

Economics of IPR
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Module – 04
Lecture – 04
Intellectual Property And Development

Intellectual Property and Development, as a part of the fourth lecture and it is the last lecture of this particular course where we are going to see the relationship between intellectual property and development and different views expressed by 2 different types of group of economists and from this discussion we are going to relate the entire issue of development and matter of development which intellectual property.

As we have seen in our first lecture of this week 4, lecture we have seen that there is a high value of commercialization of intellectual property today in the field of business and industry and since, intellectual property has commercial value and countries are fighting in case of dispute settlement body cases we have seen that less developed countries, developed countries, developing countries they all are now having different type of disputes in some cases related to patent, cases related to trademark, geographical indication and we are finding that world is facing a new type of challenge where any obligation which is not as per the TRIPS agreement, if those obligations are not basically fulfilled by any developed country or developing country . Then there is a huge protest and protest in the sense that people are exposing others problem, others demerit in terms of really taking care of the TRIPS agreement.

So, let me begin this discussion with this background that what are basically the linkages between the economical development and intellectual property.

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Introduction

- The economic, social and cultural development through intellectual property rights is contestable issue globally
- The debate on the developmental facets related to IPR has been challenged by many economists, NGOs, civil society and others, particularly in developing economies
- However, some argue that for developing countries, the protection of indigenous technology can be assured through conferring IPRs and is the major determinant of economic growth and poverty reduction
- Moreover, this will also determine the capacity and extent to which these countries can absorb and use foreign technology

So, the debate on the development is related to intellectual property and the economic, social and cultural development through intellectual property right is now in a great debate today and some argue that for developing country the protection of indigenous technology can be assured through the conferring intellectual property rights and which is one of the major determinant of economic growth and poverty deduction today. The debate on the development related to intellectual property has been challenged by many economist, nongovernmental organization, even societies and others particularly in developing economy and more over this will also determine the capacity and extent to which these countries can absorb and uses of foreign technology.

So, the major question which arises here is whether extending the intellectual property regime assist by developing countries or not. Especially in securing the access to modern technological modern technologies provided by the developed counterpart and also the channel through which the protection of intellectual property will promote growth and development in these economies and adding for achieving the social and economic targets or not, but; however, the effects of the intellectual property rights on the process of economic growth and development is complex.

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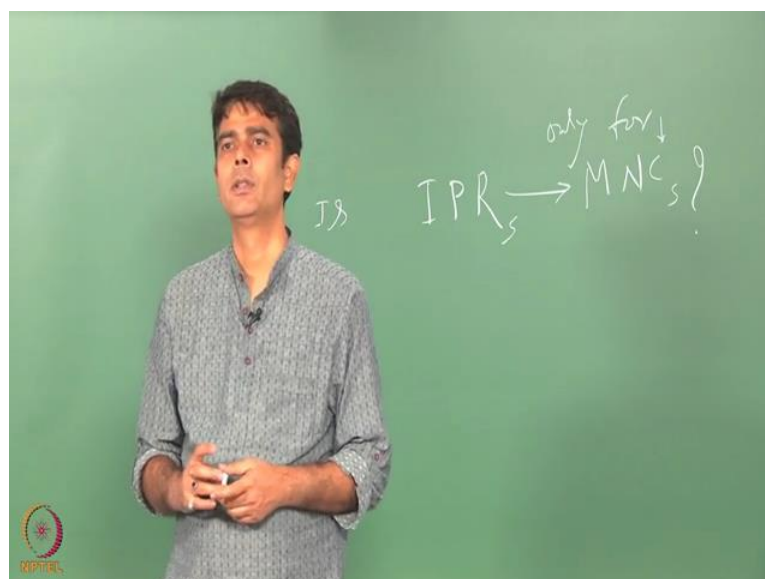
IP Protection Debate

- Some say that stronger IP protection regime would encourage innovation and benefit developing countries by contributing to more rapid economic growth through the transfer of technology from developed to developing countries
- Other argues that **stronger IPR protection** would neither accelerate economic growth nor facilitate rapid transfer of technology
- Because, it merely, results in the transfer of economic profits to **MNCs** that are mostly located in the world's most advanced economies like the US and the EU



