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NPTEL ONLINE
CERTIFICATION COURSES

Ethics in Engineering Practice

Lecture No 11 :Ethics as Design – Doing Justices to Moral Problems

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Outline of the module

- Ethical theories : As a solution for resolving ethical issues
- What is a moral theory?
- Utilitarian, Tenets of utilitarian and criticism
- Cost benefit analysis in engineering
- Duty ethics, Right ethics and Virtue ethics
- Which theory to use
- Issues and Techniques while solving ethical issues
- Steps for solving ethical dilemmas
- Code of ethics as a solution

Source: **Introduction to Engineering Ethics, Second Edition, Martin and Schinzinger**

Cost–Benefit Analysis in engineering

In cost–benefit analysis, the costs of a project are assessed, as are the benefits. Only those projects with the highest ratio of benefits to costs will be implemented. This principle is similar to the utilitarian goal of maximizing the overall good.

The Pitfalls of Cost-benefit analysis

For eg. from a pure cost–benefit discussion, it might seem that the building of a dam is an excellent idea. But this analysis won't include other issues such as whether the benefits outweigh the loss of a scenic wilderness area or the loss of an endangered species with no current economic value. Finally, it is also important to determine whether those who stand to reap the benefits are also those who will pay the costs. It is unfair to place all of the costs on one group while another reaps the benefits.

Duty ethics

Two other ethical theories—duty ethics and rights ethics—are similar to each other and will be considered together.

These theories hold that those actions are good that respect the rights of the individual. Here, good consequences for society as a whole are not the only moral consideration.

A major proponent of duty ethics was Immanuel Kant (1724–1804), who held that moral duties are fundamental. Ethical actions are those actions that could be written down on a list of duties: be honest, don't cause suffering to other people, be fair to others, etc.

These actions are our duties because they express respect for persons, express an unqualified regard for autonomous moral agents, and are universal principles [Schinzinger and Martin, 2000].

Once one's duties are recognized, the ethically correct moral actions are obvious. In this formulation, ethical acts are a result of proper performance of one's duties.

Rights ethics

Rights ethics was largely formulated by John Locke (1632–1704), whose statement that humans have the right to life, liberty, and property was paraphrased in the Declaration of Independence of the soon-to-be United States of America in 1776. Rights ethics holds that people have fundamental rights that other people have a duty to respect.

Criticism of Rights and Duty Ethics

First the basic rights of one person (or group) may conflict with the basic rights of another group.

How do we decide whose rights have priority? Using our previous example of the building of a dam, people have the right to use their property. If their land happens to be in the way of a proposed dam, then rights ethics would hold that this property right is paramount and is sufficient to stop the dam project. A single property holder's objection would require that the project be terminated.

The second problem with duty and rights ethics is that these theories don't always account for the overall good of society very well.

Virtue Ethics

Virtue ethics is interested in determining what kind of people we should be.

Virtue is often defined as moral distinction and goodness. A virtuous person exhibits good and beneficial qualities.

In virtue ethics, actions are considered right if they support good character traits (virtues) and wrong if they support bad character traits (vices) [Schinzinger and Martin, 2000].

Virtue ethics focuses on words such as responsibility, honesty, competence, and loyalty, which are virtues. Other virtues might include trustworthiness, fairness, caring, citizenship, and respect. Vices could include dishonesty, disloyalty, irresponsibility, or incompetence.

Which theory to use?

Now that we have discussed four different ethical theories, the question arises: How do we decide which theory is applicable to a given problem?

The good news is that in solving ethical problems, we don't have to choose from among these theories.

Rather, we can use all of them to analyze a problem from different angles and see what result each of the theories gives us.

This allows us to examine a problem from different perspectives to see what conclusion each one reaches. Frequently, the result will be the same even though the theories are very different.

Continued

Take, for example, a chemical plant near a small city that discharges a hazardous waste into the groundwater. If the city takes its water from wells, the water supply for the city will be compromised and significant health problems for the community may result.

Rights ethics indicates that this pollution is unethical, since it causes harm to many of the residents.

A utilitarian analysis would probably also come to the same conclusion, since the economic benefits of the plant would almost certainly be outweighed by the negative effects of the pollution and the costs required to ensure a safe municipal water supply.

Virtue ethics would say that discharging wastes into groundwater is irresponsible and harmful to individuals and so shouldn't be done. In this case, all of the ethical theories lead to the same conclusion.

Analysis of issues while solving ethical problems

First step in solving any ethical problem is to completely understand all of the issues involved. Once these issues are determined, frequently a solution to the problem becomes apparent.

The issues involved in understanding ethical problems can be split into three categories:

factual, conceptual, and moral [Harris, Pritchard, and Rabins, 2000].

Factual issues

Factual issues involve what is actually known about a case—i.e., what the facts are. Although this concept seems straightforward, the facts of a particular case are not always clear and may be controversial.

In engineering, there are controversies over facts as well. For example, global warming is of great concern to society as we continue to emit greenhouse gases into the atmosphere.

This issue is of great importance to engineers since they might be required to design new products or redesign old ones to comply with stricter environmental standards if this warming effect indeed proves to be a problem.

Conceptual issues

Conceptual issues have to do with the meaning or applicability of an idea. In engineering ethics, this might mean defining what constitutes a bribe as opposed to an acceptable gift, or determining whether certain business information is proprietary.

