UNITED STATES PATENT AND TRADEMARK OFFICE

Patenting, Entrepreneurship, and the USPTO Response

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Economics at the USPTO

A new era at the USPTO

- David J. Kappos, Director & Undersecretary

Economics and statistical research

- We see the purpose of research as
  - » An input into evidence-based policymaking
  - » Gaining, and contributing to, knowledge about the workings of the IP system, and the role that the USPTO plays and may play in that system
- Actively building an infrastructure to do and support economics and statistical research
  - » Deploying resources and capabilities to accomplish some of these tasks internally
  - » But also deeply interested in tapping external expertise and resources

Entrepreneurship Matters: It Matters A Lot

Recent evidence from Kauffman demonstrates:

- A small share of American businesses produce a disproportionate share of new jobs – small businesses (Henrekson et al 2008)
  - Fewer than 5% of businesses produce 2/3 of all new jobs
  - These businesses average 61 employees
- Young startup businesses (those younger than 3 years) may be the only net job producers in the United States, creating 3 million jobs per year (Kane 2010)
- Disturbingly, this trend may be changing – today small businesses are trending toward producing fewer jobs, a trend that predates the economic downturn in 2007 (Reedy and Litan 2011)

Entrepreneurship and the USPTO

We recognize that technology entrepreneurship is an essential element in economic growth, rising standards of living, and bringing longer, better lives to people

- Economics teaches us that innovation and technology entrepreneurship embody uncertainty and information problems, and that competition in new markets and new products is fierce
- In theory, IP can help to solve some problems of the young embryonic firm, by offering a credible signal of value, providing a means by which needed capital can flow, and enabling protection during commercialization and when competing for customers
  - But uncertainty in IP can sap entrepreneurship, efficient knowledge transfers, and investment
  - Appropriate balance?

Does Patenting Matter? Responses to the *Berkeley Patent Survey*

Results from a survey published as Graham, Merges, Samuelson & Sichelman, "High Technology Entrepreneurs and the Patent System: Results from the 2008 Berkeley Patent Survey," *Berkeley Tech. L.J.* (2009)

