

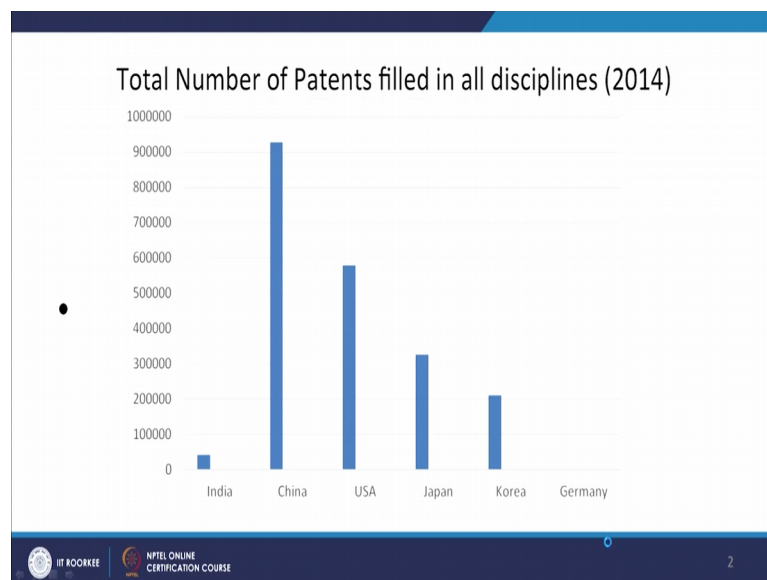
**Innovation, Business Models and Entrepreneurship**  
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**Department of Management Studies**  
**Indian Institute of Technology, Roorkee**

**Lecture - 35**  
**Patents in India**

Friends we are discussing in last few sessions that how innovations are made. And once you have done the innovation it is very important to protect those innovations, and for that purpose we discuss the role of intellectual property rights.

We discussed in our previous sessions different types of IPs which are possible which can help us to protect our innovations. But it is very unfortunate that India is not a very IP sieve nation. We do not understand the importance of intellectual property and therefore, when we see that the number of patents which were filed across the disciplines whether you talk of biotechnology, you talk of pharmaceuticals, you talk of electronics, you talk of it, you talk of agriculture the number of patents which you see in case of china is more than 9 lakhs. So, the number if you see china makes a very popular IP sieve nation.

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The second in the list is USA, but there is a huge gap between first and second. China is tending at the number one with 9 lakh plus and USA is just short of 6 lakhs and India is

actually staggering add on 50,000 values that is the patents filed from India across all the disciplines.

So, you see that in this table the numbers are giving you that China, USA, Japan, Korea, India, Germany; India is almost at the last of the numbers of IP filed we want to promote innovations or we want to make India a startup country. But the dream of becoming a startup country is only possible when we also understand, when we also realize the importance of IP into that without IP our innovations will be taken by our competitors. And then in the present circumstances and in this session also we will see that how IP play a very important role in getting you the right kind of business.

It is not true the picture is giving one part of the idea, but when we go deeper into this data we will have more clarity and what is that, we are trying to discuss the regime of patent in India from 1976 till date and when we compare this period we will see that how things are improving in India. So, I am saying things are improving, but when we will see that the contribution of different sectors in ought improvement is not up to the mark.

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Field	1976-1994					1995-2008				
	MNC	Indian Com	Indian Res/Acad	Others	Total	MNC	Indian Com	Indian Res/Acad	Others	Total
Chem	158	19	40	69	286	432	651	962	203	2248
EE/IT	28	1	1	11	41	1789	66	44	62	1961
Instru	22	8	2	24	56	255	23	54	55	387
Mech	22	8	2	24	56	101	46	23	46	216
Other	2	3	1	8	14	23	6	3	17	49
<b>Total</b>	<b>223</b>	<b>33</b>	<b>45</b>	<b>134</b>	<b>435</b>	<b>2600</b>	<b>792</b>	<b>1086</b>	<b>383</b>	<b>4861</b>
Total/year	32	5	6	19	62	200	62	84	29	374

So, let us see that first part of this slide which we have from 1976 to 1994 and now, when you see that I have 4 types of organizations patents filed by MNC's by Indian companies then by research and academic institutions particularly IITS and CSIR labs, DRDO labs and then some other organizations or may be by individuals.