Like factual issues, conceptual issues are not always clear-cut and will often result in controversy as well.

Moral issues

Once the factual and conceptual issues have been resolved, at least to the extent possible, all that remains is to determine which moral principle is applicable to the situation. Resolution of moral issues is often more obvious.

Once the problem is defined, it is usually clear which moral concept applies, and the correct decision becomes obvious.

For eg, in case when a “gift” is offered by a sales representative, once it is determined whether it is simply a gift or is really a bribe, then the appropriate action is obvious. If we determine that it is indeed a bribe, then it cannot ethically be accepted.

Understanding through a case study – *Paradyne Computers*

In 1980, Paradyne, a computer company, bid to supply the Social Security Administration (SSA) with new computer systems. We'll look at the factual issues first. The request for proposals clearly specified that only existing systems would be considered. Paradyne did not have any such system running and had never tested the operating system on the product they actually proposed to sell to the SSA. The employment of a former SSA worker by Paradyne to help lobby SSA for the contract is also clear. In this case, the factual issues do not appear particularly controversial. The conceptual issues involve whether bidding to provide an off-the-shelf product when the actual product is only in the planning stages is lying or is an acceptable business practice. Is placing a Paradyne label over the real manufacturer's label deceptive? Does lobbying your former employer on behalf of your current employer constitute a conflict of interest? These questions will certainly generate discussion. Indeed, Paradyne asserted that it had done nothing wrong and was simply engaging in common business practices. The issue of the conflict of interest is so hard to decide that laws have been enacted making it illegal for workers who have left government employ to lobby their former employers for specified periods of time.

The moral issues then include the following: Is lying an acceptable business practice? Is it alright to be deceptive if doing so allows your company to get a contract? The answers to these questions are obvious: Lying and deceit are no more acceptable in your business life than in your personal life. So, if conceptually we decide that Paradyne's practices were deceptive, then our analysis indicates that their actions were unethical.

Techniques for solving Ethical issues

Line Drawing: The line-drawing technique is especially useful for situations in which the applicable moral principles are clear, but there seems to be a great deal of “gray area” about which ethical principle applies.

Line drawing is performed by drawing a line along which various examples and hypothetical situations are placed. At one end is placed the “positive paradigm,” an example of something that is unambiguously morally acceptable.

At the other end, the “negative paradigm,” an example of something that is unambiguously not morally acceptable, is placed.

Application of Line Drawing to the Pentium Chip Case

In 1994–95, it was discovered and widely reported that the latest version of the Intel Pentium chip had flaws. At first, Intel sought to hide this information, but later came around to a policy of offering consumers chips in which the fl aw had been corrected. We can use line drawing to get some insight into this problem.

For our positive paradigm, we will use the statement that "products should perform as advertised." The negative paradigm will be "Knowingly sell products that are defective and that will negatively affect customers' applications." A few examples that we can add to the line are as follows:

1. There is a fl aw in the chip, but it truly is undetectable and won't affect any customer's applications.
2. There are flaws in the chip, the customer is informed of them, but no help is offered.
3. A warning label says that the chip should not be used for certain applications.
4. Recall notices are sent out, and all fl awed chips are replaced.
5. Replacement chips are offered only if the customer notices the problem.

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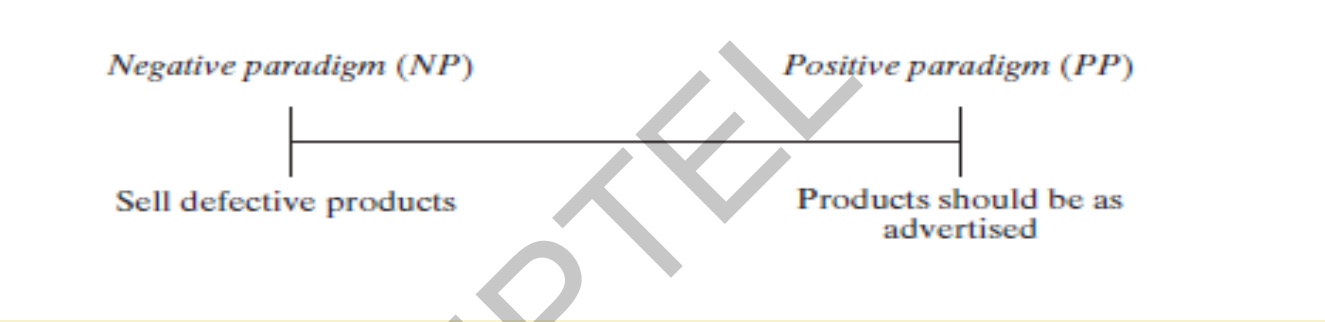

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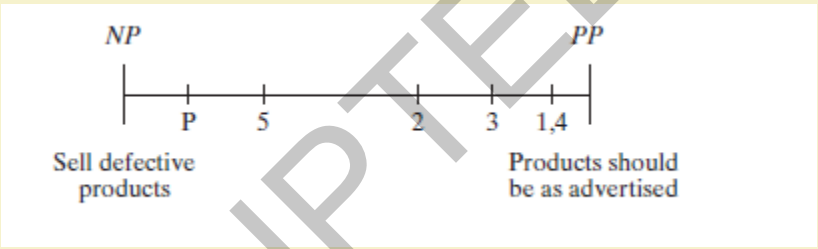
Where does our situation— “there is a flaw, customers aren’t informed, and the magnitude of the problem is minimized”—fit on this line? One possible analysis is the following:



According to this line-drawing analysis, the approach taken by Intel in this case wasn’t the best ethical choice.

