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UNIT-V

Patenting Basics of patents

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BASICS OF PATENTS: TYPES OF PATENT;INDIAN PATENT ACT 1970;RECENT AMENDMENTS;WIPO TREATIES;BUDAPEST TREATY;PATENT COOPERATION TREATY(PCT) AND IMPLICATIONS

INTRODUCTION OF PATENT

- A patent is a form of intellectual property right granted to inventors as a means of protecting their innovations.
- By obtaining a patent, an inventor secures exclusive rights to produce, use, sell, or license their invention, preventing others from doing so without permission.
- This legal protection is granted for a limited time, usually 20 years, in exchange for a detailed public disclosure of the invention.
- which contributes to broader technological and scientific advancements.

To qualify for a patent, an invention must be:

1. **Novel**: Entirely new and not publicly known before.
2. **Non-obvious**: It must involve an inventive step that isn't an obvious improvement over existing technology.
3. **Useful**: It must have practical applicability and provide some kind of benefit.

The patent process includes submitting a detailed application to a patent office, such as the USPTO (United States Patent and Trademark Office) or EPO (European Patent Office).

Once granted, the patent gives the inventor exclusive rights within the specific region or country, making patents a territorial right.

TYPES OF PATENT

There are three main types of patents

1. Utility Patents

- **Definition**: Protect new and useful inventions or discoveries, including processes, machines, articles of manufacture, or compositions of matter. This type of patent is the most common.
- **Examples**: Medical devices, software algorithms, electronic circuits, pharmaceuticals, chemical compounds, manufacturing processes.
- **Duration**: Typically 20 years from the filing date.

2. Design Patents

- **Definition**: Protect the unique visual design or appearance of a product rather than its functional features. Design patents cover the ornamental aspects of an object.
- **Examples**: The shape of a smartphone, a unique car body design, furniture designs, product packaging.
- **Duration**: Typically 15 years from the grant date in the U.S.

3. Plant Patents

- **Definition**: Granted to inventors or discoverers of new and distinct varieties of plants that are asexually reproduced (through methods like grafting or tissue culture, rather than by seeds).
- **Examples**: New varieties of flowering plants, fruit trees, or other plants reproduced by methods like cutting or cloning.
- **Duration**: Typically 20 years from the filing date.

INDIAN PATENT ACT 1970

- It provides inventors with rights to protect their inventions, allowing them exclusive control over the production, sale, and use of their inventions for a limited period, typically 20 years.
- This Act was created to support innovation, encourage research, and ensure that new inventions can be shared publicly after the patent expires.

The Indian Patent Act, 1970

1. Types of Patents:

- **Product and Process Patents**: The Act initially only allowed process patents for drugs, food, and chemicals (protecting the way products are made rather than the products themselves).
- In 2005, it was amended to allow **product patents** as well, meaning inventors could patent the final product in addition to the manufacturing process

2. Patent Requirements:

- To be patentable, an invention must be:
  - **New** (not previously known),
  - **Inventive** (not an obvious improvement), and
  - **Useful** (can be practically applied).
- Certain things cannot be patented, like scientific theories, medical treatments, and natural plants or animals.

3. Patent Duration:

- A patent is generally valid for **20 years** from the filing date, after which the invention enters the public domain for everyone to use.

4. Rights of Patent Holders:

- Patent holders have exclusive rights to use, produce, and sell their invention in India. They can also license these rights to others.
- Patent holders must work their invention in India, meaning they should make it available in the country.

5. Compulsory Licensing:

- Under certain conditions, the government can allow others to make and sell a patented product without the patent holder's permission. This is called **compulsory licensing** and can be done when:
  - The invention is not available at a reasonable price,
  - The invention isn't sufficiently available in India, or
  - There is a public health need.

6. Patent Application Process:

- The application goes through these steps:
  - **Filing**: Submit the application with all invention details.
  - **Examination**: The Patent Office checks if the invention qualifies.
  - **Publication**: Applications are made public after 18 months.
  - **Opposition**: Others can oppose the patent before or after it's granted if they believe it doesn't meet requirements.

7. Amendments to Meet International Standards:

The Act has been amended to meet international standards, including rules from the World Trade Organization (WTO) under the TRIPS Agreement, which ensures Indian patents are recognized globally.

Why It Matters

- The Indian Patent Act of 1970 strikes a balance between supporting inventors and ensuring that essential products (like medicines) remain accessible.
- By setting clear guidelines and including provisions like compulsory licensing, the Act protects public interest while encouraging innovation and investment.

RECENT AMENDMENTS

- The Indian Patent Act of 1970 has undergone several recent amendments to streamline the patent process, support inventors, and align with global intellectual property standards.
- Some key changes were introduced in the 2024 amendments:

1. Accelerated Examination Timeline:

- The time to file a Request for Examination (RFE) was reduced from 48 months to 31 months from the priority date.
- This aims to reduce delays in the patent approval process and manage backlog more effectively, allowing inventors faster access to patent rights

2. Digitalization of Processes:

- The amendments encourage digital filing and communication, making patent applications easier to manage and access across jurisdictions.
- This step helps reduce paperwork and increases efficiency in tracking patent statuses and compliance updates

3.Introduction of Certificate of Inventorship:

- inventors can receive formal recognition for their contributions, allowing their names to appear on the patent certificate.
- This not only credits inventors but can also enhance their reputation and career opportunities

4. Revised Submission of Working Statements:

Instead of yearly statements, patentees now need to submit a working statement every three financial years, easing the administrative burden on patent holders and simplifying compliance

5. Changes in Opposition Proceedings:

- The 2024 amendments introduced a fee for pre-grant oppositions to deter frivolous filings, with responses from the Controller required within a shorter time.
- This allows the opposition process to become more efficient and less disruptive to genuine applicants

WIPO Treaties

The **WIPO (World Intellectual Property Organization)** administers several international treaties designed to simplify and harmonize the protection of intellectual property (IP) rights across member countries.

Here's a simple overview of the key treaties:

1. Patent Cooperation Treaty (PCT)

- This treaty allows inventors to file a single patent application that can be recognized in multiple countries.
- It simplifies the process of getting international patent protection and delays the need to file separate applications in each country.

2. Madrid Agreement and Protocol

- These treaties help businesses protect their trademarks in multiple countries with just one application.
- It makes the trademark registration process quicker and less expensive for global businesses.

3. Berne Convention for the Protection of Literary and Artistic Works

- This treaty ensures that works like books, music, and art are automatically protected by copyright in all member countries. No formal registration is needed; creators automatically receive copyright protection when their work is created.

4. Hague Agreement for Industrial Designs

- The Hague Agreement allows designers to register their designs in multiple countries with a single application, ensuring that their visual designs (like product shapes, patterns, etc.) are protected internationally.

5. Geneva Convention for Phonograms

- This treaty protects the rights of producers of sound recordings (like music albums or other phonograms), ensuring they have control over the reproduction and distribution of their recordings worldwide.