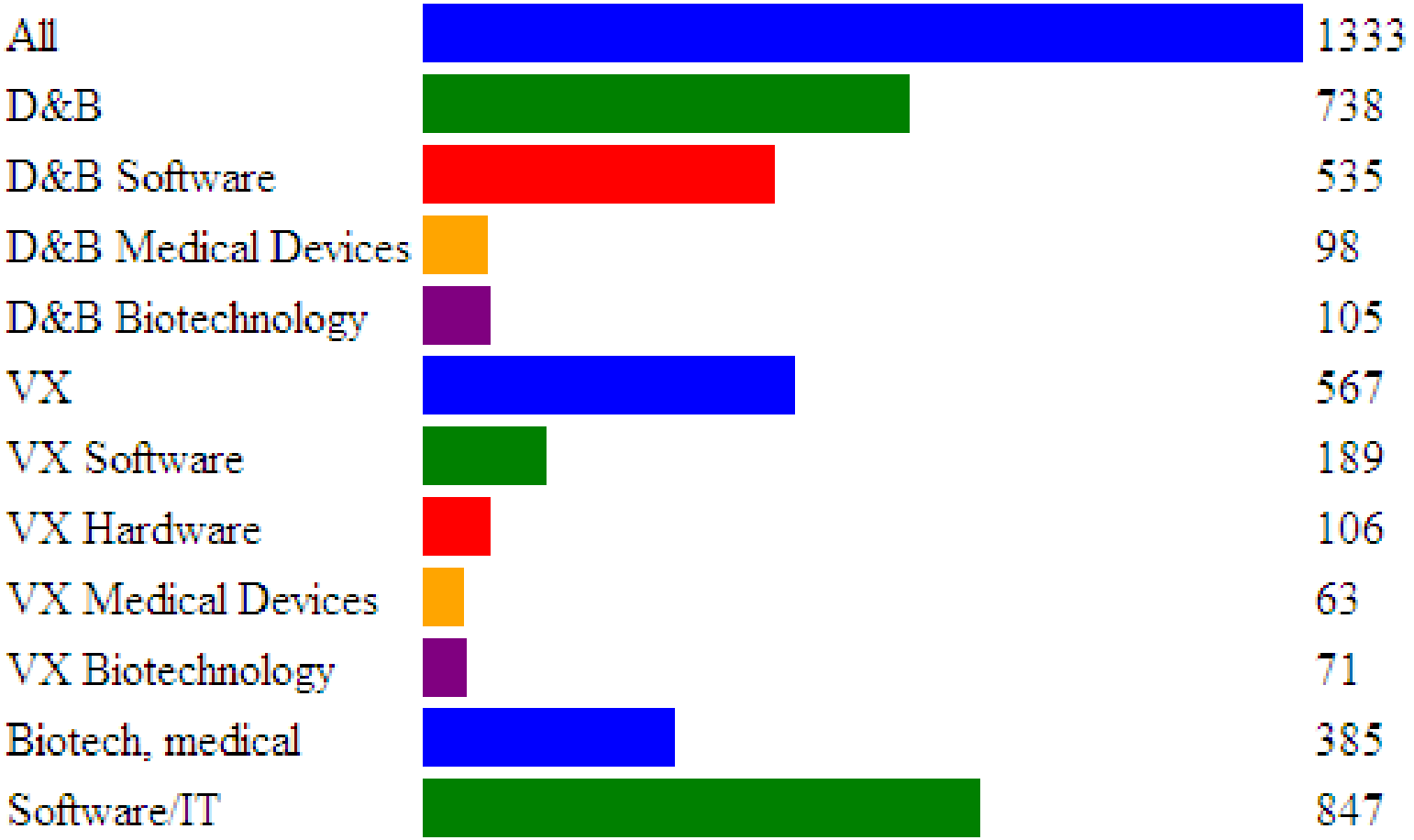
1,332 unique responding firms

- young (10 year) high-technology companies
- population frame Dun & Bradstreet
- oversample on venture-backed (Thomson VX)

Descriptive Statistics of Responding Companies

Variable	Count	Mean	Std. Dev.	Median
Date founded	1,168	10-Jan-02	- -	1-Apr-02
Gone IPO?	1,289	2.9%	0.17	0
Been acquired?	1,288	8.5%	0.28	0
No. employees	1,233	65.8	530.3	9
Share engineers	1,155	48.7	33.7	50
2007 Revenues	1,195	11.9	124.3	0.3
Prior experience?	1,182	0.68	0.47	1
Spinoff	1,151	0.15	0.35	0
Joint venture	1,151	0.01	0.12	0
Start-up	1,151	0.87	0.33	1

Respondent identities, by source and sector



Patenting by Young Hi-Tech Entrepreneurs

Patenting in technology startups more common than previously believed

Origins of Patents Held by Startup Companies

Source / Industry	All respondents	Biotechnology	Medical Devices	IT Software	IT Hardware#
Population of companies (D&B)					
Companies holding patents (share)	38.9%	75.0%	76.3%	24.3%	--
Average patents held (count, all companies)	4.7	9.7	15.0	1.7	--
- For companies holding patents:					
- Patents from founders (average count)#	1.9	2.0	3.0	1.2	--
Venture-backed companies (VX)					
Companies holding patents (share)	80.6%	95.7%	95.1%	68.2%	90.8%
Average patents held (count, all companies)	19.4	39.2	24.1	5.5	27.4
- For companies holding patents:					
- Patents from founders (average count)#	2.6	4.3	3.3	0.7	3.1

#Calculated only for those firms holding patents.

Patenting by Startups: Capturing Competitive Advantage

Industry	Biotechnology	Medical Devices	IT Hardware#	Software
First-mover advantage	2.37*	2.59*	2.51*	2.23**
Secrecy	2.19**	2.01	2.16	1.57
Patents	2.51+	2.38**	2.28	1.18
Copyright	1.08	1.34	1.3	1.64*
Trademark	1.27**	1.57**	1.42+	1.58
Reverse engineering	1.53**	1.61	2.12*	1.52**
Complementary assets	1.56	1.86**	1.95**	1.74+
Total responses	171	158	98	668