So, some of the important areas in which patent filing is taking place in India that is chemical, electronics, IT, instrumentation, mechanical and then some random which are clubbed into the others. So, now, you see during this period of 1976 to 1994 the total patents filed were just 435 that is the number of patents filed by all the organizations working in India from 1976 to 1994 these are just 435 and therefore, you can say the patents per year were just 62. So, that a small number.

The one important reason was the protection we had up to 1991. So, there was a different type of ball game which was operating in India, and Indian organizations did not realize the importance of innovation IP etcetera. So, we were not at all innovative country during this period. You see the numbers how lean this numbers are. Indian companies the Indian origin companies was just doing 5 patents per year during this period Indian academic institutions and research organizations were making just 6 patents per year from 1976 to 1994. So, that was the souring state of patent filing in India during this period.

Then we move to second period of our discussion 1995 to 2008. And when we try to compare these two side of the table now, you see things are improving. So, let us first compare the total number of patents per year. So, earlier it was 62 and now from 62 we have moved to 374 in this period. So, that is period you have about a 6 time rise in the patent filing per year. So, this looks very very impressing that something has happened and that something is the post liberalization factor.

Now, multinationals have started coming to India and as a result of that Indian society also started understanding the importance of innovation and protecting those innovations. So, therefore, from 32 the MNC's which they were doing the patents earlier per year their number increase to 200. So, now, if you see within India out of 374 patents per year 200 patents per year are coming from MNC's. So, more than 50 percent of the patents which are originating from India are the contribution of multinational organizations operating from the India.

The Indian research educational institutions are just making 84 patents per year, but certainly this number is a very pride figure because earlier this was just 6. So now, you have improved from 6 to 84. So, there is a significant improvement within the Indian educational system, within the Indian research organizations that they have understood

the importance of patents and the number has improved tremendously from 6 to 84. So, that is something to pride.

Now let see further, when we talk from 2009 to 2016 and again we are taking the data of 1995 to 2008 to compare the values of 2009 to 2016.

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Field	1995-2008					2009-2016				
	MNC	Indian Com	Indian Res/Acad	Others	Total	MNC	Indian Com	Indian Res/Acad	Others	Total
Chem	432	651	962	203	2248	1488	1404	790	410	4092
EE/IT	1789	66	44	62	1961	14761	1108	262	314	16445
Instru	255	23	54	55	387	1642	156	152	167	2117
Mech	101	46	23	46	216	1123	138	55	102	1418
Other	23	6	3	17	49	313	44	21	43	421
Total	2600	792	1086	383	4861	19327	2850	1280	1036	24493
Total/year	200	62	84	29	374	2761	407	182	148	3499

And now, this 374 which was the patents filed per year during 1995 to 2008 got a tremendous boost and now around 3500 patents per year we are filing. So, now, India is in a raise to become the IP sieve nation. But these figures if you see in isolation look very very impressive, but we are moving from 62 patent per year to 374 patents per year. And now we are having an average of 3500 patents per year. So, that average is phenomenal

But when we see it in comparison of other global leaders particularly china to which we compare for all our economic development. So, china is filing 9 lakh patents per year in 2014 and we are just around 50,000. So, in comparison of china we are almost nowhere. So, we are doing good things, we are doing good things, but we need to do more good things so that we can compete at the global label with the powers like China, USA and even a smaller countries like Republic of Korea etcetera.

Now, if you see this final part of this table that is from 2009 to 2016 here also you are improving from 374 to 3499, but out of 3499 or 3500 MNC's are contributing 2761.

