

## Definition of Intellectual Property (IP)

Intellectual Property refers to the **legal rights** given to people over the **creations of their minds**. These rights allow the creators to **control and benefit** from their inventions, designs, artistic works, symbols, brand names, and other intellectual creations.

It helps protect **innovative ideas**, **original expressions**, and **unique identities** in various fields such as technology, literature, art, and business.

## Types of Intellectual Property

1. **Patents** – Protect new inventions.

*Example:* A pharmaceutical company develops a new drug and patents it, so no one else can manufacture or sell it without permission.

2. **Copyrights** – Protect original literary, musical, and artistic works.

*Example:* A novelist writes a book, and copyright ensures that no one can publish or sell copies without the author's consent.

3. **Trademarks** – Protect brand names, logos, slogans, and product symbols.

*Example:* The Nike "swoosh" logo is a trademark. It helps consumers identify the product and prevents others from using it.

4. **Industrial Designs** – Protect the visual appearance or shape of products.

*Example:* The unique shape of a Coca-Cola bottle is protected as an industrial design.

5. **Geographical Indications (GI)** – Protect products that have a specific origin and quality.

*Example:* "Darjeeling Tea" is a GI-tagged product that can only be used for tea grown in Darjeeling.

## Importance of Intellectual Property

### 1. Encourages Innovation and Creativity

IP protection gives creators **exclusive rights** for a certain period, which motivates them to create new products, technologies, and works of art. Without protection, others could easily copy their work, discouraging innovation.

**Example:** A pharmaceutical company invests crores in developing a new drug. A patent gives them the right to sell it exclusively, allowing them to recover their investment and profit.

### 2. Promotes Economic Growth

IP rights support industries like **technology, entertainment, fashion, and agriculture**. When creators earn from their IP, it generates **income, employment, and exports**, contributing to national GDP.

**Example:** In the USA, IP-intensive industries contribute over 40% of GDP and millions of jobs.

### **3. Protects the Rights of Creators and Inventors**

IP gives legal ownership to creators, preventing others from copying, selling, or misusing their work. This helps maintain **moral and economic rights**.

**Example:** A film director who owns the copyright can stop others from distributing or broadcasting their movie without permission.

### **4. Builds Brand Value and Reputation**

IP, especially trademarks and designs, helps businesses establish a **strong brand identity**, which differentiates them in the market and builds customer trust.

**Example:** The logo and name of “Amul” are trademarks that represent quality dairy products in India.

### **5. Attracts Foreign Direct Investment (FDI)**

Countries with **strong IP laws** are more likely to attract multinational companies. These companies want to ensure their inventions and brands are protected in international markets.

**Example:** Companies like Microsoft and Samsung invest in countries where their software and designs are protected from piracy.

### **6. Preserves Culture and Traditional Knowledge**

IP also protects traditional knowledge, indigenous art, crafts, and geographical products that are unique to a culture or region.

**Example:** “Kanchipuram Silk Saree” and “Hyderabadi Biryani” are protected through Geographical Indications (GI) that prevent misuse of the name.

### **7. Supports Research and Development (R&D)**

Universities and research institutions use IP rights to **commercialize** their inventions through licensing and technology transfer, helping to fund further research.

**Example:** Indian Institutes like IITs and CSIR file patents for their innovations and license them to industries.

### **8. Enhances Consumer Confidence**

Trademarks and copyrights help consumers identify **genuine and safe products**. This creates trust and promotes ethical business practices.

**Example:** When buying branded medicines, customers trust the quality because of the manufacturer's trademark and regulatory protection.

## Introduction of WTO

The **World Trade Organization (WTO)** is an **international organization** that deals with the **rules of trade** between nations. It aims to ensure that global trade flows **smoothly, fairly, and freely**.

WTO provides a platform for countries to **negotiate trade agreements, settle trade disputes, and monitor trade policies**. It covers trade in **goods, services, and intellectual property**.

- **Headquarters:** Geneva, Switzerland
- **Established:** 1 January 1995
- **Members:** 164 countries (as of 2024)
- **Official Languages:** English, French, Spanish

## History of WTO

### 1. Origin from GATT (1947)

The WTO evolved from the **General Agreement on Tariffs and Trade (GATT)**, which was created in **1947** after World War II. GATT aimed to reduce tariffs and promote free trade among nations.

- GATT was **not a permanent organization**, but a set of trade rules signed by 23 countries.
- It held a series of negotiations (called **rounds**) to lower trade barriers.