- **6. WIPO Copyright Treaty (WCT)**
- The WCT extends copyright protection to digital works, including software and online content, ensuring that creators' rights are upheld in the digital world.
- **7. WIPO Performances and Phonograms Treaty (WPPT)**
- This treaty protects performers (like musicians or actors) and producers of sound recordings. It ensures they have rights over the digital distribution of their performances and phonograms.

BUDAPEST TREATY

- The **Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure** (1977) is an international agreement that simplifies the process of patenting inventions that involve microorganisms.

Purpose:

- The Treaty allows inventors to deposit microorganisms (such as bacteria, fungi, or viruses) in a recognized International Depositary Authority (IDA) instead of describing them in detail in the patent application.
- This is particularly useful for patenting biological inventions where a detailed description of the microorganism may not be possible.

Key Points:

1. **Deposit of Microorganisms**: If a patent application involves a microorganism, inventors can deposit a sample of it with an IDA. This deposit serves as proof of the existence of the microorganism, ensuring the invention is available for examination.
2. **International Recognition**: A microorganism deposited under the Budapest Treaty is recognized in all member countries, which simplifies the process of patenting in multiple countries.
3. **Access and Availability**: Once deposited, the microorganism is made available to patent examiners and other authorized entities, ensuring that it is available for scientific study, reproduction, or use by others under specific conditions.
4. **Member States**: The treaty has over 80 member countries, which includes most of the world's leading economies. This makes it a key tool for protecting biological inventions globally.

PATENT COOPERATION TREATY

The **Patent Cooperation Treaty (PCT)** simplifies the process for inventors who want to protect their invention in multiple countries. Here's how it works:

1. **Single Application**: Instead of filing separate applications in each country, you file one international application under the PCT. This application is recognized in over 150 countries.
2. **International Search**: After filing, an international authority conducts a search to find any existing patents related to your invention. This helps you understand whether your invention is likely to be patented in different countries
3. **Time to Decide**: The PCT gives you up to **30 or 31 months** (from the initial filing) to decide where you want to seek patent protection. This means you have more time to assess the market before committing to specific countries.
4. **National Phase**: After the international phase, you enter the **national phase**, where you file your application in individual countries and follow their national patent rules

Implications:

- **Cost-effective**: The initial cost is lower since you only file one application. However, there are additional costs when you enter the national phase.
- **Global Reach**: It makes it easier to protect your invention internationally.
- **Flexibility**: The PCT system gives you time to plan and choose the countries that are most important for your invention.
- **Better Search Results**: The international search helps you identify any issues early on, saving time and effort later

Bioenterpenurship

Role of a Country Patent Office:

The role of a Country Patent Office is to manage and regulate the patent system within a country. Its primary responsibilities Include:

1. **Examination and Granting of Patents**: The office reviews patent applications to assess whether they meet the requirements for patentability, such as novelty, inventiveness, and industrial applicability. If the application meets these criteria, the office grants a patent, giving the inventor exclusive rights to the invention for a specific period.
2. 2. **Maintaining Patent Records**: The office keeps detailed records of all patents filed and granted, including public access to patent databases. This helps in transparency and allows others to research existing patents, which is crucial for avoiding infringement.

3. **Policy Implementation and Updates**: The office is responsible for implementing national patent laws and adapting to international agreements or treaties. It may also provide input on changes to intellectual property (IP) laws and policies.

4. **Providing Patent Information and Education**: Many patent offices provide resources and guidance to help inventors understand the patent process, including educational programs on IP rights, patent searching, and filing procedures.

5. **Supporting Innovation and Economic Growth**: By protecting inventors' rights, the patent office encourages innovation, investment, and economic growth within the country.

- 6. **Handling Disputes and Appeals**: Some patent offices handle disputes related to patent infringement or appeals against decisions made in the examination process.
- Overall, a Country Patent Office plays a vital role in fostering an environment that encourages innovation while balancing public access to technological advancements.

Filing of a patent application

Filing a Patent Application is the process of submitting a formal request to a patent office to grant a patent for an invention. Here are the key steps involved:

1. Preparation of the Application:

Description of the Invention: A detailed description of the invention, including its purpose, components, and how it works, is required.

Claims: These are statements that define the scope of the patent protection sought, outlining what is considered the novel aspect of the invention.

Drawings (if necessary): Diagrams, sketches, or technical drawings are often included to illustrate the invention clearly.

Abstract: A brief summary of the invention.

2. Choosing the Type of Patent Application:

Provisional Application: Often used to establish an early filing date, it allows inventors time (usually 12 months) to further develop the invention before filing a complete application.

Complete (or Non-Provisional) Application: A full application that includes all the necessary details and claims for examination by the patent office.

3. Completing Patent Forms:

Patent offices have specific forms for applications, which may include inventor details, disclosures, declarations, and requests for examination.

4. Paying the Fees:

Filing fees, examination fees, and sometimes maintenance fees need to be paid at different stages of the process. The fee structure varies by country and type of patent.

5. Filing the Application:

The application can be filed electronically in most countries, or through paper submission. The date of filing is critical as it establishes the “priority date,” which determines the invention’s novelty compared to others.

6. Examination Process:

After filing, the application undergoes a formal and substantive examination, where patent examiners assess its novelty, non-obviousness, and industrial applicability.

7. Publication of the Application:

In many countries, the application is published after a certain period (typically 18 months), making the details of the invention available to the public.

8. Granting of Patent:

If the application meets all requirements, the patent office grants the patent, giving the inventor exclusive rights to the invention for a specified term, usually 20 years from the filing date.

9. Maintaining the Patent:

Annual maintenance fees may be required to keep the patent in force throughout its term

Precautions before patenting-disclosure/non-disclosure:

Before filing for a patent, inventors must carefully consider disclosure and non-disclosure to ensure that the invention’s novelty and patentability are not compromised. Here are key points to consider as precautions:

1. Avoid Premature Disclosure: Publicly disclosing an invention (through publications, presentations, or sales) before filing can lead to a loss of patent rights. Most patent systems require inventions to be new, and public disclosure may result in a lack of novelty.

2. Use Confidentiality Agreements: When sharing details with potential investors, partners, or collaborators, inventors should use Non-Disclosure Agreements (NDAs) to protect the invention’s confidentiality. This can prevent others from sharing or misusing the idea before it is patented.

3. File a Provisional Patent Application: In some cases, filing a provisional application can secure an early filing date without revealing all details. This gives inventors a “patent pending” status and up to 12 months to finalize their complete application.

4. Limit Sharing to Essential Details Only: Share only the necessary information with others and avoid disclosing core aspects of the invention until the patent is filed. This helps maintain novelty while still exploring potential partnerships.

5. Research Patent Requirements in Relevant Jurisdictions: Different countries have varying rules on prior disclosure. For example, some countries offer a “grace period” where disclosures within a certain timeframe before filing do not affect patentability. Understanding these rules can help protect the invention in multiple markets.

Patent application-forms and guidelines including those of National Bio-diversity Authority (NBA) and other regulatory bodies, fee structure, time frames

1. **Patent Application Forms and Guidelines**:

Application Forms: Patent offices provide specific forms to document the invention details, such as the inventor's information, a description of the invention, claims, and, if needed, drawings. Forms vary based on the type of application (provisional or complete) and the type of patent (e.g., utility or design).