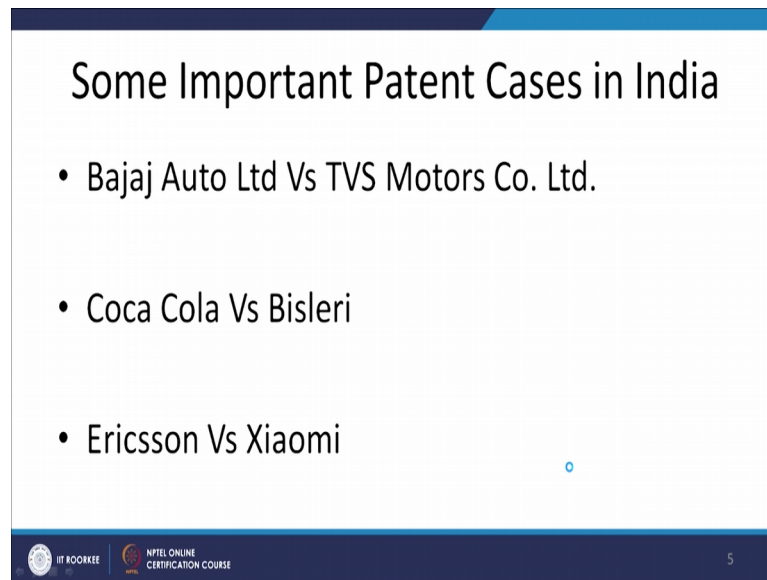
Again you see the contribution of multinational organizations in giving you patents is the maximum. While, so MNC's have improved from 200 patents per year to 2761 patents per year around 12 time increase or 13 time increase in their patents filing, while if you see the Indian educational institutions they were filing 84 patents per year from 1995 to 2008 and now they are having 182. So, they have just doubled only.

During the same period the patent filing from MNC's have increased to 13 times, while the patents filing from academia has just improved to twice. So, you can understand the huge gap. It is improving, but at the rate which MNC's are doing the progress and at the rate which academia and Indian research institutions are doing progress. There is tremendous gap between them, and therefore it is very very important that we need to develop their type of mind set that type of understanding in our startups in our innovative organizations that they should filed patent they should develop a culture of IP filing in their organization, so that we can actually improve this number of 407 and 182.

The Indian companies were filing 62 patents per year from 1995 to 2008 and this value has increased to 407. So, there is a increase of 6, 7 times, but it is again much less as compared to MNC's. So, point is that the patent culture in India is on the path of improvement, but it is much slower when we compare it with the global gears.

One of the reason for this is that we do not publicize, we do not publicize about IP happenings, we do not publicize about patent infringement cases and therefore, when we talk to industry people when we talk to academia it is a normal thing why should we go for patent there is no benefit of patent. So, therefore, these organizations Indian organizations are highly reluctant for IP filings. I will like to mention some of the popular 2, 3 cases in this session where we consider that how IP filing has benefited these organizations tremendously. 2, 3 cases sample cases or you can say case studies we are going to discuss in this session.

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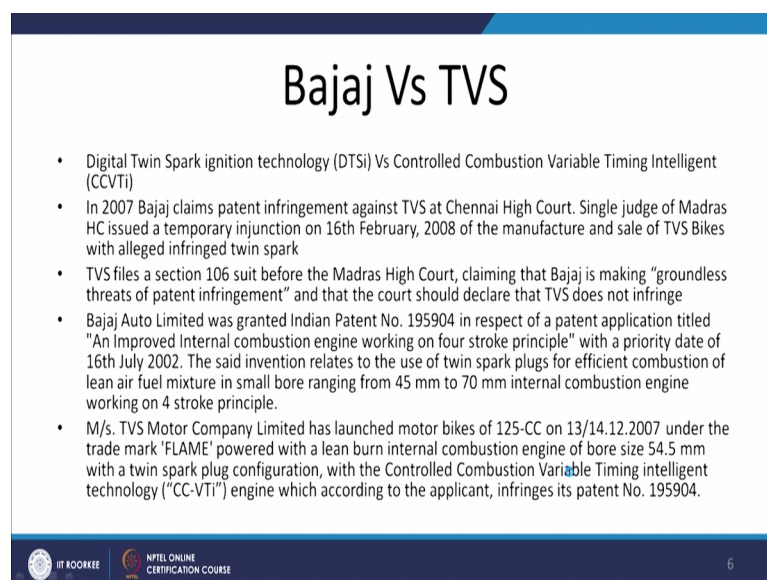
## Some Important Patent Cases in India

- Bajaj Auto Ltd Vs TVS Motors Co. Ltd.
- Coca Cola Vs Bisleri
- Ericsson Vs Xiaomi

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One of the case is very popular some of you may be knowing it also the Bajaj auto case versus TVS motors case, the other popular case which is Coco Cola versus Bisleri, then another popular case that is Ericsson versus Xiaomi. So, we will be discussing these 3 cases briefly in this session. And this will give you a fair amount of idea that how IP protection can help the organizations from lot of revenue loss or profit are gaining.