### 2. Uruguay Round (1986–1994)

The most important GATT negotiation was the **Uruguay Round**, which lasted from 1986 to 1994. It expanded trade discussions to include:

- **Services (GATS)**
- **Intellectual Property Rights (TRIPS)**
- **Dispute Settlement Mechanism**

This round resulted in the creation of the **World Trade Organization (WTO)** in **1995** to replace GATT.

### 3. Formation of WTO (1995)

- The WTO officially started on **1 January 1995**.
- It brought a **legal and institutional framework** for global trade.
- Unlike GATT, WTO is a **permanent international organization** with a **wider scope** (goods, services, IP rights).

### Key Functions of WTO

#### 1. Administer Trade Agreements

WTO is responsible for **implementing and managing all the multilateral trade agreements** that are signed by member countries. These agreements cover goods (GATT), services (GATS), and intellectual property rights (TRIPS).

- WTO ensures that all countries **follow the rules and obligations** under these agreements.
- It also **reviews and updates agreements** when necessary.

**Example:** WTO ensures that members apply agreed tariff rates and do not impose unfair restrictions on imports.

#### 2. Provide a Forum for Trade Negotiations

WTO serves as a **platform where member countries come together to negotiate trade rules and policies**. These negotiations aim to reduce trade barriers such as tariffs, quotas, and subsidies.

- All decisions are made through **consensus**, giving equal voice to every member.
- These negotiations happen through **ministerial conferences** and **working groups**.

**Example:** The Doha Development Round (2001) was launched to improve trade opportunities for developing countries.

#### 3. Settle Trade Disputes

One of the most important functions of the WTO is to **settle disputes between member countries** when they believe their rights under WTO agreements have been violated.

- WTO provides a **Dispute Settlement Body (DSB)** with a well-defined legal process.
- It helps resolve conflicts through consultations, panels, and appeals.

**Example:** If Country A imposes illegal tariffs on products from Country B, WTO can rule against it and authorize trade retaliation if needed.

## 4. Monitor National Trade Policies

WTO regularly **reviews the trade policies and practices** of its members to ensure **transparency and fairness**.

- This is done through the **Trade Policy Review Mechanism (TPRM)**.
- Reviews are conducted every 2, 4, or 6 years, depending on the size of the economy.

**Example:** WTO may review India's import-export policies to check whether they are consistent with WTO rules.

## 5. Provide Technical Assistance and Training for Developing Countries

WTO offers **technical support, training programs, and legal assistance** to help developing and least-developed countries (LDCs) better understand and implement WTO agreements.

- This helps them **build trade capacity, improve compliance, and participate effectively** in negotiations.
- Special consideration is also given to the needs of developing countries under the principle of **Special and Differential Treatment (S&DT)**.

**Example:** WTO provides training to African countries on how to benefit from the TRIPS agreement while protecting public health.

## Structure of WTO Agreements and Dispute Settlement Mechanism

The World Trade Organization (WTO) was established on January 1, 1995, as a result of the Uruguay Round negotiations. It replaced the General Agreement on Tariffs and Trade (GATT) and serves as the main international body regulating trade between nations. The WTO is based on a legal framework of agreements that guide global trade, ensure transparency, and promote fair competition. These agreements are supported by a strong dispute settlement mechanism to resolve conflicts among member countries.

## Structure of WTO Agreements

The WTO agreements are structured as a “**single undertaking**”, which means all member countries accept all agreements as a single package. The structure is divided into one umbrella agreement and several annexes that address different areas of trade.

## Marrakesh Agreement Establishing the WTO

The **Marrakesh Agreement** is the foundational legal document that created the WTO. It outlines the principles, objectives, and organizational structure of the WTO. All other agreements are annexed to this main agreement, and member countries are legally bound by it.

## **Annex 1: Multilateral Trade Agreements**

Annex 1 is the most important part of the WTO agreement package. It is divided into three sections:

### **Annex 1A – Trade in Goods (GATT 1994 and related agreements):**

This includes the updated General Agreement on Tariffs and Trade (GATT 1994), which deals with international trade in goods. It also includes specific agreements on agriculture, anti-dumping, subsidies, safeguards, rules of origin, customs valuation, technical barriers to trade (TBT), and sanitary and phytosanitary measures (SPS).

### **Annex 1B – Trade in Services (GATS):**

This covers the **General Agreement on Trade in Services (GATS)**. It applies to sectors like banking, insurance, telecom, tourism, and education. GATS establishes rules for fair competition and market access in the services sector.

### **Annex 1C – Trade-Related Aspects of Intellectual Property Rights (TRIPS):**

This agreement protects intellectual property rights such as copyrights, patents, trademarks, and geographical indications. It ensures that innovation and creativity are respected in international trade.

