Overview of IPR and case studies

Guru Jambheshwar University of Science & Technology, Hissar

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IPR/Patent Awareness Workshop

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What these creation would be
Imagination is more important than knowledge
Nature of Intellectual Property Rights

- IPR are largely territorial rights except copyright which is global under Berne Convention.
- IPR can be held only by legal entities who have the right to sell and purchase property.
- IPR can be assigned, gifted, sold, and licensed like any other property.
Nature of Intellectual Property Rights

- IPR are monopoly rights.

- IPR have to be renewed from time to time for keeping them enforced except in case of copyright and trade secrets. Renewal essential to maintain up to the term.

- IPR go hand in hand with trade and commerce
IPR have fixed term except trademark and geographical indications which can have indefinite life provided these are renewed after a stipulated time under the law by paying official fees.

This is perhaps the only right which can be simultaneously enjoyed in more than one country.
THE NEW ENVIRONMENT

* GLOBALIZATION ESSENTIAL FOR CREATING LARGE MARKETS LEADING TO COLLAPSE OF GEOGRAPHICAL BARRIERS
* NEW MARKET NEEDS EMERGING IN SHORT TIME LEADING TO SHORTER PRODUCT CYCLES
* TOUGH COMPETITION
* NEED FOR RAPID CHANGES IN TECHNOLOGY
* HIGH INNOVATIVE RISKS
* HIGH INVESTMENT IN R&D, PRODUCTION AND MARKETING
* NEED FOR HIGHLY SKILLED HUMAN RESOURCES
Many technologies needed in a product

Case of battery storing electrical energy mechanically

- Innovation by American Flywheel System Company (ex scientists from EPA)

- Three different technologies required
  1. Light weight but strong material (kevlar, Technora, fused silica)
  2. Computer power for simulation of many prototypes
  3. Magnetic bearings for supporting electromagnetic fields
URUGUAY ROUND THE FINAL TEXT

- Agriculture
- Application of Sanitary & Phytosanitary Measures
- Textile & Clothing
- Establishing WTO
- Technical Barriers to Trade
- Trade Related Investment Measures
- Preshipment Inspection
- Rules of Origin
URUGUAY ROUND THE FINAL TEXT

- IMPORT LICENSING
- SUBSIDIES & COUNTERVAILING MEASURES
- SAFEGUARDS
- TRADE IN SERVICES
- TRIPS
- TRADE IN CIVIL AIRCRAFT
- GOVERNMENT PROCUREMENT
- DAIRY AGREEMENT
- BOVINE MEAT
BASIC FEATURES

- MULTILATERAL TRADE AGREEMENT
- NATIONAL TREATMENT
- MOST FAVOURED NATION
- NO ACTION SHOULD ADVERSELY AFFECT DOMESTIC/INTERNATIONAL MARKET OF OTHER MEMBER
- HARMONISATION OF MEASURES/STANDARDS
- TRANSPARENCY
- DISPUTE SETTLEMENT SYSTEM
- INTERNATIONAL STANDARDS
INTELLECTUAL PROPERTY RIGHTS (IPR)

- PATENTS
- COPYRIGHT
- TRADEMARKS
- INDUSTRIAL DESIGN
- GEOGRAPHICAL INDICATIONS
- LAY OUT DESIGN OF INTEGRATED CIRCUITS
- PROTECTION OF UNDISCLOSED INFORMATION
Present legal system


Trade Marks: A new Trademarks Act, 1999


Protection of undisclosed information: No exclusive legislation exists but the matter would be generally covered under the Contract Law (Contract Act 1872).