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## Bajaj Vs TVS

- Digital Twin Spark ignition technology (DTSI) Vs Controlled Combustion Variable Timing Intelligent (CCVTi)
- In 2007 Bajaj claims patent infringement against TVS at Chennai High Court. Single judge of Madras HC issued a temporary injunction on 16th February, 2008 of the manufacture and sale of TVS Bikes with alleged infringed twin spark
- TVS files a section 106 suit before the Madras High Court, claiming that Bajaj is making "groundless threats of patent infringement" and that the court should declare that TVS does not infringe
- Bajaj Auto Limited was granted Indian Patent No. 195904 in respect of a patent application titled "An Improved Internal combustion engine working on four stroke principle" with a priority date of 16th July 2002. The said invention relates to the use of twin spark plugs for efficient combustion of lean air fuel mixture in small bore ranging from 45 mm to 70 mm internal combustion engine working on 4 stroke principle.
- M/s. TVS Motor Company Limited has launched motor bikes of 125-CC on 13/14.12.2007 under the trade mark 'FLAME' powered with a lean burn internal combustion engine of bore size 54.5 mm with a twin spark plug configuration, with the Controlled Combustion Variable Timing intelligent technology ("CC-VTi") engine which according to the applicant, infringes its patent No. 195904.

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Now, the first case that is the Bajaj versus TVS case it is a very popular case and in this slide I have given a brief summary of the case. And I can request my students that you

can go to different web sources and you will find lot of material available with respect to Bajaj and TVS case and they are kind of a archrival in the field of innovations.

Now, this particular case which I am discussing here it is related to dtsi technology and in which there is a fight between Bajaj and TVS. Now, what is this case all about I am just going to read quickly. That in 2007 Bajaj claims patent infringement against TVS motors in the Chennai high court, the Chennai high court issued a temporary injunction on 16th February 2008 of the manufacture and sale of TVS bikes with alleged infringed twin spark.

Now, TVS files a section 106 suit before the madras high court claiming that Bajaj is making groundless threats of patent infringement and that the court should be declared that TVS does not infringe the patents. Now, Bajaj auto limited was granted Indian patent number 195904 in respect of a patent application that an improved internal combustion engine working on 4 stroke principle, with a priority date of July 2002.

Now, in this invention it is related to the use of twin spark plugs, for efficient consumption of lean air fuel mixture in a small bore ranging from 45 millimeters to 70 millimeter internal combustion engine working on 4 stroke principles. So, basically those who know about automobile they know that automobiles work on two principles, one is 2 is stroke, another is 4 strokes. So, now, in 4 stroke engine it is said that you have a better fuel combustion and nowadays all the motor cycles and the automobiles are working on 4 stroke principles.

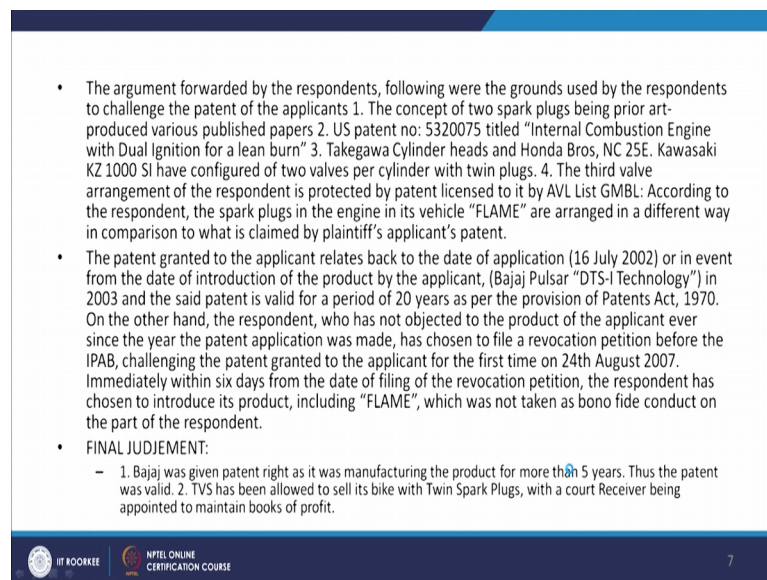
Now, there is a continuous research going on that how to achieve higher level of efficiency in your combustion process and for that purpose Bajaj filed a patent application that we have developed a twin spark technology through which we can achieve higher level of fuel combustion efficiency, and for that purpose the patent was granted to Bajaj auto limited. But TVS came into the picture and said that there is not sufficient ground to be granted patent to the Bajaj and therefore, they objected the patent of Bajaj.