## **Annex 2: Dispute Settlement Understanding (DSU)**

Annex 2 contains the **Dispute Settlement Understanding (DSU)**, which lays down the rules and procedures for settling disputes between WTO member countries. This mechanism is considered one of the most effective international dispute resolution systems. It ensures that trade conflicts are resolved in a transparent, rule-based, and timely manner.

## **Annex 3: Trade Policy Review Mechanism (TPRM)**

Annex 3 provides for the **Trade Policy Review Mechanism**. This mechanism promotes transparency by allowing regular peer reviews of the trade policies and practices of WTO members. It helps improve understanding of national trade policies and their impact on the multilateral system.

## **Annex 4: Plurilateral Trade Agreements**

Annex 4 includes **plurilateral agreements**, which are not binding on all WTO members but only on those who voluntarily accept them. Examples include the Agreement on Government Procurement and the Agreement on Trade in Civil Aircraft.

## **WTO Dispute Settlement Mechanism**

The WTO Dispute Settlement Mechanism is a legally binding system to resolve trade disputes between member countries. It consists of several stages. First, the parties are required to hold consultations to try to resolve the matter bilaterally. If consultations fail, a panel is established to examine the dispute and give a report. The report can be appealed to the Appellate Body. Once a ruling is adopted by the Dispute Settlement Body (DSB), the losing country is expected to comply. If it fails to do so, the winning country may be authorized to impose trade sanctions or receive compensation. This mechanism ensures enforcement of WTO agreements and maintains the credibility of the global trading system.

## **Principles of the WTO Trading System**

The World Trade Organization (WTO) is the global body responsible for regulating international trade between nations. It aims to promote free, fair, and predictable trade. To achieve this, the WTO operates based on certain core principles. These principles ensure that trade is conducted in an orderly and non-discriminatory manner among member countries.

### **1. Most-Favoured-Nation (MFN) Principle**

This is one of the fundamental principles of the WTO. Under the MFN rule, a country must treat all WTO members equally in terms of trade. If a country gives special treatment to one trading partner (such as lower tariffs), it must offer the same treatment to all other WTO members. This prevents discrimination and promotes equal opportunity in trade.

### **2. National Treatment Principle**

According to this principle, once foreign goods, services, or intellectual property enter a country's market, they must be treated no less favorably than domestic goods or services. This ensures fair competition between imported and locally produced products. The principle also applies to service providers and intellectual property rights.

### **3. Free Trade through Negotiations**

WTO encourages the gradual reduction of trade barriers such as tariffs, quotas, and subsidies through mutual negotiations among its member countries. This principle supports liberalization of trade and makes international markets more open and competitive over time.

### **4. Predictability and Transparency**

The WTO system promotes a stable and predictable trading environment. Countries commit to binding their tariff rates and trade policies. These commitments are published and cannot be changed easily. If changes are made, other members may seek compensation. This builds trust and confidence among trading nations.

## 5. Promoting Fair Competition

The WTO does not allow unfair practices such as dumping (selling goods below cost) or the use of excessive subsidies that distort trade. Rules are in place to ensure that competition is fair and balanced. Anti-dumping measures and subsidy controls are part of this principle.

## 6. Encouraging Development and Economic Reform

The WTO gives special attention to developing and least-developed countries. It allows them longer time periods to implement agreements and provides technical assistance and capacity building. This principle helps integrate poorer nations into the global trading system and supports their economic growth.

### Trade Policy Reviews (TPRs)

The **Trade Policy Review Mechanism (TPRM)** is an essential feature of the World Trade Organization (WTO). It aims to enhance transparency, ensure the smooth functioning of the multilateral trading system, and encourage members to follow WTO rules. Through regular reviews, member countries' trade policies and practices are examined to provide clarity and accountability.

### Meaning of Trade Policy Review

A **Trade Policy Review** is a formal assessment of a WTO member's trade policies and practices by other member countries. These reviews are conducted based on guidelines set under **Annex 3 of the Marrakesh Agreement**. The goal is not to enforce rules or settle disputes but to provide constructive feedback and promote understanding among nations.

### Objectives of Trade Policy Reviews

The primary objective of the TPR mechanism is to **promote transparency** in trade policy-making. It encourages governments to explain their trade policies and practices, provides an opportunity for peer review, and helps identify areas for improvement. This process increases trust and reduces the risk of trade conflicts.

