

Empirical Studies of High Tech Startups & The Patent System

Pamela Samuelson, UC Berkeley

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Cuing off RZ's Remarks

- Agree that markets for patents is an area for research in which some ?s best addressed by one discipline (eg, law) and some by others (eg, social science or business)
- But collaboration among researchers from different disciplinary perspectives is better than each working separately, reading others' works
- Need for more empirical work to inform policy analysis
- Especially valuable if these research projects also involve advisory board members with industry expertise

2008 Berkeley Patent Study

- With funds from the Kaufmann Foundation, Berkeley Center for Law & Technology was able to hire two fellows to conduct a survey of high tech entrepreneurs to understand the role that patents and other IP play in facilitating co
 - One fellow in law (Ted Sichelman)
 - The other fellow was a social scientist (Stu Graham)
- Both types of expertise important
 - Lawyers articulated what they thought would be useful to know
 - Social scientists know how to operationalize through survey, also knew what prior studies had found
- Advisory board of academics, high tech lawyers, VCs, industry experts

2008 Berkeley Patent Survey

- Survey of high technology entrepreneurs in 2008
- Predominantly software, computer hardware, biotech, & medical device firms
- Surveys mailed to @15K firms drawn from Dun & Bradstreet (D&B) & Venture Expert (VX) databases
- 1332 unique responses
 - 12% response rate for SW/HW, 24% for biotech/MD (correcting for returns, dead firms)
 - No statistically significant differences between respondents & non-respondents in firm characteristics, patenting activity
- *High Tech Entrepreneurs & the Patent System* report on SSRN (forthcoming Berkeley Tech. LJ 2009)
 - joint work with Stuart Graham, Rob Merges, Ted Sichelman

Key Findings

- Patents more important to high tech entrepreneurs than some studies had previously reported
- Venture-backed firms value patents more, 40% of D&B firms, 82% of VX firms had patents
- But striking variation by industry sector
 - 75% among D&B biotech/med devices, 95% of VX biotech/med devices firms had patents
 - 25% of D&B SW firms, 67% of VX SW firms
- But patents perceived to be fairly weak incentive to invent new products or processes
 - No to slight incentive for D&B firms
 - Only slight incentive for VX firms

Most Relevant Finding to Conf.

- Focusing on those who owned/applied for patents, we were interested in how they got patents, how many patents from what source
 - Biotech/med devices/hardware:
 - Average of 18 patents owned/applied for
 - Average of 5 of these patents had been purchased by or assigned to firm
 - Average of 3 brought in by founder
 - SW firms:
 - Average of 6 patents owned/applied for
 - Close to 1 of these patent had been purchased or assigned
 - Average of 1 brought in by founder

IMPTC TO COMPETITIVE ADV: SW on left non-SW on right

- 2.23 1st mover
 - 1.74 comple. assets
 - 1.64 ©
 - 1.57 TM
 - 1.57 secrecy
 - 1.52 diffic of RE
 - 1.18 patent
 - 0 = unimpt
 - 1 = slightly
- 2.48 1st mover
 - 2.3 patents
 - 2.08 secrecy
 - 1.77 comple. assets
 - 1.65 diffic of RE
 - 1.45 TM
 - 1.27 ©
 - 2 = impt
 - 3 = very impt

Motives for Getting Patents

- Preventing copying by competitors most important overall (3.5 on 4 point scale)
- Obtaining licensing revenues least important (average of 2.3 on 4 point scale)
 - But 3.1 for biotech/med devices, only 1.17 for SW firms
- Improving chances of securing investment, chances for liquidity important (just over 3 on 4 point scale)
- Some importance for enhancing reputation, improving negotiating position with other firms

Investors Care about Patents

- 2/3 of D&B firms who had negotiated with VCs reported that patents were important to these VCs; also important to angels
- 3/4 of venture-backed firms said patents were important to their funders
- But even 30% of startups who were negotiating with friends & family reported that patents were perceived as important

Patent Importance to Funders

- SW firms with patents perceived them to be impt to VCs (65%) & other investors (50%)
 - Yet, non-SW firms perceived patents as even more impt to VCs (86%) and other co investors (78%)
 - Less impt to angel SW investors (43%) than to angel non-SW investors (74%)
- Patents perceived as less impt to families (22%) and commercial banks (18%) funding SW cos
 - Yet, 31% of VX SW firms reported banks thought patents were impt
 - 2X as many non-SW firms thought patents impt to families, 3X to banks CBs

Why Do Investors Care?

- Presumably most investors care about patents because they think patents will help their owner-firms to be successful
 - Quality signal
 - Protection vs. competitive copying
 - Barrier to entry as to particular niche of this firm
- But funders may partly think patents are important because they may be an asset from which some revenues can be generated if the company goes under

Policy Implications?

- Abolishing software patents would probably not affect incentives to invest in invention in this field
 - Yet software startups are not perceiving the patent system as a drag on innovation
- Biotech/medical devices depend far more on patents as incentives to invent and as strategy for achieving competitive advantage
 - So diminishing patents in this field may undermine incentives
- Some patents from dead startup are likely finding their ways into market for patents
 - Not clear whether this is promoting investment in innovation
 - That would be worth knowing so we could assess whether to use policy levers to encourage or discourage these markets