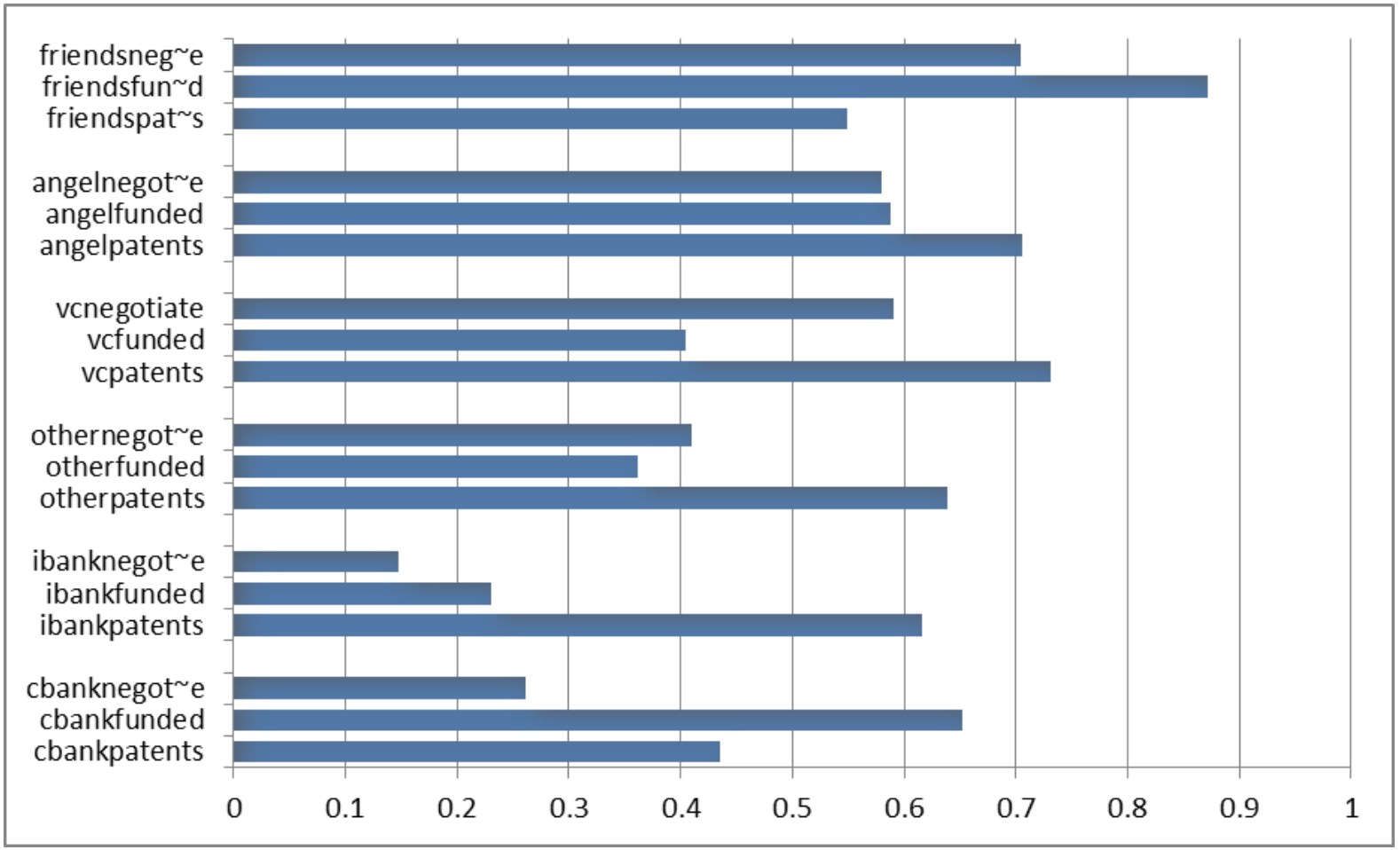
Question: "How important or unimportant is each of the following in your company's ability to capture competitive advantage from its technology innovations?" (Averages reported, where 0=Not at all important, 1=Slightly important, 2=Moderately important, 3=Very important). **, *, and + significant at the 99+, 95, and 90% confidence interval, respectively.

Among Patent Applicants: Why are they Patenting?