### Frequency of Reviews

The frequency of Trade Policy Reviews depends on the country's share in global trade:

- **Every 2 years** for the four largest trading members (currently the EU, the USA, China, and Japan).
- **Every 4 years** for significant economies.
- **Every 6 years** for smaller economies.



- Least-developed countries (LDCs) are reviewed less frequently, often based on need and capacity.

## **Process of Review**

The review process is carried out by the **WTO Secretariat** and involves two main documents:

1. **Government Report** – prepared by the member country under review.
2. **WTO Secretariat Report** – an independent report analyzing the member's policies and trade performance.

Both reports are examined during a formal meeting at the WTO Trade Policy Review Body (TPRB), where other members ask questions and make observations.

## **Benefits of Trade Policy Reviews**

TPRs help in improving the quality of trade policy by identifying gaps, inconsistencies, or areas of concern. They support developing countries in aligning their trade systems with international best practices. Reviews also act as a learning process for all members and promote mutual understanding.

## **Agreements on TRIPS (Trade-Related Aspects of Intellectual Property Rights)**

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) is one of the most comprehensive multilateral agreements on intellectual property (IP). It was introduced under the framework of the World Trade Organization (WTO) in 1995 as part of the Uruguay Round negotiations. The TRIPS Agreement aims to harmonize and enforce minimum standards of intellectual property protection across all WTO member countries.

## **Objectives of TRIPS Agreement**

The TRIPS Agreement is an important part of the World Trade Organization (WTO). Its main objectives are:

1. **Protection of Intellectual Property Rights (IPRs):**  
To set minimum standards for protecting various intellectual property rights like patents, copyrights, trademarks, geographical indications, industrial designs, and trade secrets.
2. **Promote Innovation and Creativity:**  
By protecting IPRs, TRIPS encourages inventors, authors, and businesses to create new products, ideas, and technologies.
3. **Ensure Fair and Equal Treatment:**  
All WTO members must treat foreign and domestic IPR holders equally (National Treatment and Most-Favoured-Nation principles).

4. **Prevent IPR Abuse:**  
It aims to strike a balance between rights holders and public interest by preventing misuse or over-enforcement of IPRs.
5. **Promote Technology Transfer:**  
Especially for developing countries, the agreement supports the transfer of technology and knowledge from developed nations.
6. **Support Economic Growth and Trade:**  
Strong IPR protection helps in improving trade, attracting investment, and boosting economic development.
7. **Provide Legal Framework and Enforcement:**  
It ensures that member countries have effective legal procedures and enforcement mechanisms to protect IPRs.

## Coverage of Intellectual Property Rights

The TRIPS Agreement covers **seven main categories** of intellectual property:

1. **Copyright and Related Rights** – Protects literary and artistic works, including books, music, films, software, and databases.
2. **Trademarks** – Protects brand names, logos, and symbols that distinguish goods and services.
3. **Geographical Indications (GIs)** – Protects names that indicate a product's origin and its special qualities (e.g., Darjeeling tea, Champagne).
4. **Industrial Designs** – Protects the visual design or appearance of a product.
5. **Patents** – Grants exclusive rights to inventors for a period of 20 years.
6. **Layout Designs of Integrated Circuits** – Protects the design of microchip circuits.
7. **Undisclosed Information (Trade Secrets)** – Protects confidential business information from unfair use.

## Ministerial Conferences under WTO

The **World Trade Organization (WTO)** is the global body that governs international trade rules among member countries. One of the most important decision-making bodies of the WTO is the **Ministerial Conference**, which plays a central role in guiding the direction of global trade negotiations. It is the highest authority in the WTO structure and brings together trade ministers from all member countries to review, negotiate, and set the future agenda of the organization.

### Purpose of Ministerial Conferences

#### 1. Take Major Decisions:

The Ministerial Conference has the power to make final decisions on all WTO matters. This includes approving new trade agreements, changes to WTO rules, or decisions on membership issues. No other body in the WTO has more authority than this conference.

**Example:** If a new rule is proposed to reduce tariffs on agricultural products, the final approval comes from the Ministerial Conference.

## **2. Set Direction for Global Trade:**

It acts like a steering body that decides the future direction of world trade. It sets priorities and focuses on what issues WTO should deal with next. This helps in shaping a fair and balanced international trade system.

**Example:** It may decide to give more importance to digital trade or environmental goods in upcoming years.

## **3. Review WTO Work:**

The conference examines how existing WTO agreements are being implemented by member countries. It checks whether countries are following the rules and whether the agreements are effective in practice.

**Example:** If some countries are not following rules related to subsidies or dumping, it will be discussed and reviewed here.