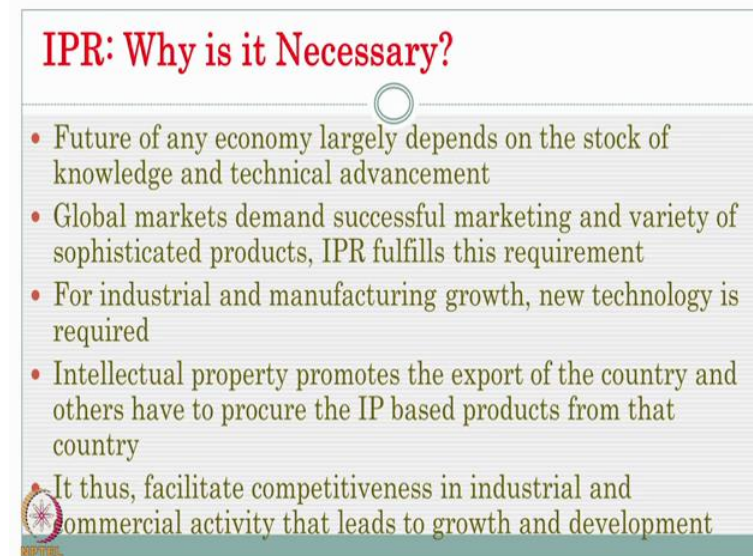
So, some of the economists really point out that there is a stronger IP Protection regime which is important to encourage innovation and benefit in developing economies by contributing to more rapid economic growth through the transfer of technology from developed to developing countries, but another group of economist do argue that stronger intellectual property right protection would neither accelerate accelerating the economic growth nor it is facilitating the rapid transfer of technology. Because it merely result in the transfer of economic profit to MNCs and that are mostly located in the world most advanced economies like the United States and the European Union.

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So, the question that whether IPR, the question that whether IPR, intellectual property rights are only for MNCs, is intellectual property rights only for MNCs or it has some other important role to play. So, if we see the general, necessity included in intellectual property right there are certain points which has to be discussed here that any economy largely depends on the stock of knowledge and technical advancement today.

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IPR: Why is it Necessary?

- Future of any economy largely depends on the stock of knowledge and technical advancement
- Global markets demand successful marketing and variety of sophisticated products, IPR fulfills this requirement
- For industrial and manufacturing growth, new technology is required
- Intellectual property promotes the export of the country and others have to procure the IP based products from that country

It thus, facilitate competitiveness in industrial and commercial activity that leads to growth and development

If, we see the example of any newly emerging economy or even some of the developed economy they have not developed without the stock of knowledge and technical advancements. So, Global markets demands successful marketing and variety of sophisticated products is really intellectual property right fulfils these requirements if you want to really serve the global market if you want to really produce the variety of sophisticated products without taking the help of innovation and technical advancements and without researching on a new direction a country cannot achieve though.

So, intellectual property rights is necessary, it is not unnecessary to have, but it is one of the necessary tools for a country today to really lead the global market into really success some of the to really get sudden success in the market and for industrial manufacturing growth also like the services industrial and manufacturing growth is completely now depending on the technology. So, intellectual property it promotes the export of a country and others, and to have procured the intellectual property base products that that a country is really having is very important today.

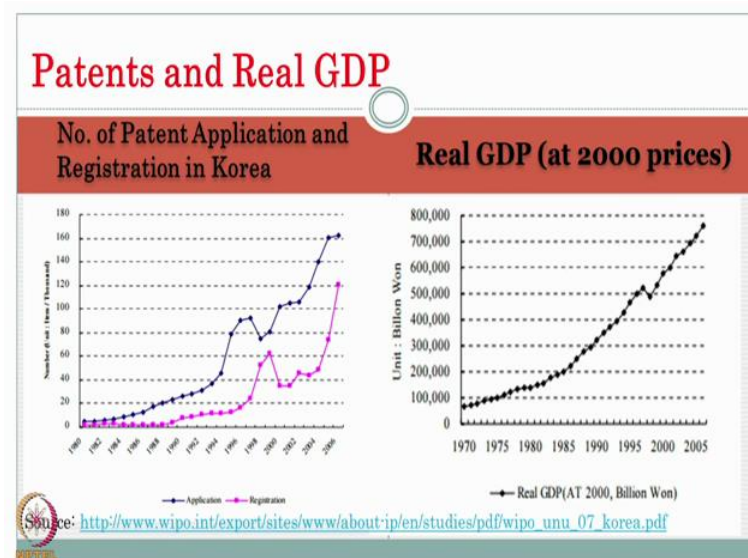
So, it does facilitates countries is for the competitiveness in industrial and commercial activity and that finally, leads to the growth and development.

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So, some the examples are from Korea, Korean companies has developed indigenous technology with the help of intellectual property system, and some of them which have become global market leaders today. So, in Korea we find a rich a strong relationship a strong correlation, correlation between the registrations of the intellectual property especially, the patent applications and the real G D P during 1970 to 2005.

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And this WIPO data suggest us that there is a positive correlation between the number of patent applications and registration in Korea and the real GDP.

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So, what Challenges Developing Countries are facing today? So, the one of the major challenge is the greater emphasis on capacity building by merely imitation of the technology through imports. So, majority of the developing countries are becoming the market for the developed countries technological products and we find today that except imitating some of the technology or working on the reverse engineering. These countries are not really having enough resources and investment capacity to really look for much higher technology compared to the technology which developed countries are having today.

So, developing countries are operating with imperfect knowledge and symmetric information of technological alternatives today. So, how the developing and the least developed economies are going to catch up where the developed economy is unknown. Because, we will find that in the field of intellectual property Right we feel that there is unequal wall in front of us.