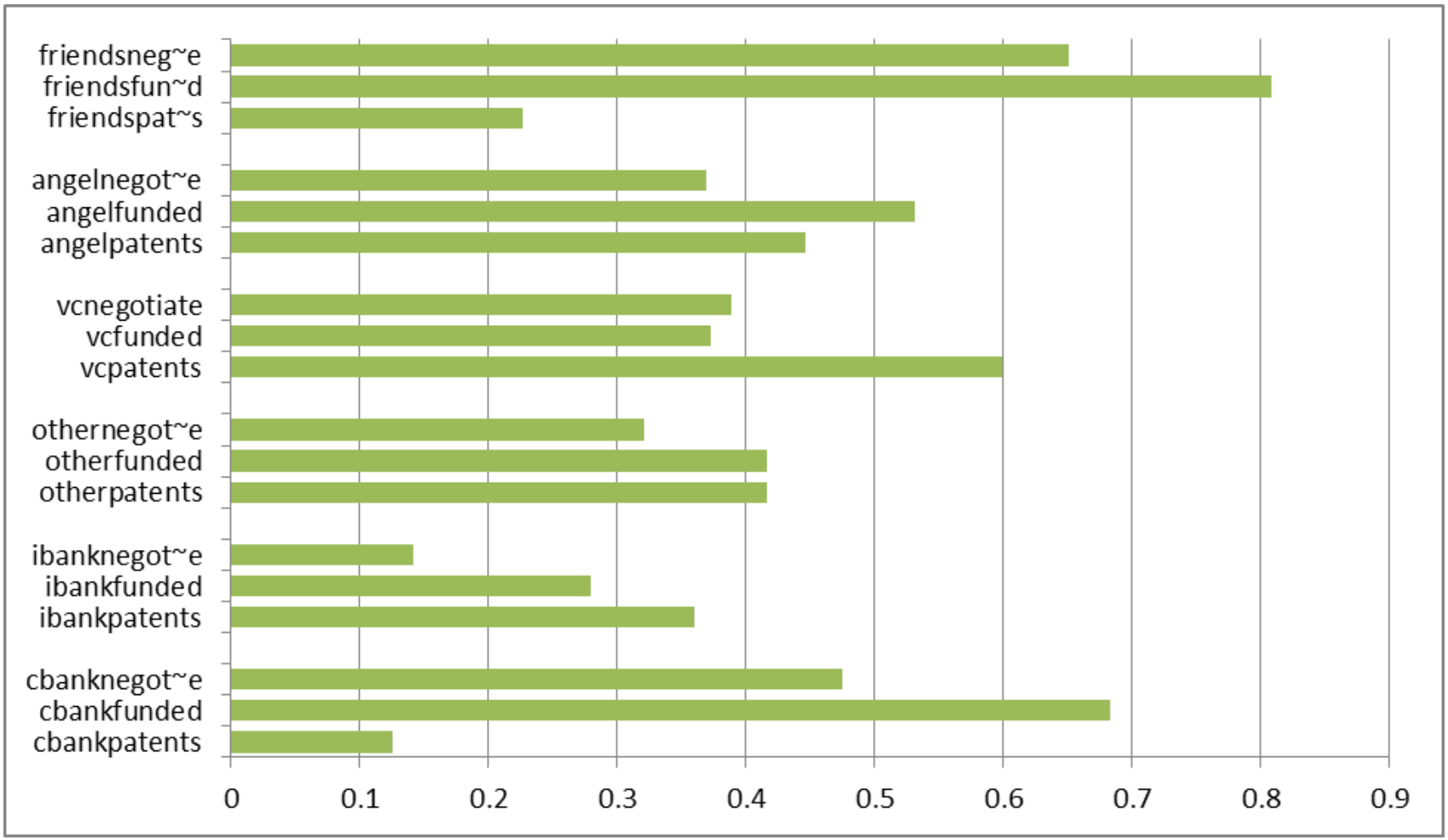
Patents generally prevent copying, help secure funding, and enhance reputation

	BT DB	w/in	Rank	SW DB	w/in	Rank	Btw
Preventing others from copying our products or services	2.77	**	1	2.37		1	**
Enhancing company's reputation /product image	2.02		2	2.36	**	1	*
Improving our chances of securing investment	2.41		2	1.96		2	**
Improving chances/quality of liquidity (e.g., acquisition/IPO)	2.34		2	2.00		2	*
Improving negotiating position with other companies (e.g., cross-licensing)	2.30		2	1.90		2	*
Preventing patent infringement actions against us	2.00		2	1.86	**	2	
Obtaining licensing revenues	2.06		2	1.38		3	**
N=	64			100			

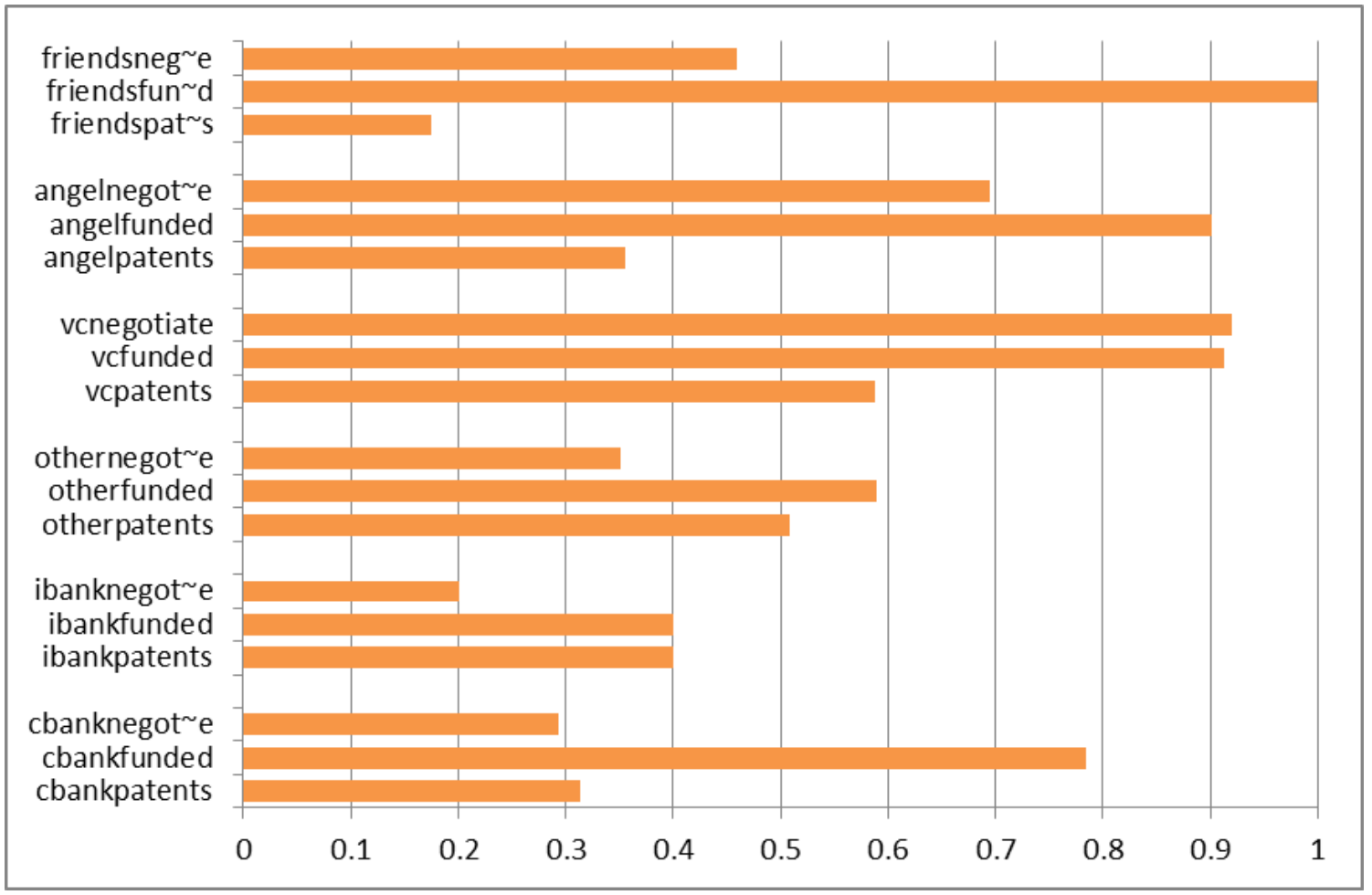
Patenting and Financing: D&B Biotech Respondents (N=88)