National Biodiversity Authority (**NBA**): In India, inventions involving biological resources or traditional knowledge require NBA approval. The NBA regulates access to India's biological resources, ensuring fair sharing of benefits and preventing biopiracy.

Other Regulatory Bodies: Depending on the invention type, other agencies may have guidelines, such as those for genetic resources, pharmaceuticals, or traditional knowledge, which must be complied with in addition to the patent office requirements.

2. **Fee Structure**:

Filing Fees: Fees are required at the time of filing the application. Costs may vary based on applicant type (e.g., individuals, small entities, or large companies).

Examination Fees: After filing, an examination fee is required for the patent office to assess the application for patentability.

Maintenance Fees: Once granted, patents often require annual renewal or maintenance fees to keep them in force. The fee structure may vary by country and invention type.

3. **Time Frames**:

Filing Date: Establishes the priority date for the invention and its novelty.

Publication: In many countries, the application is published 18 months after the filing date, making it public.

Examination: The examination process timeline varies, but applicants can sometimes request expedited examination

Grant and Maintenance: If the patent is granted, it usually remains valid for up to 20 years from the filing date, subject to the payment of maintenance fees.

BIO-ENTREPRENEURSHIP SEMINAR

Types of patent applications: Provisional and Complete specifications; PCT and conventional patent applications; International patenting requirements, procedures and costs

PATENT:

- A patent is intellectual property that gives the holder exclusive rights to a particular invention or innovation.
- This means that the patent owner can prevent others from making, using, selling, or distributing the invention without their permission.
- Generally, these rights last for **20 years** from the date the patent is filed.

TYPES OF PATENT:

There are three main types of patents:

1.Utility Patents: For new inventions or discoveries related to processes, machines, or compositions of matter.

2.Design Patents: For new, original, and ornamental designs for articles of manufacture (e.g., the shape or appearance of a product).

3.Plant Patents: For new, distinct, and asexually reproduced plant varieties.

1. Utility Patents (Invention Patents)

- **What it protects**: Utility patents are the most common type and protect new inventions or discoveries that have a **functional** or **technical** aspect.
- They cover **processes**, **machines**, **articles of manufacture**, or **compositions of matter** that are novel, useful, and non-obvious.

Examples:

•A new method for manufacturing a specific material.

•A machine or device that automates a task.

•A new chemical compound or pharmaceutical drug.

Duration:

•Typically lasts for **20 years** from the date the application is filed, though maintenance fees are required to keep the patent active.

Requirements:

•**Novelty**: The invention must be new and not previously disclosed to the public.

•**Non-obviousness**: The invention must not be obvious to someone with ordinary skill in the relevant field.

•**Utility**: It must be useful or have practical applications.

•**Disclosure**: The inventor must fully describe how to make and use the invention so others skilled in the field can replicate it.

2. Design Patents

- **What it protects**: Design patents protect **the ornamental appearance** of an object, not its function. This means they focus on the way something looks rather than how it works.
- A design patent can be granted for the shape, surface decoration, or overall visual aesthetic of a product.

Examples:

•The unique shape of a bottle or packaging.

•The decorative elements of furniture, like a chair or a lamp.

•The design of a logo or graphic elements.

Duration:

•Typically lasts for **15 years** from the date the patent is granted in the U.S. (it used to be 14 years but was extended in 2015).

Requirements:

•**Novelty**: The design must be original and not previously disclosed.

•**Ornamentality**: The design must be primarily ornamental (not functional), though it can be integrated with the functionality of the item.

•**Non-obviousness**: Like other patents, the design must not be an obvious modification of existing designs.

3. Plant Patents

What it protects:

- Plant patents protect **newly discovered or created plant varieties** that are asexually reproduced, meaning the plant can be reproduced through methods like grafting, cutting, or tissue culture (not through seeds).

Examples:

•A new breed of rose with unique colors and patterns.

•A genetically modified variety of fruit tree that produces higher yields.

•A new type of houseplant with a unique characteristic, like a color-changing flower.

Duration:

•Plant patents typically last for **20 years** from the date of filing.

Requirements:

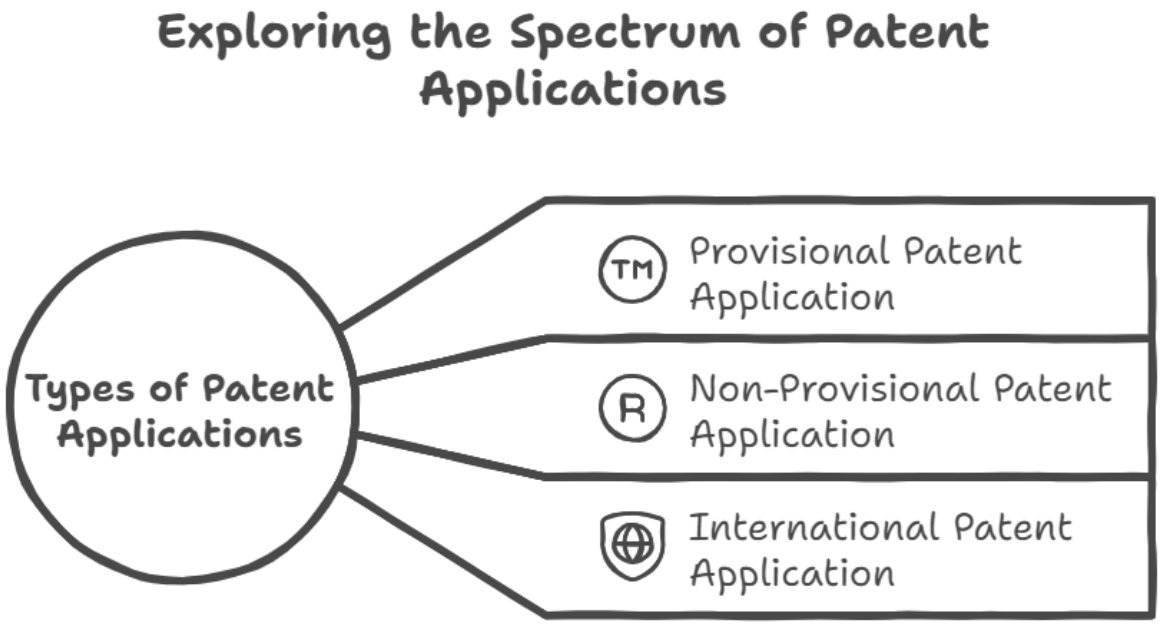
•**Novelty**: The plant variety must be new and distinct from all previously existing plants.

•**Asexual Reproduction**: The plant must be able to reproduce through asexual methods, ensuring its unique traits can be reliably passed on to future generations.

•**Non-obviousness**: The plant variety must not be an obvious variation of existing plants.

•**Distinctiveness**: The plant must have distinguishable characteristics from other known varieties.

