E-club Panel

Working with the TLO

Stephen Brown
M.I.T. Technology Licensing Office
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Typical Interactions with TLO

- You

- have a new invention
- want to license your own invention for a startup
- are looking for good IP to start a company with
- want a waiver for IP developed without MIT

Steps in Patenting Process

- At MIT submit a Technology Disclosure Form to TLO
- http://web.mit.edu/tlo/www/mitinfo.html
- otherwise need to
  - Document date of invention and have description of invention witnessed
  - These steps provides no patent protection
- Conduct literature and patent search – 4 to 8 hrs
- Prepare and file a patent application – 40 hours
- Patent Office responds ("Office Action")
  - Often takes > 1yr before hear back from USPTO
  - 1st "office action" generally rejects most or all claims
  - Need another one or two "responses" before issue

Working with startups

- Make introductions to people, $, services
- No preferred providers (VC's, legal, etc)
- Follow diligence provisions closely
- Renegotiate when needed

Typical Options to Startups

- Generally 6 months to 1 year
- Assumption of ongoing patent costs
- Modest up front signing fee 1 to 10K
- Exclusive or Non-exclusive
- Protects right to take a license
- Allows for time to evaluate technology and markets

Typical financial license terms if no Equity

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Components	Typical costs
• Issue fees	• $50K to $150K
• Maintenance fees	• ~50% of expected RR
• Diligence	• Can't leave on shelf
• Royalty as % of Sales	• 3% to 5%
• Patent costs	• $25K to $200K
• Research sponsorship	• Not required

Typical startup license terms with Equity

1 SD

Components	Typical costs
• Issue fees	• $5K to $50K
• Maintenance fees	• ~50% of expected RR
• Diligence	• Can't leave on shelf
• Royalty as % of Sales	• 2% to 4%
• Patent costs	• $25K to $200K
• Research sponsorship	• Not required
• Discovered products	• Variable
• Equity	• Next Slide

Typical startup equity terms

- Single digit % of equity
- % maintained thru 5 to 10M$ raised
- Proportional antidilution thereafter
- Future participation rights

Flexibility in negotiations

- Financial terms
- Diligence terms
- Customization to business plan

Limited flexibility with US universities on:

- Not reimbursing patent costs for exclusive license
- Not providing university with indemnification for all product liability
- Restricting publication
- Avoiding production in US if sales in US and US govt funded
- Avoiding diligence provisions if exclusive license
- Obtaining warranty of fitness for use or patent validity from university

Bayh-Dole Act Requires Universities to:

- Retain ownership of patents created under government funding
- Provide government with royalty-free non-exclusive license to use, make, or have made on behalf of federal government (limited to government use)
- Develop programs to commercialize these patents to benefit society
- Share royalties with the inventors
- Invest licensing income in research

MIT IP Ownership Policy

- MIT owns the patent or copyright if:
  - significant use was made of MIT facilities or
  - MIT administered funds were used
  - Textbooks are an exception
- Never assigns ownership to a licensee or research sponsor
- Guarantees sponsors first rights to inventions made using their funds

MIT IP Ownership Policy

- MIT can waive invention to inventor if
  - No sponsor's rights and
  - No significant use of MIT facilities and
  - No use of MIT administered funds and
  - No plans to use MIT facilities to reduce to practice

Voluntary prosecution of non-MIT owned inventions

- TLO will manage inventor owned technology, but only under
- Standard MIT policy including royalty sharing policy
- Will not promise future inventions

Sponsors Rights

- Granted a free internal research license
- Within 6 months of a future patent filing company gets to choose one of the following:
  - Royalty-free non-exclusive license for payment of patent costs ($3,000) but without right to sublicense
  - Royalty-bearing exclusive license in field(s) of use with right to sublicense
  - Option to waive rights back to MIT and to receive 25% of MIT's future licensing income from patent licensing

License Negotiation Issues

TOOLS

- Field of Use
- Exclusive or Non-Ex
- Licensed Product
- Diligence
- Sublicensing
- Warrantees
- Grant backs
- Equity

ISSUES

- Focus on strengths
- Exploit vs Seed
- Royalty based on ?
- $, dates, goals
- Mandatory?
- No dominating patents
- Share know-how, IP
- Basic or Improvement

Royalties (Pricing)

- Goldscheider Rule of Thumb:
- 25% of the additional profits due to the invention should go to the Licensor
- But what are the profits?
- How far developed?
- What about the other patents?
- Generally:This rule of thumb unworkable for embryonic stage inventions

Setting Royalties consider:

- Size of the Market
- Competition
- Risk
- Development costs and capital required
- Other patents needed
- Stage of development: Idea,Test Tube, Rat, Clinical Trial?
- Degree of Exclusivity
- Profitability of the industry

