

Importance of IP for Universities

- IP is the foundation of ‘new’ university
- United States Bayh-Dole Act
 - University can license their inventions for commercial development
- PUPFIP Bill in India: Failed
- Licensing of patents: revenue for university researchers/profs

The ‘New’ University

- Universities creators of technology solutions
- Societies' growing economic expectations of universities
 - IP tool to harness new technology
 - Develop and disseminate of R&D
- IP develops new products
 - Combined with entrepreneurship, licensing
 - All for public good

Technology Transfer

- Dissemination of technology for wider distribution
- In the US, more than 5000 start-ups have been created since 1980
- India: IITs have been incubating start-ups and companies
 - Licensing of university patents

Importance of IP for Universities

- Licensing a blockbuster
 - Florida State University, Taxol (Cancer)
 - Pharmaceutical Partner: Bristol Myers Squib
 - Earned a revenue of \$45 million
 - University of Minnesota, compounds behind abacavir (HIV)
 - Made the university more than \$370 million dollars

Billions at Stake

- University patent fights
 - Madey v. Duke University (2002)
 - CRISPR-Cas9: Technique for rewriting snippets of DNA (ethical issues)
 - UC Berkeley v. Broad Institute of MIT and Harvard
 - UCB: First to apply for patent in 2012
 - Broad: First to win the patent in 2014
 - The two institutions are applying for variations on the patents to lock up associated technologies

Lab to Market

- Professors: from research labs to great companies
 - Herbert Boyer, University of California; co-founded Genentech
 - Synthetic human insulin, 1978
 - Acquired by Roche in 2009

Lab to Market

- Professors: from research labs to great companies
 - Dr. P. Venkat Rangan
 - Founded Yodlee Inc, an American software company

Lab to Market

- MRC Laboratory of Molecular Biology
 - Work of scientists have attracted 11 Nobel prizes
 - Licensing of LMB's work led to the development of Humira
 - Generating an income of over £700 million from royalties, share sales and licensing intellectual property

Late Realisation: Rob Perneczky

- Professor in Imperial College London

In 2010 Perneczky isolated a protein in cerebrospinal fluid that could be used as a biomarker for Alzheimer's disease. Perneczky's protein promised to substantially improve the accuracy of early diagnosis of the disease. When he approached his TTO with a view to commercializing his discovery, he was surprised to learn that it was not interested. He had already detailed exactly what he had hoped to patent in a paper published in a leading academic journal. The discovery was now in the public domain, the TTO informed him.



What's Bad about Publication?

- Kills Novelty
- Grace period: Take a conscious decision
- Publication: Public domain
- Patenting by others: Credit and stall commercialization

Strategies that Exist

- File a provisional before disclosure
- NDAs
- Approach the TTO/IPM cell before disclosing
- Strategic disclosure: Limit disclosure to main result – “what” the technology can do, and not the “how”

Educating Profs on IPR rules

- Long process
- Default: “Publish or perish”
- Incentives: Promotion, Research Grants

The Grace Period as it Exists

- Section 31, Patents Act

(d) the description of the invention in a paper read by the true and first inventor before a learned society or published with his consent in the transactions of such a society,

if the application for the patent is made by the true and first inventor or a person deriving title from him ⁸³[not later than twelve months] after the opening of the exhibition or the reading or publication of the paper, as the case may be.

What needs to be done

- Take a Call: Significant implications
- Time to commercialize and decision on resources on patenting
- Average patent earns less money than it costs to get it
- Only about 10% will be commercially successful

Understanding what is IP

- Intellectual property (IP) in simple terms, is any Original, Creative work which is a result of an intellectual process.

Understanding what is IP

- In today's rapidly evolving landscape of creativity - with Artificial Intelligence and related technologies to reckon with, whether the phrase "Intellectual Process" can be attributed strictly to a human being (not being a machine/computer program/algorithm), has become debatable subject-matter.

Types of IP:

- ✓ Patent
- ✓ Trademark
- ✓ Copyright
- ✓ Design

Types of IP:

- ✓ Topography of ICs/ Semiconductor Chips
- ✓ Plant Varieties
- ✓ Geographical Indications
- ✓ Trade Secrets

How an IPM Cell is Set up (typically):

1

- A committee of the Institution, either on its own action or due to a government mandate, decides to Set-up an IPM Cell.

How an IPM Cell is Set up (typically):

2

- One among the senior Professors within the Institution is named to constitute and head the IPM Cell – regardless of whether s/he has prior ‘Industry-experience’ or formal qualification in IP Management and/or IP Laws.