So, TVS motor limited launched a motor bikes of 125 cc in 2007 under the trade mark name of flame f l a m e, many of you those who are in India know about this flame motor cycle. And this was powered with a lean burning internal combustion system of bore size

of 45, 54.5 millimeter again with a twin spark plug configuration with the control combustion variable timing intelligent technology.

So, actually Bajaj was saying the same technology as DTS-I while the TVS gave a different name to it and that is CCVTI, but if you go into the technicality you will find that the basic modus operand of both this technologies are almost similar. They gave two different types of names so that it does not go into the patent issue; so which according to the applicant infringes its patent number 195904. So, Bajaj said that this flame motor cycle which is based on CCVTI technology is infringing the patent of Bajaj which they got for their DTS-I technology.

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- The argument forwarded by the respondents, following were the grounds used by the respondents to challenge the patent of the applicants 1. The concept of two spark plugs being prior art-produced various published papers 2. US patent no: 5320075 titled "Internal Combustion Engine with Dual Ignition for a lean burn" 3. Takegawa Cylinder heads and Honda Bros, NC 25E. Kawasaki KZ 1000 SI have configured of two valves per cylinder with twin plugs. 4. The third valve arrangement of the respondent is protected by patent licensed to it by AVL List GMBL: According to the respondent, the spark plugs in the engine in its vehicle "FLAME" are arranged in a different way in comparison to what is claimed by plaintiff's applicant's patent.
- The patent granted to the applicant relates back to the date of application (16 July 2002) or in event from the date of introduction of the product by the applicant, (Bajaj Pulsar "DTS-I Technology") in 2003 and the said patent is valid for a period of 20 years as per the provision of Patents Act, 1970. On the other hand, the respondent, who has not objected to the product of the applicant ever since the year the patent application was made, has chosen to file a revocation petition before the IPAB, challenging the patent granted to the applicant for the first time on 24th August 2007. Immediately within six days from the date of filing of the revocation petition, the respondent has chosen to introduce its product, including "FLAME", which was not taken as bono fide conduct on the part of the respondent.
- FINAL JUDJEMENT:
  - 1. Bajaj was given patent right as it was manufacturing the product for more than 5 years. Thus the patent was valid. 2. TVS has been allowed to sell its bike with Twin Spark Plugs, with a court Receiver being appointed to maintain books of profit.

Now, the arguments a started in the court and it was going to be the big issue at that time and the TVS motors was arguing that Bajaj got the patent. But the technology was already available in some other parts and they give their arguments that the concept of two spark plugs being prior art produced various published papers they give the example of one us patent 5320075 which titles as internal combustion engine with dual ignition for a lean burn.

And the idea of all these arguments was that that there were not sufficient grounds for the novelty, for the non obviousness to get patent to the Bajaj motors and therefore, they were trying to say that the patent which was granted to Bajaj should not be given. So, on



the basis of that finally, when the court give their decision. So, court says that Bajaj was given the patent right as it was manufacturing the product for more than 5 years.

So, now, if you remember we said that the patent was granted to Bajaj in year 2002, 16, July 2002. And in 2007 when TVS motors raised its application, so they were trying to launch a new vehicle named as flame and on which Bajaj was claiming that it is the infringement of their patent. So, because they already had the patent of DTS-I technology and TVS was coming with CCVTI technology. So, to stop the introduction of flame motor cycle in to the market Bajaj was trying to use that patent.



Now, to make the launch successful TVS was trying to counter that the patent available to Bajaj is not right and it should be revoked. So, this was the argument between two parties, but since Bajaj was enjoying that patent for last 5 years and already sufficient numbers of motor cycles where in the market. So, finally, the court said that the patent is right which is with the Bajaj, because it is available with them for more than 5 years and during that period TVS never came with those argument that the patent is not right and now when they are launching a new product under the name of flame. So, they are saying that this is, and what happened ultimately that court made a receiver on the sale of TVS motor cycles and all the profits which was accrued by the TVS motor by the sale of flame motor cycle was countered by the receiver and a part of that was given to the Bajaj motors.