Plant Variety Protection and Farmers Rights Act 2001
COPYRIGHT

- LITERARY, DRAMATIC & MUSICAL WORK INCLUDING SOFTWARE/PROGRAMS
- ARTISTIC WORK
- CINEMATOGRAPHIC FILMS INCLUDING SOUND TRACK & VİDİOFİLM
- RECORD
- SOFTWARE, ENGINEERING DRAWINGS, PLANT LAYOUT DESIGN etc.
- PROVIDES PROTECTION FOR EXPRESSION AND NOT FOR THE IDEA/CONCEPT
COPYRIGHT

1709 FIRST COPYRIGHT ACT (UK)

INTERNATIONAL CONVENTION

- UNIVERSAL COPYRIGHT CONVENTION 1952

TERM LIFE+60 YRS

7.98% US GDP
DESIGN-

- ORIGINAL & NOVEL IN INDIA
- RELATES TO FEATURE OF SHAPE, CONFIGURATION, PATTERN, ORNAMENT OR COMPOSITION OF LINES OR COLOURS APPLIED TO ANY ARTICLE IN 2-D OR 3-D OR BOTH FORMS
- SHOULD APPLY TO ANY ARTICLE BY INDUSTRIAL PROCESS (FOR REPLICATION) & BE AN INTEGRAL PART OF ARTICLE.

- STAMPS, LABELS NOT COVERED
- PAINTINGS, SCULPTURES & LIKE NOT COVERED
DESIGN -
NOT REGISTERED AS DESIGN

* DESIGN NOT NEW OR NOVEL

* DISCLOSED TO PUBLIC IN INDIA OR ABROAD IN TANGIBLE FORM OR BY USE IN ANY OTHER ANY

* NOT SIGNIFICANTLY DISTINGUISHABLE FROM KNOWN DESIGNS

• COMPRIZES OR CONTAINS SCANDALOUS OR
• OBSCENE MATTER

DURATION 15 YEARS
The Semiconductor Integrated Circuits Layout - Design Act, 2000

- Provides Protection of Semiconductor IC layout design
- **Layout - Design** - A layout of transistors and other circuitry elements and includes lead wires connecting such elements and expressed in any manner in a semiconductor IC.
- **Semiconductor IC** - A product having transistors and other circuitry elements which are inseparably formed on a semiconductor material or an insulating material or inside the semiconductor material and designed to perform an electronic circuitry function.
Not Registrable as Layout-Design

Lay out Design:
- Not Original
- Commercially exploited anywhere in India or in a convention country
- Inherently not distinctive
- Inherently not capable of being distinguishable
- from any other registered lay out - design

Note: Design not exploited commercially for more than 2 years from date of registration of application shall be treated as commercially not exploited for the purpose of this Act.
A person when creates another layout design on the basis of scientific evaluation of a registered layout design shall not be causing any infringement.
Term  10 Years from date of filing

Rights conferred

1. Exclusive right to the use of the layout - design and

2. Obtain relief in respect of infringement.
Definition

Geographical indications, in relation to goods, means:

an indication which identifies such goods as:

- Agricultural goods,
- Natural goods or
- Manufactured goods

as originating, or manufactured in the territory of a country, or a region or locality in that territory, where a given quality, reputation or other characteristics of such goods is essentially attributable to its geographical origin,
and in case where such goods are manufactured goods: one of the activities of either the production or of processing or preparation of the goods concerned takes place in such territory, region or locality, as the case may be.
Punishment for falsifying GI: Imprisonment between 6 months to 3 years, & Fine between Rs. 50,000/- and Rs. 2 lakh

Registration
Controller General of Patents, Designs and Trade Mark shall be the Registrar of GI

Who can Apply
Any association of persons or any organization or authority under law representing the interest of procedures of concerned goods.
The GI Act, 1999

Duration

- 10 years (Renewed from time to time after payment of prescribed fee)
- Can be kept alive for an indefinite period
Indian Legislation on Protection of Plant Varieties and Farmers’ Rights Act, 2001

National Plant Variety and Farmers’ Rights Protection Authority (PVFRPA)
Essential Requirements Qualifying To Secure Plant Breeders’ Rights

Novelty

Distinctness,

Uniformity, &

Stability

Acronym NDUS.
Main Mandates of the PVFRPA are:

1. Registration of plant varieties,
2. Developing characterization and documentation of registered varieties,
3. Documentation, indexing and cataloguing of farmer’s varieties,
4. Providing compulsory cataloguing facility for all plant varieties,
5. Ensuring that seeds of all registered varieties are made available to farmers,
6. Collection of comprehensive statistics on plant varieties,
7. Maintenance of National Register of Plant variety.
Main Features of PPVFR:

