



**International Convention on Intellectual Property and Competitiveness of Micro, Small and Medium-sized Enterprises**

Rome  
Dec. 10-11, 2009

**INTELLECTUAL PROPERTY AND INTELLECTUAL CAPITAL: A VIEW FROM THE BAY AREA**

Terenzio Scapolla

Science and Technology Attaché

*Italian Cultural Institute and Italian Consulate General, San Francisco, California, USA*

[tscapolla@sfiic.org](mailto:tscapolla@sfiic.org)

**BAY AREA (AND SILICON VALLEY) ELEMENT OF SUCCESS**

Knowledge Intensity	Mobile Quality Workforce
Rewards Risk Taking	Open Business Environment
Venture Capital	Community Collaboration
Quality of Life	Government Involvement

- University encouragement of entrepreneurial spirit and collaboration with industry
- Federal funding (primarily DoD and NIH) of electronics and biomedical innovations
- Local institutions supporting cooperation and exchange of information among competing firms
- Non-hierarchical organizational structure of firms
- Flexible management

**BUSINESS LANDSCAPE**

Employment size of firms in USA show a balanced system of corporations and SMEs.

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 +	17,047	1,056,482	56,477,472

**IMPORTANCE OF SMALL BUSINESSES TO THE U.S. ECONOMY**

Small firms:

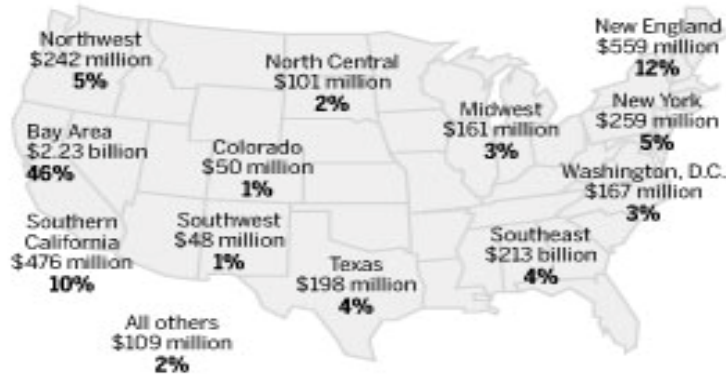
- Represent 99.7% of all employer firms.
- Employ just over half of all private sector employees.
- Pay 44 percent of total U.S. private payroll.
- Have generated 64% of net new jobs over the past 15 years.
- Create more than half of the non-farm private GDP.
- Hire 40 percent of high tech workers (such as scientists, engineers, and computer programmers).
- Made up 97% of all identified exporters and produced 30% of the known export value in FY 2007.
- Produce 13 times more patents per employee than large patenting firms; these patents are twice as likely as large firm patents to be among the one percent most cited.

[Source: U.S. Dept. of Commerce, Bureau of the Census and International Trade Admin.; U.S. Dept. of Labor, Bureau of Labor Statistics]

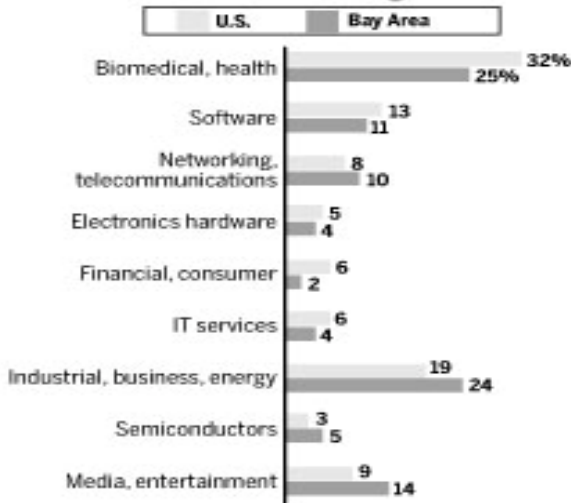
### Venture funding by region

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

Venture capital distribution in the 3<sup>rd</sup> quarter 2009: Bay Area 46%, South. Cal 10%

## REGISTERED PATENTS IN USA, 2006

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]

In the book "Patent Failure" James Bessen and Michael Meurer 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

### 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 **encourages innovation**
- **Defense** against patent lawsuits **discourages innovation** because innocent infringement common

### PATENTS AND PROPERTIES

LAND	PATENTS
Registry, third party verification, deference to fact-finders	Hidden claims, low quality opinion letters, little deference
Physical possession	Scope broader than embodiments; patents and claims are cheap

Low risk of invalidity, title insurance	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

## IDEAL: PATENT LIKE A PROPERTY

- Make property rights more transparent
- Better claim interpretation
- Robust definiteness requirement

## REVIEWING COMPETITORS' PATENTS

### Reasons for reviewing 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
- Advanced patent search tools 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 PTO 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.

#### 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

#### 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

There are many avenues to monetize the IP a company believes has value.

##### **Standard** options

- Sell the Intellectual Property
- Technology Licensing
- Patent Licensing

##### **Innovative** option

- Get Patent Management in Exchange of a Small Equity

#### 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 (ICM) program

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?

#### 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

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

#### MATURE COMPANIES

- Develop and implement a patent acquisition/publication strategy
- **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

#### CREATING AN INTELLECTUAL CAPITAL CULTURE

- What is "Intellectual Capital" and why it is important
- **Institutionalize** culture of internal **information sharing**
- Training on protection of company (and customer) confidential information

#### 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 [...] 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

## OPTIMIZING THE VALUE OF IP: THE SKYPE CASE

Skype is a medium company, having 100-250 employees, and Skype founders ring up their second big eBay payday (John Murrell, Good Morning Silicon Valley, Nov. 6<sup>th</sup>, 2009)

[...] you have to tip your cap to the Scandinavian team of Niklas Zennstrom and Janus Friis. First the founders of Skype got eBay to pay close to \$3 billion for the Net telephony pioneer while somehow retaining control of its key technology. And now [...] they've won themselves a healthy chunk in exchange for that technology.

eBay and the investors group seeking to buy Skype announced they had come to terms with Zennstrom and Friis over the licensing dispute that stood in the way of the sale. In exchange for rights to the Global Index P2P technology, the pair will get 14 percent of Skype back, plus seats on the board. All in a deal that values Skype at \$2.75 billion.

[...] Investor Marc Andreessen said, "Everything is settled — all lawsuits, all IP. The IP is now owned by Skype. The company is free and clear to execute to its full potential.

"There is fighting, and then there is negotiation. "We believe it is a plus to have founders involved. They now have a complete alignment of interest."