

International Intellectual Property Practices

FOR:



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Overview

1. Education/Experience
2. Introduction to Patents
3. Patent Statistics
4. Patent Requirements
5. US Patent Process and Practices
6. Patent Commercialization
7. INIC Patent Application Process

1. Education/Experience

Education

- **Johns Hopkins University**
 - B.S. Biomedical Engineering, B.S. Electrical Engineering
 - Graduated in 2002 with general and departmental honors
 - M.S. Electrical and Computer Engineering
 - Graduated in 2004
 - Concentration in digital communications and image and video processing
- **The George Washington University Law School**
 - Juris Doctor
 - Graduated in 2007 with general honors
 - Concentration in international Intellectual Property law

Work Experience - USPTO

- **US Patent and Trademark Office (4 years)**
 - Patent Examiner
 - Examined over 250 US applications and issued over 75 patents
 - Examined PCT applications
 - Technical areas: digital watermarking and authentication, biometrics, medical imaging, pattern recognition, image compression, and video coding
 - Board of Patent Appeals and Interferences
 - Analyzed patent appeals and drafted opinions for judges
 - Office of the Solicitor
 - Analyzed BPAI decisions and drafted appellee briefs to Federal Circuit

Work Experience – US ITC

- **US International Trade Commission – Office of Unfair Import Investigations**
 - Stops infringing goods at the border by analyzing US patents in view of the goods

Work Experience – F&R

- Fish & Richardson is one of the largest IP firms in the world
 - Associate for 2 years
- Managed patent portfolios filed in over ten countries
 - US, WO (PCT), Europe (EPO), Japan, Korea, China, India, Canada, Mexico, and Australia
- Technical areas:
 - Circuits, computer algorithms, software, semiconductors, digital communications, signal processing, imaging devices, business methods, medical devices, mechanical tools

Representative Clients

- Worked on over 250 applications for clients such as:



 **LG**
Life's Good

 **AOL**

Smith+Nephew
First Choice in Medical Devices







Work Experience – IntlIP

- **International IP Group, LLC**
 - Work with the Iranian Nanotechnology Initiative Council, the Petrochemical Research & Technology Company, the Research Center for Science and Technology in Medicine, and the Iranian National Science Foundation.
 - Drafted over 25 original U.S. utility and design patent applications for Iranian clients.
 - Secured three U.S. patent grants.
 - Performed over 60 novelty searches with detailed analysis reports.

2. Introduction to Patents

Purpose of the Patent System

- Patents
 - To reward inventors and encourage innovation
 - Inventors are granted a government-sanctioned monopoly for a limited time in exchange for disclosing their invention to the public.
 - To make it financially feasible to invest money in research and development
 - Prevent low cost reverse engineering
 - To provide a technology database available to the public at no cost

What are Patents Used for Internationally?

- Prevent others from using your innovations
- Protect startup companies from low cost manufacturers
- Revenue stream from licensing
- Defense against claims of infringement via cross suits
- Access to others' technology via cross-licenses

Why are International Patents Important for Iran?

- Create the bridge between abundant R&D and limited commercialization in Iran
 - Currently Iran is 14th in nanotechnology ISI publications
 - Private commercialization is very weak
- Attract foreign investment
 - Shows invention is indeed novel due to examination process
 - Security against low-cost copying because of right to enjoin and/or recover lost profits
- Profit from research outside of Iran
 - License or sell patents to foreign companies

Types of Patents in the USPTO

- Provisional Applications
- PCT Applications
- Design Patents
- Utility Patents

Provisional Applications

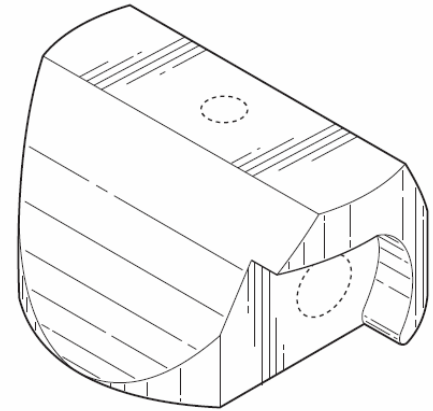
- **Provisional applications are cheaper to file and preserve your earliest filing date**
 - Especially important in view of an upcoming publication
 - Many times the actual publication is filed as provision, since there are no formalities required
 - i.e., you do not need claims
 - Must final utility application is less than 1 year from filing date of provisional application

PCT Applications

- There is no such thing as an “International Patent”
 - Rather, a PCT ultimately gives an opinion on the novelty of the claims.
 - Generally, a patent provides protection in one country only.
- Patent Cooperation Treaty (PCT) –allows a patent applicant to file an application in a member country up to 30 months after an initial filing, and get the benefit of the initial filing date (i.e., the priority date).
 - Delays high costs of filing in multiple countries
 - Enables you to evaluate claim scope and product viability over longer period of time

Design Patents

- Only protects a new ornamental design for an article of manufacture.
- Lasts for 14 years from date of grant
- Filing to grant lasts under 1 year
- Low cost



