

IP Management and Technology Transfer
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Lecture - 16
IP Audit Framework to Evaluate Your IPM System

A very warm welcome in the course Intellectual Property Management and Technology Transfer. And, now we will focus on a very important and interesting framework that is a IP Audit Framework. Now, why I am saying it is interesting because by using this framework, anybody who will apply that framework will be able to get the IPR score. So, it is so simple that you yourself for your organization, for your research lab, for your maybe R and D unit, you can just apply this IP audit framework and try to calculate the IPR score.

And, in this module we will use how this framework can be applied. Previously, we focused on how exactly IP management system looks like or what are the different components of IP management system are. So, probably you know now that your organization. So, wherever you are working in that organization probably you know that what are the different components of IP management and that system actually IP management system.

And, you have seen that Sullivan model, we have seen the model which is developed by us and we have also seen the how exactly IP management is placed in the total organizational structure.

And, now in this module, in this module we are focusing on IP audit framework and then in this whole week we will get idea that, ok this framework how you will apply. Then, the model which we have developed and we have gone through how exactly that model we can apply to your startup or your academic organization or your maybe industrial organization or research organization that we will check.

And, then we will check a few case studies actually of IITs and we will get the idea that how exactly the IP audit framework gives the IPR score. And then probably it will be easier for you to apply it to your organization, ok. So, let us start.

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IP Audit Framework		Patent		
	/per year	Appli- cation	Gran- ted	Techno- logy market size (%)
A	Total Patents			
	PCT applications			
	US applications			
	EPO applications			
	Indian patent applications			
	Any other Country Patent applications			
B	No. of product patent			
	No. of process patent			
C	Patents expired			
	Patents invalidated			
	Patents active			
D	No. of patents licensed			
	No. of patents inhouse commercialized			
	No. of patents sold			
	No. of patents not commercialized/ licensed			
	Potential patents but not commercialized			
E	No. of patents hold in collaboration with other agency			

So, when we are talking about a IP audit framework; obviously, we are focusing on an intellectual property. And, we know now in the 1st week only we have seen that 8 types of IPs are there and then there is a intellectual capital. So, now you can see here that patent related things are there. Now, this is an indicative, you can add the things into this it is a customizable.

And, what exactly covered here that ok, how many patent applications are there? Suppose, if I take an example of a startup. So, if your startup is there, you will just take out that the details like how many patent you have filed, how many are Indian patent application, how many are

US patent application. If there is a PCT application, how many PCT applications are there. Then, you will try to understand what is the stage of that patent actually.

So, whether it is application stage, whether it is a granted or whether it is expired; so, that kind of a scenario you will try to understand. Then, probably you will try to know that whether you are what how big the family patent is like, how many other countries you have covered. So, all these details which are related to your startup or which you have applied as a startup, you can just list the number, you can write the number in this framework.

And, you will get the idea in one go that ok, I have this many patents or that PCT applications, these many US applications, these many applications I have done in European Union and all such kind of a details. So, you can you can customize this, you can go through the parameters and you can add that parameters, you can just use as it is or you can customize it as required, ok. So, this is a patent related information you are putting it in this framework, you are adding it in this framework. Now, the next actually you will move and you will try to focus on a next important intellectual property type and that is a copyright.

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Publication of	Year	Number	Author
Conference paper (N/I)			
Research Paper (N/I)			
Book/Book chapter			
Graphic design			
Charts/poster			
Monograms			
Technical bulletin			
Education CDs			
Video materials			
Manuals and field guides			
Database			
Photographs			
Musical work			
Films			
Sound Recording			
Other			

IP Audit Framework

Now, when we are talking copyright and suppose I take example of a academic organization; what do you think, what are the different types of copyright material we are developing? Yes, books ok, then yes, research articles right, then question papers ok, answer sheets fine. So many extracurricular activities are going on and there we are creating different maybe poetry, drama, then elocution, competition if it is there you are creating the speech; all these different kinds of a copyright material is created.

Then, there may be video materials and there may be educational series, then there is a student database, then, you have some procedural part which is developed in the academic organization, that will also come under the copyright that whole processes if you have created the manual for that particular thing that will also come under the copyright.