1. Registration to be allowed for:
   - Plant Breeder’s Varieties (PBV)
   - Extant varieties (EV)
   - Farmer’s varieties (FV)

2. PBV to satisfy the NDUS conditions,

3. EV and FV to satisfy DUS conditions,

4. Allows RE and BE,

5. Allows elaborate farmers’ rights
WHAT IS PATENT?

* Right awarded by a country for exclusive use of invention.
  . For a limited period
  . Right applicable within the country
(There is nothing like global patent)

In return inventor has to disclose the invention to public
**THREE CRITERIA.**

<table>
<thead>
<tr>
<th>Novelty</th>
<th>Inventive Step</th>
<th>Industria Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Not part of state of the art.</td>
<td>* Not obvious to person (s) skilled in the art.</td>
<td></td>
</tr>
</tbody>
</table>

**Novelty**

- Not part of state of the art.
- State of the art comprise product, process, information in public domain.

**Inventive Step**

- Not obvious to person (s) skilled in the art.
- Not governed by smallness/quality of step.

**Capable of Industrial Application**
PATENT GRANTING

FILE APPLICATION WITH COMPLETE SPECIFICATION

18 months PUBLISHED IN GAZETTE

OPPOSITION

EXAMINATION BY PATENT OFFICE

GRANTED/REJECTED

Pre Grant

Post Grant
Biotechnological Inventions

- Essential to disclose the origin of Biological Material
- In case of Microorganism essential to deposit the material in IDA
  - On or before filing of patent
  - Access to public only after filing of patent
  - IMTech Chandigarh IDA
  - Process and product both
  - Many time product defined by process
- Permission from NBA
MICROORGANISM

- MICRO-ORGANISM PER SE
- MICRO-ORGANISM ISOLATED FROM NATURE FOR THE FIRST TIME.
- GMOS
- PRODUCTS MADE BY USING MICRO-ORGANISM FOR THE FIRST TIME.
- NEW USES OF MICRO-ORGANISM.
- VIRUS, BACTERIA, FUNGUS, MUSHROOM, PROTOZOA, UNICELLULAR ALGAE, CELL LINES, HYBRIDOMA (FUSED CELLS), VARIANTS, DNA (eukaryotic & prokaryotic origin)
BUDAPEST TREATY

INTERNATIONAL CONVENTION REGARDING DEPOSIT OF STRAINS, MICROORGANISM.

SET UP IN 1973

OFFICIALLY APPROVED CULTURE COLLECTION CENTRES KNOWN AS DESIGNATED INTERNATIONAL DEPOSITORY AUTHORITY (IDA)

IDA STORES DEPOSITED MICROORGANISM FOR AT-LEAST FIVE YEARS AFTER THE MOST RECENT REQUEST FOR A SAMPLE & FOR ATLEAST 30 YEARS FROM ORIGINAL DATE
Simple Things

- Coke Cane Opener
- Doggy Bell
- Needle
  - Simple needle
  - Machine needle
**Process for Producing 5-Methyl Uridine (5 MU)**

USE

5-Methyl Uridine is a useful intermediate for anti-AIDS drugs

PRIOR ART

5-MU is produced by reacting a nucleoside or ribose-1-phosphoric acid with 5-methyl uracil in presence of a micro-organism *Micrococcus luteus* Ferm P-7399

DRAW BACKS

- Purification step not described
- Size of 5-MU crystals obtained very small (20 - 30 micrometer)
- Separation rate decreased
- Increased size of separator
Process for Producing 5-Methyl Uridine (5 MU)

US 5547587 (1996)

PRESENT INVENTION

- Uses same chemicals & microorganism
- Change in process
- Crystal size of 50-550 micrometer (high purity 5 MU)
- Increased separator efficiency
Process for Producing 5-Methyl Uridine (5 MU)

US 5547857 (1996)

CLAIMS

1. A process for producing 5-MU, comprising the steps of:
   i) culturing a microorganism in a culture medium
   ii) removing 50-90% of said culture medium from microorganism
   iii) adding buffer to microorganism
   iv) reacting a nucleoside or ribose-1-phosphoric acid with 5-methyl uracil in remaining culture medium & buffer containing micro-organism
   v) crystallizing 5-MU formed, by forming 5-MU crystals of average particle diameter - 50-550 m & impurity crystals of particle size of 5 to 50 micrometer
   vi) separating 5-MU crystals based on difference in sedimentation velocity
PRIOR ART
1. Add 400 International Units (IU) of vitamin D3 to whole milk prior to packaging. No need to add Vitamin A
2. Add 2000 IU of Vitamin A & Vitamin 400 IU of D3 per quart of low fat & skim milk.