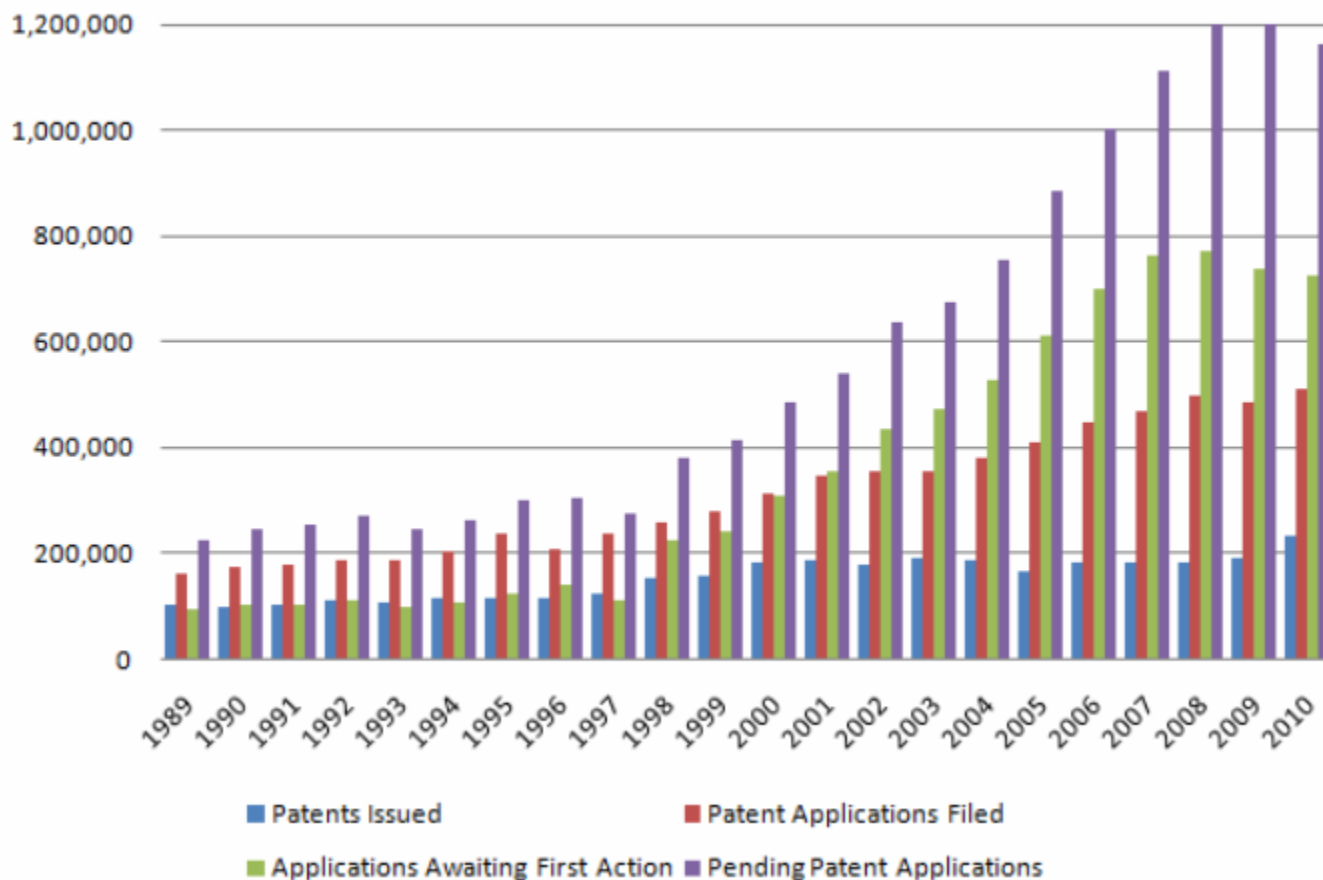
Utility Patents

- **Protecting your idea by disclosing it**
 - A patent is not a right to practice or use the invention. Rather, it is the right to exclude others from making, using, offering for sale, or selling the invention claimed in the patent throughout the United States or importing the invention into the United States. (35 USC §154.)
 - Persons violating the patentee's exclusive right can be (1) prevented from practicing the patented invention and/or (2) forced to pay damages to the patent owner.
- **Protection lasts for 20 years from effective filing date.**

3. Patent Statistics

Patent Procurement Statistics

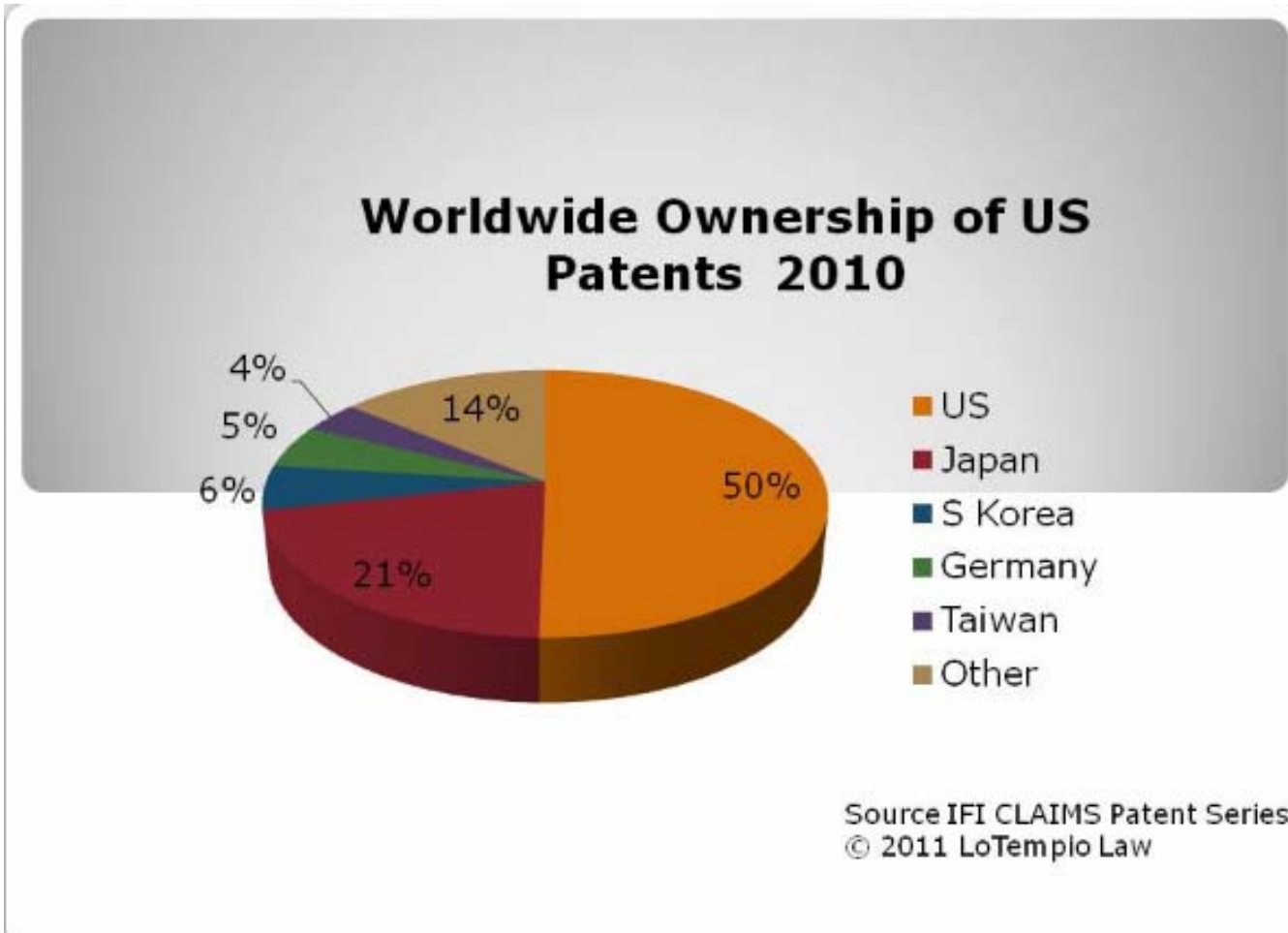
U.S. Patents and Patent Applications



Patent Procurement Statistics *cont.*

- In 2008, 456,321 utility patent applications were filed in the US (uspto.gov)
 - 231,588 were of US origin
 - 224,733 were of foreign origin (49.2%)
- In 2008, 157,772 utility patents were granted in the US (uspto.gov)
 - 77,501 were of US origin
 - 80,271 were of foreign origin (50.9%)
- In 2008, 99,053 utility patents applications were examined in the EPO (epo.org)
- In 2008, 59,819 utility patents were granted in the EPO (epo.org)