How an IPM Cell is Set up (typically):

3

- About 2 – 8 personnel are inducted into the department – (most of) who, do not have prior exposure to the key functions of an IPM Cell.

How an IPM Cell is Set up (typically):

4

- An IPR Policy is drawn up: from that of one or more premier Institutions (Foreign or Indian).



What an IP-Management Cell or IPM cell is meant to deliver.

An IPM Cell may also be called – Technology Transfer Office (TTO), Technology Commercialization Office, Technology Licensing Department etc.,

Functions of IPM Cell

- Educating its staff and students on - concepts, law and procedures to secure (and commercially exploit) various kinds of Intellectual Property.

Functions of IPM Cell

- Promoting and encouraging IP generation.

Functions of IPM Cell

- Hiring/Appointing personnel and contracting with Professionals and/or Professional Institutions (such as Lawyers, IP Attorneys, Search Service Providers etc.,) to outsource one or more of its operations; And paying/honouring their invoices/bills as per contracted terms and tariffs.

Functions of IPM Cell

- Taking responsibility of (fully or partly- in an arrangement with an outside entity/ies) the Administrative and Financial in
 - (i) accepting (or rejecting at its sole discretion),
 - (ii) (internally) validating and processing,
 - (iii) filing,
 - (iv) prosecuting and
 - (v) maintaining, as per relevant laws;

Functions of IPM Cell

- Mediating between the Institute & Industry, to Market the IP generated, to the outside world.

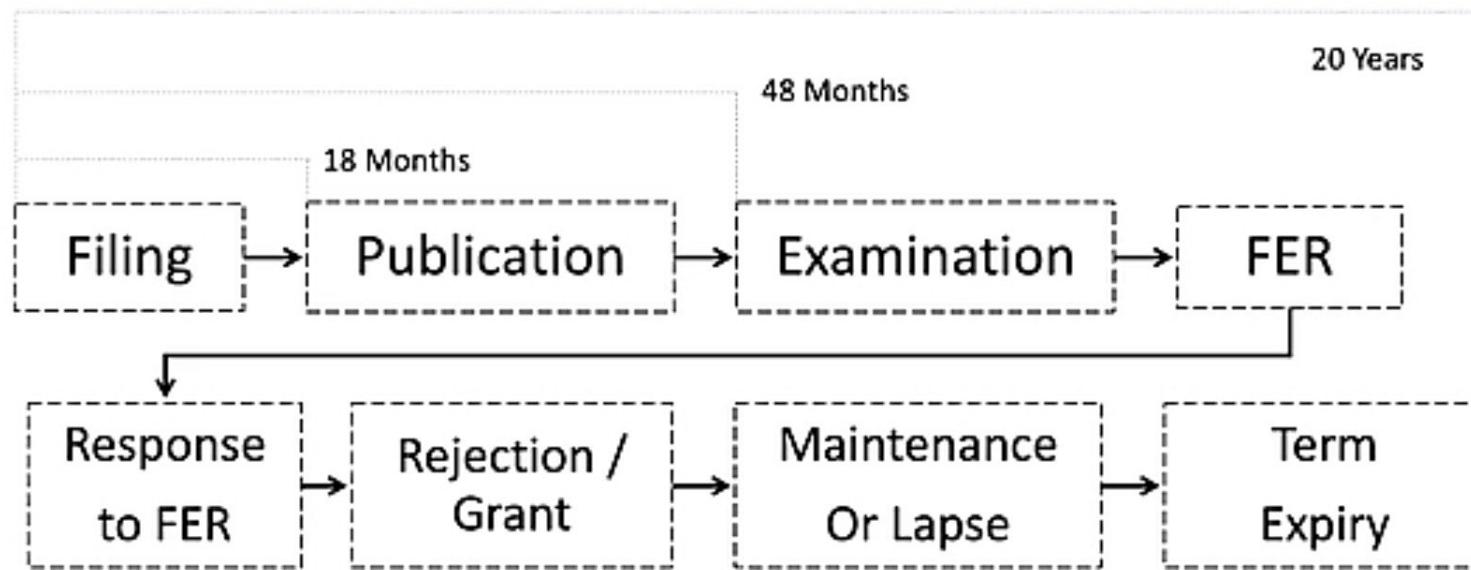
Functions of IPM Cell

- Maintaining records, generating Management Information and Statistics for analysis and reporting.'

