MIT Licensing Office
Statistics FY2021

• 54 staff (full-time employees)
• Invested $24M in IP protection
  (a reduction of $2M from FY2020)

FY2021 FACT SHEET

New U.S. Patents Filed
358

U.S. Patents Issued
435

International Patents Issued
421

Incoming Material Transfer Agreements
1,265

Active U.S. Patents
3,543

GROWTH THROUGH FY2021

Historical Data FY2021

Startup Companies Launched
528 (1997-2020)

License Agreements Executed
3,099 (1960-2020)

Disclosures Received
21,921 (1940-2020)

Total Licensing Revenue
$87.4 MILLION

Startup Sector

- Device, Diag., Research Tools: 17%
- Hardware: 24%
- Therapeutics: 21%
- Software: 7%
- Materials: 27%
- Other: 0%

Data current as of July 2021
What is a Patent?

A grant by the government that allows you to exclude others from “making, using, selling, offering for sale, or importing” your invention for a period of 20 years.

The US is now a First Inventor to File country.
Types of US Granted Patent Rights

1. Utility patent
   - Machine – robot, motor, circuit
   - Process – method of manufacturing
   - Article of Manufacture – frying pan, hair comb
   - Composition of Matter – chemical compound
   - Length of patent term is 20 years from the filing date

2. Design patent
   - Ornamental design, appearance
   - Length of patent term is 15 years from the date of grant

3. Plant patent
   - New and distinct variety of plant that can be asexually reproduced (excluding tubers)
   - Length of patent term is 20 years from the filing date
Provisional Application

• Expires after 12 months from the filing date
• Establishes an early filing date
• The strength of the provisional application depends on the construction
• Limited in its use
What’s Required to Obtain a Patent?

The invention must be:

1. Novel
   - Cannot have been described in a printed publication, or in public use, on sale or otherwise available

2. Useful
   - Solution to a problem

3. Not obvious
   - Cannot have been obvious to one skilled in the art
Requirements for Patentability

**Novelty**

The disclosure rules:

- **For the U.S.**
  - There is a 1 year grace period after a public disclosure by an inventor in which to file a patent.

- **For the rest of the world**
  - Absolute novelty is required
  - Must file before first public disclosure
  - Oral disclosure counts!

*Note: grace period under the Paris convention, 1883:* Once you have a US patent on file, it is okay to make public disclosures. The rest of the world gives us 12 months from the US filing date to file applications in other countries.
Requirements for Patentability (Cont.)

Usefulness
• Usually not difficult to establish

Not Obvious
• Subjective, often difficult to establish
• Would one skilled in the field of the invention who has not seen the invention find it obvious?

Factors to consider:
• Commercial success attributable to inventive feature?
• Filling a long-felt need?
• Doing what others said could not be done or would not work?
Non-US Patents

Paris Convention
- Twelve-month grace period is given following the US patent filing (it assumes novelty of US)

Patent Cooperation Treaty (PCT)
- Covers most countries
- Buys time – delays expense
- Used to manage risk

National filings (expensive)
- Translations
- Annuities
Patenting Process @ MIT

1. Invention report (Technology Disclosure Form)
   • Documents date of invention, provides no protection
2. Literature and patent search is performed
3. Patent application prepared and filed
4. Patent Office responds ("Office Action")
   • It may take well over a year to receive first “office action” rejecting most, if not all, claims
5. Reply to Patent Office
   • Usually results in additional “final office action” rejecting some of the claims
6. Patent allowed
7. Patent issued
   • Typically 3 years after application was filed

Duration: 20 years from the date the non-provisional application was filed

Note: There is no "patent protection" until the patent issues.
Important Points

• A patent permits the owner to prohibit someone from using the invention without a “license”
  • License sets the terms under which the licensee can practice the patented invention including upfront fees, royalties on sales, application limitations, geography, duration, etc.

• Having a patent doesn't necessarily allow the patent owner the right to use the invention

• The use of any invention may infringe someone else's patent
<table>
<thead>
<tr>
<th><strong>Stool</strong></th>
<th><strong>Chair</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>A piece of furniture intended to be used by a person for sitting comprising a horizontal platform supported by three or more vertically disposed rods which fix the platform at a height more than 12 inches and less than 30 inches above a horizontal surface parallel to the horizontal platform.</td>
<td>A piece of furniture intended to be used by a person for sitting comprising a horizontal platform supported by three or more vertically disposed rods which fix the platform at a height more than 12 inches and less than 30 inches above a horizontal surface parallel to the horizontal platform, and a vertical element attached to one side of the horizontal surface against which a seated person may place his/her back for comfort.</td>
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</tbody>
</table>
## Enforcement

<table>
<thead>
<tr>
<th>Infringement</th>
<th>Defenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unauthorized making, using, offer of sale, selling, or importing</td>
<td>That the entity does is not infringing, and/or invalidity of the patent</td>
</tr>
<tr>
<td>Patent owner may sue for:</td>
<td></td>
</tr>
<tr>
<td>✓ an injunction</td>
<td></td>
</tr>
<tr>
<td>✓ damages ($$$)</td>
<td></td>
</tr>
<tr>
<td>✓ ITC ban on imports</td>
<td></td>
</tr>
<tr>
<td>Common Defenses:</td>
<td></td>
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<tr>
<td>✓ Invalidity defense</td>
<td></td>
</tr>
<tr>
<td>✓ Citing prior art (relating to the claim)</td>
<td></td>
</tr>
<tr>
<td>* among others</td>
<td></td>
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</tbody>
</table>
Kraft sued Kellogg for infringement