METHODS KNOWN
1. Inject water soluble emulsion of the vitamin preparation into milk
2. Inject oil soluble vitamin preparation into milk
Vitamin based Fortification of Milk

DISADVANTAGES
1. Oil based method:
   - Can not be added prior to centrifugal separation as specific gravity of the preparation (0.948) is almost same as that of the cream (< 1.0). Vitamin D₃ separates out with the cream
   - To be added after separation through processing line on the suction side. Has to face high back pressure 0 to 80 PSI. Metering of quantity is difficult.
   - Risk of contamination
   - 1 ml will fortify 100 quarts (100 litters)
Vitamin based Fortification of Milk

DISADVANTAGES

2. Water Soluble Emulsion

- May oxidize over a time causing Vitamin A Palmitate to emit strong & offensive smell
- Short shelf life
- Needs refrigeration for storing
- 1 ml will fortify only 40 quarts (40 litres)
Vitamin based Fortification of Milk

PRESENT INVENTION

- Vitamin A & D additive having specific gravity greater than 1.0
- Add oil based additive prior to centrifugal separation
- Additive which can be added anywhere during processing before packaging
- Easy to mix and economical
- No refrigeration required
- Additive contains the following: Corn oil, polysorbate, triglycerol mono oleate, ester gum, Brominated vegetable oil, Vitamin A Palmitate, Vitamin D3 resin
Vitamin based Fortification of Milk

**CLAIMS**

- Oil based additive for whole milk & low fat milk having specific gravity greater than 1.0
- 1% to 3% by weight corn oil & 1% to 3% by weight Easter gum
- 25% to 30% corn oil & 8% to 15% Brominated vegetable oil
- 25% to 35% corn oil & 10% to 15% Easter gum & 4% to 10% Brominated vegetable oil
- Different applications: Fortified milk, beverages and milk products
IP observations

Darjeeling Tea

Brand

[Image of Darjeeling Tea]

[Image of Apple logo]
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Costs Involved in Protection (Patents)

- Patent search
- Filing
- Translation
- Objections & Opposition
- Maintenance/ Renewal
- Intelligence to locate infringement
- Legal
Institutional Support

- **Technical**  Patent Search, Patent Documents, Analysis

- **Legal**  Engaging Attorney, Follow-up Actions, Infringements, Revocation

- **Financial**  Fees (Patent, Attorney), Costs of Searches, Patent Documents, Litigation Charges

- **Procedural**  Clearances from University, Licensing, Actual Buying of Info., Record Maintenance

- **Administrative**  Ownership, Sharing of Benefits
FORM OF PATENT DOCUMENTATION

- ON-PAPER
- ELECTRONIC FORM
  - CD-ROMS
  - MICROFICHE
  - INTERNET

Ekaswa for Indian
Espace Access for EP
PCT etc.
Component of patent document

BIBLIOGRAPHIC DATABASES

- Title
- Inventor
- Applicant
- Appl. Number
- Date of Appl.
- Priority Date
- Patent Number
- National Patent Classification
- International Patent Classification

Databases for Full Text Documents

or

Abstracts +

or

Claims +

or

Chemical structure

or

Images
TYPES OF PATENT SEARCHES

- Novelty Searches
- Validity and Opposition Searches
- State of the Art Searches
- Infringement Searches
- Alerting Searches
- Family and Equivalent Searches
- Citation Searches
- Competitor Monitoring
- Patent No. Search
- Quick Search
- Boolean Search
- Advanced Search
- IPC Classification Search
- Bibliographic
- Abstract
- Applicant/Inventors
- Full Text
INTERNATIONAL PATENT CLASSIFICATION

5 LEVEL SYSTEM

SECTION  8
CLASS
SUBCLASS
GROUP
SUBGROUP  69,000
### INTERNATIONAL PATENT CLASSIFICATION

**CLASS**

Each section is divided into classes.