So, intellectual property Rights are the imposition by the developed countries to the developing country and many economist and including (Refer Time: 08:57) people are in facing that majority of the benefit's are reaching to the developed country and it is not reaching to the developing countries.

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Challenges for Developing Countries...

- Developed Countries- Exports High-tech sophisticated products
- Developing Countries- Factor Intensive and Primary Products Exports (Natural Resources)
- Developing Countries- Technology followers of the North



So, the challenges for developing countries are exports high tech sophisticated products, factor intensive and primary products exports and technology followers of the north. So, high developed countries are facing this challenge of high export, high technological products, sophisticated products, exported by the developed countries and these countries, developing countries are becoming the followers and the users or the importers of such sophisticated products.

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Innovation: Crucial For Economic Growth

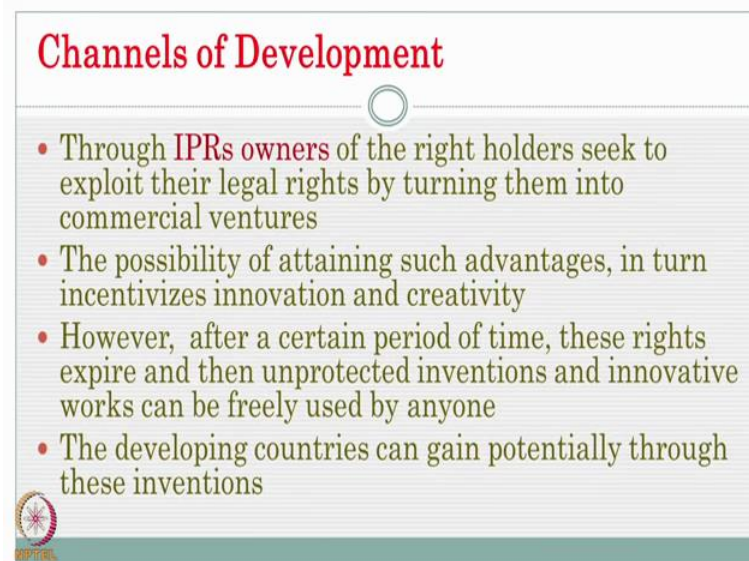
- Development as regarded by **Schumpeter** as the historical process of structural changes which is driven mostly by the innovation
- Schumpeter called innovation as the 'creative destruction'
- And is crucial for the development
- It is equally crucial for competitiveness and economic dynamism



So, under these conditions the Innovation is becoming one of the challenge today, but theoretically development as regarded by Schumpeter as the historical process of structural change which is driven mostly by the innovation.

So, Schumpeter called innovation as the 'creative destruction', and is crucial for the development because, it is equally crucial for competitiveness and economic dynamism. So, innovation is the key economic development as established while Schumpeter.

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Channels of Development

- Through IPRs owners of the right holders seek to exploit their legal rights by turning them into commercial ventures
- The possibility of attaining such advantages, in turn incentivizes innovation and creativity
- However, after a certain period of time, these rights expire and then unprotected inventions and innovative works can be freely used by anyone
- The developing countries can gain potentially through these inventions

So, through intellectual property rights owners of the right holder seek to exploit their legal rights by turning them into the commercial ventures. So, that is why some of the Multi-National Corporations are good enough to exploit the market because they know the fact that for time because, intellectual property rights are time centric and for a specific time they have a free hand to design their product, they have the free hand to design the price and to exploit the market.

So, possibility of attaining such advantage, in turn incentivizes innovations and creativity. So, more you have the time to exploit the market, more you are earning the profit, more you are becoming rich and more you are investing in the further innovations and development of that particular form. So, however, after a certain period of time, these rights expire and then unprotected inventions and innovative works can be freely used by anyone. And it happens, and sometimes you have also seen the dual level of intellectual property rights claimed by some of the firms in the world. So, developing

country can gain some of the economists are arguing that after some time developing country can again the potential benefits of such innovations because after sometime these products are free to use.

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IPRs and Technology Transfer

- Transfer of technology is seen as a part of the bargaining with the developed countries by the developing countries in return of protection of IPRs in their country
- **TRIPS Agreement** provides a number of provisions on this
- For instance: rationales of safeguarding the IP is to encourage innovation and transfer of technology, which involves developed countries to offer inducements for their corporations and organizations to transfer technology to LDCs

So, this is one of the channels of development through the growth of intellectual property rights. So, technology of transfer is seen as part the bargaining with the developed countries by the developing, developed countries with developing countries in return of protection of intellectual property rights in their country. TRIPS agreement provides a number of provisions on this.

For instance: rationales of safeguarding the IP is to encourage innovations and transfer of technology, which involves developed countries to offer large number of benefit's to their incorporation, for their corporations and organizations to transfer technology to these developed countries.