Worldwide Ownership of US Patents



US Patents Originating from Iran

- 20 US patents granted from 2006-2010 where first inventor's residence was Iran (uspto.gov)

Class	Class Title	2006	2007	2008	2009	2010	Total
318	Electricity: Motive Power Systems	0	0	0	1	1	2
423	Chemistry of Inorganic Compounds	0	0	1	0	1	2
424	Drug, Bio-Affecting and Body Treating Compositions (includes Class 514)	0	0	1	0	1	2
502	Catalyst, Solid Sorbent, or Support Therefor: Product or Process of Making	0	1	0	0	1	2
518	Chemistry: Fischer-Tropsch Processes; or Purification or Recovery of Products Thereof	0	1	0	1	0	2
134	Cleaning and Liquid Contact with Solids	0	0	0	1	0	1
250	Radiant Energy	0	0	0	1	0	1
252	Compositions	0	0	0	1	0	1
307	Electrical Transmission or Interconnection Systems	1	0	0	0	0	1
341	Coded Data Generation or Conversion	0	0	0	1	0	1
361	Electricity: Electrical Systems and Devices	1	0	0	0	0	1
379	Telephonic Communications	0	0	0	0	1	1
520	Synthetic Resins or Natural Rubbers (includes Classes 520-528)	0	0	0	0	1	1
585	Chemistry of Hydrocarbon Compounds	0	1	0	0	0	1
702	DP: Measuring, Calibrating, or Testing (Data Processing)	0	0	0	0	1	1
ALL	ALL CLASSES	2	3	2	6	7	20

US Patents Originating from Iran *cont.*

- However, there is a large growth in patent filings from Iran (uspto.gov)

**TABLE 9 UNITED STATES PATENT APPLICATIONS FILED BY RESIDENTS OF FOREIGN COUNTRIES¹
(FY 2006 - FY 2010)**

Residence	2006	2007	2008	2009 ²	2010 ³	Residence	2006	2007	2008	2009 ²	2010 ³
Bosnia & Herzegovina	-	3	6	-	N/A	India	1,862	2,280	2,869	2,878	N/A
Brazil	333	385	499	497	N/A	Indonesia	31	37	25	19	N/A
British Virgin Islands	7	11	10	11	N/A	Iran	10	18	28	29	N/A
Brunei Darussalam	-	1	-	1	N/A	Iraq	1	-	1	1	N/A

US Patents Originating from Iran *cont.*

- Due to the grant lag, the patent grants have not grown yet (uspto.gov)

**TABLE 10 PATENTS ISSUED BY THE UNITED STATES TO RESIDENTS OF FOREIGN COUNTRIES^{1,3}
(FY 2006 - FY 2010)²**

Residence	2006	2007	2008	2009	2010	Residence	2006	2007	2008	2009	2010
Bangladesh	-	-	1	-	-	India	470	560	650	678	1,076
Barbados	2	2	2	3	2	Indonesia	11	16	21	20	5
Belarus	3	7	8	6		Iran	-	4	3	6	7
Belgium	665	629	602	677	853	Iraq			1	-	-

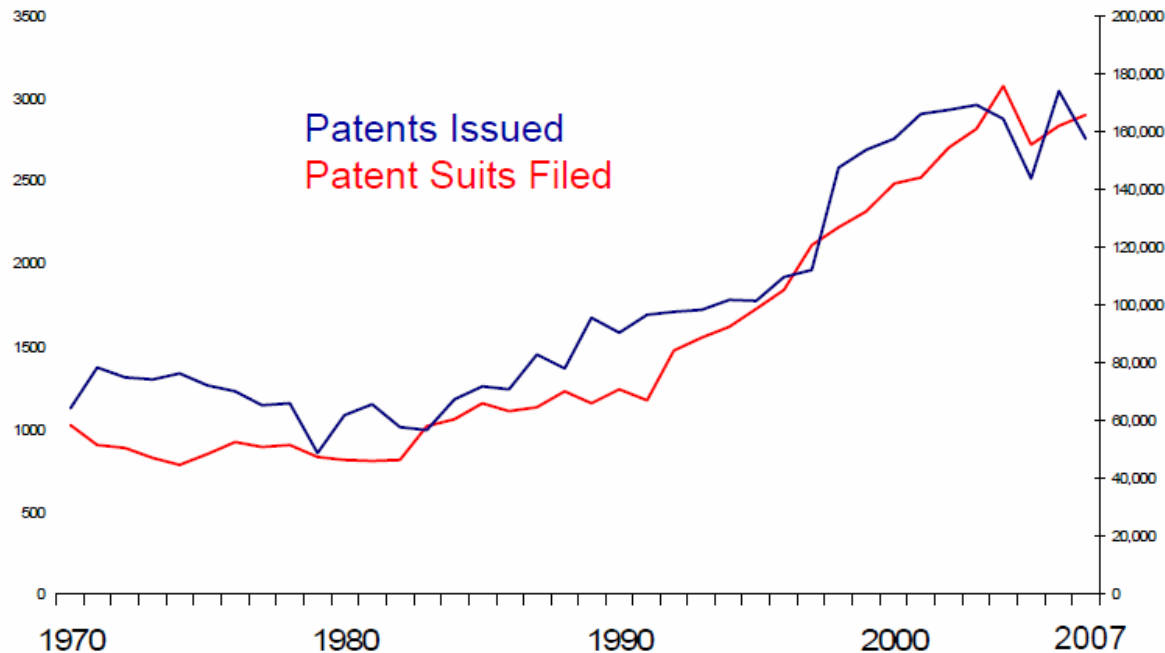
US Patents Originating from Iran *cont.*

- The number of published nanotechnology US and EPO patent applications and grants.

YEAR	IRAN(EP+US)	NANO(EP+US)	%
2006	16	2	13%
2007	19	6	32%
2008	24	7	29%
2009	37	8	22%
2010	49	18	37%
2011(May 1)	18	6	30%

Patent Litigation Statistics

- 2,736 patent infringement suits were filed in the US in 2009 (patstats.org)
 - Patent litigation tends to rise with the number of patents issued



Patent Litigation Damages

- Average recovery by winning patentees is \$5-6 million (patstats.org)

Industry	Median Damages Awarded '95-'07
Automotive	\$34,000
Biotechnology	\$4.9 million
Medical Devices	\$6 million
Software	\$8.5 million
Telecom	\$31 million

Pricewaterhouse Coopers 2008 Patent Litigation Study

4. Patent Requirements

What is Patentable?