Flow Charting

Flow charts are very familiar to engineering students. They are most often used in developing computer programs, also find application in other engineering disciplines and are often used to describe business processes and procedures.

In engineering ethics, flow charting will be helpful for analyzing a variety of cases, especially those in which there is a sequence of events to be considered or a series of consequences that flows from each decision.

An advantage of using a flow chart to analyze ethical problems is that it gives a visual picture of a situation and allows you to readily see the consequences that flow from each decision.

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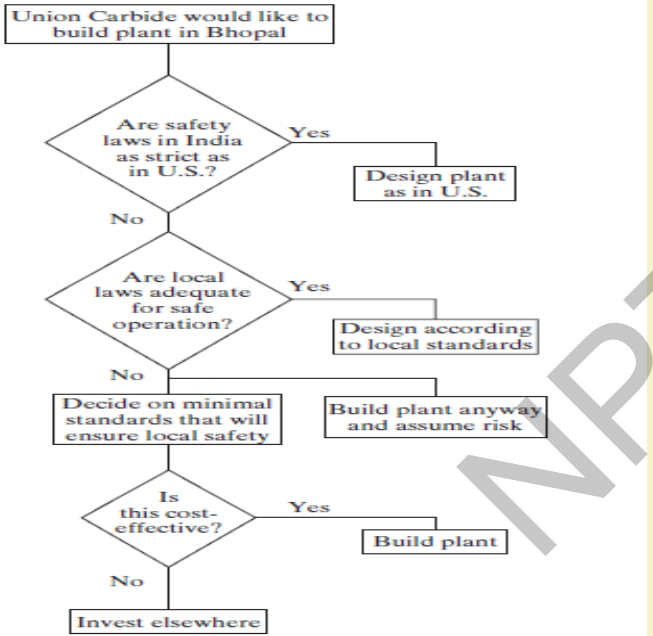
Illustration through flow chart technique concerning what happened at Union Carbide's plant in Bhopal, India, where MIC, a toxic substance, was mixed with water, creating toxic fumes.

(See next slide)

Flow Chart



Application of a simple flow chart to the Bhopal case, emphasizing potential decisions made during consideration of locating a plant in India.

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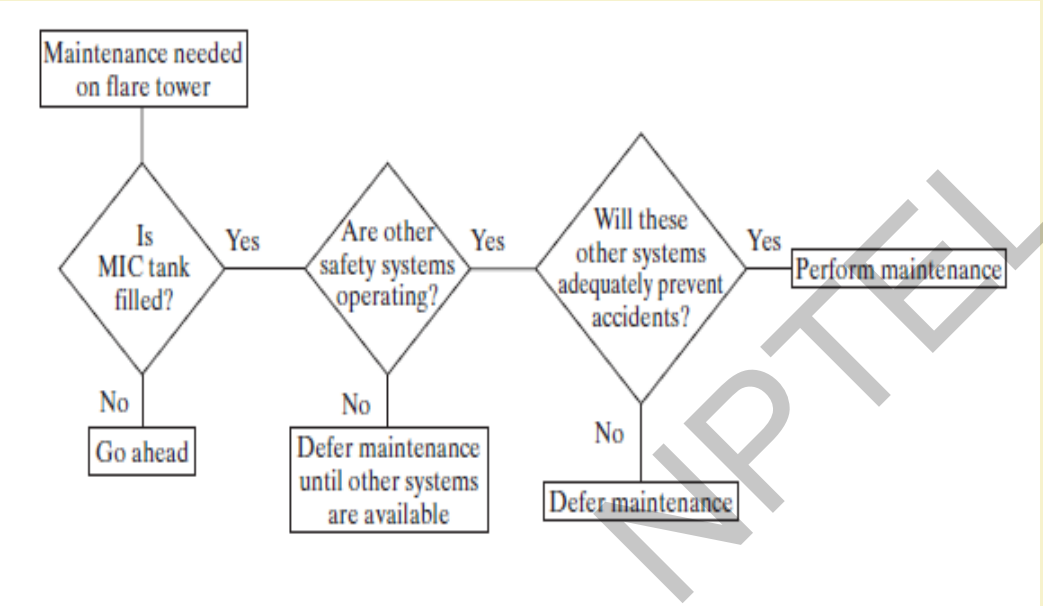

An alternative flow chart for the Bhopal case, emphasizing decisions made when considering deactivating the fl are tower for maintenance.

Conflict Problems

An area of ethical problem relates to a choice between two conflicting moral values, each of which seems to be correct.

How do we make the correct choice in this situation?

Conflict problems can be solved in three ways [Harris, Pritchard, and Rabins, 2000].

Often, there are conflicting moral choices, but one is obviously more significant than the other. For example, protecting the health and safety of the public is more important than your duty to your employer. In this type of case, the resolution of the conflict involves an easy choice.

Continued

A second solution is sometimes called the “creative middle way” [Harris, Pritchard, and Rabins, 2000]. This solution is an attempt at some kind of a compromise that will work for everyone.

The emphasis here should be on the word “creative,” because it takes a great deal of creativity to find a middle ground that is acceptable to everyone and a great deal of diplomacy to sell it to everyone.