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Technology and Development

- Technology as a factor of production-Total Factor Productivity will increase with the application of technology
- Endogenous(Solow Model)
- Exogenous & New Growth theories
- Technology Intensity of Exports as an indicator of Technological specialization – facets of capability building

So, when we connect this Technology and Development. Technology is a factor of production-Total Factor Productivity will increase with the application of technology: And it was proved by the Solow Model and Exogenous and New Growth Theories. But, Technology Intensity of Export as an indicator of Technological specialization is basically really building the capacity and capability of the firms today.

So, what option and what growth model a country will decide what growth model country will perform whether they are going to perform the import substitution model or Export Promotion Model, and Japan and Asian tigers such as Hong Kong, Singapore, South Korea Taiwan.

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The Choice of Strategy and Development

- Import substitution vs export promotion
- Japan and the Asian Tigers, such as Hong Kong, Singapore, South Korea, and Taiwan managed to raise their per capita incomes—between 1950s to 1990s
- Moreover, Thailand, Indonesia, China, and Malaysia have maintained high rate of growth for long periods- able to reduce their development gap
- They all have shifted from import substitution to export promotion outward oriented developmental strategy

Are managed to raise their per capita incomes between 1950 to 1990. Moreover, Thailand, Indonesia, China, Malaysia have maintained high rate of growth for long period periods able to reduce their development gap. They all have shifted from import substitution to export promotion outward oriented development industry a study which includes innovation, which includes the technological improvement in the country and we cannot really argue that without such Technological Innovation they could have been achieved this type of targets today.

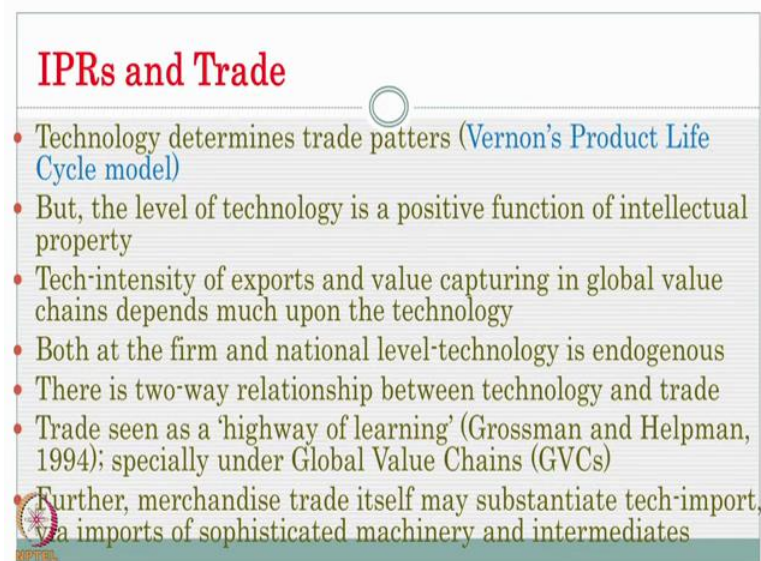
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Choice of the Model

- The long-run growth in the neo-classical growth models is exogenously determined
- In Harrod- Domar Model- long-run growth is determined by the savings rate
- The Solow Model- the long-run growth is determined by the rate of technical progress
- However, these models do not explained the causes of the savings rate and rate of technological progress
- Endogenous growth models attempted to remove this drawback by using microeconomics for developing the macroeconomic growth model

So, the long-run growth in the neo-classical growth models is exogenously determined by different factors. In Harrod-Domar Model-long-run growth is determined by the savings rate. And, The Solow Model is also arguing for the long run growth which is determined by the rate of technical progress. However, these models do not explain the causes of the savings rate and rate of technological progress. So, endogenous growth models attempted to remove this draw back by using micro economics for developing the micro economic growth model.

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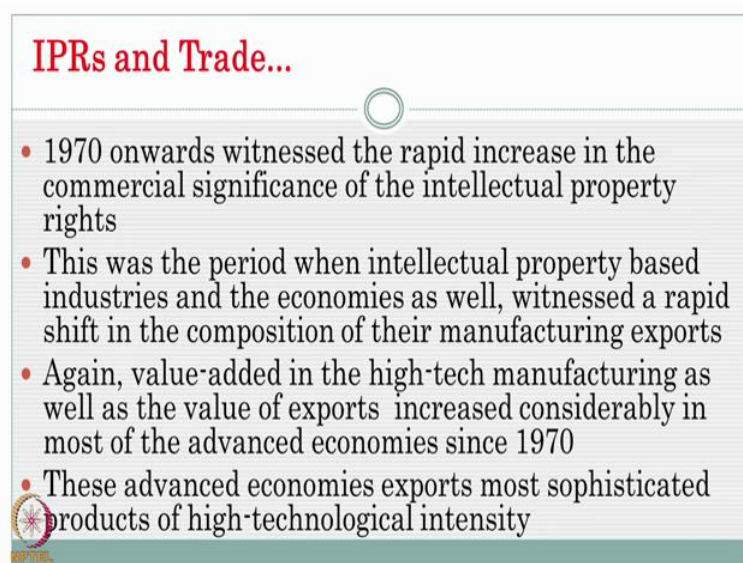
IPRs and Trade