- Any new and useful process, machine, manufacture or composition of matter, or any new and useful improvement thereof. (35 U.S.C. §101)
 - The product itself
 - Most commercially valuable
 - The method for creating the product
 - Valuable if commercially advantageous (lowest cost method)
 - A specialty machine for creating the product
 - The best mode of use for the product
 - Least valuable against infringers

Requirements for Patentability

- **Novel**
 - The object of the patent must be new (not published, previously available for purchase, or available to the public in any way).
- **Non-Obvious**
 - The invention must not be obvious to those “skilled in the art.”
 - Best if not a combination of old ideas or products.
- **Useful**
 - Must satisfy some productive purpose.

Requirements of Utility Patents

- Title
- Abstract
- Drawings
- Specification
 - Background, Summary, Brief Description of Drawings
- Claims
- Declaration/Power of Attorney
- Assignment
 - Enables you to specify the ownership of the patent

Title and Abstract

- The title of the invention should be brief but technically accurate and descriptive, preferably from 2 to 7 words.
- The Abstract is a brief narrative of the disclosure in a single paragraph of 150 words or less.
 - Make sure you include what makes your invention novel and commercially valuable

Drawings

- The applicant shall furnish a drawing where necessary for the understanding of the subject matter sought to be patented.
 - Order figures so that they logically explain your invention
 - Illustrate how invention is used in preferred mode
 - Additional modes of use
 - Block diagram of components
 - Flow chart of method of use

Background of the Invention

- **Two parts:**
 - **Field of the Invention - Field of art to which the invention pertains.**
 - EX: “This application relates to ...”
 - **Description of the Related Art: A description of the related prior patents or articles known to the applicant.**
 - Mention related art generally.
 - Discuss specific problems involved in the prior art which are solved by the applicant's invention.

Summary of the Invention

- The summary points out the advantages of the invention or how it solves previous problems (preferably indicated in the Background of the Invention).
- Include all of the elements in your claims to make sure there is support and Summary is complete. Especially important if concurrently filing in Europe and Japan.

Brief Description of the Drawings

- A reference to the drawings.
- One sentence per figure.
- Examples:
 - “FIG. 1 is a front view of a mobile device having an example dual-mode keypad.”
 - “FIG. 2 is a front view of a mobile device having another example dual-mode keypad.”

Detailed Description of the Invention

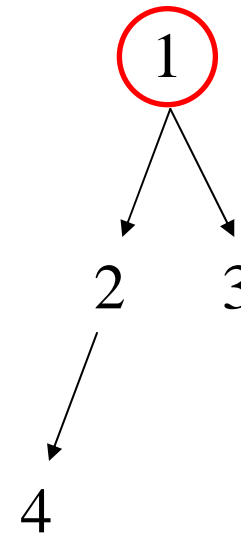
- Description should be as specific as is necessary to describe the invention adequately and accurately.
- Goal is to allow another engineer reading your patent to make your device without undue experimentation (35 USC 112).
- Go through the figures in order.
- Discuss variations following description of preferred mode.

Claims

- Each one sentence
- Preamble
 - EX: “An apparatus for ... comprising:”
 - EX: “A method of ... comprising:”
- Body
 - Parts if apparatus
 - Steps if method
- Antecedent basis
- Up to 20 claims at no additional cost

Claims *cont.*

- Independent Claims
- Dependent Claims
 - Add to independent claims
 - Used for variations of an element (different embodiments)
 - Use for additional elements of your device that are not critical



Claims *cont.*

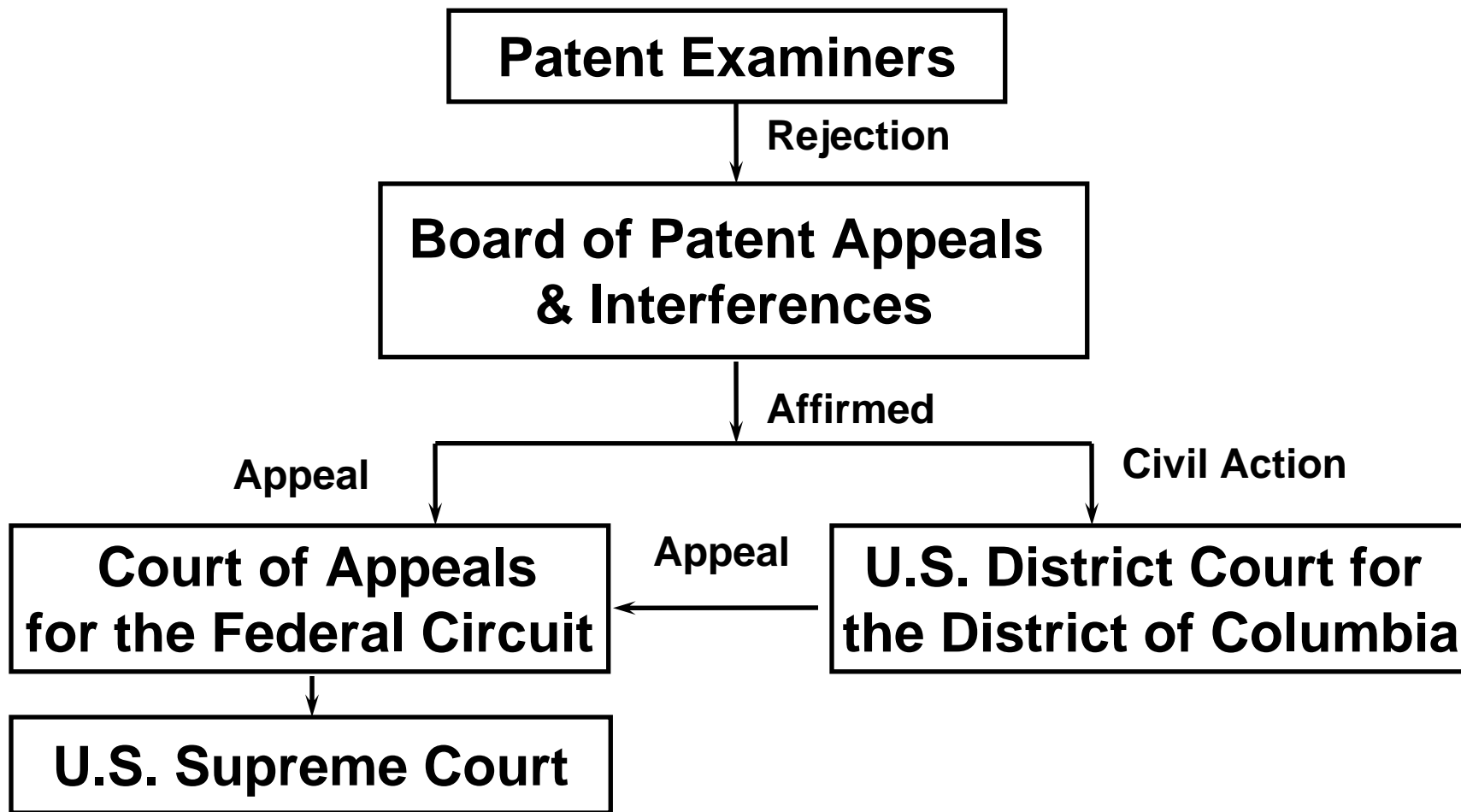
- Independent claims
 - Should include feature that makes your invention novel
 - Two main types:
 - Device/Apparatus - Description of the device
 - Use different part of device
 - Describe what it does and how it is connected to the previous device
 - Method - How the device functions
 - Start each element with a verb
 - Verbs must be gerund – end in “ing”