Kellogg counterclaimed the invalidity of the Kraft patent for obviousness

CAFC affirmed the invalidity for obviousness
Claim 1

1. A polygonal shaped **food container** comprising:
   a **frame** defining the polygonal shape of the container,
   said container having a top, a bottom and sides connecting the top and bottom,
   the frame containing a food product comprised of discrete food articles;

   a **wrapper** surrounding said frame,
   said wrapper forming the top, sides and bottom of the container;
   said top having an access opening sufficiently large to provide hand access to substantially all of the discrete food articles contained within the frame,
   such that substantially any one of the discrete food articles can be accessed and removed individually through said access opening; and

   a **sealing layer**, adhesively sealed to said top around said opening,
   said sealing layer including a starter portion located near a side of the top which can be grasped by a user,
   said sealing layer being releasable when said starter portion is pulled in a direction away from said side to in turn pull and thereby release at least a portion of said sealing layer to provide the hand access to said top access opening and reclosable against said top to seal said opening when said sealing layer is moved back against the said top.
Prior Art

Resealable “Wet Wipe” Dispenser

Cookie Package and Tray
References ultimately used
MIT Policy

MIT owns the patent or copyright except when:

- Not invented under sponsored research, and
- No significant use of MIT administered funds or MIT facilities were made

If industrially sponsored, sponsor(s) has the right to request a license.

- Non-exclusive license is essentially free; exclusive license, if available, is royalty-bearing

If government sponsored, MIT notifies sponsor of invention disclosure and MIT must decide if it will file a patent application within two years.

- If “yes”, government gets a royalty-free, government-purposes license
- If “no”, MIT waives its ownership right to the government agency that sponsored research; the agency may decide to file a patent application on behalf of the US government

After recovery of costs and 15% to fund the Technology Licensing Office (TLO), inventors receive one-third of the license revenue
Our mission is to **move innovations and discoveries from the lab to the marketplace** for the benefit of the public and to amplify MIT's global impact. We cultivate an inclusive environment of scientific and entrepreneurial excellence, and bridge connections from MIT's research community to industry and startups, by **strategically evaluating, protecting, and licensing** technology.
Strategically Evaluate

Primary objective: move innovations from lab to marketplace

Evaluate the invention:
  • Meet with inventors
  • Ask for Prior Art search or patentability review from attorney
  • Research the market/technology area

Determine the best path to achieve the primary objective:
  • Seek patent protection
  • Publish the work
  • Keep the work “quiet” until further development
  • Open Source
  • Waive invention back to inventors
  • Etc.

FY2021 Stats:
730 new invention disclosures
Primary objective: move innovations from lab to marketplace

Best way to protect an invention is to seek patent protection!

• If TLO’s goal is the primary objective above, why would TLO seek patent protection that allows MIT to prevent others from using the invention? Isn’t that counterproductive?

• New product development is expensive
  • Cost to develop new drug ~$1Billion
  • New battery startup estimates ~$1.6Billion in development costs

• New product development is risky!
  • 90% of new startups fail

• Investors prefer investing in companies with patent protection
  • High risk, high reward

Patents = an advantage in the marketplace, which companies need in order to justify development costs
License

Primary objective: move innovations from lab to marketplace

- Types of companies TLO licenses to:

Exclusive License Company Types 2010-2020

- startups: 23%
- sponsors: 9%
- small: 5%
- large: 63%

Non-Exclusive License Company Types 2010-2020

- startups: 51%
- sponsor: 8%
- small: 5%
- large: 36%
Primary objective: move innovations from lab to marketplace

1. TLO requests business plan from ALL interested licensees
2. Negotiate term sheet (mostly financial terms)
3. Draft license, negotiate (often includes attorneys)
4. Execute license
5. Maintain license
   • Progress reports
   • Follow up on diligence items
   • Royalty reports
   • Amendments
   • Etc.
6. Termination (Voluntary termination by MIT or by Company, or natural expiration once patents expire)

FY2021 Stats:

103 license agreements executed
24 startup companies founded on MIT IP
Example Elements of a License

• Field of Use
• Exclusivity
• License Issue fee
• Royalty rate
• Sublicensing
• License maintenance fees
• Equity
• Milestone fees
• Patent cost reimbursement
• Diligence requirements

FY2021 Stats:

$87.4 M in gross licensing income
$35.3M in equity proceeds
$13.8M in patent reimbursements

519 active revenue generating licenses
4 licenses generated >$2M
8 additional licenses generated >$500K
Where Does the Revenue Go?

- 15% to TLO as administrative fee
- Retain unreimbursed patent expenses
- Of the remaining 85%:
  - 1/3 to Inventors
  - 1/3 to Departments
  - 1/3 to General Fund
- Depending on the situation, may share MIT revenue with joint owners, foundations, and sponsors

FY2021 Stats:
$25.7M was distributed to:
- 1,291 inventors
- 89 DLCs
- 55 other entities
Department Resource Example

Lincoln Labs uses their department share to support programs like this one.

Girls' Engineering Workshop

OUTREACH TYPE: S.T.E.M. Program
AUDIENCE: Middle School (Grades 6-10)
TOPIC: educational outreach

Twice a year, 100 middle school girls visit Lincoln Laboratory for the day to explore engineering. They explore the contents of cellphones, cameras, and clocks to learn about the inner workings of various types of electronic devices.
Success Stories
Thank you
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http://tlo.mit.edu/