From invention to innovation – IP funds and their role in the exploitation of IP

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Agenda

Introduction and Background

Method and Data

Results

Implications
Motivation: Patent-based investment funds as under-researched intermediaries in the transition and financing of invention

Invention to innovation transition

Typical sources of finance

Availability of financing

Introduction and Background

Source: Based on Schefczyk (2006), Auerswald and Branscombe (2003), Acs and Sanders (2012), Block et al. (2013), Carlsson et al. (2009), Guerrero and Urbano (2014)
IP venture funds

Invention \[\rightarrow\] Innovation \[\rightarrow\] Economic growth

Intermediaries / Money injection / knowledge transfer
„capital market for inventions“*

* Term coined by Nathan Myhrvold, the Co-founder and CEO of Intellectual Ventures, one of the largest funds aggregating and exploiting patents and patentable inventions.
**Definition: IP venturing funds ...**

1. ... acquire or gain control over patents or patentable inventions
2. ... do not consider R&D or production as core competence
3. ... invest privately or publicly raised funds and try to generate a return for their investors by commercializing the technology through the creation of a new start-up

Source: Gredel et al. (2012)

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After having looked at the activities and commercialization strategies of IP based funds, we now take a deeper look at the **success factors of IP venturing funds**.

Thus, the following **research question** is derived:

*How do funds' activities decrease agency costs and add value, eventually leading to a higher return for the fund?*
Agenda

Motivation and research questions

Methods

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**Method: Exploratory, qualitative research based on multiple case studies**

1. **Selection criteria**
   - Fund’s investment approach is to **commercialize IP through the creation of start-ups** around this IP, therefore they are the primary investors of a venturing project before or at foundation.
   - The **commercialization project** selected out of prior or existing portfolio companies of the fund needs to be **successful**.
   - **Principal informants** were **available** and we were able to gain access to them in order to conduct interviews.
   - => 6 Cases identified and case studies conducted (fund and deal level data)

2. **Data:**
   - Primary source: semi-structured interviews (11)
   - Secondary source: Additionally, archival data (internal and external sources)

3. **Data analysis:**
   - Data analyzed in an **iterative way** (Miles and Huberman, 1994)
   - 1st within case analysis (standardized summary descriptions, tabular displays, validation by interviewees), 2nd open coding and data assignment to emerging provisional categories, 3rd constant comparative method (Silverman 2006), 4th consolidation of categories, framing with theory (change from open to axial coding)
Agenda

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Results: Common success factors

"Something that you have to become very good at is recruitment."

"We have to create a business leadership team, whereas in a traditional venture model you have an entrepreneur or founder that tends to be more a business entrepreneur [...] So I think that was the largest challenge we had."

"The skills are a lot more hands-on, business building skills, than they are traditional venture financial investment type skills."

"If [somebody inside the fund] stay[s] involved in the company then my investment in that company is closer and guaranteed success because they stay in the network. And that eliminates one of the biggest challenges with venture capital funds, which is this question of governance and control."

"We were not meeting industry standards for lipstick and curry powder and no one our own chemists in to go and work out what it is that was actually happening at the molecular level, which we eventually did. We eventually solved that problem."
Results: Common success factors

- IP venturing funds act as active business builders

Recruitment of a „surrogate management team“
- External CEO (all 6 cases)
- Complementing management team
- Inventor role varies

Interim management positions
- Internal resource human capital through fund
- Mainly very early stage / transfer period

Operational support after incorporation
- Financial and legal question
- Network
- Technical support
- Staff
Results: Common success factors – propositions

Proposition 1A: Active business-building activities of IP venturing funds provide the venture with a competitive advantage and decrease agency costs, which leads to a higher financial return.

Proposition 1B: Active business-building activities are moderated by relevant industry experience and commercialization expertise within funds.
Results: Two investment styles

Cross-case comparison led to the proposition that a **dichotomy** exists among the **investment styles** of IP venturing funds. Subsequently, we investigate the distinct strategies of the funds in each group to manage the risks associated with IP venturing.