Assignment

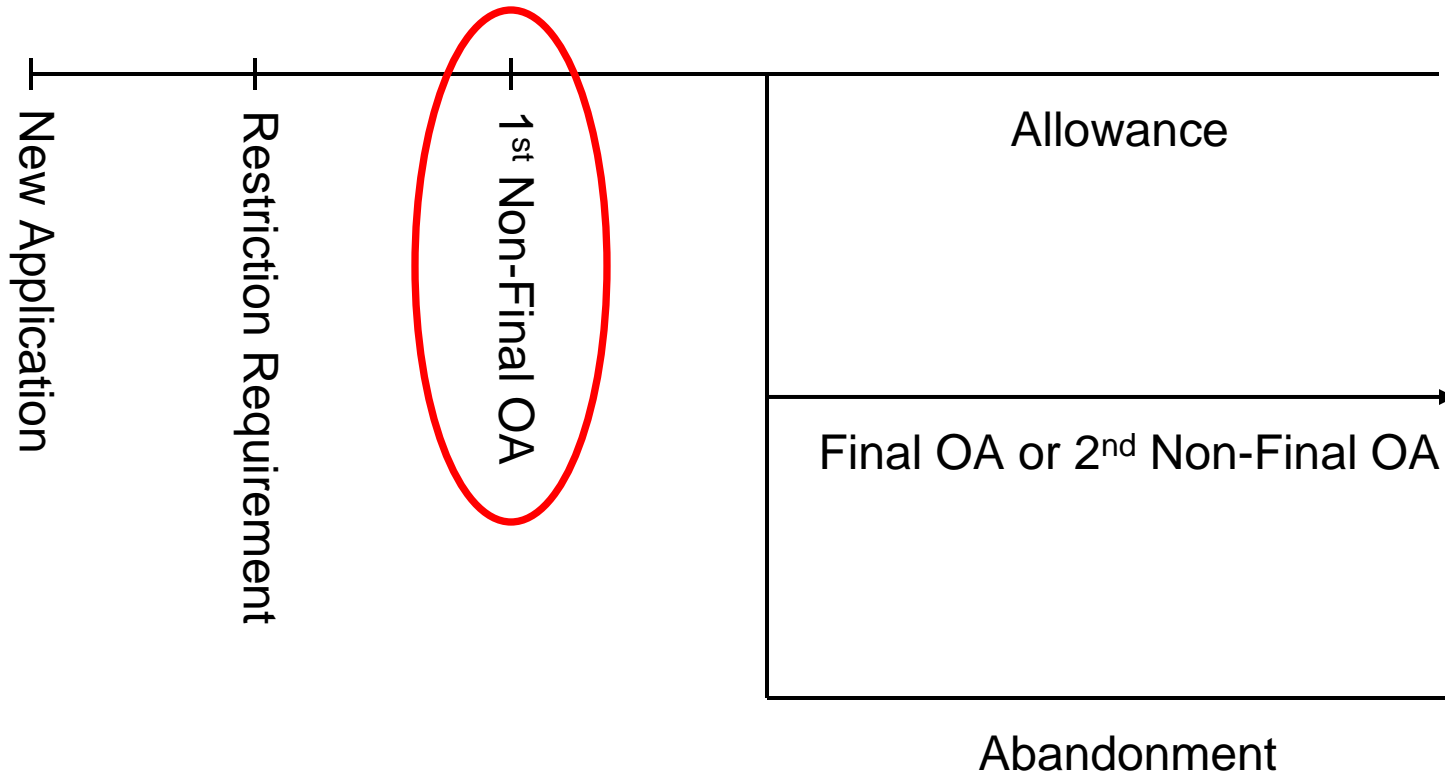
- Without assignment, patent is equally owned by inventors
- Inventors pass their ownership rights to the assignee
 - Assignee is typically employer or new owner of invention
 - Can be limited by geography and/or duration
- Assignments can be filed at any time
 - Important if company is formed after patent filing

5. US Patent Process and Practices

US Patent Review Process



USPTO Flow



How to Overcome an Office Action

- Argue that claims are different from references
- Amend claims to overcome references
 - Most common technique
- Overcome date of references
 - Foreign priority
 - Date of conception

Best Patent Practices

- **Beware of Statutory Bars**
 - Statutory bar = an act prior to filing that prohibits a patent from granting (35 U.S.C. § 102(b))
 - Publication (paper, speech, presentation) of invention
 - Offer for sale of invention
- **In U.S., a patent application must be filed within one year of publication or offer for sale of invention**
 - Must be same inventive entity – inventors = authors
- **Many foreign countries have absolute novelty system, so any publication or offer for sale prior to filing = complete bar**

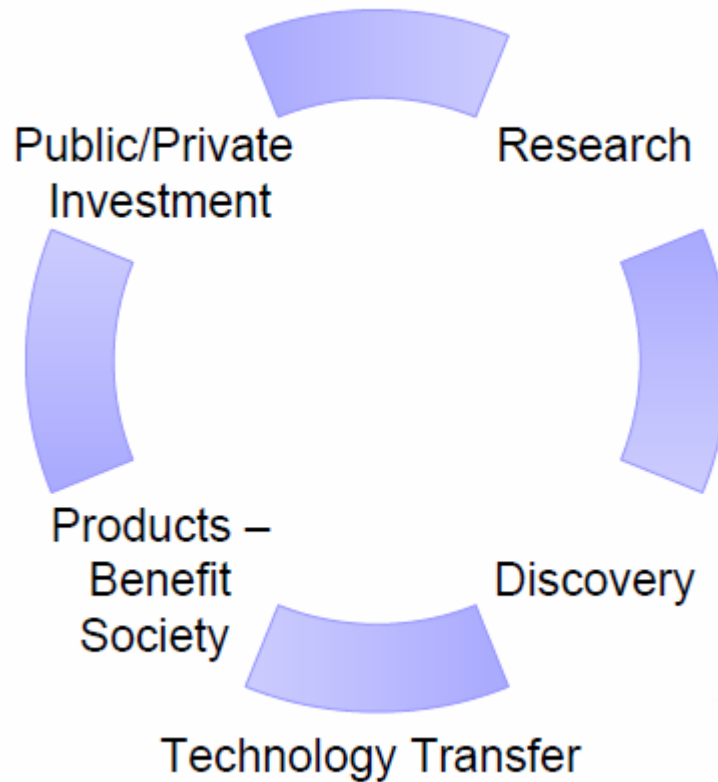
Best Patent Practices *cont.*

- Ideas without implementation can be patented
 - Should consider provisional application if likely that changes will be made to physical system when implemented
- Can file multiple applications on different aspects of a product if each aspect is novel

6. Patent Commercialization

Why Commercialize Patents?

