

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

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# Agenda

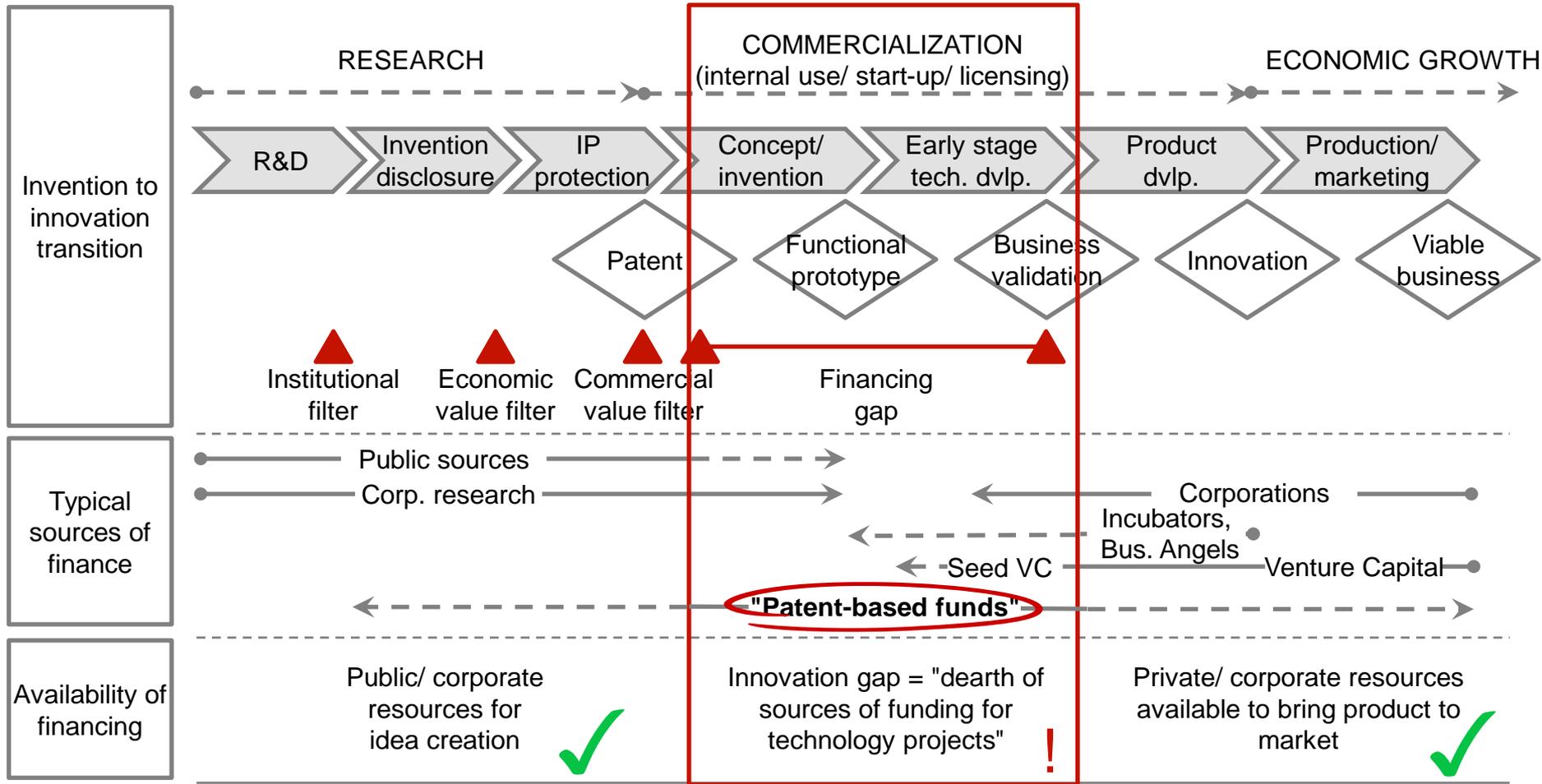
## Introduction and Background

Method and Data

Results

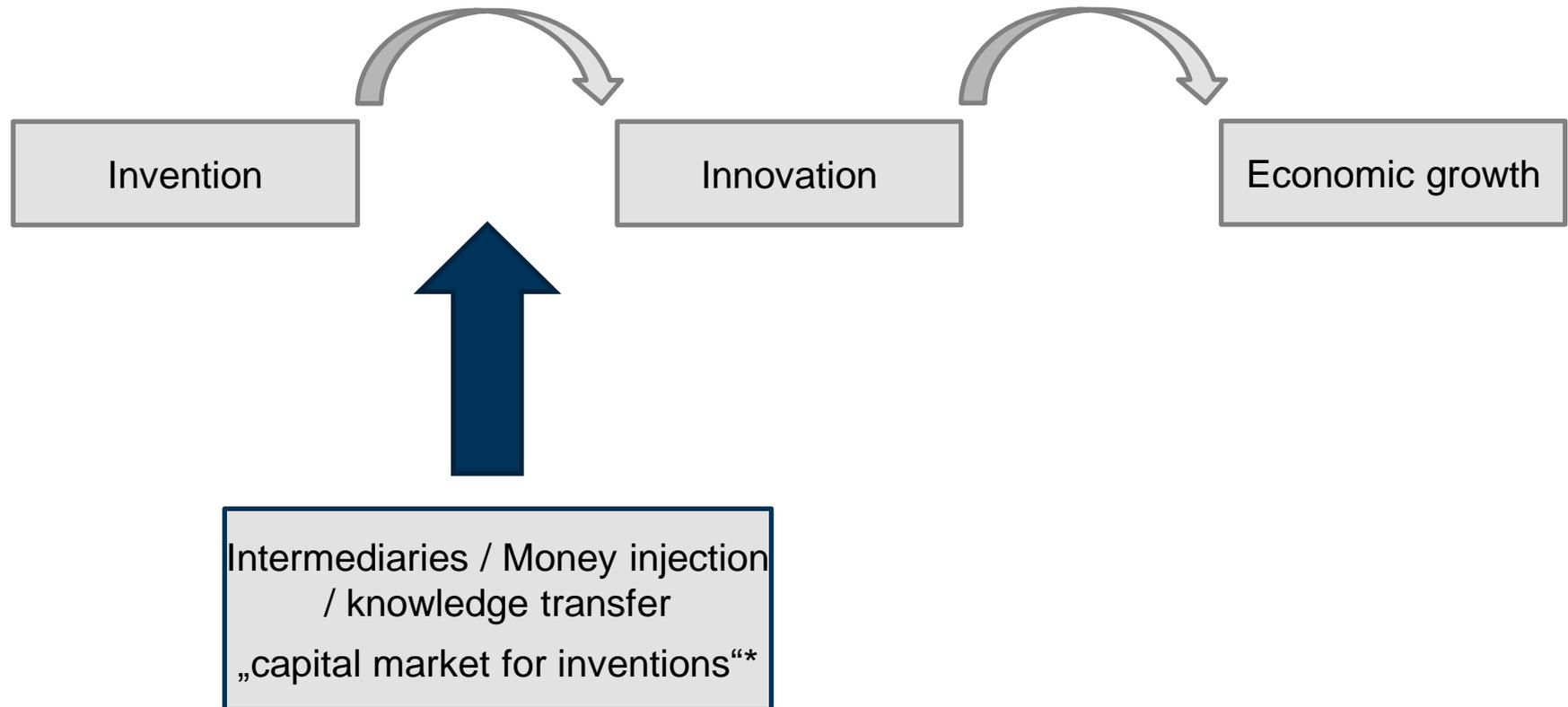
Implications

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



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 venturing funds



\* 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)



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**

Results

Implications

## 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)
- 1<sup>st</sup> within case analysis (standardized summary descriptions, tabular displays, validation by interviewees), 2<sup>nd</sup> open coding and data assignment to emerging provisional categories, 3<sup>rd</sup> constant comparative method (Silverman 2006), 4<sup>th</sup> consolidation of categories, framing with theory (change from open to axial coding)

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## Results: Common success factors

...venture development organization...

"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."