Steps for solving ethical dilemmas

a) *Moral clarity: Identify the relevant moral values – identifying moral values and reasons in the situation*

b) *Conceptual clarity: Be clear about key concepts – be clear about the conceptual issues involved. What you are asked to do may not be good for the organization in long run*

a) *Informed about the facts: Obtain relevant information. This means* gathering information that is pertinent in light of the applicable moral values

Continued

d) *Informed about the options: Consider all (realistic) options. Initially, ethical dilemmas seem to force us into a two-way choice: Do this or do that. Either bow to a supervisor's orders or blow the whistle to the town authorities. A closer look often reveals additional options.*

e) *Well-reasoned: Make a reasonable decision. Arrive at a carefully reasoned judgment by weighing all the relevant moral reasons and facts. This is not a mechanical process that a computer or algorithm might do for us. Instead, it is a deliberation aimed at integrating all the relevant reasons, facts, and values—in a morally reasonable manner. If there is no ideal solution, as is often the case, we seek a satisfactory one, what Herbert Simon dubbed "satisficing."*

Code of Ethics – A solution for ethical decision making

Codes of ethics state the moral responsibilities of engineers as seen by the profession and as represented by a professional society.

Because they express the profession's collective commitment to ethics, codes are enormously important, not only in stressing engineers' responsibilities but also in supporting the freedom needed to meet them

Continued

Codes of ethics play at least eight essential roles:

I. serving and protecting the public
II. providing guidance
III. offering inspiration
IV. establishing shared standards
V. supporting responsible professionals
VI. contributing to education
VII. deterring wrongdoing
VIII. strengthening a profession's image.

Thank You!!

Ethics in Engineering Practice

Lecture No (12,13) : Intellectual Property Rights and Ethics

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Outline of the module

- What is Intellectual property Right?
- Categories of IPR
- IP Chain of Activities
- Intellectual property as Intangible property
- Why intellectual property needs protection?
- Managing IPR Today
- Patent – meaning, protection, rights of patent owners, what can be patented etc
- Trademark – meaning, purpose, what can be protected as a trademark?

- Industrial design – meaning, why protect industrial designs and what can be protected as industrial design
- Geographical indications – meaning, why geographical indications need protection, geographical indications vs. a trademark
- Copyrights and related rights – meaning, what protect copyrights, rights of holders, advances in technology and copyrights, benefits of copyrights and other related rights
- WIPO - World Intellectual Property Organization

Source: **Handout of WIPO**

What is Intellectual Property?

A category of property that includes;

“intangible creations” of the human intelligence,

and

mainly covers **copyrights**, **patents**, and **trademarks along with** other types of rights, such as **trade secrets**, **publicity rights**, **moral rights**, and rights against **unfair** competition.

Categories of IPR

Intellectual Property rights can be divided into two categories;

Industrial Property: This includes **patents** for inventions, **trademarks**, geographical indications and industrial designs.

Copyright : This covers literary works like novels, poems and plays, films, music, artistic works like drawings, paintings, photographs and sculptures and architectural designs.

The IP Chain of Activities

Continued

Creation – “ coming up with a new product”

Innovation – “ not seen before”

Commercialization- “ execution and availability for selling”

Protection – “registering under law”

Enforcement – “cannot be copied or stolen as per law”

INTELLECTUAL PRPERTY AS INTANGIBLE PROPERTY

Tangible Property

- *can be physically touched. For eg. Land, houses, bikes, cars etc*

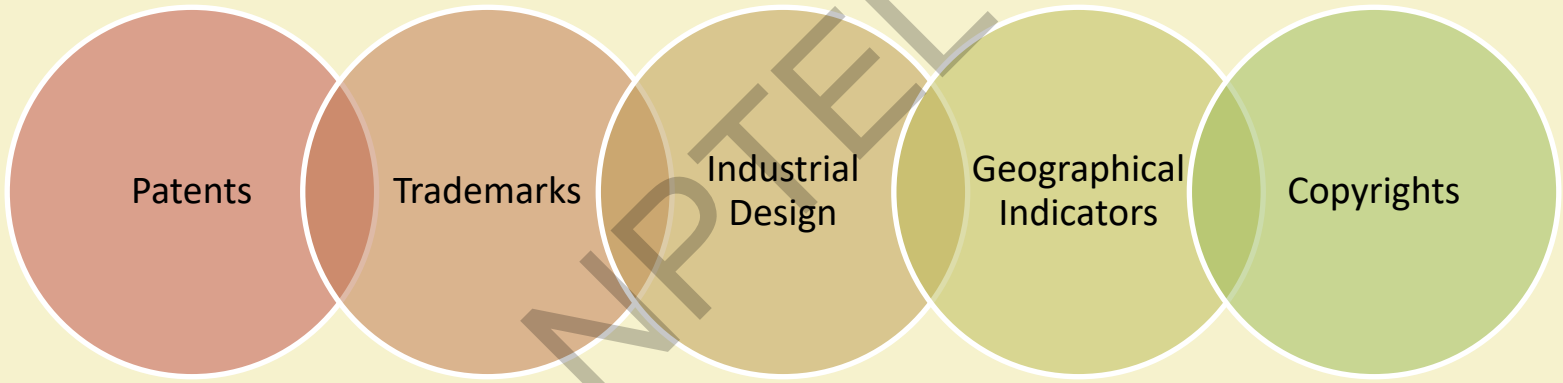
Intangible property

- *cannot be seen or touched,*
- *can be easily appropriated,*
- *cost of reproduction is negligible*

Why Intangible property needs protection?