## **4. Launch New Trade Negotiations:**

New rounds of trade talks often begin during Ministerial Conferences. These negotiations can aim to reduce tariffs, improve services trade, or update rules for emerging issues like e-commerce.

**Example:** The **Doha Development Round** was launched during a Ministerial Conference in 2001 to focus on improving trade for developing countries.

## **5. Address Global Trade Issues:**

Any urgent or long-standing trade problems — such as trade wars, disputes, or unfair practices — can be discussed and addressed in this forum. It gives a platform where all members can present their concerns.

**Example:** If there is a global food crisis due to export bans, the issue may be taken up in a Ministerial Conference.

## **6. Promote Fair and Free Trade:**

The ultimate goal of WTO is to create a global trade environment that is transparent, open, and fair. The Ministerial Conference promotes these values and works to reduce trade barriers, so that all countries—especially developing ones—benefit.

**Example:** It may support special trade benefits or technical help for least-developed countries (LDCs) so they can participate more in global trade.

## Major Ministerial Conferences Held So Far

Since the WTO's establishment in 1995, several Ministerial Conferences have been held:

- The **First Ministerial Conference (1996)** was held in Singapore, where working groups on investment, competition, and transparency were established.
- The **Third Conference (1999)** in Seattle failed due to protests and disagreement among members, marking a significant moment in WTO history.
- The **Fourth Ministerial Conference (2001)** in Doha launched the **Doha Development Round**, which aimed to address trade issues of developing countries.
- The **Sixth Conference (2005)** in Hong Kong made progress in areas such as export subsidies in agriculture.
- More recently, the **Twelfth Ministerial Conference (MC12)** was held in **Geneva in 2022**, where agreements were reached on COVID-19 vaccine patents (TRIPS waiver), fisheries subsidies, and e-commerce.

These conferences provide an opportunity to review progress and reset priorities for the multilateral trading system.

## Importance of Ministerial Conferences

### 1. Highest Decision-Making Body in WTO

Ministerial Conferences are the **topmost authority** in the WTO, where all important decisions, including changes to IPR regulations and TRIPS, are discussed and approved.

□ *Example:* Decisions on extending patent exemptions for developing countries are taken during these conferences.

### 2. Platform for Global Negotiations on IPR

They offer a **common platform** where countries negotiate and discuss issues like:

- IPR protection in developing nations
- Technology transfer
- Patent flexibility (e.g., in health emergencies)

□ *Example:* During COVID-19, several countries demanded waivers on vaccine patents. Such topics are discussed in Ministerial Conferences.

### 3. Balancing Interests of Developed & Developing Countries

Ministerial Conferences help ensure that IPR policies are **balanced and fair** for both developed and developing countries.

□ *Example:* India and other countries often raise concerns about access to affordable medicines and protection of traditional knowledge.

## 4. Updates and Reforms in TRIPS Agreement

Any proposed **amendments to the TRIPS Agreement**, or discussions on its interpretation, happen at these conferences.

□ *Example:* Inclusion of new IPR areas like digital IP or AI-related patents may be considered in the future during such events.

## 5. Opportunity to Raise IPR Concerns Publicly

Countries can **voice their IPR-related challenges** on a global stage and request support or change.

□ *Example:* African countries often use these meetings to demand better access to patented medicines and fair licensing systems.

## Emerging Issues in Intellectual Property Rights (IPR)

Intellectual Property Rights (IPR) refer to the legal rights granted to creators, inventors, and businesses to protect their innovations, inventions, and creative works. As technology evolves and globalization increases, several new and complex issues are emerging in the field of IPR. These challenges demand updates in laws, policies, and enforcement mechanisms to balance innovation, public interest, and fair trade practices.

### 1. Digital Piracy and Online Infringement

With the growth of the internet, digital piracy has become a serious concern. Unauthorized downloading, streaming, and sharing of music, movies, software, and e-books have increased. Enforcing copyright laws in digital spaces is difficult due to the speed and anonymity offered by the internet. This raises issues related to enforcement, jurisdiction, and cross-border legal cooperation.

### 2. Artificial Intelligence (AI) and Ownership

Artificial Intelligence is capable of creating inventions, artworks, and software. The question arises—who should own the IPR for AI-generated works? Traditional IP laws recognize human creators, but the growing role of machines in innovation creates uncertainty. There is a debate on whether AI can be recognized as an inventor or if the ownership should belong to the developer or user of the AI.

### 3. Biopiracy and Traditional Knowledge

Biopiracy refers to the exploitation of biological resources and traditional knowledge of indigenous communities without proper authorization or compensation. Multinational

companies often patent traditional medicines or plant varieties that have been used for generations. This raises ethical and legal concerns about benefit-sharing, protection of biodiversity, and recognition of community rights.