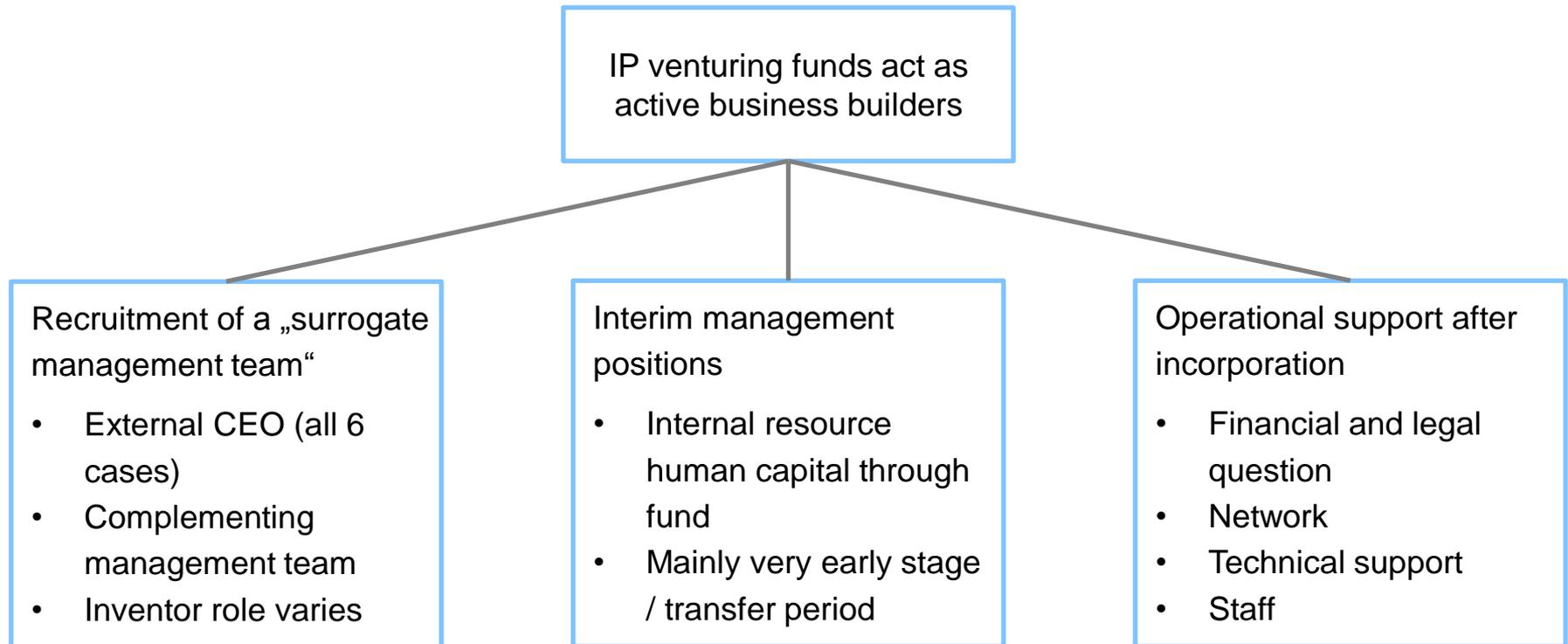
"The skills are a lot more **hands-on, business building skills**, than they are traditional venture financial investment type skills."

...business builders...

"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 knew why. In fact, we **had to send one of 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