So, this is one example where you can see that how patent infringement could protect the Bajaj motors otherwise it would have been difficult for Bajaj to protects its technology and there would have been a disaster for Bajaj motors point of view. The other popular case which needs your attention is a case of Coco Cola versus Bisleri. Now, Bisleri we know is a very popular Indian brand and we all know them for the bottled water and it is so popular that all types of bottled water these are known as Bisleri, whether it is of aqua, whether it is Ganga whether it is relier be all consider that if it is a bottled water it is a Bisleri water.

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## Coca Cola Vs Bisleri

- **Facts:**
- Bisleri International Pvt. Ltd (Defendant) is an Indian beverages company, best known for bottled water. It sold and assigned the trademark 'MAAZA' including the right to formulate, intellectual property right and goodwill attached to the mark for India to Coca-Cola.
- In the year 2008, the defendant filed an application for registration of trademark 'Maaza' in Turkey, and then started exporting the mango flavoured fruit drink with the mark 'Maaza'.
- Coca-Cola Co. (Plaintiff) filed a petition for permanent injunction and damages for passing-off and infringement of trademark.

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Now, Bisleri used to have a very popular brand with them and that is Maaza. Now, Maaza they sold to them they gave all its rights to Coca Cola and with it includes the right to formulation, it includes the intellectual property right, and goodwill attached to the mark of Maaza to the Coca Cola. So, it was done and now, if you drink Maaza in India. So, in that you know that it is a Coca Cola product, because Bisleri granted all the rights to the Coca Cola.

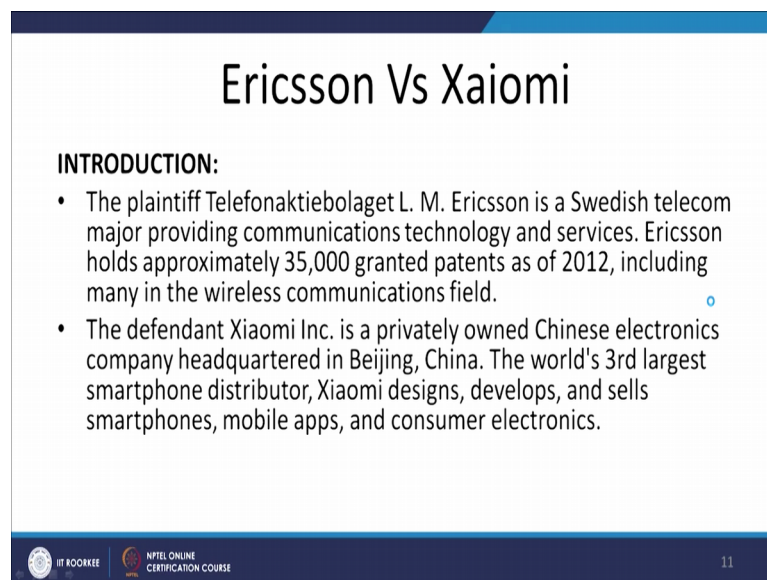
But what is started happening in year 2008 that Bisleri is started exporting this Maaza product in Turkey with the same brand name of Maaza and when it came to the knowledge of Coca Cola. So, Bisleri argued that we are not doing the business of Maaza in India, we are doing this business in some other country Turkey and we gave you the rights for India not the global rights and therefore, this matter went to court and in the court it was decided that since the product is made in India and when the product is made in India and you are distributing this or exporting this product from India. So, it is actually the infringement of intellectual property right. And therefore, it cannot sell the product anywhere on the earth under the name of Maaza.

So, if intellectual property rights would not be there it would have been difficult for Coca Cola to stop Bisleri from doing this practice. So, because of intellectual property rights and the transfer of those rights or selling of those rights to Coca Cola, so Coca Cola became the legal owner of that trade mark Maaza and the secrets and the processes

intellectual property related to Maaza. And therefore, court gave decision in favor of Coco Cola and Bisleri had to stop the export of Maaza brand from India to any part of the world. So, again the role of intellectual property became important, but since these are not the popular news stories we do not know and therefore, people do not keep interest in these things.

Another importance case we will like to discuss that is the Ericsson versus Xiaomi. Now, we know that Xiaomi is one of the largest distributor of a smartphones in global label, and this case is again related to the infringement of the patents. Now, we know that Ericsson is a Swidesh telecom major and they have large number of patents to their traded and around 35,000 patents are owned by Ericsson company.

