



Intellectual Property and Intellectual Capital

A View From the Bay Area



SILICON VALLEY

Knowledge Intensity

Mobile Quality Workforce

Rewards Risk Taking

Open Business Environment

Venture Capital

Community Collaboration

Quality of Life

Government Involvement

ELEMENTS OF SUCCESS

University encouragement of entrepreneurial spirit and
collaboration with industry

Federal (primarily DoD and NIH) funding of electronics
and biomedical innovations

Local institutions supporting cooperation and exchange of
information among competing firms

Non-hierarchical organizational structure of firms, flexible
management

ISSUED PATENTS AT STANFORD

(BY SCHOOL 1977-1999)

Engineering	379
Medicine	232
Humanities and Science	228
Other	108

BUSINESS LANDSCAPE

Myth: USA a land of big corporations

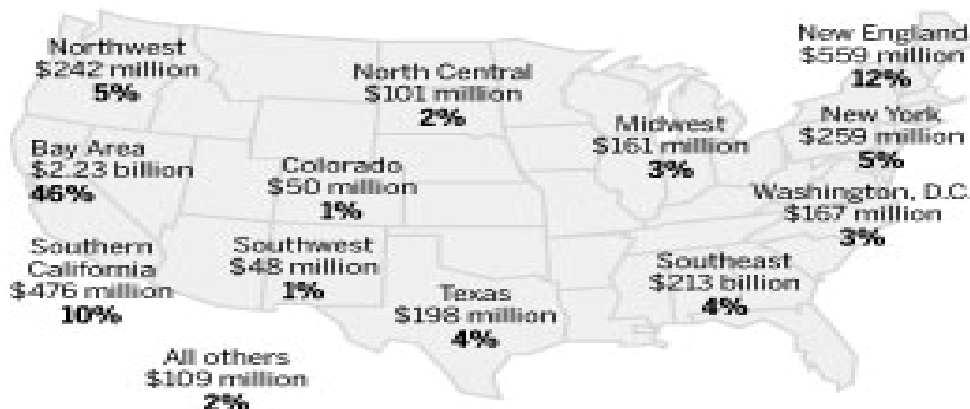
Facts: Employment size of firms (2004)

EMPLOYMENT SIZE OF ENTERPRISE	FIRMS	ESTABLISHMENTS	EMPLOYEES
All firms	25,409,525	26,911,465	115,074,924
Nonemployer firms	19,523,741	19,523,741	n/a
Employer firms	5,885,784	7,387,724	115,074,924
Firms with 1 to 19 employees	4,453,810	4,504,763	21,197,087
Firms with 20 to 99 employees	526,355	692,677	20,642,614
Firms with 100 to 499 employees	86,538	330,447	16,757,751
Firms with 500 employees or more	17,047	1,056,482	56,477,472

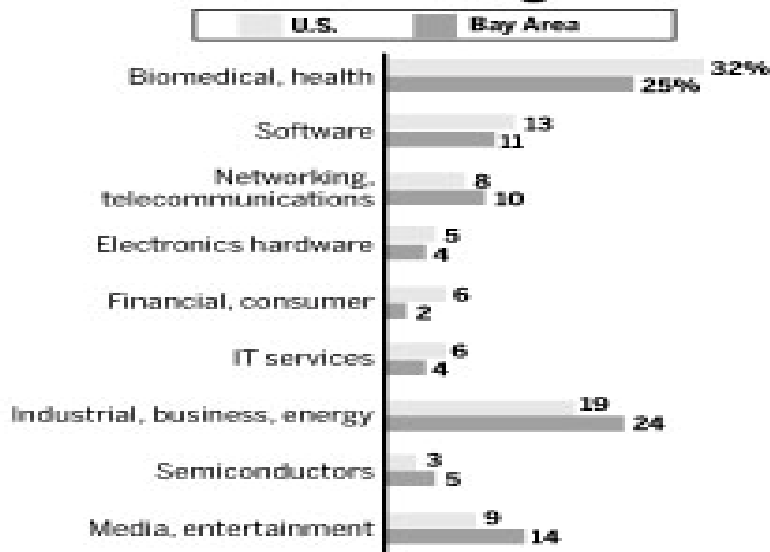
Venture funding by region

Nationally, venture capitalists invested \$4.8 billion in U.S. companies in the third quarter, down 33 percent from the \$7.2 billion they expended in the comparable quarter the year before. Nearly half of this money, 46 percent, was invested in Bay Area companies.

Note: Percentages may not total 100 because of rounding.