- High Expenditure in creation of new product or designs
- High research and development activities
- Avoiding free riding problems – usage of own property by others for free
- Maintaining loyal followers and inhibiting “me too” creations in grey markets
- To retain profits

Managing Intellectual Property Rights Today



What is a Patent?

A patent is an exclusive right granted for an invention – a product or process that provides a new way of doing something, or that offers a new technical solution to a problem.

A patent provides patent owners with protection for their inventions. Protection is granted for a limited period, generally 20 years.

Are patents necessary?

Yes! As they offer incentives and rewards to individuals by recognizing their creativity to encourage them to come up with new marketable inventions for benefit of the common people.

Continued

Protection offered by patents

Patent protection implies that invention under patents cannot be commercially or otherwise used by the other persons for generating profits or any commercial returns.

And cannot be recreated, sold or shared with owner's consent

Patents are usually enforced in courts and courts can also cancel patents in case the claims of the third party are found right if any at a alter stage.

Continued

Right of Patents owners

Patent owners have the right to decide who can or cannot use the patented invention. Owners have this right to give permission to or offer license to other parties on mutually agreed terms. Owners can also sell their rights to other person if they wish to do so who then becomes the new owner of the patent.

Patents in public domain

Once the patent expires, protection ends and it enters the public domain.
This is also called as off-patent in which the current owner of the patent, no longer ceases to be the owner.

Continued

Role of Patents in our everyday life

Patents inventions have invaded our all aspects of day to day life. Even the shape and design of the coffee mug or the fans on the ceiling above our head could be patented. Like it is well known that in case of electric lightening (patents held by Edison and Swan) and sewing machines (patents held by Howe and Singer), and the iPhone (patents held by Apple), these are the things we see very normally in our surroundings.

All patent owners are required to share their information in public domain. This information can be used by the other people for carrying out derive inspiration for carrying out further creativity and innovation.

Continued

What Kind of Inventions can be patent protected?

Must be of practical use

Must carry some novelty

New characteristics must exist which is not a part of an existing knowledge

In many countries, scientific theories, mathematical methods, plant or animal varieties, discoveries of natural substances, commercial methods or methods of medical treatment (as opposed to medical products) **are not generally patentable.**

Trademark

Trademark is the distinctive design which identifies certain goods or services produced or provided by an individual company.

Its origin can be traced back to ancient times where weavers or craftsmen would mark their signatures or remarks on their artistic works.

These marks in the present scenario are called as trademarks. It helps consumers to identify and purchase a product or service based on whether its explicit characteristics and quality – as indicated by its unique trademark – meet their needs.

Continued

Purpose of Trademarks

Trademarks ensure that the people who own these trademarks have the right to use these to help others identify the goods and services and to also allow others to use these in return of a pre-determined payment.

In a broader sense, trademarks promote enterprises globally by rewarding their owners with recognition and financial profit.

Trademarks also protect someone's unique property from being used by others for creating counterfeit products (which use similar signs to sell fake products).

Continued

What can be registered as Trademarks?

A combination of words, letters and numerals

They may consist of drawings, symbols or three dimensional signs, such as the shape and packaging of goods.

Holograms, motions, color and non-visible signs (sound, smell or taste).
Eg. ISO certifications

Continued

Some other categories of trademarks;

Collective marks- owned by an association whose members use them collectively. Such associations might represent professionals like accountants, engineers or architects

Continued

Applying for Trade-marks

Application for registration of a trademark needs to be filed with the appropriate national or regional trademark office.

The application must contain a clear reproduction of the sign filed for registration, including any colors, forms or three-dimensional features.

Finally, the right applied for cannot be the same as, or similar to, rights already granted to another trademark owner.

Industrial Design

It refers to the ornamental or aesthetics aspects of an article.

Design may consist of the shape of the article, pattern, size, color or two dimensional features.

Industrial designs are applied to a wide variety of products and handicrafts. These products may include medical equipments, watches, jewelry, luxury items, electrical items, house wares, textile designs and luxury goods etc.

Continued

To be protected, an industrial design must be;

New – should be different from designs already protected.

Non functional – technical features cannot be protected under designs, they can only be covered under patents.

Continued

Why protect Industrial designs

Designs make a product appealing and increases its marketability so must be protected.

When an industrial design is protected, the owner which could be an individual or a firm are assured an exclusive right against unauthorized imitation of the design by others.

This helps the owners to assure a fair return on investment.

It also promotes fair competition and honest trade practices.
It helps to promote creativity as people feel assured that their designs will not be stolen.

Continued

Which industrial designs can be protected?

Those designs which carry an element of newness.

Being new here means they should not be similar to designs which have already been protected

Normally, the term of protection granted is generally five years, with the possibility of further renewal, in most cases for a period of up to 15 years.

Geographical Indication

It is a sign used on goods that denotes the belongingness of the goods or reputation to a particular geographical location.

Commonly, it consists of name of the place of the origin of the goods.

Geographical indications have been most commonly used in case of agricultural products. Like here in India, people are very much willing to pay a extra price for apples that hail from Himachal or globally Swiss chocolates command an extra price as they are produced in Switzerland.