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**Ericsson Vs Xaiomi**

**INTRODUCTION:**

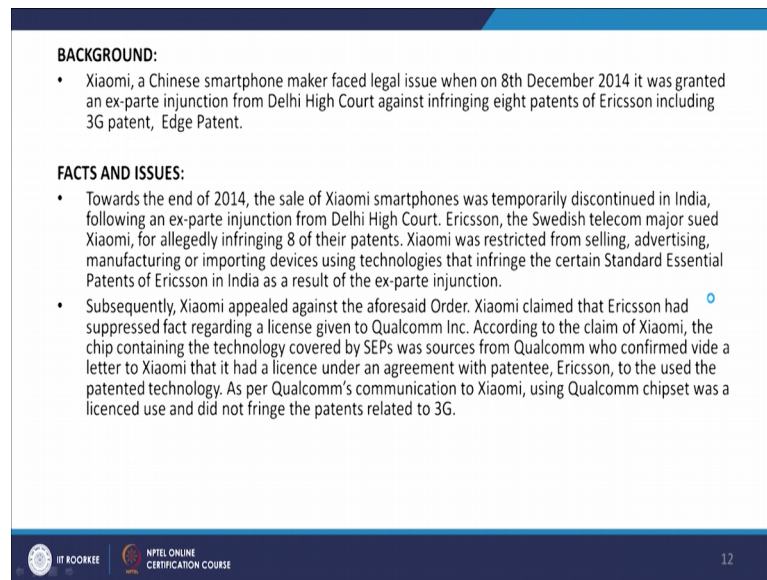
- The plaintiff Telefonaktiebolaget L. M. Ericsson is a Swedish telecom major providing communications technology and services. Ericsson holds approximately 35,000 granted patents as of 2012, including many in the wireless communications field.
- The defendant Xiaomi Inc. is a privately owned Chinese electronics company headquartered in Beijing, China. The world's 3rd largest smartphone distributor, Xiaomi designs, develops, and sells smartphones, mobile apps, and consumer electronics.

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And the Xiaomi which is a Chinese company is the third largest smartphone distributor and it designs develops, sells smartphones, mobile applications and different types of consumer electronic products.

Now, what is happened? That it give some type of mobile phones in India where they started using the patents of Ericsson. Now, just to give you the facts and figures towards the end of year 2014 the sale of Xiaomi smartphones was temporarily discontinued in India because of one Delhi high court decision in which the Ericsson the Swidesh telecom major sued the Xiaomi telecom company for allegedly infringing 8 of their patents.

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**BACKGROUND:**

- Xiaomi, a Chinese smartphone maker faced legal issue when on 8th December 2014 it was granted an ex-parte injunction from Delhi High Court against infringing eight patents of Ericsson including 3G patent, Edge Patent.

**FACTS AND ISSUES:**

- Towards the end of 2014, the sale of Xiaomi smartphones was temporarily discontinued in India, following an ex-parte injunction from Delhi High Court. Ericsson, the Swedish telecom major sued Xiaomi, for allegedly infringing 8 of their patents. Xiaomi was restricted from selling, advertising, manufacturing or importing devices using technologies that infringe the certain Standard Essential Patents of Ericsson in India as a result of the ex-parte injunction.
- Subsequently, Xiaomi appealed against the aforesaid Order. Xiaomi claimed that Ericsson had suppressed fact regarding a license given to Qualcomm Inc. According to the claim of Xiaomi, the chip containing the technology covered by SEPs was sourced from Qualcomm who confirmed via a letter to Xiaomi that it had a licence under an agreement with patentee, Ericsson, to use the patented technology. As per Qualcomm's communication to Xiaomi, using Qualcomm chipset was a licenced use and did not infringe the patents related to 3G.