#### **4. Patent Evergreening**

Evergreening is a strategy used by pharmaceutical companies to extend patent protection by making minor changes to existing drugs without substantial innovation. This delays the entry of generic medicines into the market, affecting affordability and access to essential medicines, especially in developing countries. This practice is being criticized and closely monitored by global health organizations and IP offices.

#### **5. Protection of Traditional Cultural Expressions (TCEs)**

Traditional cultural expressions such as tribal art, folk music, dances, and handicrafts are not always protected under conventional IP laws. As these are passed orally and collectively owned, they do not fit into the individualistic model of copyright or trademark. There is growing demand for a separate legal framework to protect cultural identity and prevent commercial misuse.

#### **6. Cross-border Enforcement and Jurisdiction**

As intellectual property is increasingly infringed across borders—especially through e-commerce and social media platforms—enforcing IPR internationally is becoming more complex. Different countries have different laws, and global enforcement cooperation is still limited. This raises concerns over how to protect rights in a digital, borderless world.

#### **7. Open Access and Data Sharing**

In the academic and research fields, the movement toward open access and data sharing creates a conflict between IP protection and the free flow of knowledge. While IPRs aim to reward creators, open access promotes free availability of research, especially in education and public health. Finding a balance between the two is a major emerging challenge.

#### **Protection of Plant Varieties**

Plant varieties are crucial for agricultural development, food security, and biodiversity. Farmers, plant breeders, and researchers invest significant effort in developing new varieties that are high-yielding, disease-resistant, and climate-resilient. To encourage such innovation, legal protection of plant varieties is essential. This protection grants exclusive rights to breeders and also safeguards the interests of farmers. The concept of plant variety protection is recognized under international and national laws.

## International Legal Framework

The most important international framework is the **UPOV Convention** (International Union for the Protection of New Varieties of Plants), which sets minimum standards for plant variety protection. The **TRIPS Agreement** under the WTO also requires member countries to provide protection to plant varieties either by patents or by a sui generis (unique) system or a combination of both. This gives countries flexibility to design their own legal systems suited to their needs.

## Protection of Plant Varieties and Farmers' Rights Act, 2001 (India)

In India, the **Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act, 2001** is a sui generis legislation enacted to fulfill TRIPS obligations while protecting the interests of both breeders and farmers. This law recognizes the role of farmers as cultivators, conservers, and breeders.

### Key features of the Act include:

- **Breeder's Rights:** Plant breeders have exclusive rights to produce, sell, market, distribute, and license the registered variety.
- **Farmer's Rights:** Farmers can save, use, sow, resow, exchange, and share the seeds of protected varieties like traditional practice.
- **Researcher's Rights:** Researchers can use protected varieties for conducting experiments and creating new varieties.
- **Benefit Sharing:** The Act provides for benefit sharing with local communities if their genetic material or traditional knowledge has been used in the development of a new variety.

## Criteria for Protection

To be eligible for protection, a plant variety must meet the following criteria:

- **Novelty:** It must be new and not previously sold or distributed.
- **Distinctiveness:** It must be clearly distinguishable from any known variety.
- **Uniformity:** It must show uniform characteristics in all plants of the variety.
- **Stability:** The variety must remain stable in its essential traits over generations.

## Patent Sharks

The term **"Patent Sharks"** refers to entities or individuals who acquire patents not to produce or innovate, but to **enforce patent rights aggressively and extract money** from other businesses through litigation or the threat of legal action. These entities are also commonly known as **"Patent Trolls."** They exploit weaknesses in the patent system for financial gain, often targeting small businesses and startups that cannot afford expensive legal

battles. This practice has raised serious ethical, legal, and economic concerns in the intellectual property world.

## **Nature and Behavior of Patent Sharks**

### **1. No Involvement in Innovation or Production**

Patent sharks do not contribute to innovation or technological development. They are **non-practicing entities** that do not engage in research, product development, or manufacturing. Unlike genuine patent holders who use patents to protect their inventions, patent sharks only use patents for legal and financial gain.

### **2. Acquisition of Broad or Vague Patents**

Patent sharks often acquire patents that are **old, broad, or vaguely worded**, making it easier to apply them to a wide range of technologies. These patents are usually bought from **individual inventors, bankrupt firms, or small companies** that are unable to commercialize their inventions. Their goal is to collect as many questionable patents as possible.