Continued

But the use of geographical indications is not limited to agricultural products, now days it is being extended to other products as well like automobiles from Japan and much more.

Continued

A generic geographical indication

It occurs when the name of the place is used to designate a particular type of product, rather than to indicate its place of origin, the term no longer functions as a geographical indication.

Continued

Why geographical indications need protection?

Geographical indications are mainly treated by the consumers as synonymous to quality and trust.

These in a way depict the valuable reputations which have been earned by y=the company over years and could be used by other for misrepresentation.

False use of geographical indications could be done by others to sell products at a higher price and cheat consumers. Like selling tea in the name of Darjeeling tea, though it is not grown there but the name is just used to command a high price.

Continued

Difference between a geographical indication and a trademark

While, a trademark a sign used by a company to distinguish its goods and services from those produced by others, geographical indication offers the guarantee for production of a product in particular place.

Protection of Geographical indications

These are protected in accordance with the national laws which might vary from one country to another.

Copy rights and related rights

Copy rights laws usually grant authors the protection for their literary and artistic work.

Another field of related rights also exists and provides protection to performers like actors and musicians and to sound recordists as well as broad casting organizations like radio and television.

Continued

Works covered by copyright include, but are not limited to:

Novels, poems, plays, reference works, newspapers, advertisements, computer programs, databases, films, musical compositions, choreography, paintings, drawings, photographs, sculpture, architecture, maps and technical drawings.

Continued

Rights of holders of Copy rights and other related rights;

Can authorize or stop others from:

- Reproducing their work
- Using it elsewhere without taking permission
- Creating copies and selling it for a profit or otherwise
- Translating into other languages
- Performing it and enchasing it without permission etc.

Continued

Advances in Technology and Copyrights

With the advances in technology, copyrights and related rights have expanded enormously because of the new ways of disseminating creations by such forms of communication as satellite broadcasting, compact discs and DVDs.

This in a way has also made it easier for people to copy other works and thus in today's technological area, copyrights and related rights command enormous importance.

Continued

Benefits of Copy rights and other related rights;

Essential for fostering human creativity

Giving recognition and protection boosts the confidence of the artists and enhances their activity and creative output

It encourages companies to invest in the creation, development and global dissemination of their works.

World Intellectual Property Organization

Established in 1970

World Intellectual Property Organization (WIPO) is an international organization devoted to serving and ensuring that the rights of creators and owners of intellectual property are protected worldwide, and that inventors and authors are therefore recognized and rewarded for their creativity.

By providing a stable environment for marketing products protected by intellectual property, it oils the wheels of international trade as well.

Continued

WIPO serves as a forum for its Member States to establish and harmonize rules and practices for the protection of intellectual property rights

WIPO also services global registration systems for trademarks, industrial designs and appellations of origin, and a global filing system for patents. These systems are under regular review by WIPO's Member States and other stakeholders to determine how they can be improved to better serve the needs of users and potential users.

Continued

WIPO works with its Member States to make available information on intellectual property and outreach tools for a range of audiences – from the grassroots level through to the business sector and policymakers – to ensure its benefits are well recognized, properly understood and accessible to all.

Thank You!!

Ethics in Engineering Practice

Lecture No 14 : TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS

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Outline of the module

- Introduction to TRIPS
- Objective behind formulating TRIPS
- Nature and scope of the member obligations under TRIPS
- Why was TRIPS included in WTO?
- Which IPRs are covered under TRIPS?
- Link between TRIPS and WTO
- Relevance of Doha Declaration for public health

Source: The content of the slides has been drawn from FAQ module of Centre of WTO studies, IIFT Delhi And https://www.wto.org/english/docs_e/legal_e/27-trips.pdf

TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS

The Agreement on Trade related Aspects of Intellectual Property Rights of the World Trade Organization is commonly known as the TRIPS Agreement or just TRIPS.

It is one of the main agreements of the World Trade Organization which was negotiated as was negotiated as part of the eighth round of multilateral trade negotiations in the period 1986-94 under General Agreement on Tariffs and Trade (GATT) commonly referred to as the Uruguay Round extending from 1986 to 1994.

Continued

It appears as Annex 1 C of the Marrakesh Agreement which is the name for the main WTO Agreement.

The Uruguay Round introduced Intellectual Property Rights into the multilateral trading system for the first time. The uniqueness of the TRIPS lies in the fact that it applies to all the members mandatorily.

The objective behind formulation of TRIPS

TRIPS was signed /formed with the main the objective of;

(As exactly mentioned in Annexure 1 c)

Desiring to reduce distortions and impediments to international trade, and taking into account the need to promote effective and adequate protection of intellectual property rights, and to ensure that measures and procedures to enforce intellectual property rights do not themselves become barriers to legitimate trade;

Continued

Recognizing, to this end, the need for new rules and disciplines concerning:

(a) the applicability of the basic principles of GATT 1994 and of relevant international intellectual property agreements or conventions;

(b) the provision of adequate standards and principles concerning the availability, scope and use of trade-related intellectual property rights;

(c) the provision of effective and appropriate means for the enforcement of trade-related intellectual property rights, taking into account differences in national legal systems;

Continued

(d) the provision of effective and expeditious procedures for the multilateral prevention and settlement of disputes between governments; and

(e) transitional arrangements aiming at the fullest participation in the results of the negotiations.