PATENT APPLICATION:



- A **patent application** is a formal request submitted to a patent office seeking legal protection for a new invention or innovation.

  cludes a detailed description of the invention, ms defining its scope, and any necessary wings or diagrams.

  application initiates the process of obtaining a ent, which grants exclusive rights to the ntor for a set period, typically 20 years if the lication is approved.

- There are different types of patent applications, such as **provisional**, **non-provisional**, **PCT (international)**,

1. Provisional Patent Application

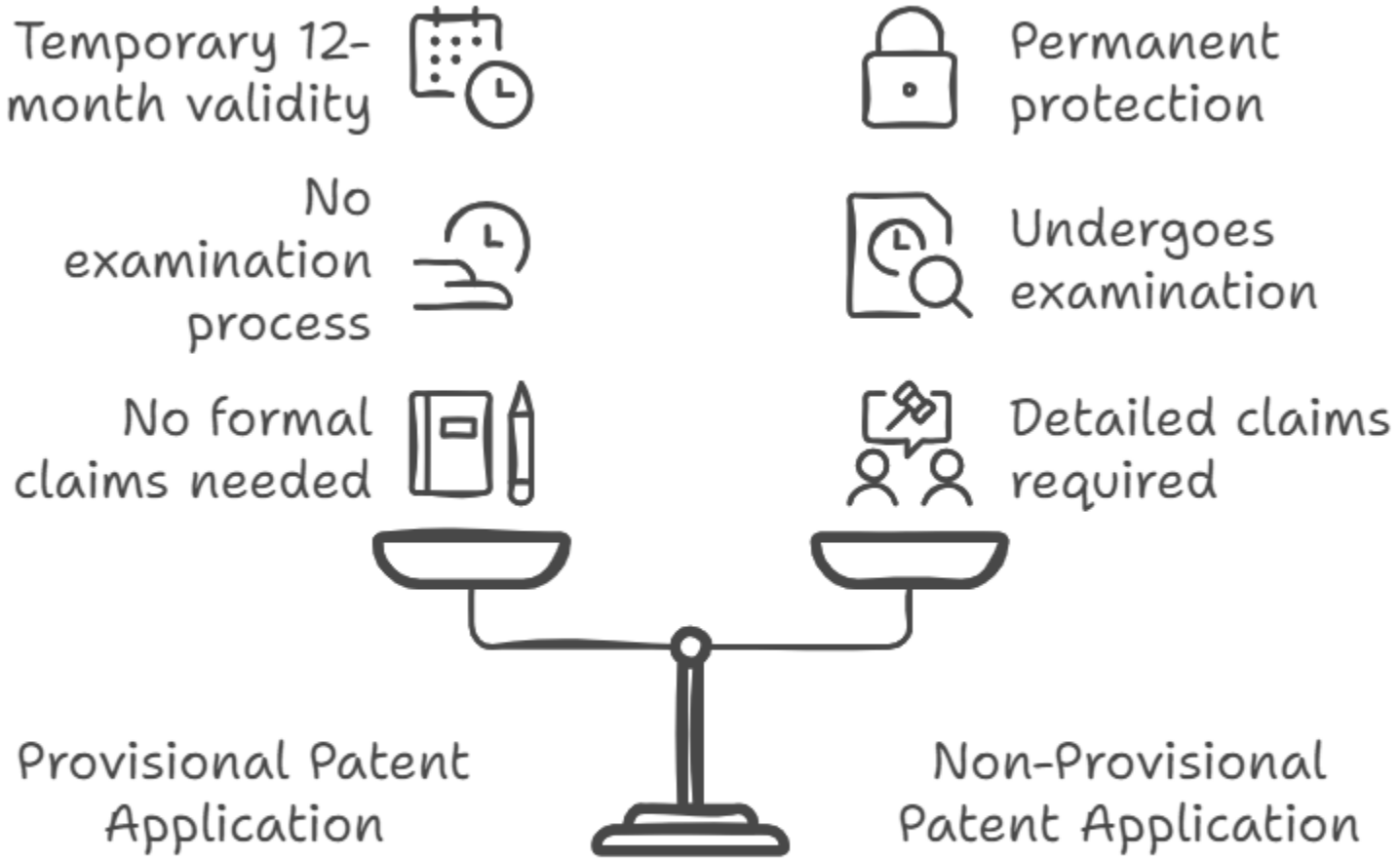
A **provisional patent application (PPA)** is a preliminary filing that allows inventors to secure a filing date for their invention without having to meet all the requirements of a full patent application. It essentially gives you "patent-pending" status and a year to refine your invention and prepare a non-provisional application.

Key Features:

•**No formal patent claims required**: Unlike a non-provisional application, a provisional application doesn't require the detailed claims or formal legal language associated with a full patent.

•**No examination**: The provisional application is not examined by the patent office.

•**Temporary**: It expires after **12 months**, at which point you must file a non-provisional application to continue the process.



Compare provisional and non-provisional patent applications.

2. Non-Provisional Patent Application

The **non-provisional patent application** (also known as the **regular patent application**) is the full, formal application that begins the process of examination by the patent office. It is the application that will ultimately lead to the issuance of a patent if approved.

Key Features:

•**Complete details**: This application must include a detailed description of the invention, including drawings (if necessary), a set of claims (defining the scope of protection), and an abstract.

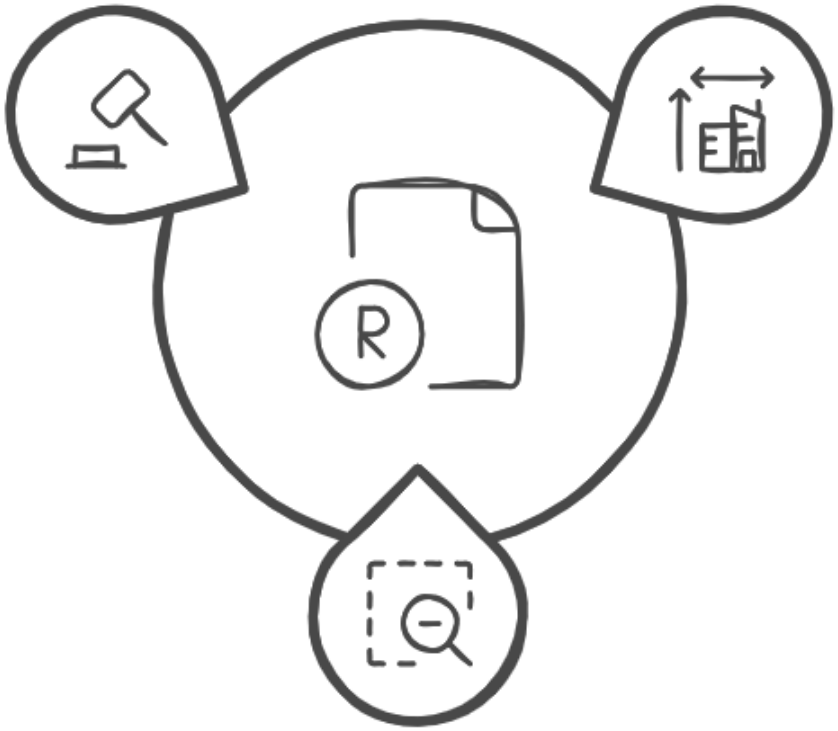
•**Examination**: The application will be examined by a patent examiner to determine if the invention meets the requirements of novelty, non-obviousness, and utility.