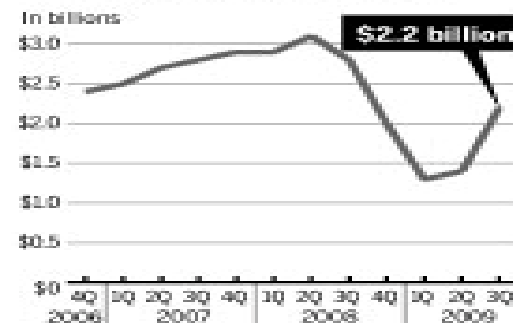
Where venture funding went



Source: MoneyTree survey

VC funding in Bay Area climbs

Venture funding in Bay Area companies rose during the third quarter of 2009 by 63 percent from the quarter before but was down 19 percent from the same quarter the year before.



Sources: PricewaterhouseCoopers LLP/National Venture Capital Association/MoneyTree report based on data from Thomson Reuters

MERCURY NEWS

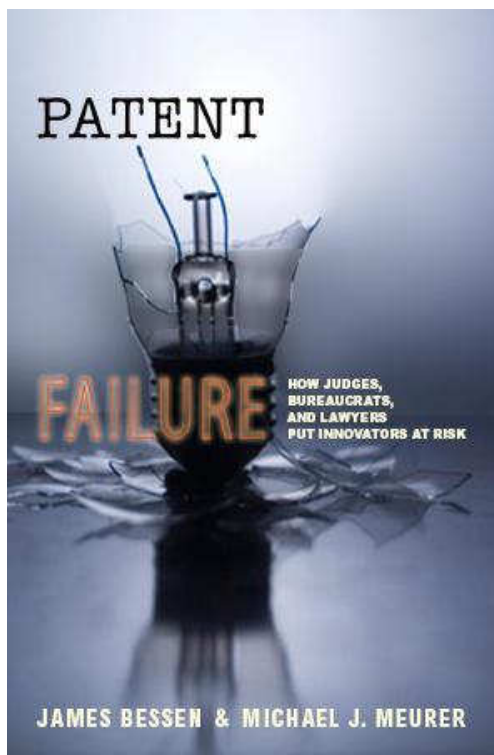
PATENTS ISSUED IN USA

1 San Jose, CA 3,867		11 Houston, TX 1,071
2 Sunnyvale, CA 1,881		12 San Francisco, CA 1,022
3 Austin, TX 1,705		13 Portland, OR 784
4 Palo Alto, CA 1,601		14 Seattle, WA 756
5 Fremont, CA 1,440		15 Los Altos, CA 719
6 San Diego, CA 1,382		16 Rochester, NY 664
7 Cupertino, CA 1,360		17 Plano, TX 643
8 Boise, ID		18 Saratoga, CA 620
9 Mountain View, CA 1,128		19 Menlo Park, CA 619
10 Santa Clara, CA 1,096		20 New York, NY 614

Bay Area leads the nation in patents issued.

10 of the 20 most inventive towns in America in Silicon Valley, 12 are in California.

[Cities ranked by the number of patents issued. Wall Street Journal, 2006]



How Judges, Bureaucrats,
and Lawyers Put
Innovators at Risk

Patent Failure

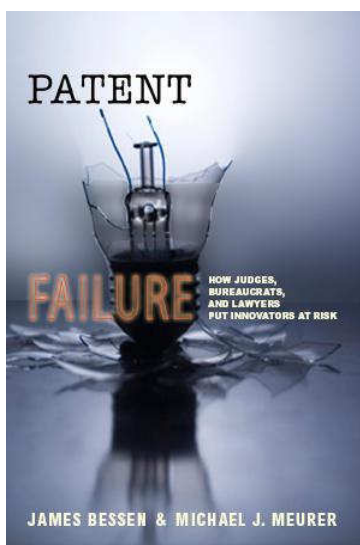
James Bessen and Michael Meurer

Both author found patent system ineffective and expensive affecting not only patent owner but also customer who are using that product.

First, the real need for the patent system is for **small entities**. Large firms can protect their markets just fine by their size alone.

Large firms are seldom responsible for groundbreaking technologies.

They're good at refining, but seldom do they come up with revolutionary innovations. That is what **small firms** most often do.