Functions of IPM Cell

Although academic institutions generate more than one type of IP (Patents, Copyrights, Designs, Trademarks, New Plant varieties etc.,), the quantity (number) and quality of Patents they file for and obtain, are considered a measure of their innovative potential/activity.

A snap shot of Patent life cycle (with timeline):



Core functions of an IPM Cell

S.NO	STEP	INFRASTRUCTURE / AID	HUMAN RESOURCE
1.	The IPM Cell runs various drives, campaigns on IP Awareness and IP education on campus.	Lectures, Workshops, Contests on a regular basis. Also, a compulsory session on IP forms part of the curriculum for Research scholars.	The IPR Chair Professor and Head of the IPM Cell organize various such programs periodically.



Core functions of an IPM Cell

S.NO	STEP	INFRASTRUCTURE / AID	HUMAN RESOURCE
2.	Creative work emanates from Students/ Researchers/ Faculty members;	An IDF (or Invention Declaration Form), available on the Institute's website is duly filled-out by the Inventors and submitted to the IPM Cell	Clerical Staff receive and docket IDFs on an Internally developed System that facilitates Archival, Retrieval, MIS, Analyses and Reporting.

Core functions of an IPM Cell

S.NO	STEP	INFRASTRUCTURE / AID	HUMAN RESOURCE
3.	The Inventors are encouraged to carry-out a 1 st level, preliminary due-diligence check for Novelty & Inventiveness at the IPM Cell	Free and Paid Patent & Non-Patent databases such as (but not limited to); Google, Google Scholar, Google Patents, Questel Orbit, Thomson Innovation, IEEE Innovation Q Plus, Etc.,	In-house IP (Search) Analysts train & help inventors navigate and use Patent and Non-Patent databases to ascertain Patentability

Core functions of an IPM Cell

S.NO	STEP	INFRASTRUCTURE / AID	HUMAN RESOURCE
4.	The Inventors are then encouraged to discuss, in confidence, the results of their Patentability-Search with a qualified/competent IP Professional	The IDF is referred to an In-house Attorney for the preliminary discussion to help Inventors decide on whether to file for a Patent and which route to choose – i.e., a Provisional or Complete Patent Specification.	In-house Patent Agent/Attorney. Note: Filing a Provisional Patent application first, which is a common and popular practice is not encouraged, unless such filing is warranted by specific/compelling circumstances.

Core functions of an IPM Cell

S.NO	STEP	INFRASTRUCTURE / AID	HUMAN RESOURCE
5.	If a prima facie case of Novelty and Inventiveness is made out, a decision to file a Patent application is made. (Else, the Inventors are advised against patent filing at this (premature) stage.)	The IDF is then referred to an IP-Services Firm for Drafting and Filing the Patent Application.	Approvals for filing and Costs thereof are taken from the Unit Head. An empaneled IP-Services Firm is engaged for the purposes of Drafting, Filing and Prosecution of Patent applications.



Core functions of an IPM Cell

S.NO	STEP	INFRASTRUCTURE / AID	HUMAN RESOURCE
6.	The IP-Services professionals interact with the Inventors concerned, to finalize and file the Patent Application	A confirmation of filing of the Patent application is submitted to the IPM Cell along with a Bill of Professional and Statutory Fees by the IP Services Firm to the IPM Cell.	The Superintending and Clerical staff check the billed amounts against the Contract-tariffs and pay them.**

Core functions of a IPM Cell

****Billed items broadly include:**

- Prior Art Search fee, Drafting & filing fees
- Prosecution fees (for Office Actions such as response to FER etc.,).
- Records are maintained as Hard and Soft copies for auditing, MIS & reporting purposes

Core functions of an IPM Cell

S.NO	STEP	INFRASTRUCTURE / AID	HUMAN RESOURCE
7.	After filing of the Patent, Marketing efforts are initiated by the In-house Marketing team;	Expert Opinion including Techno-Commercial Evaluation (TCE) is sought. Also Opinion on Commercial Potential of the IP in foreign Jurisdictions is obtained.	Third Party Evaluation Entities empaneled for the purpose are provided with the patent specification as filed; This is co-ordinated by the Marketing team & Operations team of the IPM cell.