Completing the Circle

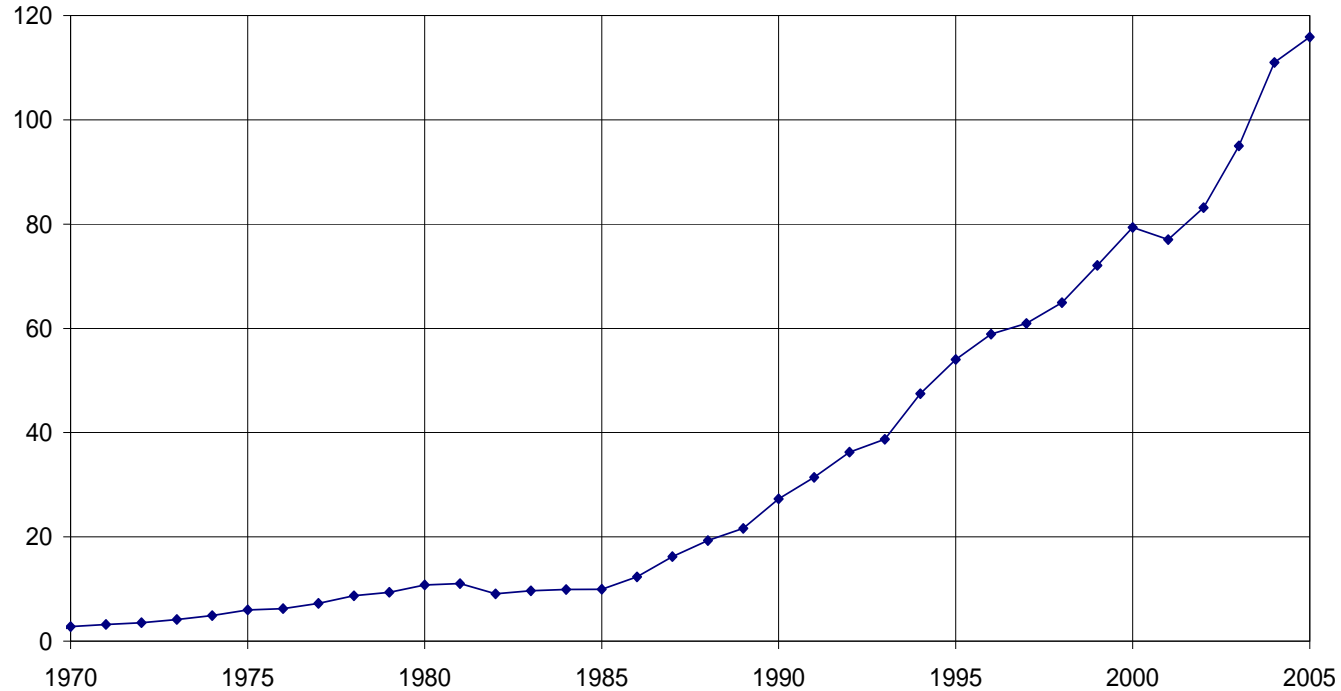


Ways to Commercialize Patents

1. Own use
2. Litigation
3. Sale
4. Licensing

Growth of Patent Licensing

- Worldwide licensing revenue in US billions (World Bank)



MIT Licensing Revenues (2007)

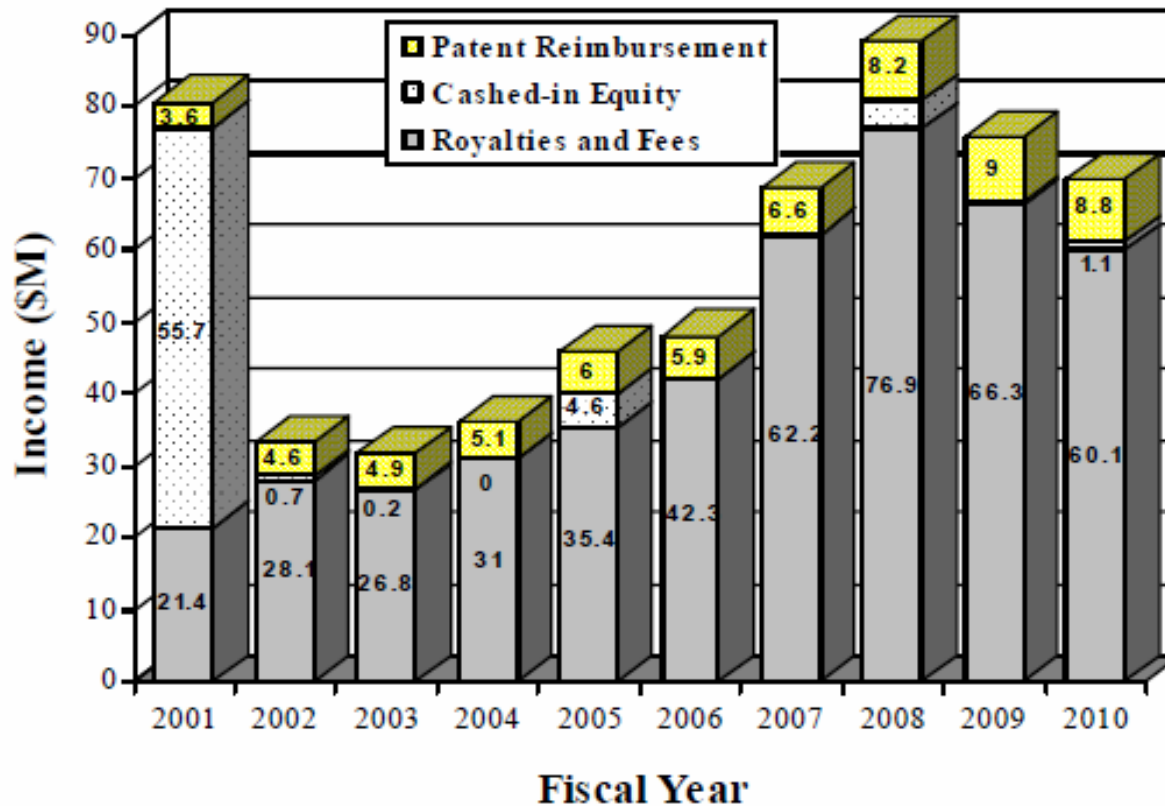
• Royalty income	\$68.2 million
• Operating expense	\$ 4.2 million
• Patent expense	\$12.8 million
• Inventors	\$16.5 million
• Other institutions	\$10.6 million
• MIT departments	\$25.6 million