## 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."*

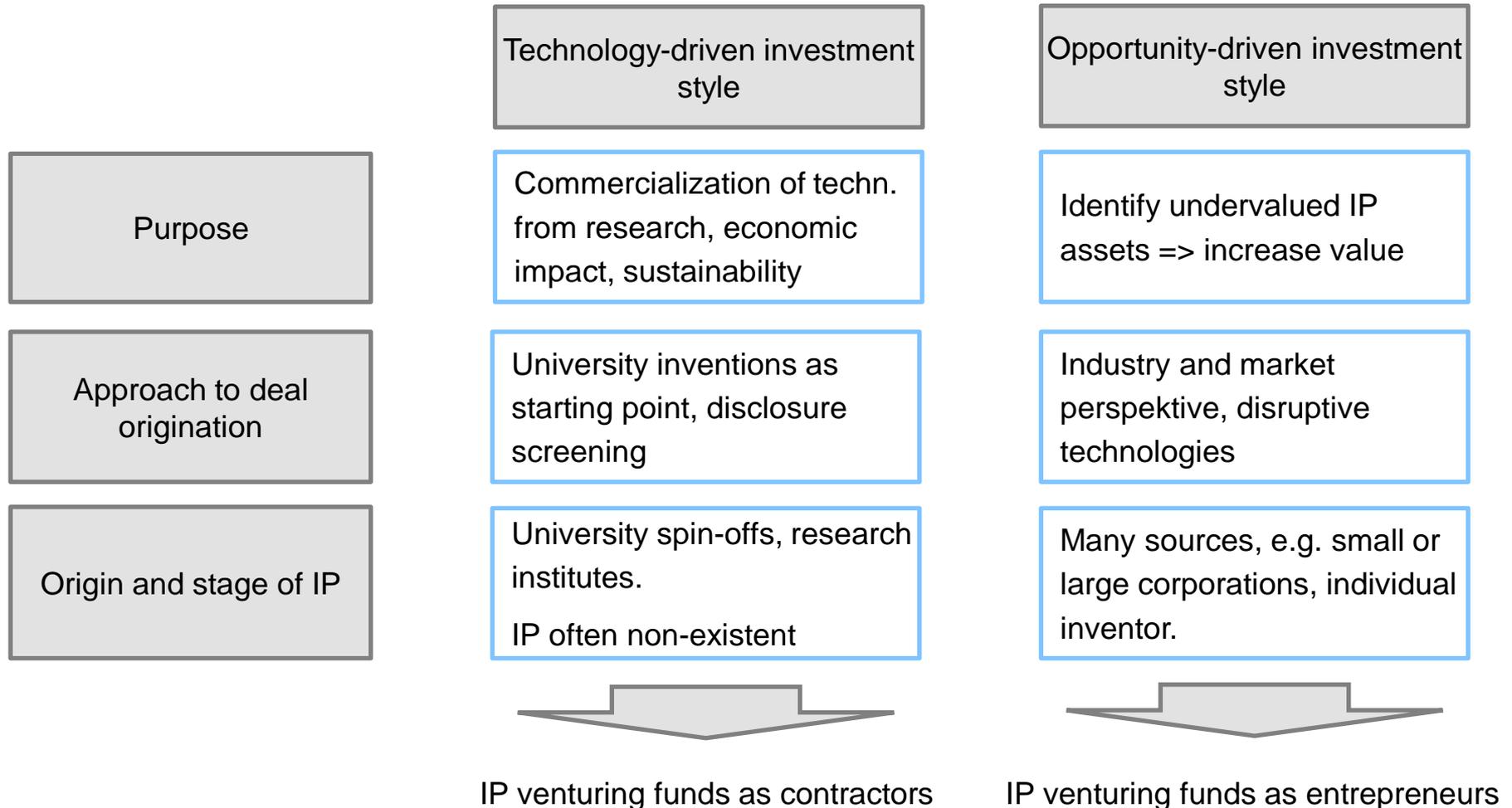
*"We are constantly looking at opportunities [...] we are close to pharmaceutical companies, large pharmaceutical companies, small pharmaceutical companies."*

*"to influence the creation of successful companies that will create new wealth and anchor that wealth in this region."*

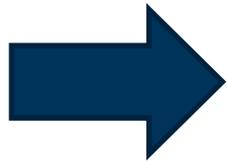
*"We would have a scientific team go through these disclosures, who'll decide that it's worthwhile spending time on it; ..."*

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

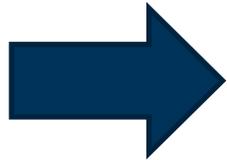
## Results: Two investment styles



## Results: Two investment styles – propositions

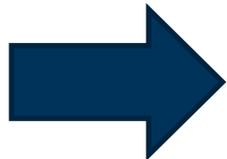


Proposition 2A: Access to information including active search and cognitive abilities shaped by prior experience enable IP venturing funds to recognize an opportunity and find corresponding IP.

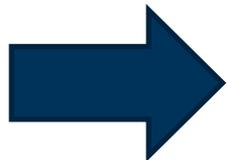


Proposition 2B: Opportunity recognition through IP venturing funds is compensated through a high founder share and significantly decreases agency costs, which leads to a higher financial return.