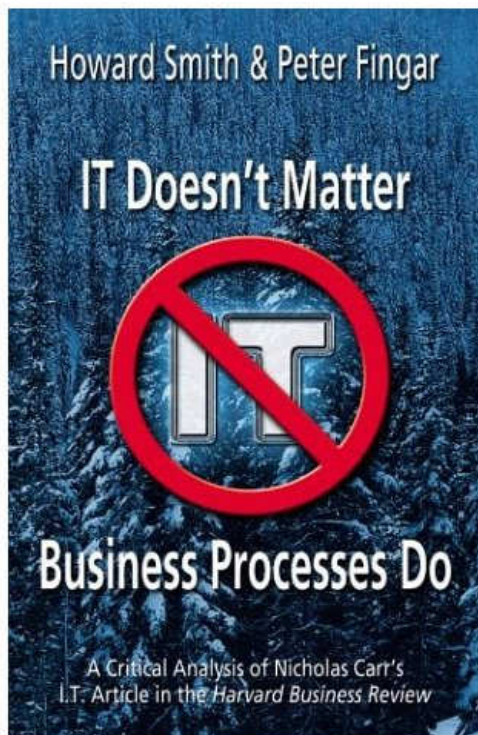


The objective of large firms is not to fix the patent system, but to destroy it or pervert it so only they may obtain and defend patents.

Patents are a threat against their market dominance. They would rather use their size alone to secure their market position.

Patents of others, especially **small entities**, jeopardize that.

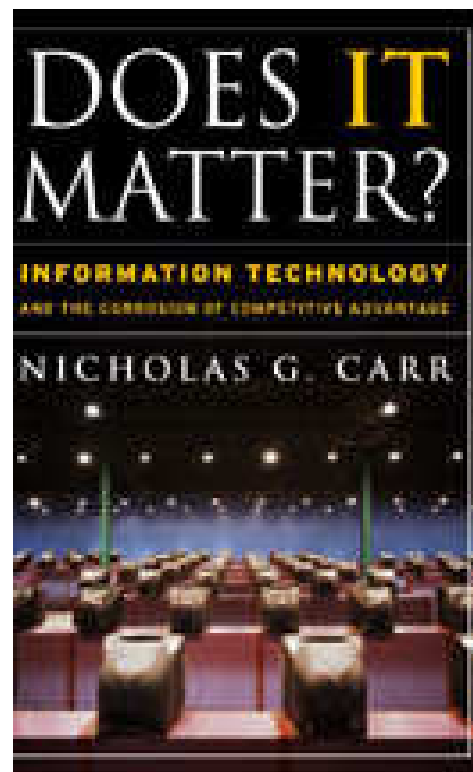
- Revolutionary innovations originate with small inventor/firms
- Patents are crucial to small firms



IT Doesn't Matter

Business Processes Do

A Critical Analysis of Nicholas Carr's I.T.
Article in the Harvard Business Review



Does IT Matter?

Information Technology and the
Corrosion of Competitive Advantage

PATENTS AND PROPERTY

- Property rights encourage investments, transactions and economic growth
- Patents have a mixed record, current outlook is troubling
- Patent law fails as a property rights system and imposes a tax on most innovators

PATENT INCENTIVES AND DISINCENTIVES

- Patent reward encourages innovation
- Defense against patent lawsuits discourages innovations because innocent infringement common
- Especially common
 - software, computers, telecomm
 - business methods

PATENTS AND PROPERTIES

Land

Registry, third party
verification, deference to
fact-finders

Physical possession

Low risk of invalidity, title
insurance

Patents

Hidden claims, low
quality opinion letters,
little deference

Scope broader than
embodiments; patents
and claims are cheap

No insurance, relatively
high risk of invalidity

COMPLEXITY

- E-commerce firm faces between 4000-11000 patents
- Semiconductor firms faces 100's of patents
- 3G standard 7600 patents
- 65% of firms do not conduct a patent search before initiating product development
- 39% of applicants disclose zero prior art patents

[Cockburn & Henderson survey]

PATENT REFORM

- Make property rights more transparent
 - Continuation reform, early and complete publication of claims
- Better claim interpretation
 - Specialized trial courts
 - Expand PTO claim construction activity
 - More deference to PTO and trial courts
- Robust definiteness requirement

REVIEWING YOUR COMPETITORS' PATENTS

Reasons for reviewing your competitors' patents

- To determine which products or services you can freely provide or you cannot provide without incurring possible liability for patent infringement
- To see which products or services your competitors may have worked on or are currently working on, or may work in their future
- To learn what the state of the art is to avoid "reinventing" the wheel in your own

HOW TO DETERMINE WHAT PATENTS YOUR COMPETITORS HAVE

- Inventor / Assignee / Subject matter

WHERE TO LOOK

- <http://www.google.com/patents> General search page. You can search for patents with any selected words or combination. Does not include published patents applications.
- To search a specific part of the patents, such as an Assignee or an Inventor, click Advanced Patent Research
http://www.google.com/advanced_patent_search

USPTO www.uspto.gov/patft/indexz.html

Can view and download only one page at a time for patent images.