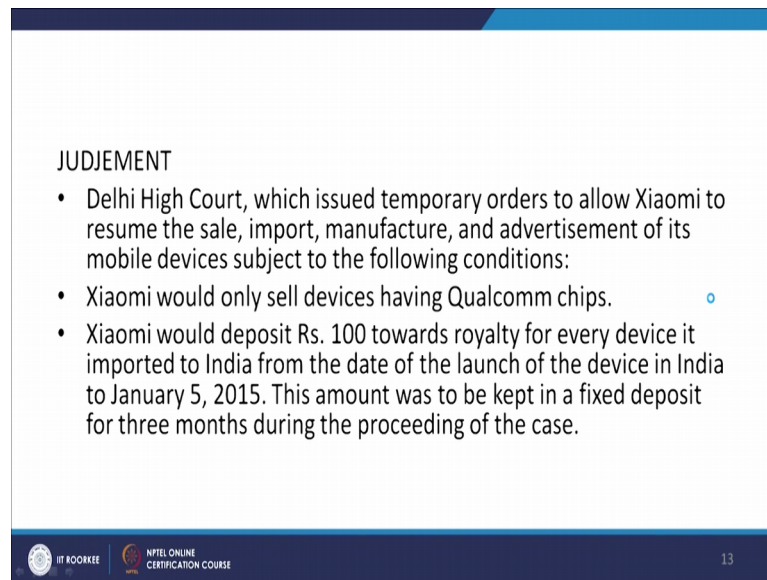
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Now, Xiaomi was restricted from selling advertising, manufacturing or importing devices using technologies that infringe the certain standard essential patents of Ericsson in India as a result of ex-parte injunction. Now, because when you are making a Smartphone you have certain kind of essential patents and when you make a mobile device you need to pay royalty to all those patent holders which are owner of those essential patents.

So, some 8 essential patents which were hold by Ericsson were used by Xiaomi in distributing their mobile phones in India, without the knowledge of Ericsson, without giving due royalty to Ericsson. And when it came to Ericsson's knowledge they filed a case against Xiaomi and finally, the high court of Delhi gave decision in favor of Ericsson and as a result of that Xiaomi had to stop the distribution and supply of these mobile phones in India where the patents of Ericsson's were used.

So, subsequently Xiaomi applied against the order of this high court and that its says that there are some facts which were not properly a disclosed by Ericsson and it is not actually the Ericsson's patent and it is license given to QUALCOMM by Ericsson and we have taken these patent grants from the QUALCOMM. So, finally, if you see the decision came that to resume the supply or sale of Xiaomi phones and Xiaomi had to deposit rupees 100 per phone as a royalty and so that this can compensate the losses of Ericsson mobile company.

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JUDJEMENT

- Delhi High Court, which issued temporary orders to allow Xiaomi to resume the sale, import, manufacture, and advertisement of its mobile devices subject to the following conditions:
- Xiaomi would only sell devices having Qualcomm chips.
- Xiaomi would deposit Rs. 100 towards royalty for every device it imported to India from the date of the launch of the device in India to January 5, 2015. This amount was to be kept in a fixed deposit for three months during the proceeding of the case.

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So, this way you can get different types of benefits either you can totally stop with this 3 cases what we are trying to prove that, either you can create a situation where you cannot allowed to be selling your product that is happening in the case of Maaza that court said no you cannot do this that the same brand name you distribute to other countries. So, this is not possible.

In the case of Xiaomi and in the case of Bajaj motors in both these cases some kind of royalty was collected and which was given to other party so that it can compensate the losses of those parties. The amount is well defined in the case of Xiaomi versus Ericsson that is 100 rupees per mobile phone, but in the case of Bajaj and TVS there is they reported item that some receiver was there, but how much amount was transferred from TVS to Bajaj that is not in the open domain. But with these cases it is very important to understand that these are know names Bajaj, TVS, Ericsson, Xiaomi, Bisleri, Coco Cola and therefore, these things became the part of newspapers, these are the part of social media discussions.

But many other things where we do not come to know about the IP infringement therefore, we do not get interest in IP filing. Therefore, the numbers in India are not that encouraging. So, we need to see that how to popularize IP news so that if IP news became a point of discussion in our day to day life and therefore, people will understand the meaning of IP, and when they start realizing that yes it is very important for their

business you cannot like when we do business all of us know that we have to register our company to the register of company. You cannot move ahead without registering your company.

So, same type of awareness, same type of importance need to be given for IP, that if you are in a startup you cannot get funding without some kind of IP available with you. And if that type of awareness is there probably in due course of time India will also become because we are 125 million people and with that large number of brains we can certainly be one of the top IP sieve nation. And that is what we want to convey with this discussion.

Thank you very much.