Research Proposal

"Patent Spinoffs: Economics of Innovation and Technological Entrepreneurship"

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New ventures create an average of 3 million new jobs, and all other ages of firms are net job destroyers losing 1 million jobs net combined annually using "Business Dynamics Statistics" dataset by the U.S. Census Bureau (Kane 2010, p.6). These staggering statistics suggests that new ventures have enormous contribution towards economic growth and job creation within an economy (Schumpeter 1942).

A specific type of new ventures called "spinoffs" have drawn substantial attention in last decades. Spinoffs are the new entries whose impetus originates from within an existing company. It does neither require the spin-off to be in the same industry as the incubator firm, nor does it require the spin-off to be located in some high-tech industry (Erikkson and Kuhn 2006, p.1022). The distinctive performance of spinoffs as compare to start-ups, raises fundamental theoretical and policy related concerns (Klepper 2009; Sorenson and Fassiotto 2011).

This proposal aims to address the lack of systematic research on the long-term impacts of patent based spinoffs. Considering the importance of technology based spinoffs in entrepreneurship research and innovation policies, and the significant amount of resources used to promote these firms; limited knowledge about their impacts is an impediment to the design of efficient policies and support mechanisms.

A unique database is created covering the *US based patents and spinoffs in high tech industries such as aerospace and nanotechnology from 1970 to 2015.* This dataset covers characteristics of patents, parent-spinoff firms, and inventor & top management teams. Major sources for data collection are USPTO, Compustat, Bureau Van Dijk's ORBIS, Lexis nexis, company websites (company prospectus, profile, annual report etc.), LinkedIn, and US Securities and Exchange Commission (SEC).

While data on public firms are readily available in machine-readable databases such as Compustat; information on young private firms, specifically patent based spinoffs, is much harder to gather. This novel combination of data sources will make it possible to draw deeper insights into the determinants and performance of patent based spinoffs.

This approach makes it possible to explore largely unaddressed research questions such as: *What is the link between initial founding conditions, resources (e.g. financing) and the long-term performance of patent based spinoffs? How does the source of funding (e.g. venture capital, angel, & corporate sponsored) influence performance of spinoffs? Do the most successful spinoffs become acquired?*

Implications of the study will inform the discussion about whether the prominence given to spinoff research and innovation policy is warranted; and how entrepreneurship policies and support initiatives to promote the growth and potential impacts of spinoffs should be designed. Finally, results will have important implications for scholars, managers and policy makers in the field of technology based entrepreneurship.

References:

Eriksson, Tor, and Johan Moritz Kuhn. "Firm spin-offs in Denmark 1981–2000—patterns of entry and exit." International Journal of Industrial Organization24.5 (2006): 1021-1040.

Klepper, Steven. "Spinoffs: A review and synthesis." European Management Review 6.3 (2009): 159-171.

Kane, T. (2010). The importance of startups in job creation and job destruction. Kauffman Foundation Research Series: Firm Formation and Economic Growth.

Sørensen, Jesper B., and Magali A. Fassiotto. "Organizations as fonts of entrepreneurship." Organization Science 22.5 (2011): 1322-1331.

Schumpeter, Joseph. "Creative destruction." *Capitalism, socialism and democracy* (1942): 82-5.

InnoST. 2011. Innovative S&T indicators combining patent data and surveys: Empirical models and policy analysis.

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EDUCATION

Ph.D.	**The Wharton School, University of Pennsylvania, US** Ph.D. Visiting Scholar, Innovation and Entrepreneurship (Prof. **Ian MacMillan**)	2016
	University of Bologna, **Department of Management, Italy** Ph.D. Candidate, Innovation and Entrepreneurship Dissertation: "Antecedents and Consequences of the Patent based Spinoffs' Performance: Evidence from 23 countries."	2016
	University of Oxford, U.K Ph.D. Visiting Student (Innovation Management)	2013
	Cass Business School, City University London, U.K Ph.D. Visiting Student (**Prof. Scott Shane**)	2012
MBA	Amity University, Delhi Concentration: Strategy Graduated with University Honors (First Class result)	2009
B.Sc.	University of Delhi, Delhi Graduated with University Honors (First Class result)	2007

RESEARCH & TEACHING INTEREST

- Entrepreneurship
- Patent Spinoff
- Top Management Teams
- Technology & Innovation Management
- Intellectual Property Management
- Strategic Management