ASCII versions of patents are available but difficult to read.

“Quick Search” and “Advanced Search” are available

US PATENT SYSTEM IS STRUCTURED TO ENCOURAGE PATENT FILING EARLY

- Current thinking: early filing system is beneficial, facilitating commercial development, eliminating wasteful patent races
- Missing: early filing forces inventors to make filing decisions and draft applications with little technical or market information about the invention.
- Result: File first and ask questions later. File early, file often attitude.

FILING EARLY AND OFTEN EXACERBATES MANY OF THE PATENT SYSTEM'S PROBLEMS.

- Rising number of applications, contributing to the **backlog** on the Patent Office that reduces the quality of examinations and issued applications
- The more the patents are filed, the more likely they go **underdeveloped** because of the great uncertainty and the minimal investment at the time of filing
- Asserting the early filed patents in court is a cheaper option, creating patent **trolls** who use patents solely to extract rents from those already engaged in commercial development
- The dearth of information and high level of uncertainty at the time of filing also contributes to the lack of clarity in the patents' specification and claims, causing patent boundaries to be unclear

- An actual reduction to practice requirement should be used to optimize the filing time. The requirement would ensure that actual implementation information is available prior to filing, while stopping short of requiring full blown commercialization.
- The additional, development specific information generated reduces uncertainty at the time of filing, lowers the number of applications and issued patents, and increases the likelihood of commercialization

KEY INGREDIENTS OF AN EFFECTIVE PATENT APPLICATION

- Patent applications are expensive to write and prosecute
- Low value (silly or marginal idea) patents are not worth as much, now or later

PATENTS ARE PUBLIC: ARE YOU BETTER OFF WITH A TRADE SECRET?

- Pros: they never expire
- Cons: copycats cannot be penalized

GOALS FOR PATENTING

- Have clear goals for what you want to obtain from patents: run a successful business?
- Defensive
 - Protect your ideas, product and inventions
 - Protect your investments in a certain field, longer term
 - Get license fees and/or royalties
- Offensive
 - Barricade/exclude related areas of work for your competition
 - Prosecute infringers

SOME DO'S AND DON'TS

- Stamp all your documents with “Confidential”
- Ensure anyone outside your company seeing your idea has an NDA (e.g., customer, third-party vendor, business partners, ecc.)
- Maintain a witnessed notebook
- Track the date of conception
- Track the date of first non-confidential disclosure
- Track the date of first offer for sale
- File the idea in a timely fashion so it goes on record, and enclose all relevant documents, notebooks, emails, ...

HOW GOOD IS YOUR IDEA

- You want to only file perfect ideas. Have you the advantage of hindsight?
- Many patent ideas are non-obvious variations and extensions of existing invention and products
- Some ideas are astute applications of old ideas to new environments
- It is important to appoint someone skilled in the area of your invention to read over your idea (use NDA if not another employee) and provide comments

OPTIMIZING TIME

- Most patent attorneys are not the expert in your area of specialty
- Your initial communication to them on the idea, its importance, and relevance to your company and the industry is usually quite critical
- Attorneys will often tape your conversation because they may not grasp all the fundamental concepts at the first conversation. Will your explanations stand up to repeated play-back?
- Having technical documentation written (even in early draft form) before filing the application is always a huge plus

- Patents have useful monetary benefits
- Patents can make or break a business model and a company
- A successful patenting program often comes from within a company's culture and goals
- You can make it easier by following simple do's and don'ts
- Writing an effective patent application comes from better communication between you, the inventor, and the patent attorney

MONETIZING INTELLECTUAL PROPERTY

A product company with IP that it believes has value.

There are many avenues to monetize the IP.

Some options:

- Sell the Intellectual Property
- Technology Licensing
- Patent Licensing

TRADE-OFFS

ITEM	SELL IP	TECHNOLOGY LICENSING	PATENT LICENSING
RETURN ON INVESTMENT	Guaranteed Return	Good	Good – Risk
NEW INVESTMENT	None	Minimal	Yes
R&D INVESTMENT	None	Yes. Need to maintain innovation or lose customers	Yes
HUMAN RESOURCES	No Change	No Change	Largely new team

PITFALLS OF PATENTS

- Not all patents are created equal
- Patents tell your competitor your most intimate secrets
- Patents secure limited (time & geography) monopoly rights
- Patents can generate revenue, and minimize cash outflows

SUGGESTION FOR EARLY STAGE COMPANIES

- Make early decisions as to what patent and what remains are trade secrets
- Target between 3 and 5% of R&D budget for intellectual capital management (patents and trade secret protection)
- Implement a robust intellectual capital management program, including
 - Institutionalize culture of internal information sharing
 - Training on protection of company (and customer) confidential information

- Early stage companies need to identify early in their IC
 - Human capital: who are your internal technology leaders
 - Do you have unique processes, business methodologies?
 - Where does your technology come from, and what changes/innovations are you making to it?