- Technology determines trade patterns (Vernon's Product Life Cycle model)
- But, the level of technology is a positive function of intellectual property
- Tech-intensity of exports and value capturing in global value chains depends much upon the technology
- Both at the firm and national level-technology is endogenous
- There is two-way relationship between technology and trade
- Trade seen as a 'highway of learning' (Grossman and Helpman, 1994); specially under Global Value Chains (GVCs)
- Further, merchandise trade itself may substantiate tech-import, via imports of sophisticated machinery and intermediates

And especially, when we see the interconnection between the intellectual property rights and trade, we will find that technological, technology determines the trade patterns for example, the Vernon's Product Life Cycle Model: is one of the one of the example today where the level of technology is a positive function of intellectual property.

So, Tech-intensity of the exports and value capturing in global value chains depends much upon the technology. So, there is a 2 way relationship between the technology and trade. And Trade had seen as a 'highway of learning' especially under Global Value Chains. So, further, merchandise trade itself may sub substantiate tech (Refer Time: 15:09) or taking part import via imports of sophisticated machinery and intermediates.

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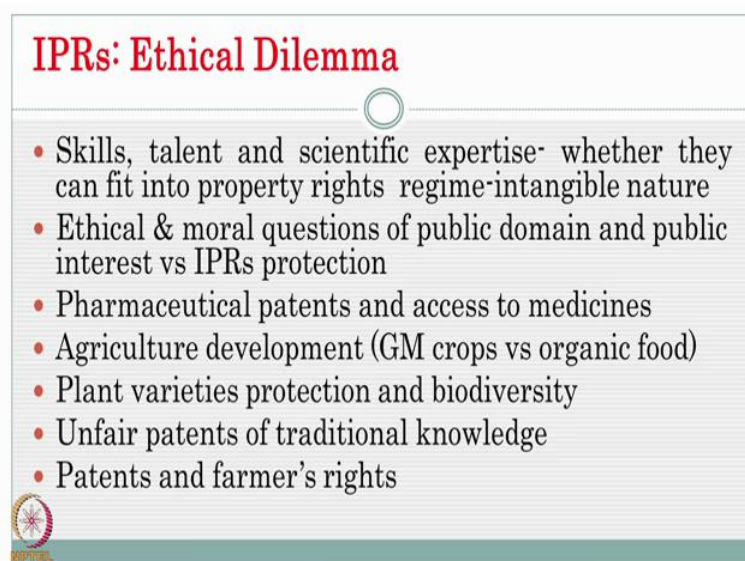
IPRs and Trade...

- 1970 onwards witnessed the rapid increase in the commercial significance of the intellectual property rights
- This was the period when intellectual property based industries and the economies as well, witnessed a rapid shift in the composition of their manufacturing exports
- Again, value-added in the high-tech manufacturing as well as the value of exports increased considerably in most of the advanced economies since 1970
- These advanced economies exports most sophisticated products of high-technological intensity

So, in 1970 onwards had witnessed the rapid increase in the commercial significance of the intellectual property rights. This was the period when IP based industries and the various economies of the world had witnessed a rapid industrialization and shift in the conjunction of their manufacturing exports.

So, gain, value added in the high technological manufacturing as well as the value of exports increased considerably in most of the advanced economies since 1970. So, these advanced economies exports most sophisticated products of high technological, high-technological intensity.

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IPRs: Ethical Dilemma

- Skills, talent and scientific expertise- whether they can fit into property rights regime-intangible nature
- Ethical & moral questions of public domain and public interest vs IPRs protection
- Pharmaceutical patents and access to medicines
- Agriculture development (GM crops vs organic food)
- Plant varieties protection and biodiversity
- Unfair patents of traditional knowledge
- Patents and farmer's rights

This really gives us a certain dilemma in our thinking and there are issues related to the Ethical and Social issues which is well connected with intellectual property rights. So, this skills, talent and scientific expertise - whether they can fit into the property rights regime-intangible nature. Ethical moral questions of public domain and public interest process intellectual property right protection are in front of us. Again, Pharmaceutical patents and access to medicines is one of the Ethical issues.

Agriculture development especially, the (Refer Time: 16:36) modified crops and organic food we had a long debate in week 3 when we were discussing about what type of certain crops are coming on the way and how it is really going to, in case of India 3 lacks, around 3 lacks people have committed suicide and this type of numbers is not a very small number and that really opening our eyes to find out that how Ethical these Multi-National crops and these Multi-National seeds are where the farmers are not really able to control the productivity and when they do not have any escape to come out from the expectation of the high growth or high productivity from these crops, but due to the some changes, due to the some pesticides and due to the some problems occurred on the way the entire crops are basically, helping them not helping basically entire crops are basically putting them in great pressure and they commit suicide.

