/09/2017
Award relations: Design methods for supporting the adaption and design of products for emerging markets
Project: PhD

Explaining the survival rate of new pharmaceutical products in clinical trials
Buonansegna, E., PhD Student, Department of Management Engineering
Salomo, S., Main Supervisor
Li-Ying, J., Supervisor
Maier, A., Supervisor
Schultz, C., Supervisor
Perunovic, Z., Examiner
Knudsen, M. P., Examiner
Kock, A., Examiner
Technical University of Denmark
01/12/2010 → 30/09/2014
Award relations: Explaining the survival rate of new pharmaceutical products in clinical trials
Project: PhD

GODSEM: Global Opportunities for Danish SMEs in Emerging Markets: Strategies and Methods for Adaptive Product Development
Many Danish companies realise that the growth potential relies on a successful entry into the emerging markets, such as China, Brazil, India, Latin America, and Africa.
There are tremendous amount of opportunities to do business in more innovative ways in emerging markets. Do you face challenges in developing business for your company in emerging markets or adapting your products to these new markets?
The purpose of this project is to accelerate the growth of Danish start-ups and SMEs with regard to their global expansion into emerging markets through establishing new growth strategy and methods to support: understanding of product requirements, product development processes, business models, and pathways for networked resources.
The project is financed with 4.000.000 DKK from the Danish Industry Foundation (Industriens Fond) and runs over a three year period. It will involve a number of researchers from the Department of DTU Management Engineering.
Rosati, F., Project Participant, Department of Management Engineering, Technology and Innovation Management
Li-Ying, J., Project Participant, Department of Management Engineering, Technology and Innovation Management
Ahmed-Kristensen, S., Project Coordinator, Department of Management Engineering, Technology and Innovation Management
Li, X., Project Participant, Department of Management Engineering, Technology and Innovation Management
15/10/2014 → 14/10/2016
Keywords: Emerging Markets; Business Model Development; Product Development; Danish SMEs
Documents:
GODSEM - Project Description
Project: Research

Kina Vækst (China Growth): Business Development in Chinese market for SMEs in Region Sjælland
consultation and guiding SMEs in Region Sjælland regarding their business model innovation and product development in China
Li-Ying, J., Project Participant, Department of Management Engineering, Technology and Innovation Management
02/01/2013 → 30/09/2014
Collaborators: Væksthuset Sjælland
Project: Research