Patenting and Financing: D&B SW / Internet Respondents (N=352)



Patenting and Financing: VentureXpert SW / Internet Respondents (N=174)

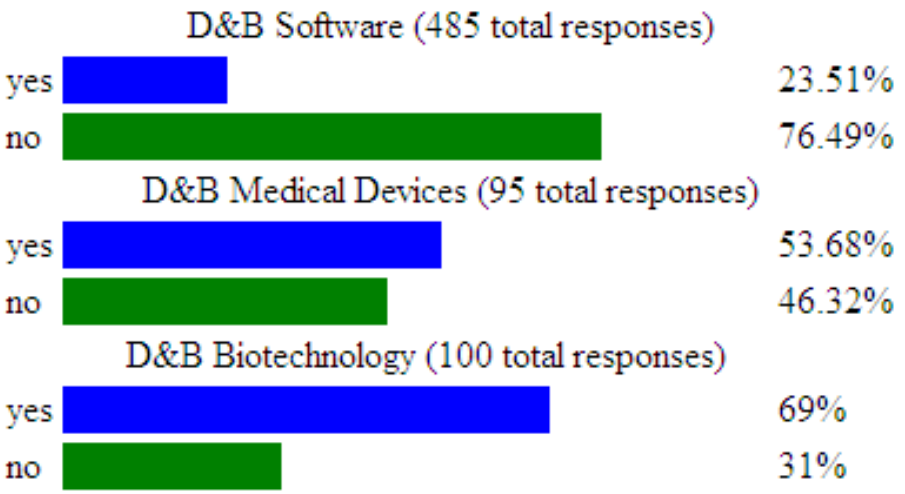


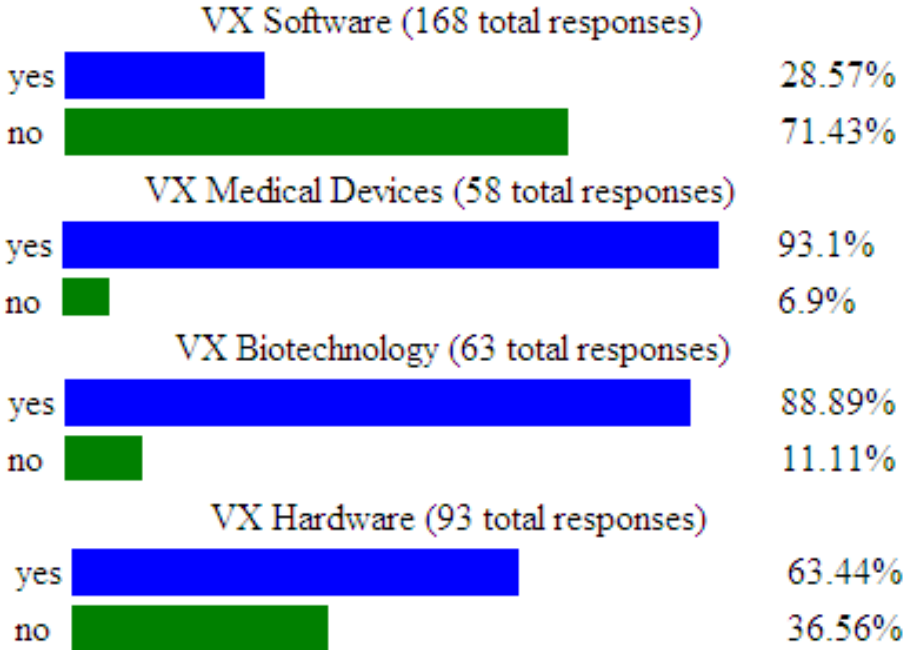
(When forgoing patent protection on major innovations) which if any of the following influenced your company's decision not to patent?