Nature and Scope of member counties

As mentioned in Article 1;

Members shall give effect to the provisions of this Agreement. Members may, but shall not be obliged to, implement in their law more extensive protection than is required by this Agreement, provided that such protection does not contravene the provisions of this Agreement.

Members shall be free to determine the appropriate method of implementing the provisions of this Agreement within their own legal system and practice.

Continued

For the purposes of this Agreement, the term "intellectual property" refers to all categories of intellectual property that are the subject of Sections 1 through 7 of Part II.

(Copyrights and related rights, Trademarks, Geographical Indications, Industrial design, Patents)

Continued

Members shall accord the treatment provided for in this Agreement to the nationals of other Members.

In respect of the relevant intellectual property right, the nationals of other Members shall be understood as those natural or legal persons that would meet the criteria for eligibility for protection provided for in the Paris Convention (1967), the Berne Convention (1971), the Rome Convention and the Treaty on Intellectual Property in Respect of Integrated Circuits, were all Members of the WTO members of those conventions.

Continued

Any Member availing itself of the possibilities provided in paragraph 3 of Article 5 or paragraph 2 of Article 6 of the Rome Convention shall make a notification as foreseen in those provisions to the Council for Trade-Related Aspects of Intellectual Property Rights (the "Council for TRIPS").

Why was TRIPS included in WTO?

GATT (General Agreement on Tariffs and Trade) which was a precursor to the WTO had already resulted in low tariffs and increasing trade among nations. Due to which even domestic policies of the nations came into focus of trading nations. Developed countries, including the United States started facing increasing competition in manufactured exports from Newly Industrializing Countries (NICs) of Asia.

Developed countries, including the United States started facing increasing competition in manufactured exports from Newly Industrializing Countries (NICs) of Asia.

Continued

For issues concerning IPR, these countries were required to “clarify GATT provisions and elaborate as appropriate new rules and disciplines” in order to reduce distortions and impediments to international trade.

As the role of technology became much bigger, having higher proportion of invention and designs, IPR gained a dominant role in trade among nations globally.

As a result, in the Uruguay Round negotiations, the intellectual property rights dominated the discussions.

Which IPRs are covered under TRIPS

- Copyright and related rights (i.e. the rights of performers, producers of sound recordings and broadcasting organizations)
- Trademarks, including service marks
- Geographical indications including appellations of origin
- Industrial designs

Continued

- Patents including the protection of new varieties of plants
- Layout-designs (topographies) of integrated circuits
- Undisclosed information, including trade secrets and test data

Link between TRIPS and WTO

WTO through the TRIPS Agreement provides rules for trade and investment in ideas and creativity by incorporating standards laid down in certain exact provisions of the major IPR conventions.

The WTO provides that “intellectual property” should be protected when trade is involved. Thus, through the TRIPS, the WTO makes it mandatory for all its member countries to follow basic minimum standards of IPR provided for under TRIPS and bring about a degree of harmonization of domestic laws in this field.

Relevance of Doha Declaration for public health

The framework of rigid intellectual property rights established by the TRIPS Agreement allows pharmaceutical manufacturers to charge prices above marginal cost of production.

This affects the ability of governments to monitor and protect public health because of their obligations to protect IPRs of these medicines producers. This in a way restricts the ability of the government to ensure affordable access of these medicines to common public.

Continued

In order to come over these issues, mainly with reference to the developing countries, regarding limited or no access to medicines at affordable prices, the WTO members agreed to issue the Doha Declaration to clarify the TRIPS Agreement in the context of Public Health.

The declaration made it clear that TRIPS Agreement does not restricts its member countries from taking steps to protect public health and give them the right to create exceptions to its IPR laws to enable it to grant compulsory licenses for manufacture of essential goods such as life-saving drugs, even if the consent of the holder of the IPR is not forthcoming. But it was on the countries to decide when the compulsory licenses can be granted or determine situations of national emergency.

Continued

Member states were also allowed to grant a compulsory license for limited export and import of medicines where the receiving country lacks manufacturing capacity, this was decided based on the decision taken by WTO in 2003.

Thank You!!

Ethics in Engineering Practice

Lecture No 15 : Indian obligations under TRIPS

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Outline of the module

- Impact of TRIPS on relevant Indian legislation
- Is there any special or unique provision on Patents in the Indian law?
- Under what conditions is a trademark granted in India?
- How is an Industrial design defined in India?
- The IPR of Design is covered by the Designs Act, 2000.
- Important aspects in Indian Design Act 2000
- Protection of Copyrights in India
- Challenges in negotiations on various IPRs under TRIPS for India

Source: The content of the slides has been drawn from FAQ module of Centre of WTO studies, IIFT Delhi

Impact of TRIPS on relevant Indian legislation

In order to meet the requirements and comply with the international obligations, a number of domestic IPR laws were amended.
The Indian Patent Act, 1970 was amended to conform to the requirements of TRIPS.

The first amendment to the Patent Act 1970 was effected through the Patents (Amendment) Act, 1999 that was brought into force retrospectively from 1st January, 1995.

“It allowed for filing of patents in the areas of drugs, pharmaceuticals and agro chemicals even though such patents were not allowed”

Continued

The second amendment to the 1970 Act was made through the Patents (Amendment) Act, 2002.

New patents rules were introduced, which came into force on 20 May, 2003 and the earlier Patents Rules passed in 1972 were replaced by it.