### **3. Targeting Vulnerable Businesses**

After acquiring patents, patent sharks **search for companies—especially startups or small firms—that might unknowingly be using similar technologies**. These smaller firms usually lack the financial and legal resources to fight back, making them ideal targets for aggressive legal action.

### **4. Accusation of Patent Infringement**

Once a potential target is identified, patent sharks **accuse the company of patent infringement**, even when the claim may not be legally strong. They exploit **uncertainties in patent law**, making it difficult for companies to determine whether they have actually violated any rights.

### **5. Use of Legal Threats to Extract Money**

Patent sharks rely heavily on **fear of litigation**. They threaten to file lawsuits, knowing that court cases are expensive and time-consuming. In most cases, companies agree to **pay settlement amounts or licensing fees** just to avoid legal hassles, regardless of whether the claim is justified.

## **Methods Used by Patent Sharks**

### **1. Sending Legal Notices Claiming Infringement**



Patent sharks often begin their strategy by **sending legal notices to multiple companies**, accusing them of violating patent rights. These notices are usually vague but threatening, prompting fear of legal consequences. Most recipients, especially small firms, may not have the resources to assess the validity of the claims and may feel pressured to respond quickly.

## 2. Demanding High Licensing Fees

Once companies are contacted, patent sharks **demand large sums of money as licensing fees**. They offer to "settle" the matter outside court, presenting it as a cheaper alternative to fighting a long legal battle. Even if the infringement claim is weak, businesses often pay these fees to avoid the risk and cost of litigation.

## 3. Filing Lawsuits in Favorable Jurisdictions

Patent sharks often choose to **file lawsuits in jurisdictions known to favor patent holders**, where courts are quick to grant injunctions or high compensation. This legal environment increases pressure on the accused companies to settle. For example, in the United States, some entities file cases in courts like the Eastern District of Texas, which has historically been favorable to such plaintiffs.

## 4. Targeting Companies at Vulnerable Times

A common tactic of patent sharks is to **target companies during critical business moments**, such as just before a product launch, a funding round, or a merger. At these times, companies are more likely to settle disputes quickly to avoid delays or negative publicity that might affect business operations or investor confidence.

## Steps Taken to Address Patent Sharks

Countries like the **United States** have introduced reforms to stop abusive practices:

- **Improving patent examination** to ensure only valid, specific patents are granted.
- **Fee-shifting rules**, where the loser in a lawsuit pays the legal costs.
- Promoting **transparency** in patent ownership and licensing.
- **Discouraging vague claims** in software and business method patents.

## Open Source Movement

The **Open Source Movement** in the context of **Intellectual Property Rights (IPR)** is a global initiative that promotes the **free and open sharing of knowledge, software, and creative works**, while still respecting certain legal frameworks of intellectual property. It challenges the traditional use of IPR, which often focuses on **exclusive rights and commercial control**, by offering an alternative that **encourages collaboration, transparency, and innovation**.

In IPR, creators usually protect their inventions, designs, or works using patents, copyrights, or trademarks to **restrict others from using them without permission**. However, the open source movement uses specific **open licenses** (like GNU GPL, Creative Commons) to allow others to **use, modify, and redistribute** the work legally, often without needing to pay royalties.

## **Objectives of the Open Source Movement**

### **1. Promote Free Access to Knowledge**

The open source movement aims to ensure that knowledge, especially in the form of software and innovation, is freely accessible to everyone. It promotes the idea that source code, scientific findings, and technical designs should not be hidden behind legal or financial barriers. This open access allows individuals, researchers, and developers across the world to learn from, use, and build upon existing innovations.

### **2. Encourage Innovation Through Collaboration**

One of the primary goals of the open source movement is to create an environment where people work together to innovate. By sharing source code and technical knowledge, developers and creators can collaborate to improve software or inventions. This collective approach helps generate new ideas faster and more efficiently than when innovation is restricted by exclusive ownership rights.

### **3. Oppose Restrictive Intellectual Property Practices**

The movement challenges the traditional use of intellectual property rights, particularly where they are used to create monopolies. It stands against the overuse of patents, copyrights, and licenses that prevent the free flow of knowledge. Instead of locking up innovation through legal restrictions, the open source philosophy supports openness, sharing, and the free distribution of ideas.

### **4. Reduce Software and Technology Costs**

By eliminating the need to purchase expensive software licenses or pay for patented technologies, the open source movement helps reduce costs. This is especially beneficial for schools, small businesses, developing countries, and nonprofit organizations that might otherwise be unable to afford necessary technologies. Open source tools provide a cost-effective alternative to proprietary products.

