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# Is Strategic Patenting still In Vogue?

## A Reassessment of Motives to Patent a Decade after the Patent Surge

Patent Statistics for Decision Makers

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## LITERATURE REVIEW & MOTIVATION

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- During the late 1990s we experienced an unprecedented surge in the number of patent applications.
- Around that time many scientific articles dealt with the motives to patent (i.e. Duguet and Kabla 1998, Cohen et al. 2002 or Pitkethly 2001).
- In the case of Germany, Blind et al. (2006) cope with this phenomenon by investigating data collected in 2002 on several reasons (motives) to apply for patents.
- Due to significant changes in the patent landscape (i.e. patent thickets, patent trolls or increasing number of patent litigations), the patent landscape has become much more competitive and the room to manoeuvre shrinks.

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## LITERATURE REVIEW & MOTIVATION

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Therefore, two major questions arise:

- Has the importance of motives to patent changed over the last decade?
- Have other protection instruments increased in relevance?

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# MOTIVES TO PATENT

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## Traditional motive

- Protection function

## Strategic motives

*(...) the decision to patent - despite the significance of the protection motive (...)*”

(Blind et al. 2009: 656)

- Blocking function (Grant 1991, Granstrand 2000)
- Exchange function (Hall und Ziedonis 2001; Markman 2004)
- Signaling function (Arundel 2001; Long 2002; Arora et al. 2001)
- Incentive function (Arai 1999; Neuhäusler 2012)

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# HYPOTHESES

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*Hypothesis 1:* Additional instruments to protect a companies' IP have increased in importance.

*Hypothesis 2:* Strategic patenting motives have become less important.

*Hypothesis 3:* Traditional patenting motives are still highly important because they protect companies from patent related risks.

*Hypothesis 4:* Companies tend to implement a more integrated patent strategy.

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# DATA

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## Two samples:

Sample 1: 532 patenting German companies (2002)

Sample 2: 519 patenting German companies (2011)

## Survey:

- Information on the application and assessment of several formal and informal instruments to protect IP
- Information on the assessment of 12 motives to apply for a patent
- Information on several background variables such as size and sector

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# DATA

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## Problem:

- Different companies in the two samples → no panel structure!
- Observed changes in the assessment of motives might be due to company-specific characteristics and not due to changes in their importance over time

## **Solution:** Propensity Score Analysis (PSM)

- Generate two samples with almost equal sample structure regarding several covariates (**here: sector-dummies and company-size**)
  - Two balanced samples with 411 observations.

# DATA

## Two balanced samples:

### 411 Companies (2002) and 411 Companies (2011)

Table 3

Balanced sample 2002	Observations	Per cent	Average number of Employees
Mechanical engineering	116	28.22	2084
Chemistry/Rubber & Plastics/Biotech	77	18.73	3396
Consumer goods	20	4.87	2642
Metal production	46	11.19	1369
Electrical engineering	110	26.76	7097
Motor vehicles	23	5.60	37754
Construction	19	4.62	5302
<b>Total</b>	<b>411</b>	<b>100.00</b>	<b>5764</b>

Table 4

Balanced sample 2011	Observations	Per cent	Average number of Employees
Mechanical engineering	101	26.28	700
Chemistry/Rubber & Plastics/Biotech	77	18.73	3453
Consumer goods	20	4.87	60
Metal production	45	11.19	152
Electrical engineering	126	28.71	5455
Motor vehicles	23	5.60	40285
Construction	19	4.62	2367
<b>Total</b>	<b>411</b>	<b>100.00</b>	<b>4875</b>



# RESULTS:

## RELEVANCE OF PROTECTION INSTRUMENTS

Ranking of protection instruments (Balanced Sample, N=411)

Instrument	2011 (mean)	N=	2002 (mean)	N=	Change (%)	T-test
Lead-Time Advantage	4.17	371	4.35	401	-4.32	↓***
Patent	4.14	409	4.08	405	1.47	→
Secrecy	4.13	373	3.55	397	16.34	↑***
Trademark	3.54	336	3.54	390	+/- 0	→
Utility Patent	3.27	350	2.54	401	28.74	↑***
Design Patent	2.31	264	1.77	364	30.51	↑***
Copyright	2.32	352	1.97	354	17.77	↑***

The mean is derived from a five point Likert-scale: 1 (= very unimportant) till 5 (= very important)

\*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1

# RESULTS:

## RELEVANCE OF MOTIVES TO PATENT

Ranking of motives to patent (Balanced Sample, N = 411)

Motive	2011 (mean)	N=	2002 (mean)	N=	Change (%)	T-test
Strengthening of market position / hedging of market shares	4.35	408	3.81	392	14.17	↑***
Protection against imitation	4.30	407	4.24	405	1.42	→
Preservation of own technological development scope	3.81	403	3.95	397	-3.67	↓*
Improving corporate image	3.54	403	3.82	405	-7.91	↓***
Preventing competitors from entering the market	3.49	401	3.86	400	-10.60	↓***
Increasing corporate value	3.28	402	3.40	405	-3.66	↓
Enhancing position in business cooperation	2.39	398	2.74	392	-12.77	↓***
Exchange potential	2.30	399	2.27	386	1.32	→
Earning of royalties	2.20	398	2.24	407	-1.82	→
Use of patents as an internal performance indicator	2.13	398	2.36	398	-10.80	↓***
Employee motivation	2.08	399	2.69	398	-29.33	↓***
Easier access to capital markets	1.85	398	2.10	384	-13.51	↓***

The mean is derived from a five point Likert-scale: 1 (= very unimportant) till 5 (= very important)

\*\*\* p < 0.01. \*\* p < 0.05. \* p < 0.1

# RESULTS: TEST FOR MORE INTEGRATED PATENT STRATEGIES FACTOR ANALYSIS

Factor loadings of motives to patent (N = 392)

Variable	Factor 1	Factor 2	Factor 3
Protection against imitation			0.7696
Exchange potential		0.7720	
Earning of royalties		0.6406	
Strengthening of market position / hedging of market shares			0.8097
Easier access to capital markets		0.6232	
Enhancing position in business cooperation		0.6351	
Preventing competitors from entering the market			0.5770
Preservation of own technological development scope			0.5458
Improving corporate image	0.7199		
Increasing corporate value	0.7215		
Use of patents as an internal performance indicator	0.6650		
Employee motivation	0.6630		
Eigenvalues	3.76	1.85	1.08
% of variance	19.83	18.72	17.27
<i>Cronbach's alpha</i>	0.72	0.72	0.63

Blanks represent factor loadings < .5

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## RESULTS: SUPERORDINATED PATENT MOTIVES

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### Changes of the superordinated patent motives between 2002 and 2012

Year 2002	Year 2012
Protection	Blocking & Protection
Blockade	Reputation & Incentive
Reputation	Exchange
Incentive	
Exchange	

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## FINDINGS

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Has the importance of patents motives changed over the last decade?

- The traditional motives are still most important
- Strategic motives have lost significantly in relevance
- Companies tend to use a more integrated patenting strategy

Have other protection instruments increased in relevance?

- Informal protection instruments are still most important
- Especially the importance of utility patents, design patents and copyrights has significantly increased

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# LIMITATIONS

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## Limitations

- Comparability of the samples
- Samples contain only German companies
- External factors -for instance the increasing number of patent litigations or patent trolls- are not part of the analysis

## Next steps:

- Using patent portfolio information (citations, size or diversification) to achieve better matching results
- Additional tests for robustness

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Thank you very much for your attention!