GRANTS, HONOURS & FELLOWSHIPS

- **Italian Ministry** of University and Research grant (MIUR): Research Programs of Relevant National Interest (PRIN), National Coordinator **Bocconi University** (team member) 2013-2015. ≈ $ 5,40,000
- Winner of the Doctoral **Scholarship** at the University of Bologna, Italy 2012. ≈ $ 46,000
- Awarded Brains-In housing fellowship at the **Institue of Advanced Studies**, Italy 2013-2014. ≈ $ 27,000
- Winner of the Marco Polo Doctoral Fellowship **Award**, Italy 2015. ≈ $ 1,800
- The youngest scholar in the management track of Ph.D. at University of Bologna, Italy.
- **Academy of Management** Doctoral Student Consortium, USA- selected International PhD Candidate (**Technology & Innovation management** Division).
- Selected Doctoral Fellow, Academic Organiser for Leading Enabling Technologies for Societal Challenges (LETS 2014) International Conference under Italian Presidency of the Council of the European Union, Italy 2014.
- Awarded Merit Scholarship for Academic excellence in AISSE by the government of India.
- Received Merit Certificate in the National Science Olympiad, India.

Non-academic

- Honoured civilian award (NRI) at the **Parliament** of the **United Kingdom** by Minister Sandip Verma, London.

- Honoured guest by honorary **Ambassadors** of foreign **Embassies** (USA, Italy, Austria, Slovak, Belarus, Qatar, Azerbaijan, Brunei, South Africa, Nigeria) at their National Day Receptions, Delhi.
- IFS Leader for the Indian Parliament election campaign fundraising led by Delhi's Chief Minister.

RESEARCH PAPERS (Work in progress)

- "Coming out of J. P. Morgan or Google? Impact of parent organizations on the performance of patent based spinoffs." (Target: **Academy of Management Journal**)
- "Founders, resource acquisition and technology new ventures."
  (Target: **Strategic Entrepreneurship Journal**)
- Who is the boss? Patent based spinoffs' Ownership and survival: Evidence from 23 countries.
  (Target: **Strategic Management Journal**)

- Killing the next Apple? The America Invents Act and technological entrepreneurship.
- Founders, Resource acquisition and Technology New Ventures.
- Machine Learning Analysis: Innovation in Technology Ventures.
- Entry and performance antecedents of the technology based new ventures.
- Towards an Integrated Framework of Entrepreneurship.

CONFERENCES, WORKSHOPS & PRESENTATIONS

- Academy of Management (AOM) Annual Meeting, Anaheim, California, August 2016.
  - "Coming out of J P Morgan or Google? Impact of parent organizations on the performance of patent based spinoffs."
- Wharton Technology & Innovation Conference 2016.
- Academy of Management (AOM) Annual Meeting, Philadelphia, PA, August 2014.
  - Technology & Innovation Management Doctoral Consortium (invited) "The Performance determinants of the technology-based spinoffs."
- Strategic Management Society (SMS), Madrid, September 2014.
- European Academy of Management (EURAM), Annual Conference, Valencia, Spain, June 2014.
  - "Top management teams and business strategy workshop".
- "Financing Knowledge Transfer in Europe" Workshop, University of Bologna, Bologna, Italy, February 2014.
- European Investment Bank sponsored "Economics & Management of Intellectual Property" Summer School, Alma Graduate School, University of Bologna, Bologna, Italy, June 2013.
  - "How organisations influence performance of patent based spinoffs?"
- Academy of Management (AOM), Orlando, Florida 2013.
  - New Doctoral Student Consortium Co-organizer Program Committee Member.
- Said Business School, Oxford University, Oxford, U.K: Private Equity Forum, 2013.
- Introduction to Structural Equation Modelling, University of Bologna, Bologna, Italy 2013.
- European Group for Organizational Studies (EGOS), Helsinki, Finland, July 2012.
- World Didac India, an international conference "Educational Material, Training & Technology based solutions for all levels and sectors of the Education & Training Industry" at Germany Embassy, Delhi 2009.

TEACHING EXPERIENCE

- **The Wharton School, University of Pennsylvania, Philadelphia** (2015/2016)
  - **Lecturer Management**: MGMT 100 Leadership course (offered position)
- **University of Bologna, Italy** (Teaching assistant) (2012/2013)
  - Master degree in International Management- course "International Marketing and Distribution".
  - Bachelor degree in Business and Economics- course "Organizational Behaviour".

RESEARCH EXPERIENCE

Italian Ministry of University and Research (MIUR) (PRIN grant), National Coordinator: Bocconi University; Research Assistant at the University of Bologna, Italy (2013-2015)

- Project "Market and non-market mechanisms for the exchange and diffusion of innovation: when do they work, when they do not work, and why should we care".
- European Commission's (InnoST-7FP project): conduct data analysis on 269 technology new ventures derived form 22,000 EPO patent inventors from 23 countries (USA, 20 EU nations, Japan & Israel) across 7 industries.
- Assist in matching and analysis of parent-spinoff firms data with other datasets such as Amadeus, Compustat (company accounting and financial data), PATSTAT (patent data), Zephyr (M&As, IPOs), US Securities and Exchange Commission (SEC) and Bureau van Dijk's TMT dataset (CEO, VP, CTO etc.).