•**Formal**: Must meet strict legal and technical standards, including specific language for claims and disclosure.

Components of a Non-Provisional Patent Application

Formal Standards

Adheres to legal and technical requirements



Complete Details

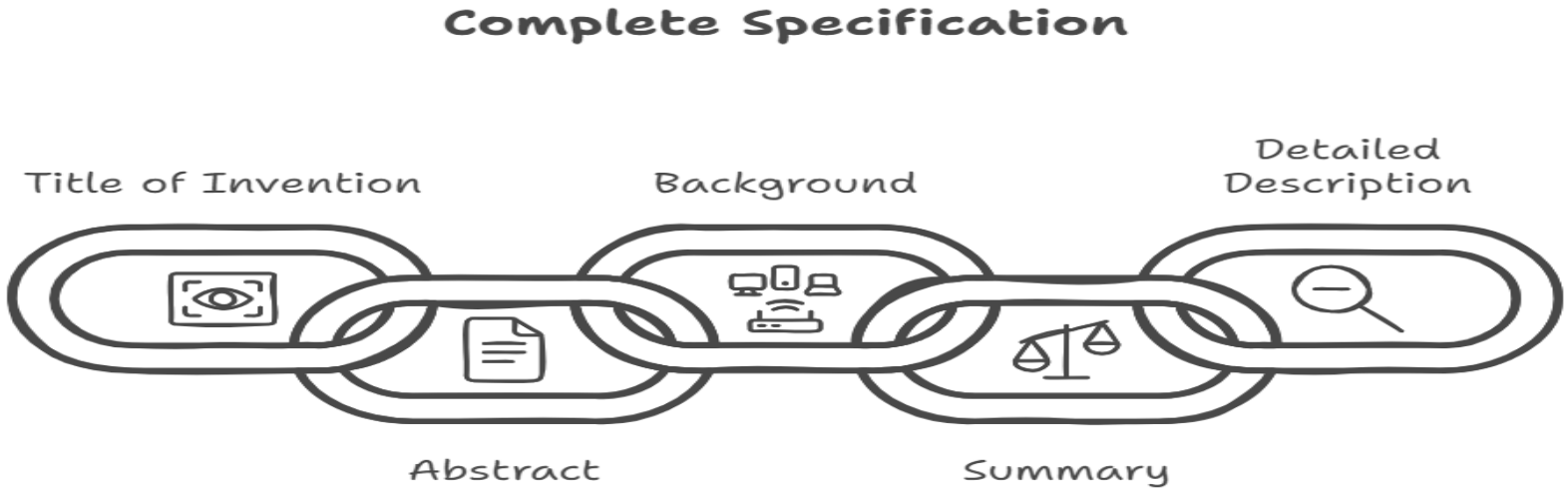
Includes detailed description, drawings, claims, and abstract

Examination

Evaluated for novelty, non-obviousness, and utility

Complete Specification (or Complete Patent Application)

A **complete specification** is a fully detailed and formal document submitted as part of a patent application. It is the next step after filing a provisional specification (if applicable) and is necessary to obtain a granted patent.



Requirements of a Complete Specification:

•**Title of the invention**: A clear and precise title that reflects the essence of the invention.

•**Abstract**: A brief summary of the invention, usually around 150-250 words.

•**Background of the invention**: A description of the problem the invention addresses, along with a review of the prior art.

•**Summary of the invention**: A concise statement explaining the core aspects and benefits of the invention.

•**Detailed description**: A thorough explanation of how the invention works, with enough detail to allow someone skilled in the field to make and use the invention.

•**Claims**: Formal statements that define the scope of the patent's protection.

•**Drawings or diagrams** (if applicable): Visual representations that help explain the invention.

•**Any additional technical material**: For biotech or pharmaceutical inventions, for example, this could include sequence listings.

Key Features of Complete Specification:

•**Detailed Description**: The complete specification includes a **detailed and thorough description** of the invention, explaining how it works, what problem it solves, and how it differs from prior art.

•**Patent Claims**: This section includes the **claims**, which define the legal scope of the invention and determine what aspects of the invention are protected by the patent. Claims are carefully drafted to ensure broad protection while being specific enough to distinguish the invention from existing technologies.

•**Drawings/Diagrams**: If the invention is complex, the complete specification may include **drawings** or **diagrams** to help explain the invention clearly. These must be referenced within the detailed description.

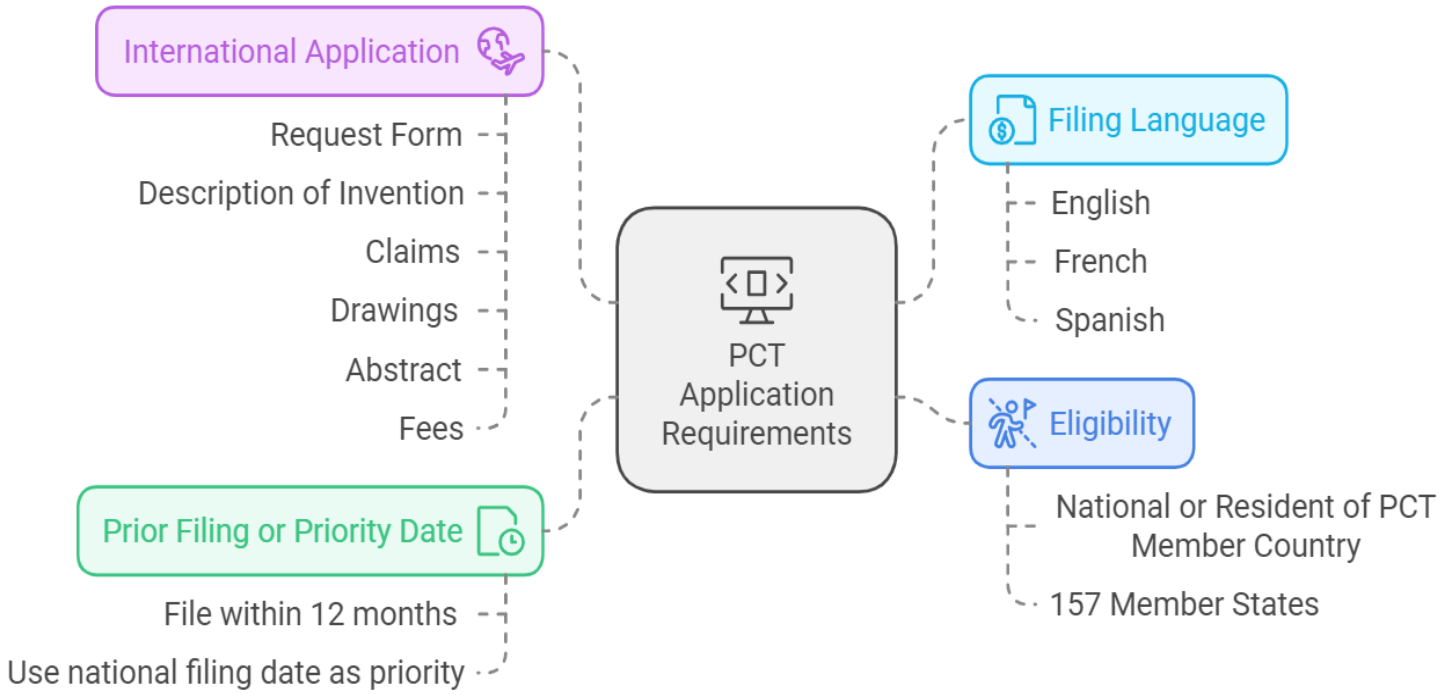
•**Formal Filing**: The complete specification is the **formal document** that is examined by the patent office. Once filed, it is subject to an official examination process, where the patent examiner will assess whether the invention meets the requirements of patentability (novelty, inventive step, and utility).