Typical MIT License Terms

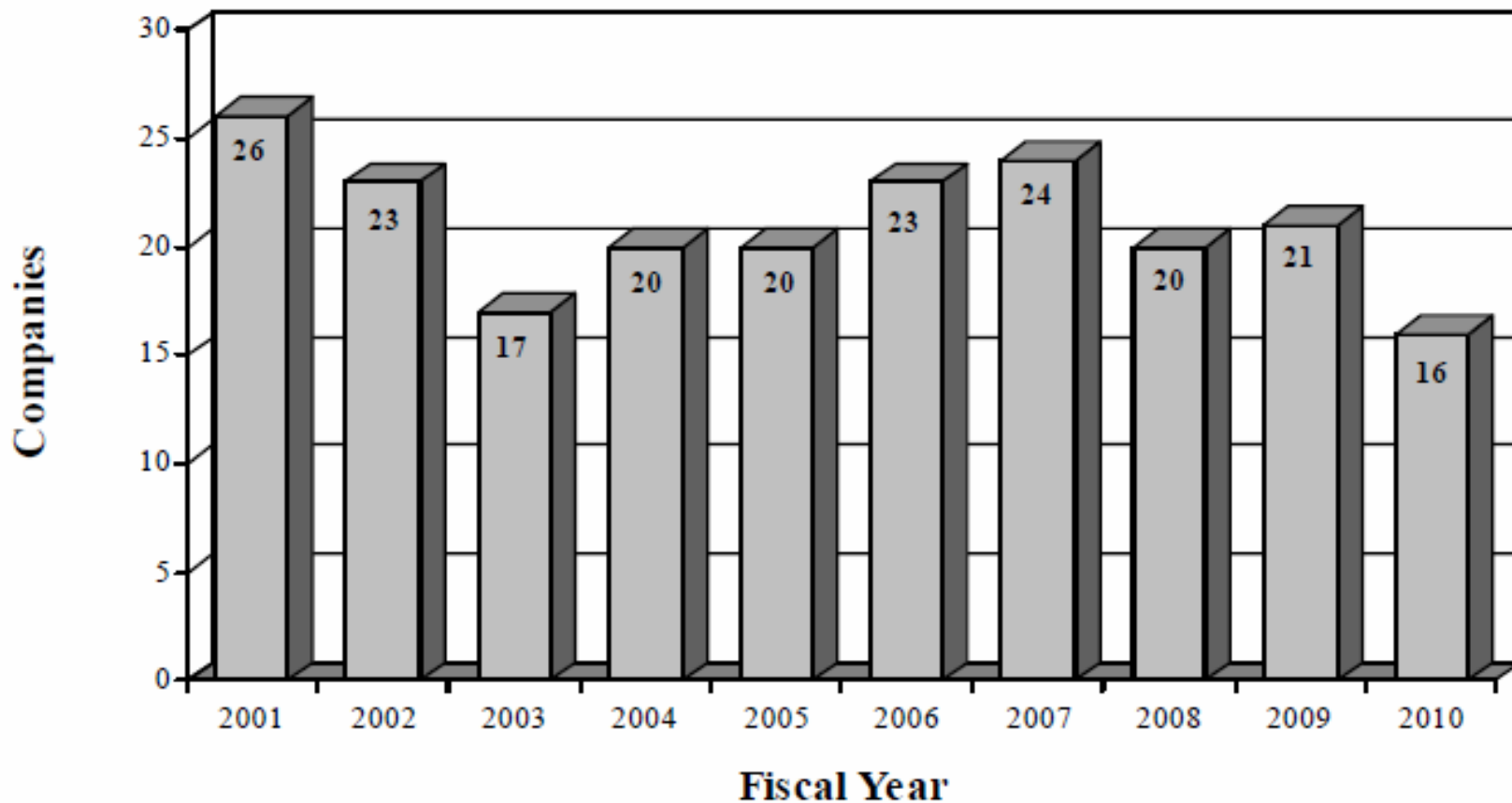
- Exclusive
- Limited Field of Use
- License Issue Fee: \$25 - \$100K (up front payment)
- Royalty: 3-5%
- Minimum annual royalty escalates over time
- Equity: 5% after significant funding
- Patent expense reimbursement