"...the focus is on the maximization of the intellectual property value in a nonlitigation setting."

"We are constantly looking at the market, constantly looking for opportunity for arbitrage."

"We are constantly looking at opportunities [...] we are close to pharmaceutical companies, large pharmaceutical companies, small pharmaceutical companies."

"to influence the creation of successful companies in this region."

"We would have a scientific team go through these disclosures, who'll decide that it's worthwhile spending time on it; ..."

"[The fund's] remit was to invest in spin-offs from the University of Manchester. So it had a single-university focus."
Results: Two investment styles

- **Purpose**
  - Technology-driven investment style: Commercialization of techn. from research, economic impact, sustainability
  - Opportunity-driven investment style: Identify undervalued IP assets => increase value

- **Approach to deal origination**
  - University inventions as starting point, disclosure screening
  - Industry and market perspektive, disruptive technologies

- **Origin and stage of IP**
  - University spin-offs, research institutes. IP often non-existent
  - Many sources, e.g. small or large corporations, individual inventor.

IP venturing funds as contractors | IP venturing funds as entrepreneurs
**Results: Two investment styles – propositions**

**Proposition 2A:** Access to information including active search and cognitive abilities shaped by prior experience enable IP venturing funds to recognize an opportunity and find corresponding IP.

**Proposition 2B:** Opportunity recognition through IP venturing funds is compensated through a high founder share and significantly decreases agency costs, which leads to a higher financial return.

**Proposition 3A:** Contractual control mechanisms applied by IP venturing funds decrease deal origination and agency costs, which leads to a higher financial return.

**Proposition 3B:** The effect of contractual control mechanisms on return is moderated by the ability of the fund to invest in later financing rounds and to avoid dilution.
Results

Propositions

Opportunity-driven investment-style
(Purpose, deal origination, IP source and stage)

Technology-driven investment-style

Active business building

Industry experience and expertise

Access to information, incl. active search

Cognitive abilities of fund managers

Fund as entrepreneur (Opportunity recognition)

Fund as contractor (setting incentives)

Financial firepower

Opportunity-driven investment-style

Technology-driven investment-style

IP Venturing Funds
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Implications
Implications for theory and practice

1. Theoretical implications:
   • We introduce IP venturing funds as investors in very early stages of opportunity recognition and following start-up formation.
   
   • A dichotomy of investment approaches can be shown, which also includes very active involvement in the sourcing of suitable inventions.
   
   • We propose success factors by linking our model to the reduction of agency costs and in the future increased returns.
   
   • We can show that “building winners” is a main characteristic of the approach of IP venturing funds. Activities are similar to VC and BAs, yet start much earlier in the start-up process.

2. Broader implications:
   • Funds can take over the core entrepreneurial task of opportunity recognition.
   
   • Enhances our knowledge on invention and patent intermediaries.
Discussion

Thank you for your attention!

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Appendix
### Methods: Overview 6 Case Studies, sample characteristics

<table>
<thead>
<tr>
<th>Case characteristics</th>
<th>A. Fund information</th>
<th>B. Investment characteristics</th>
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<tr>
<td><strong>Location</strong></td>
<td>Philadelphia, USA</td>
<td>Large company, small biotech company</td>
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<td>Year of establishment</td>
<td>2004</td>
<td>Anti-interleukin-5 monoclonal antibody</td>
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<td><strong>Fund size</strong></td>
<td>&gt;$1.2B invested since 2004</td>
<td>Novel water-saving systems using polymer beads</td>
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<td>Fund term</td>
<td>Pledge fund structure (no fixed term)</td>
<td>Research team at associated university</td>
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<td>Team size</td>
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<td><strong>Inventor</strong></td>
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<td><strong>Industry/ target market</strong></td>
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<td><strong>Investment characteristics</strong></td>
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<td>High voltage ion propulsion technology</td>
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<td><strong>Institution</strong></td>
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## Methods: Overview 6 Case Studies, data sources

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<th>Data sources</th>
<th>Case A</th>
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References