Plant variety protection and biodiversity, biopiracy, gene piracy is another issue which which is in front of us. So, again unfair patents we have seen in case of India that US

many US, companies has the patent rights on Neem and Basmati another things and which is quite unfair in nature. The Patent and farmer's rights the breeders are saying that farmer's has no right to keep the seeds. So, there is ethical dilemma today in developing country because developing country cannot be changing the entire, entire occupational structure in a very shortest span of time it is not so difficult, it is not so easy, because large number of population has to be shifted from one occupational structure to other occupational structure and it is not so easy.

So, the farmer's rights are the under the review once after another other companies are really challenging the farmers in developed country and in developing country different type of impacts we are finding with the entry of these high yield variety of crops and seeds. Plant variety protection, bio piracy, gene piracy, unfair patents, these are all issues which and ability of the very costly medicines these are some of the issues which is not so easy to handle today by any developing country in the new patent region.

So, Knowledge: technological product linkages or trade-able knowledge is really helping us to have the technological product in our hand market structure the necessary for innovation, but this monopolizing. Somebody is saying that market structure through innovation is giving us the way to compete and to provide the competitiveness in the society.

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IPRs: Ethical Dilemma...

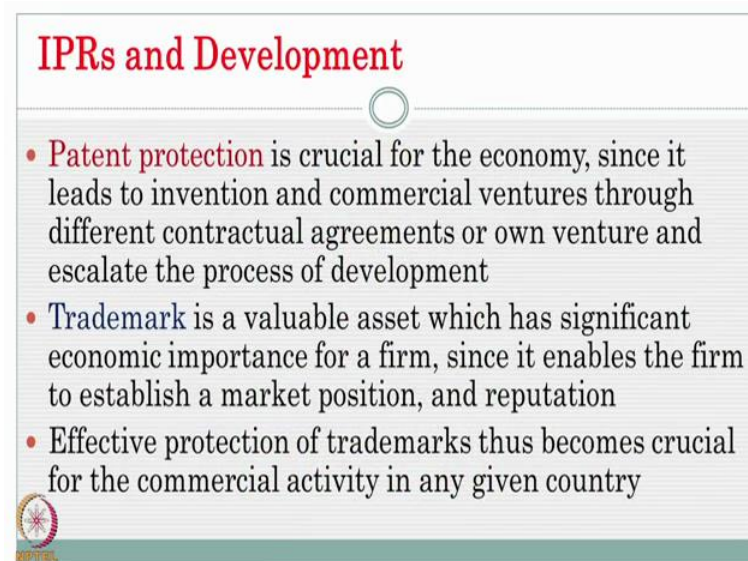
- Knowledge : Technology-Product Linkage or tradable
- Market Structure necessary for Innovation - Monopolies versus competition
- Right holder vested: Community versus Individual- corporate entities-Sliding balance from 'sui generis' to entrenched systems of Intellectual Property- strength or weakness of IPRs

 IPRs

Right holders vested interest community versus the individual, corporate entities and the sliding balance from 'Sui generis' to the entrenched systems of intellectual property strength or weakness of intellectual property rights. So, today we find that one way right holders are saying that because an individual has developed something they were saying that it is my property, I have developed a new variety of rice, but they have basically worked on the gene which is already the property of the particular community or particular region and then there is a huge fight between the individual who has developed something and the product which had a long history of or the product which has a long tradition and generation to generation people have saved such items in a certain region.

So, this ethical dilemma and issues are really very important to connect with the intellectual property rights and development.

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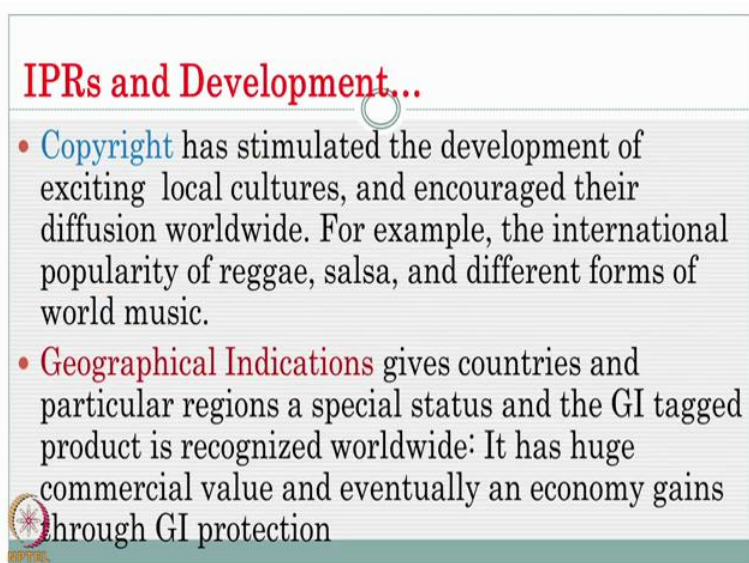


IPRs and Development

- **Patent protection** is crucial for the economy, since it leads to invention and commercial ventures through different contractual agreements or own venture and escalate the process of development
- **Trademark** is a valuable asset which has significant economic importance for a firm, since it enables the firm to establish a market position, and reputation
- Effective protection of trademarks thus becomes crucial for the commercial activity in any given country

It is true that patent protection is crucial for the economy, since it leads to the invention and commercial ventures trademarks is valuable asset which has significant economic importance for a firm, since it enables the firm to establish a market position and reputation effective protection of trademarks thus become crucial for the commercial activity in any given country.