Core functions of an IPM Cell

S.NO	STEP	INFRASTRUCTURE / AID	HUMAN RESOURCE
8.	On Inventors' request for Foreign filing, an International Patent Committee set up by the Institute for the purpose, considers such request in conjunction with the Third party Expert Opinion to make an informed and judicious decision.	Expert Opinion including Techno-Commercial Evaluation (TCE) is sought. Also Opinion on Commercial Potential of the IP in foreign Jurisdictions is obtained.	The Indian Patent application as filed is then referred to an empaneled Law firm for Filing Patent applications in the jurisdiction/s of choice.



Core functions of an IPM Cell

S.NO	STEP	INFRASTRUCTURE / AID	HUMAN RESOURCE
9.	The inventors are required to provide details such as (i) the stage of development of the technology/invention (ii) whether or not a Prototype has been tested etc.,	Specific Forms developed by the institute are filled out by the Inventors in the presence of a Marketing team member.	Handholding is done by the Marketing team of the IPM cell.

Core functions of an IPM Cell

S.NO	STEP	INFRASTRUCTURE / AID	HUMAN RESOURCE
10.	The IPM Cell then prepares a brief write-up called Value-Proposition based in the inputs from the Inventors	The said Value-Proposition typically summarizes the Technical and Economic advantages of the invention over prior art, in a manner that invites interests from Industry players in the relevant field, to explore Tech-transfer/Licensing opportunities	The Value Proposition and necessary details of the invention are put up on the Institute's Technology-Transfer website; Also, Letters/calls to prospective buyers identified are initiated to exploit the Commercial potential of the IP.



Core functions of an IPM Cell

S.NO	STEP	INFRASTRUCTURE / AID	HUMAN RESOURCE
11.	Once the Patent is granted, the maintenance fee is paid, the pros and cons of further renewing each Patent is considered based on the status and potential for commercialization.	The opinion of the Inventors concerned, as well as expert opinion on its Market potential are considered by a Patent committee constituted for the purpose.**	Superintending and Clerical staff follow-up with and coordinate exchange of information between inventors, the IPM Cell and the Patent Committee.

Core functions of an IPM Cell

S.NO	STEP	INFRASTRUCTURE / AID	HUMAN RESOURCE
12.	Statutory requirements such as; submission of Form 27 (Working of the Patent in India), MIS, Annual Report and Reports required by the Government etc., are complied with.	An Intranet system developed by the Institute's IT Department, which is a repository of all information pertaining to the IP generated and managed at the Institute's IPM Cell is used.	Superintending and Clerical staff coordinate this activity under the supervision and guidance of the Dean, IC&SR, IIT Madras.



STAFFING OF THE IPM CELL:

For the proposed IPM Cell, 3 levels of staffing would be ideal;

Level-1 Staff

- **A Department Head** – Either a qualified patent Attorney/Examiner with 5 years Industry exp' in handling IP-Commercialization related responsibilities, or
- A Marketing professional with at least 7 – 10 yrs Marketing exp' in FMCG or Mgf' or IT industry, with 4 years at Managerial level or target driven Marketing as his key result area.

STAFFING OF THE IPM CELL:

Level-2 Staff

- (i) At least one individual with at least 2 years exp' in ***Prior Art Search***
- (ii) At least one ***Marketing individual*** for every 50 - 100 Patent applications filed.
- (iii) At least one ***Admin Supervisor*** with an MBA and at least 3 years of Post-qualification Supervisory experience.
- (iv) At least one ***Patent Agent/Attorney***
- (v) At least one ***Cost Accountant*** with at least 5 years' experience in a Manufacturing company.

STAFFING OF THE IPM CELL:

Level-3 Staff

At least one individual per 500 Patents filed, for Data capture, archival, ***retrieval and correspondence***, with at least 5 years exp in a large Public sector company or MNC in the clerical/secretarial cadre, with good English comprehension & writing skills.

INFRASTRUCTURE:

- A comprehensive Docketing, Archival, Retrieval, Diarizing and Auto-communication system, wherein email correspondence can be automatically triggered and launched by the system.
- Basic office Automation.

Forms:

- *IDF or Invention Declaration Form:*
 - ☒ The IDF comprises a specific set of questions required by the Inventors to answer, with a view to capture the following;
 - ☒ The Filed, Description & Novel and Inventive aspects of the invention,
 - ☒ The names and addresses of each inventor concerned.

Forms:

- *IDF or Invention Declaration Form:*
 - Their respective inventive contribution to the invention and the mutually agreed share in respect of the revenue/royalty that its commercialization;
 - Any Government, external or other funding that may have gone into the project.
 - Involvement of any external entities (i.e., other Academic institutions or Corporations) or inventors thereof, and the terms/agreement governing such collaboration.