Reasons for not seeking patent protection

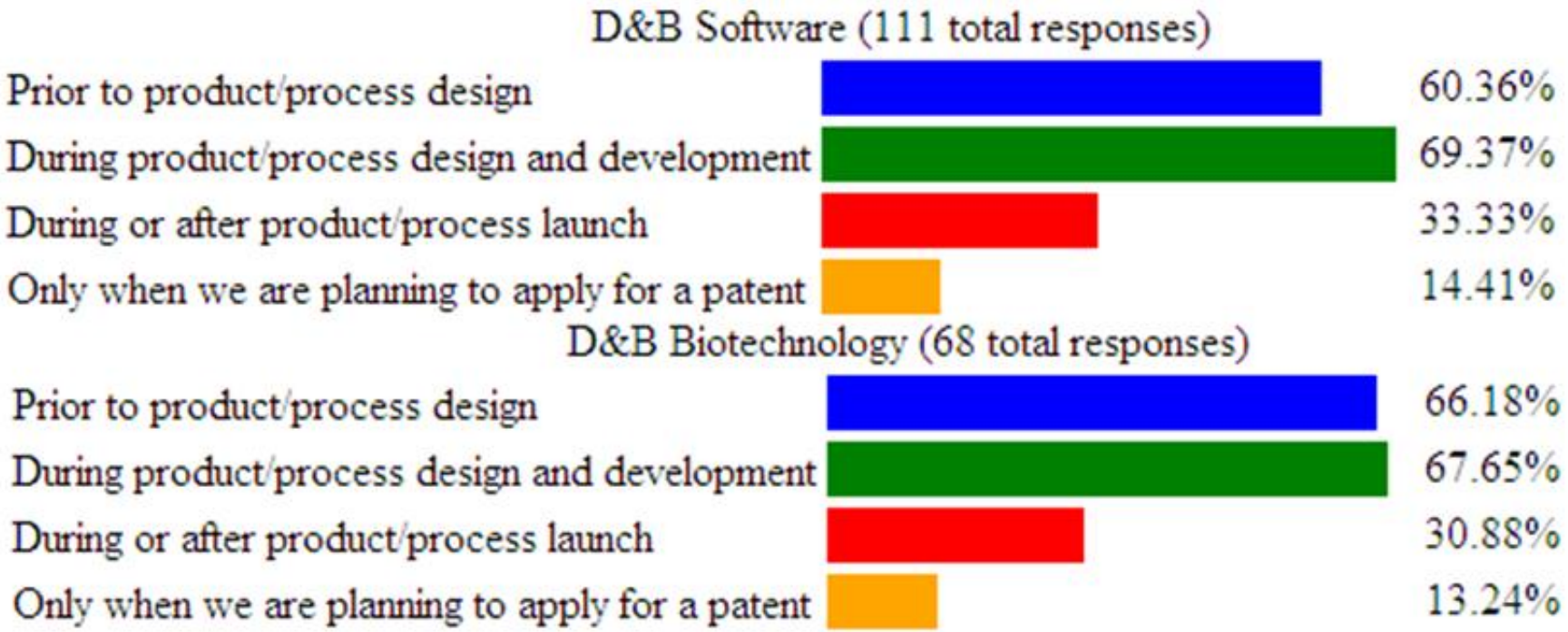
Industry	All respondents	Biotechnology (A)	Medical Devices	IT Hardware#	IT Software (B)	Test of difference (A) against (B)
Did not want to disclose	35.0	58.8	45.2	50.0	25.0	**
Cost of filing	54.9	42.6	52.6	38.1	63.5	**
Ease of inventing around	43.7	41.9	48.1	35.7	45.7	
Trade secret was adequate	35.6	48.5	45.2	45.2	29.0	**
Cost of enforcing	44.2	36.0	35.6	31.0	52.0	**
Did not believe patentable	37.6	27.9	28.1	36.9	41.9	**
Did not need protection	17.4	16.9	13.3	7.1	20.0	
Total responses	1,057	136	135	84	589	

Checking the Patent Literature





At what stage does your company usually conduct such a patent search?



