

# Licensing to Companies in Asia: The Stanford Model



Linda Chao, Senior Licensing Associate

EE 402A IP Management for Technology Businesses in Asia October 26, 2006



## Outline

- Office of Technology Licensing
- Patenting and Licensing Issues
- Case Study: Yamaha



# Office of Technology Licensing (OTL)

#### **Mission**

To promote the transfer of Stanford technology for society's use and benefit while generating unrestricted income to support research and education.

#### **Technology Transfer Portfolio**

Patents<sup>(1)</sup> Copyrightable Material Software Biological Material Semiconductor Maskworks



## Bayh-Dole Act (U.S. Public Law 96-517)

- University may elect to retain title to inventions developed under federally-funded research programs
- University grants royalty-free nonexclusive license to government
- Any company holding an exclusive license must substantially manufacture the product in the U.S.
- In marketing of an invention, University must give preference to small business firms (< 500 employees)</li>
- University must share with the inventor(s) a portion of any revenue received from licensing

(Sources: COGR Publication "The Bayh-Dole Act: A Guide to the Law and Implementing Regulations", 37 CFR Part 401, 35 USC 200-212)



#### Licensing: Inventions to New Products



## Stanford's Intellectual Property Policy

- Patentable Technology University takes title to all inventions created with more than incidental use of University resources <u>www.stanford.edu/dept/DoR/rph/5-1.html</u>
- Copyrighted Works University takes title to copyrightable works created with significant University resources <u>www.stanford.edu/dept/DoR/rph/5-2.html</u>
- SU-18 Patent and Copyright Agreement
  <u>www.stanford.edu/dept/DoR/rph/su18.html</u>



## Stanford's Royalty Distribution Policy

- Cash Royalties from Issue, Minimums, Earneds
- Net Royalties = Cash Royalties

minus 15% for administrative expenses

minus out-of-pocket expenses (e.g. patent costs)





#### **OTL: Notable Stanford Inventions**

- 1970 OTL Established
- 1971 FM Sound Synthesis (\$22.9M)
- 1974 Recombinant DNA (\$255M)<sup>(1)</sup>
- 1981 Phycobiliproteins (\$46.3M), Fiber Optic Amplifier (\$32.6M), MINOS (\$3.4M)
- 1982 Amplification of Genes (\$30M)
- 1984 Functional Antibodies (\$124M)
- 1986 CHEF Electrophoresis (\$2M)
- 1990-1992 Discrete Multi-tone technologies for DSL (\$29M)
- 1996 Improved Hypertext Searching Google<sup>™</sup> (\$336.5M)

2006 – the next big thing ???



#### Case Study: Recombinant DNA



- Nonexclusive license strategy (467 companies)
- Total royalties: \$255 million

OFFICE OF TECHNOLOGY LICENSING

**Fiscal Year** 

## **OTL: Disclosure and Licensing History**

	<u>1970</u>	<u>2006</u>	<u>Cumulative</u>	<u>Active</u>
Disclosures	28	450+	6400+	~2500
Licenses*	3	109	2700+	~1100
Royalty Income	\$50,000	\$61.3 M	\$1.09 B	
Staff	2	25+		

\* Majority of disclosures are never licensed; many disclosures have one license; some disclosures have multiple licenses



## **OTL: The Upside**



- In FY05-06, \$61.3 million in royalties
- From 1970 through 2005, ~\$1.09 billion cumulative royalties
- Typically, 10 to 15 years may elapse between initial invention disclosure and any significant royalties



## **OTL: Looking Closely at Royalties**



- In FY05-06, \$61.3 million from 470 disclosures
  - 50 out of 470 disclosures generated over \$100,000 each
  - 7 out of 50 generated over \$1 million each
- From 1970 through 2006
  - 53 inventions generated\$1 million or more
  - 3 out of 6000 is BIG WINNER
- Royalties from large portfolio of inventions



#### **OTL: Conversion Numbers**





## **OTL: Invention to License**

- Steps
  - Disclosure
  - Evaluation<sup>®</sup>
  - Licensing Strategy
    - File patent?
    - Market to potential licensees
  - The License  $\square$
  - Maintaining the Relationship
- 7 "Licensing Associate & Licensing Liaison" teams
  - Technical degrees and marketing focus
  - Responsibility for inventions from cradle-to-grave



## Outline

Office of Technology Licensing

Patenting and Licensing Issues

Case Study: Yamaha



#### Patents are Territorial



U.S. Patent == a property right granted by the U.S. government to an inventor "to exclude others from making, using, offering for sale, or selling the invention throughout the U.S. or importing the invention into the United States" for a limited time in exchange for public disclosure of the invention.



## **OTL: Patent Prosecution**

- Licensing professional manages outside counsel
  - Technology expertise
  - Patent agent vs. Patent attorney
- Patent costs
  - Typically \$25,000 to \$35,000 over life of U.S. patent
    - USPTO fees
      - if invention is not licensed, pay small entity fees
    - Patent attorney/agent costs
  - Higher patent costs for foreign coverage



#### U.S. vs. Foreign Patent Systems

	<u>U.S.</u>	<u>Foreign</u>
Statutory bar	printed publication	public disclosure
Novel	1-year grace period	absolute novelty
Patent costs	\$25,000 - \$35,000	> \$200,000 for broad foreign coverage (e.g. translation, local fees)
Type of patent system	"first to invent"	"first to file"



# Foreign Rights: Typical PCT Approach



- Patent Cooperation Treaty (PCT) application preserves foreign rights while delaying expensive costs
- National phase entry at 30 months deadline if licensee reimburses costs