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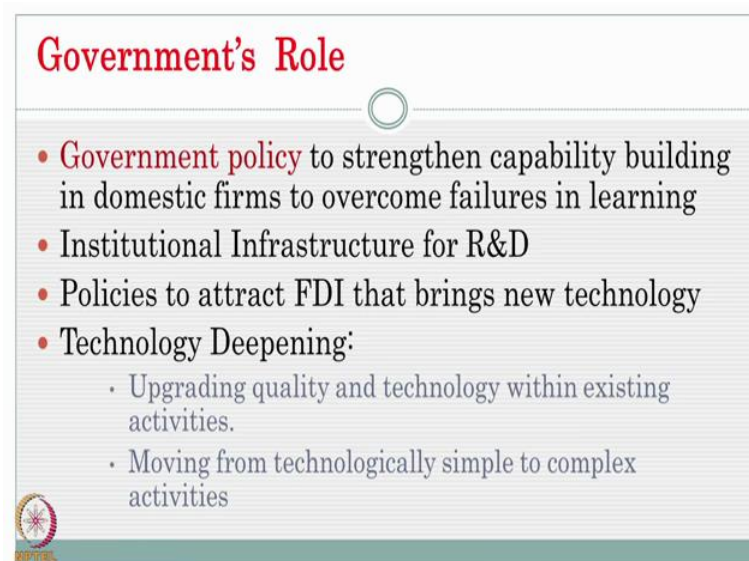
IPRs and Development...

- **Copyright** has stimulated the development of exciting local cultures, and encouraged their diffusion worldwide. For example, the international popularity of reggae, salsa, and different forms of world music.
- **Geographical Indications** gives countries and particular regions a special status and the GI tagged product is recognized worldwide. It has huge commercial value and eventually an economy gains through GI protection

But the point is the issues which are on the way such as the copyright which has stimulated the development of exciting local cultures, and encouraging their diffusion worldwide. But, we have a huge cases related to copyright piracy also. In case of geographical Indications which gives countries and particular regions a special status and the tags GI products is recognized worldwide. But, we find that even in the geographical Indication sector except 2 products other products are not really accepted in WTO as one of the as registered products.


So, we find that there is a, uneven distribution of certain intellectual property in the world.

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Government's Role

- **Government policy** to strengthen capability building in domestic firms to overcome failures in learning
- Institutional Infrastructure for R&D
- Policies to attract FDI that brings new technology
- Technology Deepening:
 - Upgrading quality and technology within existing activities.
 - Moving from technologically simple to complex activities



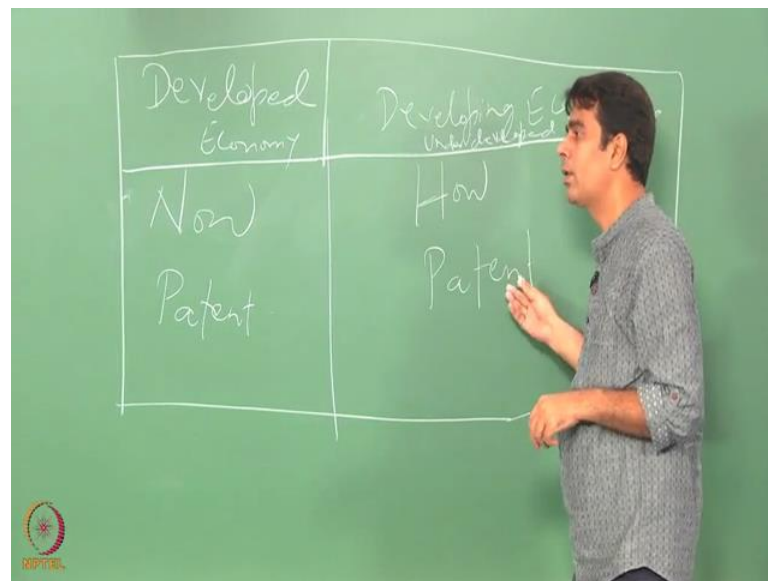
Government policy: Is one of the important government role, is one of the important here to understand that what type of strength you are really going to provide to the domestic firms. So, domestic government policy to a strengthen capability building in domestic firms to overcome failure in learning. And, institutional infrastructure for R and D is again connected with a government's role. A policy to attract Foreign Direct Investment that brings new technology again is very important point. And, Technological Deepening, that relates to the Upgrading quality and technology within existing activity. And moving from technological, technologically simple complex activities are important.