USPTO Working to Offer an Environment Conducive to Entrepreneurship: First Order

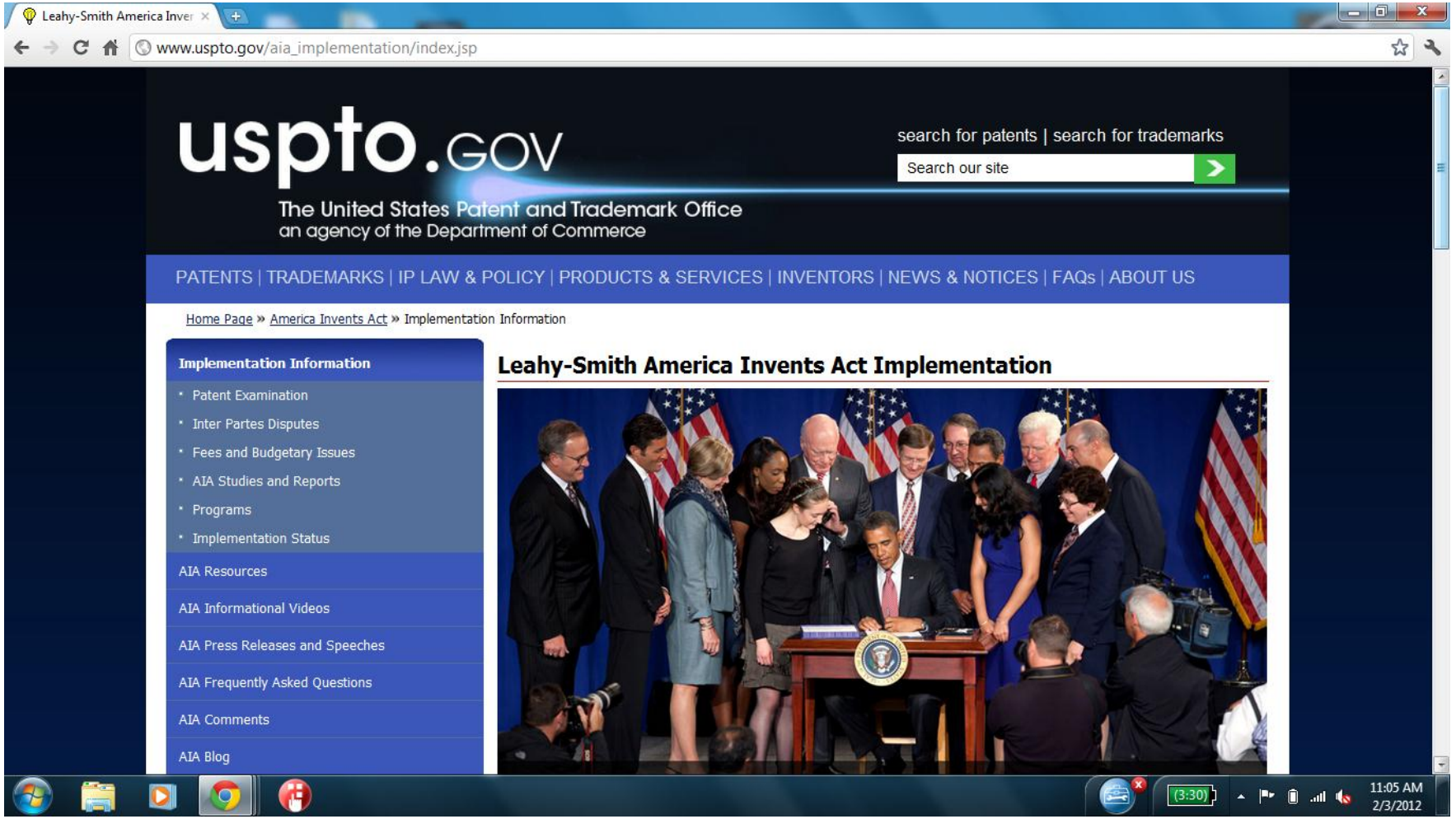
- Reduce Low "Quality" Output
  - Lacking requisite novelty, non-obviousness, utility
- Reduce Uncertainty
  - Over final *boundaries* of the disclosure
  - Over the *validity* of the property right
    - » Under- or misdirected investments
      - by inventor in the patented technology
      - by competitors in competing technologies
    - » Adds transaction costs to commercialization, technology transfer (licensing), developing markets for IP
    - » Conferring market power to trivial innovations with little or no social welfare
    - » Create an environment inviting to costly litigation