Typical Royalties for University Patents

- Software 5-15%
- Equipment/Medical Devices 3-5%
- Materials 1-4%
- Semiconductors (Chip Design) 1-2%
- Materials (Processes) .02-2%
- Materials (Commodities) .01-1%

Typical Royalties for University Patents

- Pharmaceutical at clinical testing stage 12-20%
- Pharmaceuticals composition of matter 8-10%
- Diagnostics new entity 4-5%
  - new method for old entity 2-4%
- Biotechnology exclusive process 1-2%
  - non exclusive process .025-1.5%

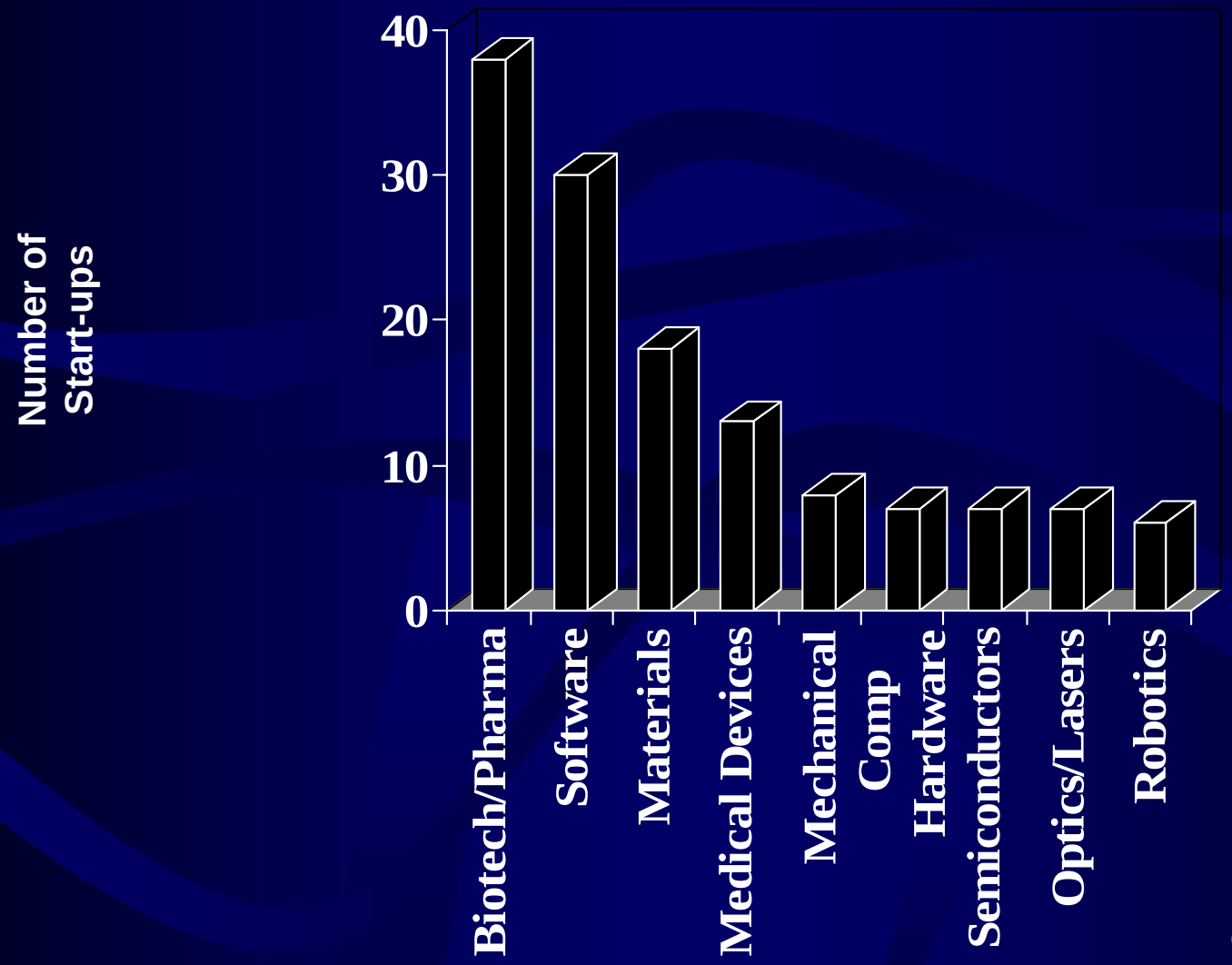
MIT Royalty Distribution Policy

- Deduct 15% from gross income for TLO operating expenses
- Deduct out-of-pocket, usually patent costs, expenses
- Distribute one-third of what's left equally among inventors
- Inventors can request unequal distribution
- Adjust remainder based on actual TLO operating expenses
- Subtract out-of-pocket expenses for unmarketable patents
- (write off bad inventory)
- -One-half remainder to departments
- -The other half to MIT General Fund