Opportunity-driven



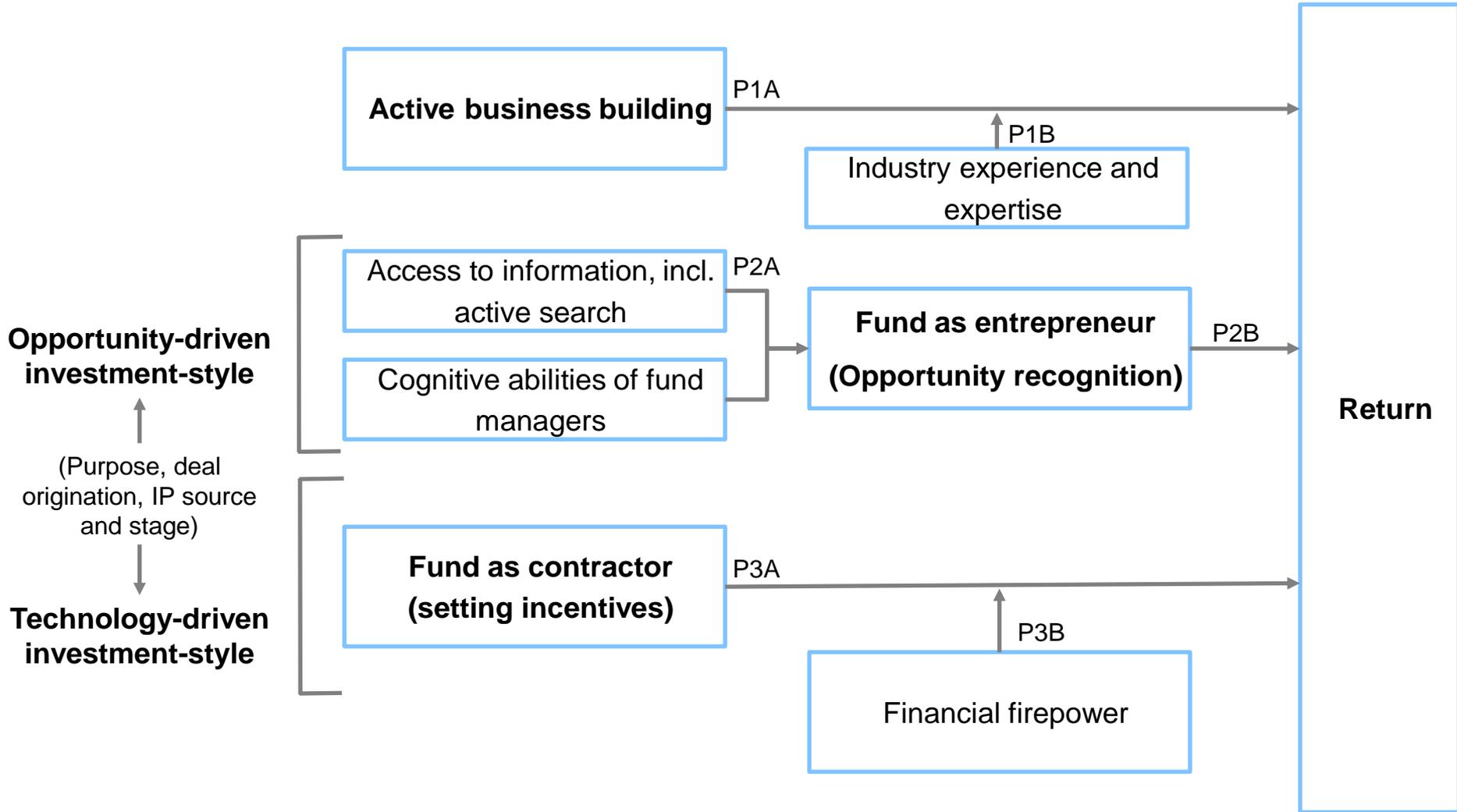
Proposition 3A: Contractual control mechanisms applied by IP venturing funds decrease deal origination and agency costs, which leads to a higher financial return.



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.

Technology-driven

# Propositions



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## 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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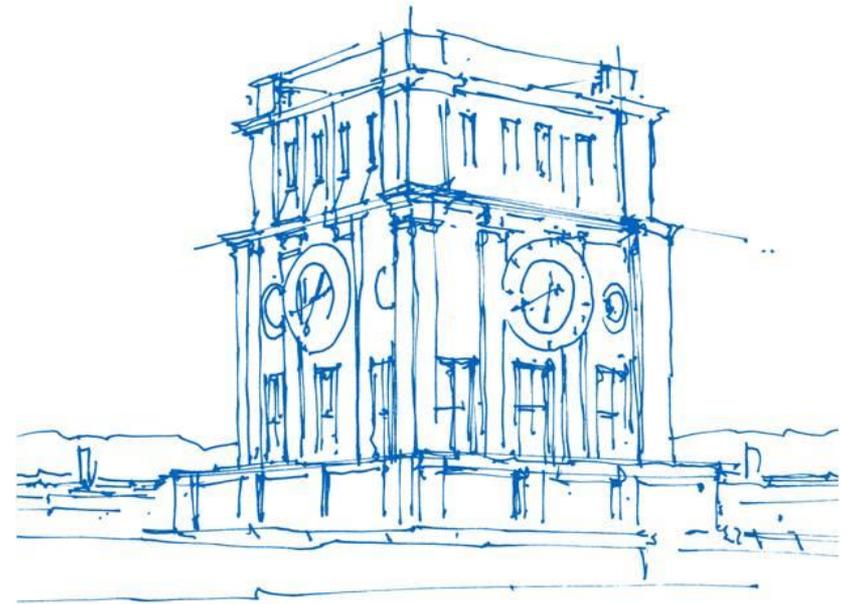
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*Uhrenturm der TUM*