•**Priority Date**: The filing date of the complete specification (whether it follows a provisional or not) is considered the **priority date** for the invention.

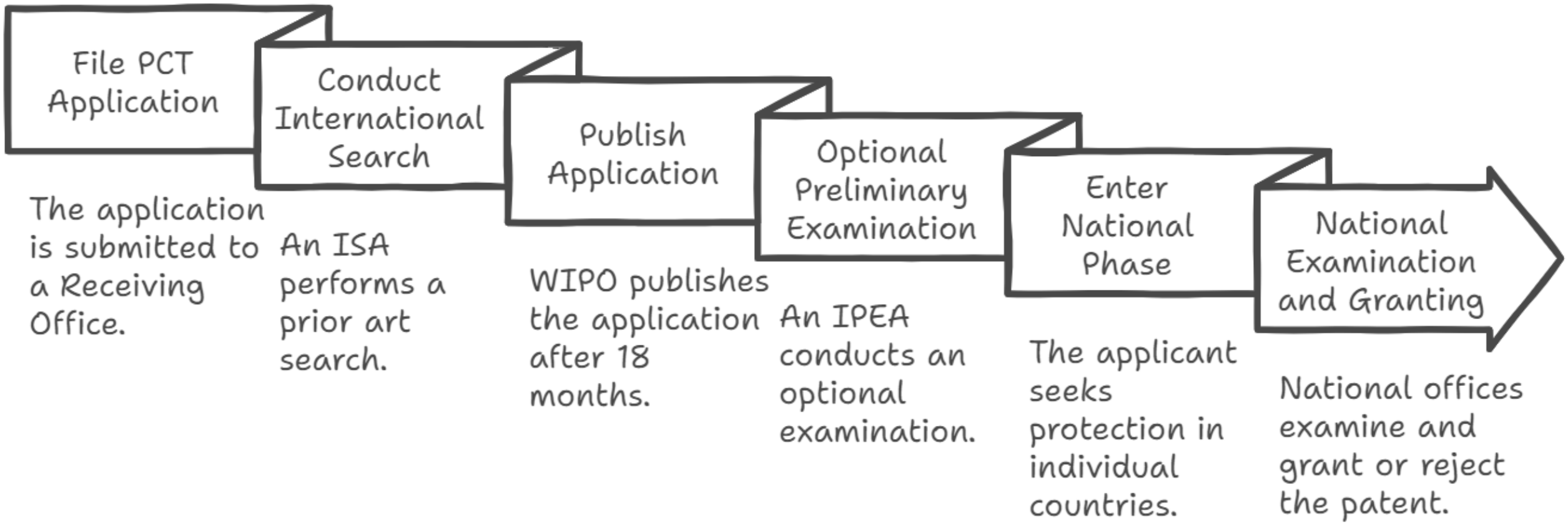
Feature	Provisional Specification	Complete Specification
Purpose	Establishes a filing date and "patent pending" status.	Provides full disclosure for patent examination and protection.
Claims	No formal claims required.	Includes formal claims that define the scope of the invention.
Detailed Description	Basic description of the invention.	Detailed and thorough explanation of the invention.
Filing Date	Establishes the priority date for the invention.	The filing date is considered the official priority date.
Examination	Not examined by the patent office.	Subject to examination by the patent office.
Time Limit	Must be followed by a complete specification within 12 months.	Can be filed at any time and is not subject to a time limit.
Cost	Lower filing cost than a complete specification.	Higher cost due to the need for a full, formal document.
Drawings/Diagrams	Optional, not required.	Required if the invention involves complex designs.

International Patent Application: Requirements, Procedure, and Cost:

- An **international patent application** allows an inventor to seek patent protection for their invention in multiple countries through a unified process.
  This is made possible by the **Patent Cooperation Treaty (PCT)**, an international treaty that streamlines the process of obtaining patent protection in member countries.



PCT Patent Application Process



Cost Breakdown (Approximate):

Item	Cost Range (USD)
Basic Filing Fee (WIPO)	$1,500 - $2,000
Search Fee (ISA)	$150 - $2,000
Preliminary Examination Fee	$500 - $2,000
National Phase Entry Fees	$400 - $2,500 (per country)
Translation Costs	$1,000 - $5,000 (per country)

REFERENCE:

"Principles of Intellectual Property" by Richard Stim
"The PCT Handbook: A Guide to the Patent Cooperation Treaty" by World Intellectual Property Organization (WIPO)

Financial assistance for patenting-introduction to existing schemes; publication of patents-gazette of India, status in Europe and US; patent infringement-meaning, scope, litigation, case studies and examples

Financial assistance for patenting: Introduction to Existing Schemes

- Patenting can be a costly process, and numerous schemes have been established to provide financial assistance and support for inventors and small businesses. In India, various government initiatives and programs are available to help innovators navigate the patenting landscape:

Startup India: Launched by the Government of India, this initiative supports startups by offering financial assistance and benefits, including patent filing support.

Support for International Patent Protection in Electronics & IT (SIP-EIT): This scheme assists companies in filing international patents by providing financial support.

R&D Support in Biotechnology: The Department of Biotechnology provides incentives for patenting in biotechnology sectors.

Micro, Small & Medium Enterprises (MSMEs): The MSME Development Act offers financial assistance and subsidies for patent filing.

Publication of Patents: Gazette of India

- Patents in India are published in the Patent Journal, which is released weekly by the Indian Patent Office.
- This publication includes:- Patent applications that have been accepted and are now open for public inspection.
- Details such as patent number, title, name of applicants, and abstracts of the patents.

Status in Europe

- In Europe, the European Patent Office (EPO) publishes its patent applications in the European Patent Bulletin.
- Similar to India, this bulletin provides a comprehensive overview of pending and granted patents.
- The process in Europe usually involves:
- Pre-grant publication after 18 months from the filing date.
- The possibility for inventors to withdraw their applications before publication to maintain confidentiality.