Typical Year
MIT Startups

- 20 to 30 startups/yr
- ~2/3's still in business over last 10yrs
- ~1/3 have had liquidity event
- Many bought by larger organizations

MIT Start-ups by Category



1995 data

TLO Decision Making Process

- One person manages disclosure to expiration
- No committee to review licenses
- Director signs each license
- Some variance TLO to TLO in deal terms

TLO Decision Making Process

- TLO's are on straight salary, no incentives
- Pursue any technology that can make it
- Don't maximize $ return/license but # of technologies commercialized

The MIT TLO Provides

- Patent management and marketing
- Advice, counseling and conflict resolution
  - Inventors, faculty and student entrepreneurs
- Introduction to sources of funding
- The license agreement and its management

The MIT TLO Does Not Provide

- Money
- Space
- Management
- Business Plan Writing
- Formal Guidance - (No Board Seats)

MIT's Patent and Licensing Goals

- Ensure that ideas are practiced broadly so that the general society benefits
- Protect M.I.T. right to receive govt funding
- Provide funds to patent future ideas
- Reward inventors by sharing income
- Provide modest income to MIT
- If commercial goals conflict with academic, academic goals take precedent

Typical Year
Revenue and Expenses

- Gross revenue
  - ~ $30 M from royalties and fees
  - Plus $1 to 50 M$ received from equity cash-outs
- Expenses
  - ~ $6 M legal fees, primarily prosecution
  - ~ $3 M operating expenses for the office

Typical Year
Income Distributions

- ~ $21 M net income distributed
  - ~ $7 M to inventors
  - ~ $7 M to their departments
  - ~ $7 M to MIT

License Negotiation Issues

- Scope of the Field of Use
- Exclusive, Co-exclusive or Non-Ex
- Licensed Product Definition
- Diligence Terms
- Warrantees, Insurance
- Royalties, Maintenance, Issue Fee,
- Equity, antidilution of equity

License CHOICES

TOOLS

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CHOICES

- Focus on strengths
- Exploit vs Seed
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- Mandatory?
- No dominating patents
- Share know-how, IP

Factors to consider in setting terms

- Role of the IP for the company
- Number and scope of patents
- Exclusive or non-exclusive
- Breath of field of use
- Years to first sale, size, profitability
- Stage of the technology
- Business model- sales, licensing, etc.
- Financing plans

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Review TYPES of IP

Type of Asset:		Protected by:
• Invention	⇒	• Patents
• Logo, Mark	⇒	• Trademarks
• Physical expression of ideas	⇒	• Copyrights
• Marketplace and Existing Technology Knowledge • Other Know-how	⇒	• Trade Secrets and Non-competes or publication

CHOOSING which TYPES and TOOLS to use

- Ability to maintain confidentially: trade secret?
- Extensive “prior art”: publish?
- Short product life cycle : copyright?, trade secret?
- $ for patent prosecution: partner?
- Early examination for enforcement, “stake”
- Generate $ early through field of use (FOU) out-licensing: keep key FOU to exploit
- Existing dominating patents: in-license?, partner?

Deciding whether to file a patent?

How Broadly patentable?
Claims capture the value?
Cover intended product?
Cover competitors products?
Enforceable?
Any dominating patents?
Regulatory barriers?
How easy will it be to design around the patent?

Common MISTAKES

- The first words out of our mouths!
  - Inventions, licensing, etc, etc, etc
  - A sound business plan is paramount
- Poor search to identify dominating patents, prior art
- Not writing claims to cover how others might circumvent your patent
- Not rewarding key inventors

Common MISTAKES (continued)

- Filing on each invention made
- Filing in more countries than needed
- Assuming US laws are same as ROW
- Assuming all developed countries have same respect for IP
- Forgetting that application will be published
  - 18 months after filing

Common MISTAKES (continued)

- Invalidating your patents by
  - Making a public disclosure prior to filing
  - Not documenting invention and date
  - Not getting documentation witnessed
  - Not citing all known prior art
  - Not describing best mode
  - Including erroneous or excluding valid inventors

Potential M.I.T. startup mistakes

- Premature disclosure of idea, bar to patent
- Not checking for dominating patents
- No agreement on ownership or role by founders
- Not understanding inventors/founders agreements previously made with MIT
- Agreement on terms with VC's prior to obtaining license

Thank you for your attention

web.mit.edu/tlo/www