Forms:

- *IDF or Invention Declaration Form:*

Link to IDF:

<https://icsr.iitm.ac.in/ipr.php>

Link to NDRA.

<https://icsr.iitm.ac.in/ipr.p>



ICSR Website

PATENTS AND OTHER IPR - TRANSFER OF TECHNOLOGY

POLICY & GUIDELINES

[IPR Policy \(Revision 2012\)](#)

[Incubation Policy](#)

[Technology Transfer / Royalty](#)

[Sale of Software](#)

PROCEDURES

[Procedure for filing an Indian Patent](#)

[\(Constituted review committee\)](#)

[Procedure for filing of PCT and / or other foreign filing](#)

[\(Constituted review committee\)](#)

[Incubation >> Refer to IITM Incubation Cell](#)

FORMS AND TEMPLATES

[IDF \(Invention Disclosure Form\)](#)

[TAF \(Technology Assessment Form\)](#)

[NDA \(Confidentiality Agreement\)](#)

[JDA \(Joint Development Agreement\)](#)

[Sample MOUs with Industry: \[Available for reference in ICSR\]](#)

[Sample IIA \(Inter Institutional Agreement\): \[Available for reference in ICSR\]](#)

QUICK LINKS

[IIT Madras Home](#)

[ICSR Home Page](#)

[Patents and Other IP Listing \(External Website\)](#)

[Project Accounts Website](#)



Forms:

- *Agreement templates:*
 - Various Agreement templates that are commonly used by the Institute for purposes such as:
 - Joint Collaborative Research,
 - Joint Development of technology,
 - Industrial Consultancy,
 - Inter-Institutional Agreement,
 - Technology Licencing Agreement etc.,

NIRF

- National Institutional Ranking Framework
- This framework outlines a methodology to rank institutions across the country.
 - Teaching, Learning and Resources
 - Research and Professional Practices
 - Graduation Outcomes
 - Outreach and Inclusivity
 - Perception

NIRF: RPC Ranking

- Research and Professional Practices
 - This includes combined metric for publications, their quality, patents, and Projects

Institute ID	Name	City	State	RPC Score	RPC Rank	Score	Rank
IR-1-O-O-U-0229	Indian Institute of Science	Bengaluru	Karnataka	91.08	1	82.16	1
IR-3-O-OEM-U-0306	Indian Institute of Technology Bombay	Mumbai	Maharashtra	85.59	2	79.20	3
IR-2-O-OE-U-0456	Indian Institute of Technology Madras	Chennai	Tamil Nadu	81.42	3	81.39	2
IR-3-O-OEM-I-1074	Indian Institute of Technology Delhi	New Delhi	Delhi	78.67	4	73.97	4
IR-5-O-OEMAL-U-0573	Indian Institute of Technology Kharagpur	Kharagpur	West Bengal	74.57	5	71.39	5
IR-3-O-OEM-I-1075	Indian Institute of Technology Kanpur	Kanpur	Uttar Pradesh	68.63	6	65.39	7
IR-4-O-OEMA-U-0560	Indian Institute of Technology Roorkee	Roorkee	Uttarakhand	61.59	7	64.93	8
IR-4-O-OEMA-U-0439	Anna University	Chennai	Tamil Nadu	60.76	8	62.82	10
IR-1-O-O-U-0120	University of Delhi	Delhi	Delhi	58.16	9	58.69	14
IR-2-O-OE-U-0575	Jadavpur University	Kolkata	West Bengal	57.07	10	59.68	13

Patents and Ranking (2018)

- NIT Rourkela, Rank 15

Patent Details (For last 3 calendar years, i.e. 2014, 2015, 2016)

No. of Patents Granted	No. of Patents Published	Earnings from Patents (in Rs.)
0	3	0.00

- Thapar Institute of Engineering & Tech., Rank 20

Patent Details (For last 3 calendar years, i.e. 2014, 2015, 2016)

No. of Patents Granted	No. of Patents Published	Earnings from Patents (in Rs.)
1	11	27900000.00

NAAC

- National Assessment and Accreditation Council
 - Assesses and accredits higher education Institutions in India
- Quality Indicator framework
 - Research, Innovation, and Extension
 - Number of patents obtained

UGC & AICTE

- UGC requests universities and affiliated colleges to provide IPR as elective
- The AICTE approval process handbook mentions the creation of IPR Cell