Status in the US

- In the US, patents are published in the Official Gazette of the United States Patent and Trademark Office (USPTO).
- The US system allows for:-
- Automatic publication of patent applications 18 months post-filing, unless secrecy is requested.
- Full access to information concerning patent applications and granted patents, enhancing transparency.

Patent Infringement: Meaning and Scope

- Patent infringement occurs when a party uses, sells, offers for sale, or manufactures a patented invention without the patent holder's permission.
- The key considerations in patent infringement include:-
- Direct infringement: Involves the unauthorized use or exploitation of a patented invention.
- Indirect infringement: Includes contributory or induced infringement, where an entity contributes to or encourages the infringement of a patent.

Patent Litigation

- Patent litigation can be complex and may involve:- Filing lawsuits in federal court.
- Seeking remedies, which can include injunctions, monetary damages, and attorney fees.
- Engaging in settlement negotiations or alternative dispute resolution (ADR) methods.

Case Studies and Examples

- **Apple vs. Samsung:** A notable patent infringement case where Apple accused Samsung of copying its iPhone design and features. The litigation spanned multiple jurisdictions and led to significant damages awarded to Apple.
- **Novartis AG vs. Union of India**: A landmark case where Novartis attempted to patent its cancer drug Glivec in India. The Supreme Court of India ruled against Novartis, emphasizing the balance between innovation and public health, highlighting the complexities of patent law.

- **Research In Motion (RIM) vs. NTP Inc**: This case involved RIM, maker of BlackBerry devices, accused by NTP of infringing patents related to wireless e-mail technology. The case was settled for around $612 million, showcasing the potential financial risks associated with patent infringement.

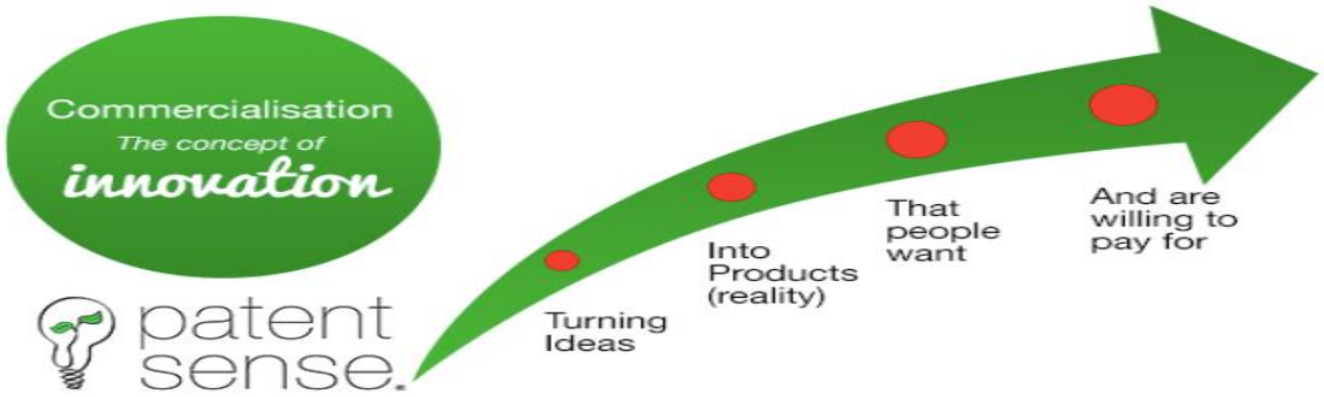
COMMERCIALISATION OF PATENTED INNOVATIONS LICENSING- OUTRIGHT SALE, LICENSING, ROYALTY PATENTING BY RESEARCH STUDENTS AND SCIENTISTS.

COMMERCIALISATION OF PATENTED INNOVATIONS

- The process of commercialization of patent innovations is the transformation of research and development results into innovative products and services on the market in order to meet the needs of innovation consumers and to generate income and profits as a result of their sales.
- At the present stage of development, the process of commercialization of the results of innovation should be considered at almost all stages of the innovation process, including

1. the search
2. examination
3. selection of innovations
4. distribution and consolidation of the legal rights of their owners
5. further modernization and maintenance of the implementation and operation of the innovation product

- The most important segment of the intellectual property market is the commercialization of patents. The complexity of the commercialization process in this case lies in the valuation of the patent.
- Evaluation of the commercial value and value of patents, has always been reduced to their assessment using financial and market indicators.



- Analyzing the benefits of using patent citation indices in scientific research, the most important in the context is the effect of patent citation on their value.
- Using quotes in magazines, patents and other sources helps determine whether the end user has achieved a scientific product, is the organization of high-performance in its industry.
- The indicator "analysis of patent quotations "allows us to explore the impact of science on technology, allows us to determine the significance and effectiveness of the results of creative work of enterprises ,organizations and institutions.

OUTRIGHT SALE

- In the context of licensing, an "outright sale" refers to the complete transfer of rights from the original owner (licensor) to a buyer (licensee). This differs from traditional licensing, where the licensor retains ownership of the intellectual property (IP) and simply grants permission to the licensee to use it under specified conditions.
- Here's how outright sale compares with regular licensing:
- 1**.Ownership Transfer**: In an outright sale, ownership of the IP or product is permanently transferred to the buyer, who gains full control over it. In a traditional license, the licensor retains ownership.
- 2. **Rights and Restrictions**: In an outright sale, the buyer can usually use the IP or product without restrictions and may even re-license or resell it. In licensing, the licensee's usage rights are limited by the terms set by the licensor.

- 3.**Revenue Structure**: Outright sales generally involve a one-time, lump-sum payment, whereas licensing often involves ongoing payments (e.g., royalties, fees).
- 4. **Risk and Responsibility**: An outright sale shifts all risk and responsibility to the buyer. In licensing, the licensor may still bear certain responsibilities (e.g., IP maintenance, enforcement).
- 5**. Future Developments**: If further development or improvements are made after an outright sale, the original owner typically has no stake in them. In licensing, the licensor may have rights to improvements made by the licensee, depending on the agreement.
- An outright sale can be appealing when the original owner wants immediate revenue or is no longer interested in maintaining or developing the IP.

LICENSING

- The term licensing agreement refers to a legal, written contract between two parties wherein the property owner gives permission to another party to use their brand, patent, or trademark.
- The agreement, which is set between the licensor (the property owner) and the licensee (the permitted party), contains details on the type of licensing agreement, the terms of usage, and how the licensor is to be compensated.
- Contract types vary based on what is being licensed.

- **Examples of Licensing Agreements**
- Licensing agreements are found in many different industries.
- An example of a licensing agreement is a contract between the copyright holders of software and another company, allowing the latter to use the computer software for their daily business operations.
- An example of a licensing agreement in the restaurant space would be when a McDonald's franchisee has a licensing agreement with the McDonald's Corporation that lets them use the company's branding and marketing materials.