10 Year MIT Income

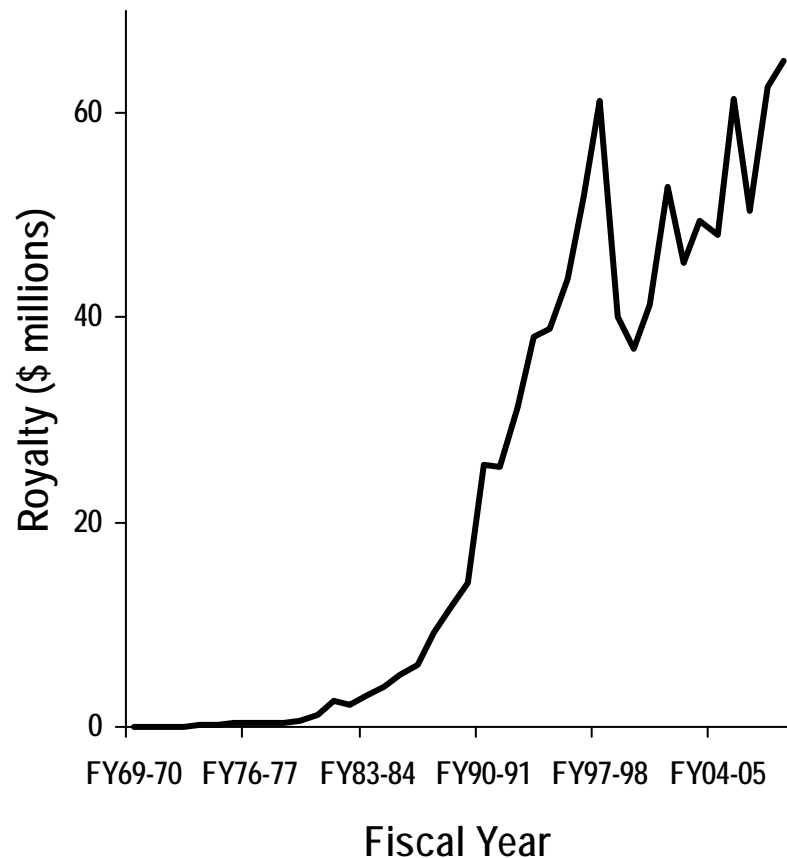
Income (\$M) by Fiscal Year, 2001-2010



10 Year Number of Startup Companies



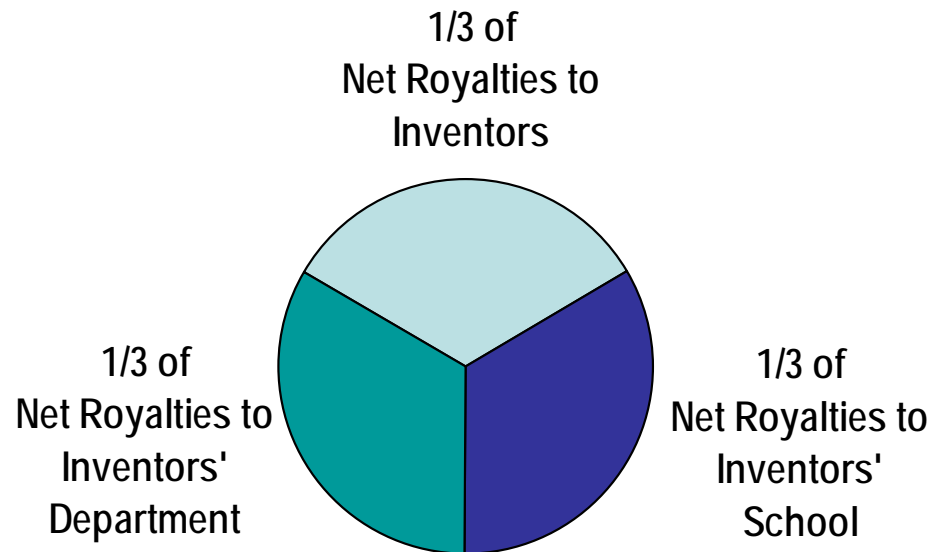
Stanford Univ. Licensing Revenue



- From 1970 through 2009, ~\$1.27 billion cumulative royalties
- In 2010, \$65.1 million in royalties
- Operating budget of ~\$4.9 million/year
- Patent expenses of ~\$6.3 million/year
- Profit of \$54 million in 2009

Stanford's Royalty Distribution Policy

- Net Royalties = Cash Royalties - 15% for administrative expenses - out-of-pocket expenses (e.g. patent costs)



University Licensing Statistics (2007)

Name of Institution	2007 Licenses and Options Executed	2007 US Patents Issued	2007 New Patent Applications	2007 License Income
New York University	38	52	46	\$791,210,587
Columbia University	56	66	274	\$135,632,417
University of California System	231	331	959	\$97,593,575
Northwestern University	35	22	169	\$85,298,599
Wake Forest University	13	8	N/A	\$71,226,905
University of Minnesota	76	44	53	\$63,315,910
University of Washington	203	43	88	\$63,283,697
Massachusetts Institute of Technology	116	149	314	\$61,600,000
University of Rochester	12	21	82	\$53,336,965
Stanford University	88	106	256	\$50,370,600
University of Florida	74	77	162	\$48,035,273
University of Wisconsin Madison	57	124	175	\$46,700,000
University of Massachusetts	78	22	74	\$40,738,116

Source: AUTM U.S. Licensing Activity Survey, FY2007

7. INIC Patent Application Process

INIC Patent Application Process

- Login

USER LOGIN

متقاضی حقیقی، افراد با نام کاربری و رمز عبور **بختش** حمایت تشویقی می باشند. 

متقاضی حقوقی، شرکت ها با نام کاربری و رمز عبور در **سایت کربدور** می باشند. 

متقاضی حقوقی متقاضی حقیقی

نام کاربری

کلمه عبور

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INIC Patent Application Process *cont.*

- Create new file

The screenshot displays the INIC Patent Application Process interface. On the right is a dark sidebar menu with the following items:

- صفحه اصلی
- صفحه اصلی
- مدیریت درخواست ها
- سایر
- خروج از سیستم

The main content area has a yellow header with the text "صفحه اصلی" and "خوش آمدید، 11". Below the header is a section titled "مدیریت درخواست ها" containing two buttons:

- لیست درخواست های ثبت شده
- اضافه کردن درخواست جدید

A red arrow points to the "اضافه کردن درخواست جدید" button.

INIC Patent Application Process *cont.*

- Complete inventors, contact info, title

آیا این اختراع ، مخترع دیگری نیز دارد؟
در صورت پاسخ مثبت، پست الکترونیکی فرد را که در سایت حمایت های تشویقی نانو ثبت شده است، وارد نمایید:

ارسال ایمیل و دریافت اطلاعات مخترع

پست الکترونیکی

عنوان اختراع (فارسی) *

عنوان اختراع (انگلیسی) *

کلید واژه (فارسی) *

کلید واژه (انگلیسی) *

فیلدهای اجباری *

لطفا به تعداد کافی کلید واژه انگلیسی ارائه شود

ثبت اطلاعات و مرحله بعد



INIC Patent Application Process *cont.*

- Complete other information at same or later time

اختراع و مخترع | اختراع و پایان نامه | شرح اختراع | تابویی بودن | مقالات مشابه | پتنت های مشابه | مزایا و معایب | مرحله هشتم | مرحله نهم | قابل اظهارنامه | ثبت نهایی

انجام ثبت نهایی، در آخرین مرحله، برای تکمیل ارسال و آغاز بررسی الزامی ست! پس از ثبت نهایی مجاز به ویرایش اطلاعات نخواهید بود.

لطفا اختراع خود را در 5 بند ذیل توضیح دهید.

اختراع خود را به صورت کلی توضیح دهید.

لطفا از 75 کلمه بیشتر نشود.

Abstract

* توضیح

فرآیند ساخت از ماده اولیه تا محصول را توضیح دهید.

مراحل فرآیند ساخت را به تعداد مورد نیاز اضافه نمایید. در 6 تا 8 مرحله و هر مرحله حداکثر 2 جمله. **مثال راهنما**

Process



* مرحله 1

INIC Patent Application Process *cont.*

- Complete other information at same or later time

لطفا فایل شرح دقیق و همراه با جزئیات اختراع خود را ارسال نمایید.

میزان شرح اختراع باید در حدی باشد که یک متخصص در این حوزه قادر به فهم ابداع شما باشد.

لطفا فرمت فایل ارسالی doc,docx,pdf,jpg,jpeg و یا gif و حداکثر حجم 4mb باشد.

انتخاب و ارسال فایل

* الصاق فایل

Description – SAME AS ARTICLE

توضیح

نوآوری های کار خود را شرح دهید.

Why Novel?

* توضیح

Patent Search Services

- Should search patents and articles to increase likelihood of patent grant before filing
- Free patent search services:
 - Google Patents - <http://www.google.com/patents>
 - Free Patents Online - <http://www.freepatentsonline.com/>
 - USPTO – www.uspto.gov/patft
- Pay patent search services:
 - QPAT - www.qpat.com

Questions