With these amendments, India met all its obligations relating to patent protection that it was required to meet by the year 2000 under the TRIPS Agreement. It also brought the Patents Act in conformity with the requirements of the Patent Cooperation Treaty of WIPO as modified until 2001.

Continued

The third amendment to the Patents Act, 1970 was initiated through the Patents (Amendment) Ordinance, 2004 with effect from 1st January, 2005.

This Ordinance was later replaced by the Patents (Amendment) Act 2005 (Act 15 of 2005) on 4th April, 2005 which was brought into force from 1-1-2005.

This amendment provides access to India to start providing patents for drugs and medicines, food and chemical products. This final amendment brought India in full compliance with its TRIPS obligations.

Continued

Similarly, in the case of trademarks, the governing law in India now is Trade Marks Act, 1999 and this was brought into force with effect from September 15, 2003 to bring it in compliance with TRIPS by repealing the Trade and Merchandise Marks Act, 1958.

The Copyright Act, 1957 today is compliant with most international conventions and treaties in the field of copyrights. India is a member of the Berne Convention of 1886 (as modified at Paris in 1971), the Universal Copyright Convention of 1951 and TRIPS. Though India is not a member of the Rome Convention of 1961, the Copyright Act, 1957 is fully compliant with the provisions of this Convention.

Continued

Two new treaties, collectively termed as Internet Treaties, were negotiated in 1996 under the auspices of the World Intellectual Property Organization (WIPO). These treaties are the 'WIPO Copyrights Treaty (WCT)' and the 'WIPO Performances and Phonograms Treaty (WPPT)'.

These treaties were negotiated essentially to provide for protection of the rights of copyright holders, performers and producers of phonograms in the Internet and digital era. India is not a member of these treaties.

Is there any special or unique provision on Patents in the Indian law?

Patent act has a set of exceptions mentioned in Section 3 by which certain things cannot be protected by the law.

One unique provision is clause d mentioned in Section 3.

“This provision prevents patenting of minor improvements in chemical and pharmaceutical entities unless the invention results in the enhancement of known efficacy of that substance”

Continued

This prevents patenting of mere discovery of any new property or new use for a known substance or of the mere use of a known process, machine or apparatus. This provision is a safeguard for public health purposes and sets a higher threshold which has been interpreted as therapeutic efficacy for the grant of a patent on pharmaceuticals.

Under what conditions is a trademark granted in India?

Under the Indian Trademarks Act, 1999, the following conditions have been included for the grant of a trademark:

- Definition of trademark has been enlarged to include shape of goods, packaging and combination of colors which can be adopted as a trade mark.

- Registration of Service Marks allowed in addition to Trademarks for goods.

- Single Registration of trademark; no separate application necessary for each category/class of goods or services, a single application would do; however filing fee will be charged separately for each class of goods/services.

Continued

- Some offences relating to trademark made cognizable.
- Extension of application of convention countries in India

Who provides Patents in India?

In India, the Controller General of Patents, Designs and Trademarks is responsible for the administration of the Patents Act, 1970 through the Patent Offices located at Kolkata, Mumbai, Delhi and Chennai.

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•Enhanced punishment for the offences relating to trademark on par with the Copyright Act, 1957 to prevent the sale of spurious goods.

• Term of registration of trademark is ten years, subject to renewal thereafter.

• Registration of Collective Marks owned by associations allowed.

• Some offences relating to trademark made cognizable.

• Extension of application of convention countries in India

How is an Industrial design defined in India?

The IPR of Design is covered by the Designs Act, 2000.

"This means only the features of shape, configuration, pattern, ornament or composition of lines or colours applied to any article whether in two dimensional or three dimensional or in both forms, by any industrial process or means, whether manual, mechanical or chemical, separate or combined, which in the finished article appeal to and are judged solely by the eye; but does not include any mode or principle of construction or anything which is in substance a mere mechanical device, and does not include any trade mark as defined in clause (v) of sub-section (1) of section 2 of the Trade and Merchandise Marks Act, 1958 or property mark as defined in section 479 of the Indian Penal Code or any artistic work as defined in clause (c) of section 2 of the Copyright Act, 1957 43 of 1958"

Continued

- identification of non-registerable designs
- introducing a classification system (Locarno classification)
- elimination of secrecy period of two years for a registered design
- provision of public inspection after notification
- introduction of rights of registered proprietor of design

Continued

- initial term of protection is 10 years followed by another 5 years on request
- provision of restoration of lapsed design.

Protection of Copyrights in India

The Indian Copyright Act, 1957 protects original literary, dramatic, musical and artistic works and cinematograph films and sound recordings from unauthorized uses.

Unlike the case with patents, copyright protects the expressions and not the ideas. There is no copyright protection for ideas, procedures, methods of operation or mathematical concepts as such. In India, the duration of copyright for authors is life of the author plus 60 years after his/her death and for cinematograph films and sound recordings 60 years from the year of production.

After the death of the owner, the rights pass on to his/her legal heirs.

Challenges in negotiations on various IPRs under TRIPS for India

There is current debate on patenting of life forms, whether access to medicines through Doha declaration has been achieved.

Other issues of concern are biodiversity and its link with sui generic systems of plant protection and technology transfer.

There is also debate on whether to extend enhanced protection for geographical indications beyond wines and spirits. Internet access and sharing of electronic files has questioned some of the established rules in copyright. On all these issues India needs to examine world trends and proactively develop informed policy interventions.

Thank You!!