### **5. Support Customization and Flexibility**

Open source software and tools allow users to modify them according to their specific needs. This flexibility is especially useful in sectors like education, healthcare, and governance, where unique solutions are often required. Unlike proprietary software, which restricts modifications, open source enables users to customize and improve systems independently.

### **6. Promote Transparency and Trust**

Transparency is a key benefit of open source. Because the source code is publicly available, users can inspect it for bugs, vulnerabilities, or unethical practices. This builds greater trust among users, as they know what the software does and can verify its safety and reliability.

## **7. Democratize Technology and Empower Users**

The movement aims to put the power of technology into the hands of the people. Instead of relying on big corporations, individuals and communities can use, modify, and share technology freely. This democratization helps promote equality in the access to tools and knowledge and empowers local innovation and problem-solving.

## **8. Create a Global, Inclusive Knowledge Economy**

The open source movement encourages participation from around the world, regardless of economic or social status. It enables contributions from diverse cultures and regions, thus promoting inclusiveness. This global participation helps bridge the digital divide and builds a more equitable and knowledge-driven economy.

## **Key Features of Open Source Software**

Open source software typically has the following features:

### **1. Availability of Source Code**

The most important feature of open source software is that its **source code is freely available**. Users can view, study, and understand how the software works. This transparency allows anyone to analyze, improve, or modify the code according to their needs.

### **2. Freedom to Modify and Customize**

Open source software gives users the **freedom to change the source code**. They can add new features, fix bugs, or tailor the software to suit local or specific requirements. This flexibility is not usually possible with proprietary software.

### **3. Free Redistribution**

Users are allowed to **freely distribute** the original or modified versions of the software. There are **no licensing fees or restrictions** on sharing it with others. This encourages collaboration and wider usage.

### **4. Community-Based Development**

Most open source projects are developed and maintained by a **global community of developers**. Users can contribute to the development, report bugs, or suggest improvements. This community-driven model ensures regular updates and better innovation.

### **5. Platform Independence**

Many open source software programs are **platform-independent**, meaning they can run on various operating systems like Windows, Linux, or macOS. This compatibility makes them more versatile and accessible.

## 6. Security and Transparency

Since the source code is open, it is easier to **identify and fix security issues**. Anyone can review the code for vulnerabilities. This **transparency builds trust** among users and ensures better overall security.

## 7. Low Cost or Free of Charge

Open source software is usually **free to use**, which makes it affordable for individuals, businesses, schools, and governments. Even when some costs are involved (like support or customization), they are generally lower than proprietary alternatives.

## Challenges Faced by the Movement

Despite its success, the open source movement faces several challenges:

- **Lack of funding** for long-term maintenance.
- **Sustainability issues**, as projects may depend on volunteer contributions.
- **Compatibility problems** with proprietary systems.
- **Security risks**, if code is not properly audited or maintained.

## Bio-piracy

**Bio-piracy** refers to the **unauthorized and unethical use of biological resources**—such as plants, animals, and traditional knowledge—**by individuals, companies, or research institutions**, usually from developed countries. It involves **patenting or commercializing** genetic materials and indigenous knowledge without proper consent or compensation to the local communities or countries from which the resources originated. Bio-piracy is a major issue in the context of **intellectual property rights, biodiversity, and ethical research practices**.

## Examples of Bio-piracy

Some famous examples include:

- **Neem (*Azadirachta indica*):** A U.S. company patented an antifungal product derived from neem, which had been traditionally used in India for centuries. The patent was later revoked after a legal challenge.
- **Basmati Rice:** An American company patented a variety of basmati rice developed using Indian strains, which sparked controversy and opposition.

- **Turmeric:** A U.S. patent was granted for the wound-healing properties of turmeric, a well-known traditional Indian remedy. It was later canceled after evidence of traditional use was presented.

These cases highlight how indigenous knowledge is often **misappropriated and commercialized**.

## **Reasons for Bio-piracy**

Bio-piracy is common due to:

- **Lack of awareness and legal protection** in developing countries.
- **Weak documentation** of traditional knowledge.
- **Power imbalance** between multinational corporations and local communities.
- **Gaps in international patent laws** that allow vague or unjust patents.

## **Steps to Prevent Bio-piracy**

Several national and international efforts have been made to control bio-piracy:

- **Biodiversity Act (2002)** in India provides a legal framework to protect bio-resources and ensure fair benefit-sharing.
- **Traditional Knowledge Digital Library (TKDL)** was created in India to document traditional knowledge and prevent wrongful patents.
- **International Treaties** like the CBD and the Nagoya Protocol emphasize **prior informed consent and equitable benefit sharing**.