So, when we see today the intellectual property rights after the entire discussion in different weeks we are finding that there is any confusion that intellectual property is required for the sustainable development today, but there is a necessary, it is necessary because it will eventually allow countries to develop their own process of Technological Innovations. And it enables them to a (Refer Time: 23:03) effectively, the technological, technologically or technologies developed abroad, but at same time many developing and least developed countries do face their challenges in a very different way.

So, a Patent right which is a very legal and important right by a by any innovator in any part of the world is a different challenge for a farmer's surviving for their livelihood in other part of the world. (Refer Time: 23:33) today is having the ownership of certain

patent and then based on that the way the prices are being charged and the way those crops are really required lots of technological imports and support is not so easy for the farmers in another developing countries and least developed countries to really, to really have. So, we find today that world has 2 types two different types of world we are finding today the one world where patent is a matter of the part of the world like in case of united states we have seen that more than 1,42,000 the cases of patent in 2015.

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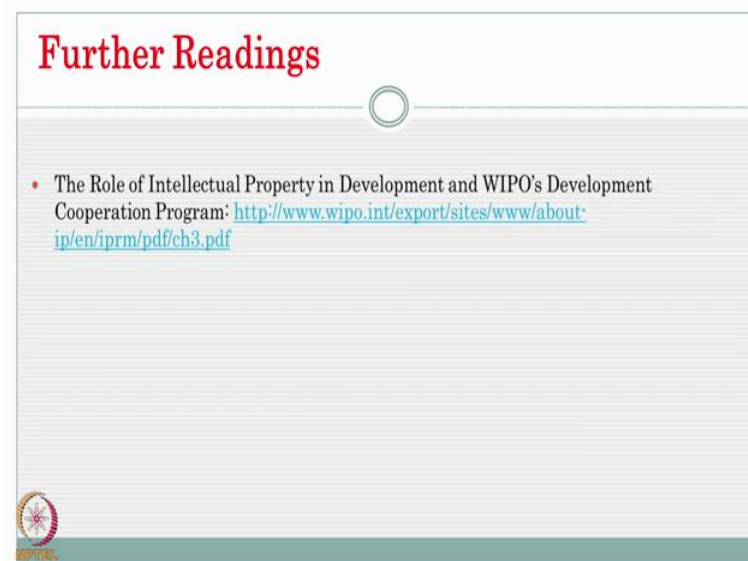
So, we have 2 types of world. One, world which is working on the principle or working and have the capability to have the mind set or to activation for the Now Patent and another side of the world which is struggling for the question that How Patent. So, this side is the Developed World, Developed Economy and this side is the Developing Economy or may be the Under Developed Economy. So, this is the condition of the world - one side is Now Patent another side is How Patent, one side is Now we should have the right on trademark another side is a struggling for How to have trademark. Because, in many cases it is just few days back when India has adopted a policy to have the trademark in a very limited time, but it was very time taking activity in India to have the trademark.

So, a Developing World and Under Developed World where struggling very high for how to have the patent because patent requires lots of exercise, investment, time and then you do not have a very fast patenting system where the large numbers of patent

applications are still waiting for the final results. So, who will run the intellectual property right? The question is the economy which has all efficient tools all mechanism to have the patents now or to the economy which has very slow and very weak infrastructure to have the patent which is really a struggling from the question that how to have patent.

So, then when we have this type of 2 world, in one world where the patent is the question of immediate concern and another world where the question of patent is a question of lots of and but the answer to this question that who will really lead in the world of intellectual property rights and who is going to really have more growth and development is very simple to understand because only these world only the world which has more capability to have patent rights, and other intellectual property rights they are really going to lead us not the world which is really struggling for how to have a patent and how to have the trademark.

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So, I would like to stop this discussion with these observations and these discussions you must read in detail the role of intellectual property right in development with this link. I think all these discussions and argument must be giving you a wide range of idea that how economics of intellectual property rights is going to become a very controversial and one of the most sensitive issue for the world today. Entire international trade is surrounding to these issues which is related to intellectual property right. Probably after

the end of the entire course you will be given an assignment where you have to have, you will have a topic for the debate. We will try to really give you topic for the E debate and I will also give you the option that how you will send your imports to the portal and that will be the part of one of the assignment.

But you all are free to have your questions on the discussion forum and we will try to help and answer your questions on a very regular basis three of teaching assistant, Mister Kumar Gaurav, Mister Chandan Kumar Mistress Mamtha Kumari they all will Miss Mamtha Kumari all will help you to also understand the different links, different assignments and different questions which comes in your mind.

So, the discussion on intellectual property rights and the economics of intellectual property rights is not going to end with the end of these lectures, but it is just the beginning of understanding the economies of intellectual property rights these lectures are I think that these lectures are not enough to understand the economics of IPR.

But, these lectures are just going to have really going to give a beginning of thinking and rethinking on very regular bases, especially on the issue of intellectual property rights. And I will love to answer your questions. And I will motivate you to really participate on the discussion forum week wise discussion and it will be a really very fruitful exercise for me too.

Thank you.