#### **Other Patent Issues**

- What things cannot be patented
- Official procedures
- Form and content
  - Mistranslation
    - In a 1983 Tokyo High Court case, the Court refused to allow an applicant to correct the mistranslation of a chemical term.
  - Language differences
  - Similar and different requirements



#### **Example: Language Differences**



Microfabricated Cantilever Stylus with Integrated Conical Tip

	④ 日本 回 特	許庁(JP) @特許出職公開
	◎ 公 開 特 許	公報(A) 平3-75501
@Int.Cl.*	識別記号 庁内整理者	1号 總公開 平成3年(1991)3月
G 01 B 7/3 H 01 J 37/2	4 Z 8505- 8 Z 9069-	2F 5C
	-	審査請求 未請求 請求限の数 23 (全)
母発明の名称	一体型円輪先端部を有する片持ちま	+及びその製造方法
	⑥种 順 平2-162535	
	②出 顧 平2(1990)	6月20日
優先権主張	愈1989年6月20日@米国(US)與8	68580
60 원 해 者	トーマス アール ア アメリカ	り合衆国 カリフオルニア州 94305 スタン
	ルプレヒト ニドマ	マンザニタ バーク 10 トム帝国 カリマナルニア州 04946 スタン
回出 職 人	サ ホート オノート ノメリン	2010年間 ガリンオパーンパー 2000 パンク
	ザ リーランド スタ	
	ンフオード ジュニア	
	ユニパーシテイ	
03代 理 人	弁理士 中村 稔 外7名	
最終頁に続く		
明輝	春の浄杏(内容に変更なし)	
	············	二酸化理素からなる片掛ら針を形成するエ
)、発明の名称	一体型円錐光確認を有する片段	会び観光信仰に記載の方法。 ※ にはための影響で開め、読録い込まや落
	5 M & C 4 D M M / D	10 方方であったの二位の、前前の住宅の市 に接注意業業務のパター ソウボルに 変換効果
2.特許請求の記	日本町の一部に石穴のフスキングパー	●して、防御御御堂もんなより降ち始を形
い 理事課報の	を回い一時に但足の12012010100000000000000000000000000000	A 丁損を会た健実項目に経動の方法。
, -, en,	を変大的にエッチングして、際マ	ω 片持ち針の形成工程が、
142800	- ンの下方の前時素養板上に詰業	該能い建業先達都及び接現素基板の隣接
#314 KK	L.	上に第1の物質からなる確識を形成して、
		確都を製造し、及び
112 X 11 1 1	鮮いは素佐藤都を形成し、	該建業基礎及び該針先増都に隣接する該
11.657-	ム防び防治神ちアームに固定され	基板領滅上にわたって第2の物質からなる
や医療い現象	虫痛薬を含む片持ち針を形成し、	を形成して、片持ちアームに固定された語
14 CF		確認を有する該第2の物質からなる片持ち
89256	の運営部分を運営的に触去して、	ムを製造する工程を含む様求現旧に記載の
推力勝ち針を	、認識者基礎から離す	ⅠⅠ 該第]の物質が熟成長510+であり、かつ
工程を含む	一体型の鉄い先端部を有する片持	第2の物質が51,5。である課項項に記載
	<b>\$.</b>	<b>6</b> .
ち針の製造方		
5針の製造方 23 片持ち針の	形成工程が、雑観い瑞業先確部及	の 珪素基板上にマスキングバターンを形成

Cantilever with Integral Cone Tip



#### **International Patent Strategy**



Examples of licensee's patent reimbursement and country choice:

- 1997 invention disclosure
- 2001 invention disclosure



## **OTL: License Agreements**



- Option agreement
- Non-exclusive agreement
- Exclusive agreement
  - Limited by Field of Use
  - Limited Period of Time (e.g. earlier of 8 years from Effective Date or 5 years from first commercial sale)



# Long Term Industry Relationships





OTL annual reports at http://otl.stanford.edu/about/resources.html

- Continuum of companies
  - − Large  $\leftrightarrow$  Startup
  - Electronics ↔ Pharmaceutical
  - U.S.  $\leftrightarrow$  Worldwide
- Case Study: Olympus
  - First license in 1980 (scanning acoustic microscope)
  - Subsequent licenses in many different areas
    - atomic force microscopy cantilevers
    - micromachined miniature confocal scanning optical microscope



#### Licensing U.S. Patent to Global Companies



Example:

- US Patents for 1994 invention disclosure (nonlinear optical materials)
- Nonexclusively licensed to several global companies



#### **Bayh-Dole Act and Offshoring**



- Under Bayh-Dole Act, any company holding an exclusive license must substantially manufacture the product in the U.S.
- Request for U.S. Manufacturing Waiver



## Outline

- Office of Technology Licensing
- Patenting and Licensing Issues





## Case Study: Yamaha

- 1975 FM Sound Synthesis<sup>®</sup>
- 1989 Physical Modeling
- 1997





## Case Study: FM Sound Synthesis





#### **Connect and Collaborate**

"when the world starts to move

from a primarily vertical (command and control) value-creation model to an increasingly horizontal (connect and collaborate) creation model, it doesn't affect just how business gets done. It affects everything"

- "The World is Flat" by Thomas L. Friedman



## **Questions?**



#### For More Information...

 Visit our website (<u>http://otl.stanford.edu</u>)



 Attend a monthly informational meeting at OTL on the first Friday of every month at 10:00am (call 650-723-0651 to make a reservation)