- Categorize your IC into relevant buckets
 - What can be protected as a trade secret
 - Human capital: how do we institutionalize the information
 - Patent / Copyright / Trademark
 - Third party IC

SUGGESTIONS FOR MID-LIFE COMPANIES

- Re-evaluate trade secret categories based on issued and allowed patents, publications, competitor disclosures
- Morph IC management program from “capture and categorize” mode into “analyze and act”
- Likely patenting improvements to existing technologies rather than fundamental technology.

- Such patents are likely narrower than early patents
 - Less value
 - Optimize by strategic patenting

- What are competitors doing?
 - Consider reverse engineering studies of their products (they are probably doing the same to your's)
 - In areas of overlap with your technology, evaluate your existing patents and create a strategic direction for your own patents

Early and mid-stage companies focus on patenting their own technology

SUGGESTION FOR MATURE COMPANIES

- Develop and implement a patent acquisition/publication strategy
 - Need to determine what your target patent areas are
- Trade patent licenses to startups in exchange for equity interest and/or option to acquire
- Evaluate opportunities to participate in standard bodies
- Beware the creation of de facto standards

PATENTS versus TRADE SECRETS

- Patents disclose to your international competitors the best mode for practicing your technology
- Legal reverse engineering may render your unpatented trade secrets into industry standards
- Key questions to answer
 - Is it reverse engineerable?
 - If so, how long it will take, and how much would it cost?
 - If not, are you really certain?
 - Can you afford to patent in every country where there might be a competitor? Can you afford not to?

CREATING AN INTELLECTUAL CAPITAL CULTURE

- What is “Intellectual Capital” and why it is important
- Institutionalize culture of internal information sharing
 - IC kept in a drawer (or in one person’s head) isn’t valuable to the company
- Training on protection of company (and customer) confidential information
 - IC is predominantly human capital, and it gets up and changes employers
 - Companies share IC, and need to treat it appropriately

INTELLECTUAL CAPITAL

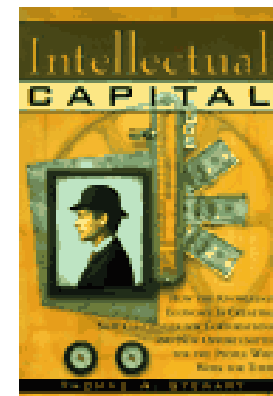
"Every company depends increasingly on knowledge: patents, processes, management skills, technologies, information about customers and suppliers, and old-fashioned experience. Added together this knowledge is intellectual capital."

Tom Stewart, **Brainpower** (Fortune, June 3, 1991)

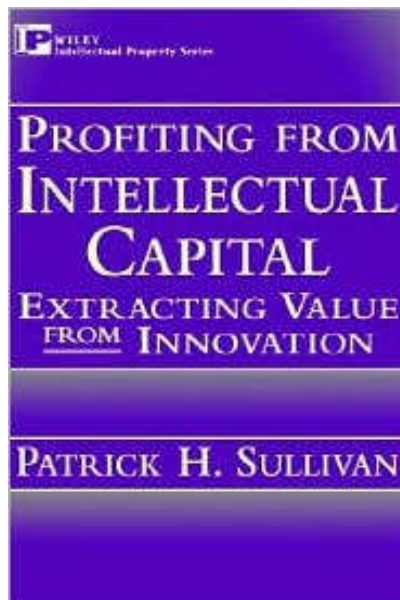
"Intellectual capital is becoming corporate America's most valuable asset and can be its sharpest competitive weapon. The challenge is to find what you have-and use it".

Tom Stewart

Intellectual Capital. The New Wealth of Organizations



INTELLECTUAL CAPITAL



*“Intellectual capital ...
is the sum of a firm’s ideas,
inventions, technologies, general
knowledge, computer programs,
design, data skills, processes,
creativity and publications.”*

Patrick Sullivan
Profiting from Intellectual Capital, 1998

- Patents play a crucial role in the development of the company and need to be carefully managed
 - They disclose your technology
 - They protect your technology
- An effective Intellectual Capital balances:
 - vs. trade secrets
 - against what competitors are doing
 - against what public bodies are doing
- There are different strategies for different stages of company development