<table>
<thead>
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<th>SYMBOL</th>
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<tr>
<td>B24</td>
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<td>C12</td>
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<td>F42</td>
<td>AMMUNITION</td>
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<td>H01</td>
<td>BASIC ELECTRIC, ELEMENTS-RELAYS, SWITCHES, SEMICONDUCTOR</td>
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</table>

**SUBCLASS**

Each class is divided into subclass.

<table>
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<th>SYMBOL</th>
<th>ALPHABET A, B, ETC</th>
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<td>SOIL WORKING</td>
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<tr>
<td>H01Q</td>
<td>AERIALS</td>
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<tr>
<td>H01S</td>
<td>DEVICES USING STIMULATED EMISSION</td>
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<td>GROUP</td>
<td>EACH SUBCLASS IS DIVIDED INTO GROUPS</td>
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<tr>
<td>----------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>SYMBOL</td>
<td>1/00, 3/00 ETC</td>
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<tr>
<td>A01B 1/00</td>
<td>HAND TOOLS</td>
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<td>H01S 3/00</td>
<td>LASERS</td>
</tr>
<tr>
<td>H01Q 9/00</td>
<td>SHORT AERIALS</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SUBGROUP</th>
<th>EACH SUBGROUP IS DIVIDED INTO SUBGROUPS</th>
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<tbody>
<tr>
<td>SYMBOL</td>
<td>1/02, 3/04, ETC</td>
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<td>CONSTRUCTION DETAILS OF SEMICONDUCTOR LASERS</td>
</tr>
<tr>
<td>H01Q9/04</td>
<td>RESONANT AERIALS</td>
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WEBSITES PROVIDING FREE ACCESS TO PATENT DATABASES

1. http://www.indianpatents.org.in
   Ekaswa-A & Ekaswa-B

2. http://pk2id.delhi.nic.in
   Access to EPIDOS-INPADOC database
   Bibliographic and Equivalent searches
   Coverage more than 65 countries

   Allow searches in bibliographic field, abstract, claims and full text of US patents since 1976. Full text images from 1970

   European, PCT, Japanese abstract and EPO’s worldwide collection database. In the worldwide data collection data for most of the countries are from 1970 and for few from 1920 also

5. www.ipindia.nic.in
INFRINGEMENT COSTS

- HONEYWELL Vs MINOLTA $166 m
- LITTON Vs HONEYWELL $1.2 b
- POLAROID Vs KODAK $873 m
- HUGHES TOOL Vs SMITH INTL $200 m
- DOW CORNINGS Vs SUMITOMO SUMITOMO OUT OF FIBRE OPTICS BUSINESS.
What could be implemented for next level of TT

- **Methods of marketing technologies**
  - Customized tools for TT in India
  - Method of marketing through advertisement paper and online
  - Membership to TT forum and web resources
  - Advanced planning for system for maintenance of IPR and TT
  - Creation of HR pool in the area
  - Policies for different issues
Practice Patent

- Register as patent agent
  - Degree in science or technology
  - Exam conducted by patent office

1. Patent Department in Industry & Govt.
2. KPO
3. Own enterprise
   - Attorneys
   - Infringement analysis
   - Advisory services
   - IP intelligence
   - Strategy formulation
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TOYOTA Story

- 1896 Sakichi Toyota obtained patent for power loom
- 13 years later Sakichi succeeded in patenting automatic loom
- In 1924 Toyota type G automatic loom reached the market
- Kiichiro agreement with Platt Brother & Co paid £100,000 (equivalent to US$25 million today)
- Now you know Toyota co. selling cars
Learning Pyramid

- Hear: 5%
- Read: 10%
- See: 20%
- Demonstrate/learn with actual objects: 30%
- Group discussion: 50%
- Practical exercise: 75%
- Teach others: 90%
Message to Those Aiming to Become IP Human Assets

(1) Live positive
→ Creativity

(2) Discover your value
→ Originality

(3) Envision a dream
→ Vision
Knowledge

It is what we think we know already that often prevents us from learning.