Operational Moves to Boost Effectiveness of the USPTO, and the Innovation System

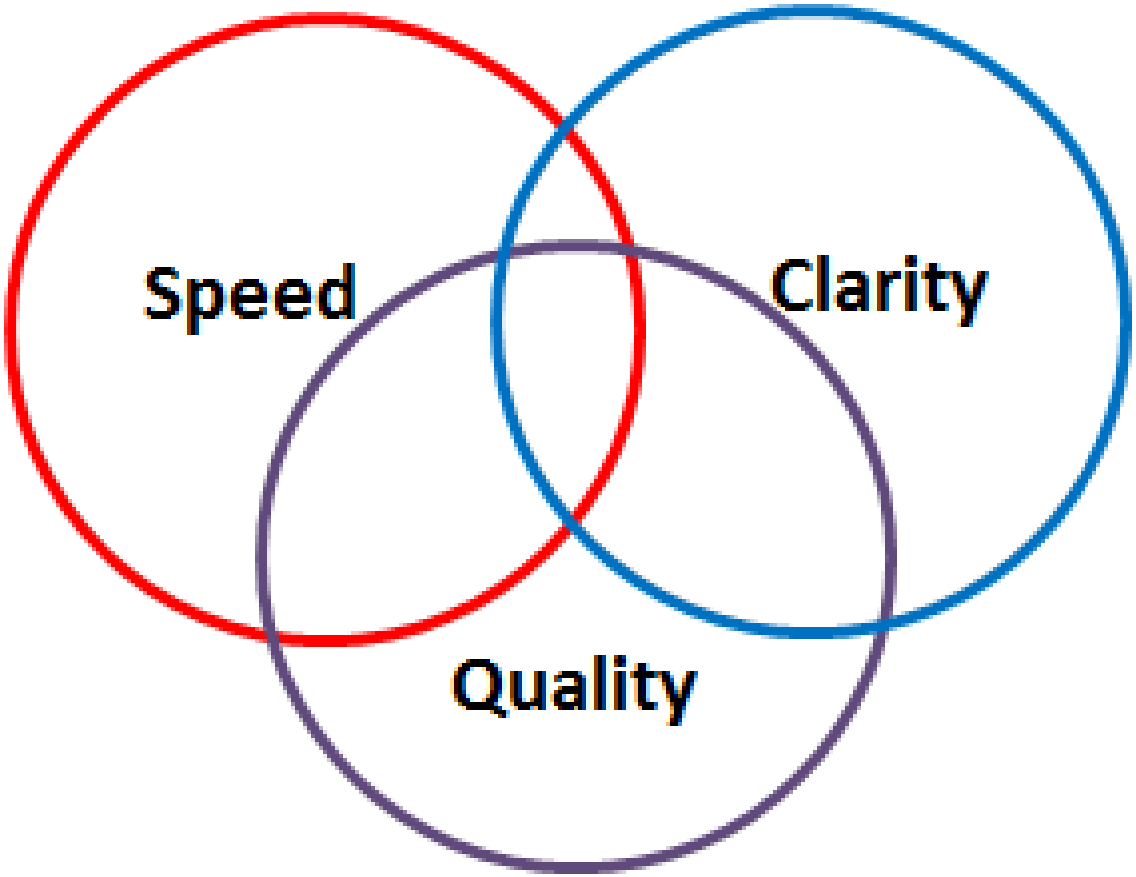
1. Examiner point-system reform (employee incentives)
2. Examiner bonus-system reform (employee incentives)
3. Create 21st Century IT infrastructure
   - E.g., End-to-end examiner interfaces in both patents & TMs
4. Quality Metrics Reform
   - 5-measure performance criteria
5. Reform of MPEP – "disclosure and specification" (notice)
6. Three-track applicant timing initiative
   - Menu of timing choices offered to applicants
7. Increased hiring of examiners, and increased training
8. Geographic diversity (labor markets – proximity)
   - Satellite offices – Detroit, Michigan
9. Operational and data transparency
   - Dashboard / data

Public Comment: USPTO microsite

http://www.uspto.gov/americainventsact



Three Pillars of the AIA



How does the AIA Work to Champion these Outcomes?

Speed

- E.g., prioritized examination

Quality

- E.g., 3rd party citation of prior art, post-grant review

Clarity

- E.g., first inventor to file and derivation process

Cutting through them all – fee setting authority

> price system – needed USPTO resources

> Small-entity discounts, Micro-entity discounts, University-patenting discounts

In Sum: USPTO and the Entrepreneurship Environment

Patents play important role in technology entrepreneurship

- Best played when they allow investments and commercialization to be made earlier, and in an environment that is characterized by less uncertainty

Evidence is coming to light, but we need more

- Understanding is desirable
  - » More than 50% of US business outputs = intangibles
- Increasingly, US competitiveness tied to our national innovative performance
  - » An efficient, effective and appropriately balanced patent system is one important determinant of economic growth

USPTO actively engaged in implementing the AIA in our mandated role to serve a more effective and efficient patent system