PROFESSIONAL AFFILITATION

- Academy of Management
- Strategic Management Society

PROFESSIONAL SERVICES

- Academy of Management (AOM), Orlando, Florida 2013.
  Co-organizer & Program Committee Member: New Doctoral Student Consortium
- Reviewer: Academy of Management Conference.

INDUSTRY EXPERINCE

START-UP ADVISOR

Advise **Founder and CEO** of startups in general management, strategy, IP and business development areas.

- Micello Inc. ($5-10 Million R), California.
- Epic Pain Management LLC ($ .5 Million R), New York.
- EstateCorner Ltd., London.
- Rednet Srl, Rome.
- 55Miles.com, Mumbai.
- hotelshare.org, NYC.
- Gogodave.com Switzerland.

BOARD MEMBER

- **Board of Directors- Finance & Audit Committee Member: The One Less Foundation, Philadelphia.**
  - Overseeing the fiscal affairs of the foundation by ensuring the proper systems, procedures and controls are in place.
  - Ensuring all financial transactions are conducted with transparency and in accordance with GAAP standards

FAMILY BUSINESS

- **Piaggio Group €1.2 Billion R (Italy) & Lohia Machines Ltd ₹ 2.6 Billion R (India) JV: LML Vespa Dealership**
  Ownership of automobile dealership rights for the Indian submarket.

JOB EXPERIENCE

RNB International (MNC) Delhi, Manager (2011)

- **Client development**: responsible for client development, deliverables & servicing (Unilever, L'Oreal, Nielsen). 90% increase in client size. Fostering effective collaboration to develop critical & trusted business relationships with internal and external stakeholders.
- Built strategic business alliances in international market place (Europe/APAC) for market research services.

- **Market Research**: Using research tools and sound frameworks to develop high-impact client deliverables while ensuring the quality, timeliness, accuracy, and accountability of the research projects.
- **Project Management**: contributes proactively towards market research projects' conceptualization, proposal drafting, delivery, client presentation & recommendation. Participating in international tender biddings.
- **New hire & training**: hired and lead a 5-person team of research executives.

BLS Group (₹2.5 Billion R) MNC, Delhi, Asst. Manager (2009)

- **Commercial research**: active contribution in preparing and presenting commercial reports & due diligence reports for international and domestic clients (e.g., VTB Bank Russia, Finland Trade Commission).
- **Business development**: develop and maintain a comprehensive global network of high level officials of foreign embassies including **ambassadors, trade commissioners,** other **diplomats** (**45 countries**), and ministries.
- Participate in international tender biddings for visa processing outsourcing services with Embassies and Ministries (e.g. Embassy of the Denmark and Philippines, Malaysian High Commission).
- Acted as an authorized signatory and one point contact for Embassy of Finland and Malaysian High Commission.
- Facilitating foreign investments in India via central bank of India (Reserve Bank of India) and Foreign Investment Promotion Board (FIPB).

Jubilant Group ($3Billion R) MNC, Clinsys Research, Delhi, Management Trainee (2008)

- Assist **CEO** and **Vice President** for the global pharma projects, **$1.3Million** clinical trials phase I-IV, conducted in compliance with U.S Food and Drug Administration (**FDA**), and European Medicines Agency (EMEA).
- Provide assistance in implementation of the protocol-specific and operational aspects of assigned clinical trials.
- Collaboration with major functional areas such as bioanalytical, data management, drug safety, medical affairs and writing, pharmacovigilance, quality assurance, and regulatory services.
- Contribute to identify and evaluate fundamental issues on the project, make good business decisions and ensure the implementation of timely solutions.

PATENTS (USPTO)Forthcoming

1. Methods and systems to provide on-demand location based medical services through use of portable computing devices.
2. Methods and systems to provide communication (and emotions) through virtual reality.
3. Methods and systems to provide economic air travel.
4. Methods and apparatus for safety of underwater lives including free-divers and scuba-divers.
5. Dermatological disorders treatment prescription through herbal methods.
6. Herbal health-drink.

SKILLS

- Statistical software: Stata, SPSS, NVivo
- Programming language (familiar): C++, Python, SQL and HTML.

OTHERS

- Languages: English, Italian, Hindi.
- Cultural Experience: Visited over 20 countries and lived in 3 countries.
- Personal Interests: Running, Golf, Yoga, Scuba-Diving.

REFERENCE

- Professor Ian MacMillan
  The Dhirubhai Ambani Professor
  Professor of Innovation and Entrepreneurship
  Director, Sol C. Snider Entrepreneurial Research Center
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