# Appendix

## Methods: Overview 6 Case Studies, sample characteristics

Case characteristics	Case A	Case B	Case C	Case D	Case E	Case F
<b>A. Fund information</b>						
<b>Location</b>	Philadelphia, USA	London, UK	Manchester, UK	Columbus, Ohio, US	New York, US	Boston, US
<b>Year of establishment</b>	2004	2001	2008	2005 (Restarted in 2013)	1999	2007
<b>Fund size</b>	>\$1.2B invested since 2004	Invests from balance sheet (£76M in 2015), ~£85M across three funds	£32M	~\$60M across 7 funds (\$1M-\$22M per fund)	\$50M	~\$20-40M invested per year
<b>Fund term</b>	Pledge fund structure (no fixed term)	Evergreen model <sup>1</sup> , funds with 10 year term	10 years	10-12 years	12 years	Evergreen model, three year rolling investment term
<b>Team size</b>	5	63	5	28	3	3 (~20 engineers internally)
<b>Technology focus</b>	Pharmaceuticals, Biotech	Healthcare, Technology, Cleantech, Biotech	Materials, Med-Tech, Electronics	Advanced Technology, IT, Life science	n.a.	Industrials, Consumer, Financial services, Energy
<b>Regional focus</b>	US	UK	UK	Central Ohio, US	US and Europe	US
<b>B. Investment characteristics</b>						
<b>Inventor</b>	Large company, small biotech company	Professor at associated university	Professor at associated university	Research team at associated university	Research group at research institute	Small tech company
<b>Technology</b>	Anti-interleukin-5 monoclonal antibody	Novel water-saving washing systems using polymer beads	Oxygen-enhanced MRI	Efficient and more affordable natural gas compressor	Fuel cell technology	High voltage propulsion technology
<b>Industry/ target market</b>	Treatment of eosinophilic asthma and esophagitis	Laundry industry	Pharmaceutical industry and medical diagnostics	Transportation and oil and gas industry	Electrical components and equipment	Private engineers / research lab

## Methods: Overview 6 Case Studies, data sources

Data sources	Case A	Case B	Case C	Case D	Case E	Case F
<b>Principal informant 1</b>	<b>A1<sup>1</sup></b>	<b>B1</b>	<b>C1</b>	<b>D1</b>	<b>E1</b>	<b>F1</b>
Position	Senior Managing Partner, Founder	CEO	Investment Partner (3A)	Senior Director of Venture Capital	CEO, Founder	CEO, Four
Role	Investor side	Investor side	Investor side	Investor side	Investor side	Investor side
Place/ date of interview	Phone/ 13.09.2016	Phone/ 19.09.2016	Phone/ 04.10.2016	Phone/ 26.10.2016	Phone/ 22.11.2016	Phone/ 25.11.2016
Length of interview	61 min	67 min	59 min	50 min	43 min	46 min
<b>Principal informant 2</b>	<b>A2</b>	<b>B2</b>	<b>C2</b>	<b>D2</b>		
Position	CEO Europe of a different IP fund	CEO of venture	CEO of venture	CEO of venture		
Role	External observer	Surrogate entrepreneur	Inventor, entrepreneur	Surrogate entrepreneur		
Place/ date of interview	Phone/ 06.04.2016	Phone/ 04.10.2016	Phone/ 24.11.2016	Phone/ 17.11.2016		
Length of interview	97 min	32 min	30 min	38 min		
<b>Principal informant 3</b>				<b>D3</b>		
Position				Executive Vice President		
Role				Investor side		
Place/ date of interview				Phone/ 17.11.2016		
Length of interview				37 min		
<b>Archival data</b>						
Internal sources	E-mail correspondence	E-mail correspondence	E-mail correspondence	E-mail correspondence	E-mail correspondence	E-mail correspondence
External sources	<b>AP<sup>2</sup></b>	<b>BP</b>	<b>CP</b>	<b>DP</b>	<b>EP</b>	<b>FP</b>

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