ROYALTY

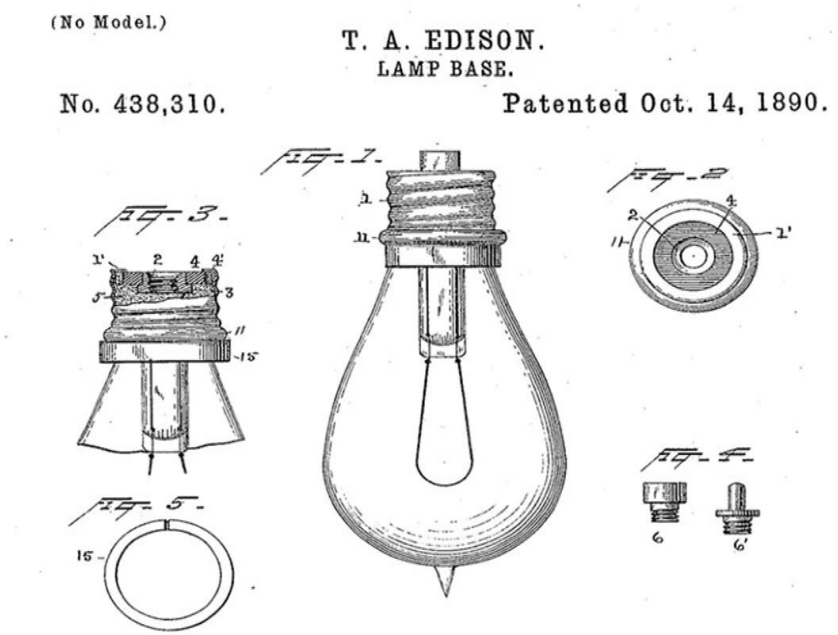
- Royalty refers to a contractual payment by a person for the use of assets belonging to another person.
- The payment includes royalty for the use of intangible assets, such as copyrights, trademarks, or franchise model agreements.
- Royalty is also paid for the use of natural resources, such as mining leases. Royalty agreements generally give limited right to use assets or resources.
- The person paying royalty generally pays it as a percentage of the turnover or gross receipt. Royalty agreements are legal in nature and can involve elaborate negotiations on the terms and conditions of the grant of right to use.

EXAMPLES

- The commonly known royalty agreements are music rights or publishing rights of books in return for a percentage of the sales.
- Royalty is a passive income stream, providing benefit to people who create intangible assets or work of art. Musicians owning music rights, cinema rights, and authors often grant the right to use their copyrighted material and earn income.
- In the case of non-renewable energy sources, royalties are generally paid to the government of the State.
- Also, in the case of extraction of oil and natural gas, royalties are paid to the State.
- In respect of television channels, royalties are paid by television channels to satellite companies.

PATENTING BY RESEARCH STUDENTS AND SCIENTISTS

- **A** patent is a vital intellectual property right that safeguards new inventions and non-obvious discoveries. It is crucial for academia, research, start-ups, and industries to prioritize patents as a means to foster innovation.
- Researchers should keep in mind three important elements that make an idea patentable.
- First, the invention must be new: the same idea can’t have been published before in any form.
- Second, there must be some inventive step of ‘non-obviousness’.
- Third, the disclosure in a patent must be sufficient for a skilled person to reproduce the invention with only routine effort.



Role of mentors

- In academic and research institutions, where researchers are encouraged to publish in prestigious journals and conferences, filing patents can be simplified.
- Mentors should guide researchers to consider patent applications early, which can later be transferred to their parent organizations.
- Academic environments should either establish active IP cells with qualified staff, including patent attorneys, or seek assistance from reputable external agencies that must not only help in patent filing but also aid in marketing the innovations and securing royalties for the institution.

- Inventors can file patents individually, the guidance of patent attorneys is invaluable. These professionals ensure patenting ideas are comprehensive and effectively capture the essence of the invention.
- Encouraging the pursuit of patents and IPs will attract young innovators and drive the development of cutting-edge technologies and globally competitive products.

University and organizational rules in India and abroad.
Collaborative research, Benefit and credit sharing

University and Organizational rules in India

- Institutions like the University Grants Commission (UGC) in India mandate a code of conduct for faculty, staff, and students, which includes anti-ragging policies, guidelines on plagiarism, and proper classroom behavior.
- Universities enforce strict guidelines on plagiarism, often requiring original work, especially for research.
- Research standards are growing stricter, with emphasis on publishing in peer-reviewed journals and avoiding predatory publications. The UGC provides a list of approved journals.

Rules in abroad

- Many international universities follow a similar code, including zero tolerance for bullying, harassment, or academic misconduct. Some countries have stricter policies on diversity, inclusion, and discrimination.
- Western universities, for example, may require students to take courses or sign agreements about academic integrity.
- IP is taken very seriously in research-driven institutions, with clear guidelines on IP ownership, especially in funded projects, often providing inventors with a share of royalties.

Collaborative research- Backward IP

- Backward IP refers to pre-existing IP that each party brings into the collaboration.
- Each collaborating party retains ownership of its backward IP unless otherwise agreed upon
- Licensing agreements for backward IP are typically restrictive, designed to ensure the IP is only used for project-specific purposes and not for broader commercial or research applications by the other party.
- Collaborators often sign confidentiality agreements to protect backward IP, limiting disclosure and usage strictly to the project's scope.

Forward IP

- Forward IP, or foreground IP, refers to the IP created as a direct result of the collaborative research.
- Ownership and Rights: Ownership of forward IP can vary depending on the terms of the collaboration agreement
- Joint Ownership: Both parties co-own the forward IP, usually with conditions on how it can be used, commercialized, or patented.
- Sole Ownership: One party owns the forward IP, often if they have led the development or provided more resources

Benefit sharing among parties

- Fair distribution of commercial and non-commercial benefits.
- Clear guidelines on credit attribution, including authorship on publications.
- Benefit-sharing arrangements aim to ensure mutual satisfaction among collaborators by fairly distributing both tangible (e.g., profits) and intangible (e.g., credit, expertise) benefits, ultimately enhancing the project's success and sustaining long-term partnerships.

Credit and Attribution

- Joint Ownership and Acknowledgment: Collaborators may jointly own any results or innovations, with shared IP often entailing both parties' names on patents, research outputs, or commercial products.
- Public Acknowledgment: Research agreements may specify that both parties acknowledge each other's contributions in communications about the project, such as in media announcements, scientific talks, or reports.

Commercial Incentives

- Revenue Sharing: If the research leads to a commercial product, such as a drug, technology, or service, revenues (like sales profits, royalties, or license fees) are often shared according to pre-agreed terms.
- Royalties: Some agreements specify royalties on sales of products derived from the collaboration.
- Licensing Agreements: One or both parties may receive licensing rights to the IP developed, allowing them to further develop or commercialize the technology.

Non-Commercial Incentives

- Authorship and Publication Credit: Academic institutions and researchers often receive credit through co-authorship on publications, which enhances academic reputation and contributes to career advancement.
- Recognition and Awards: Collaborators may be credited in announcements, press releases, or award submissions, increasing visibility and recognition within the field.
- Access to Data and Research Tools: Both parties may benefit from shared access to databases, tools, or experimental materials developed during the project, which can enhance ongoing and future research.