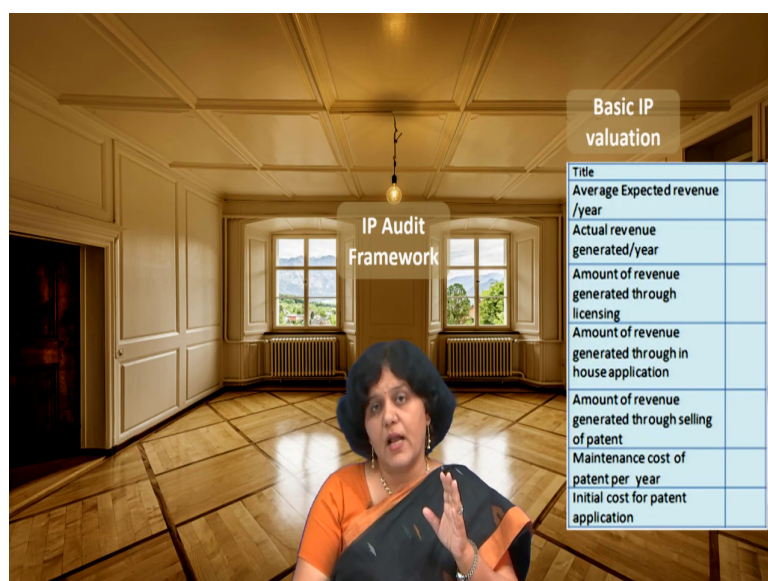
What do you think computer program will come under copyright? Yes, it may be it if you have not protected by patent then you can; obviously, consider it under a copyright because you are getting automatic protection for that computer programs. And obviously, you can count it or you can use it or add it in the copyright, if you have not patented it. The separate guidelines are there and if you have followed you can definitely go for patent of that copy that computer program.

But, if you have not done, you can add it into the com this copyright actually. Then, there may be musical work, there may be sound recording if you are if you if your academic activities, if you are art college probably all this outcome will be there, ok. So, this is the indicative, again I am saying that you can customize it, you can add it and you can you we know the subject matter of a copy right now. So, we can add that and we can make a list and obviously, we have to put the year in which it is created.

So, that we can know the whether it is the life of the copyright we know; so, to just count that particular thing we should know the year of creation number for our record and; obviously, who is author. In patent we use a specific word who is creating that particular technology, what is that? Here, we are using author. There? Inventor, ok.

So, just check out that thing. So, accordingly we will put the data. So, here you can see that this copyright related information you are putting here. So, we have done that ok, patent related information, copyright related information.

(Refer Slide Time: 07:42)



The image shows a woman in an orange and black sari standing in a virtual room with a wooden floor and a coffered ceiling. Two floating boxes are visible: 'IP Audit Framework' and 'Basic IP valuation'.

Basic IP valuation

Title	
Average Expected revenue /year	
Actual revenue generated/year	
Amount of revenue generated through licensing	
Amount of revenue generated through in house application	
Amount of revenue generated through selling of patent	
Maintenance cost of patent per year	
Initial cost for patent application	

Now, let us move further and now next we will add like a here the something which is related to trademark and then there is a geographical indication. But, before that we can go for little bit a basic valuation, actually it is very difficult, IP valuation is really difficult. Difficult in a sense now there is no full proof method for the valuation of IP that ok, you follow this method and you will get the correct value of IP valuation, nobody can claim that thing.

So, basic idea to get how exactly what are our IP assets, you can just get that if any revenue is generated from patent or copyright, we can note that particular thing. Then, if any licensing is done, we can put that thing and how much returns we are getting that royalty out of that, we can put that data here in this framework.

Then, you can put the initial cost which is invested for the patent creation; we can put that complete data here. Then we can say for example, current market scenario you can just check

and based on that probably what will be the value, what will be the price or value of that patent we can just put that particular thing in this framework.

So, it is like a some kind of a broad idea about the IP and how it can be it will be valued. It is like a you are making the broad idea you are getting about this particular thing. I will not say it will be proof full proof, but definitely we will get the idea that this is kind of IP assets I am owning and this probably will be the value of this IP. So, basic idea about IP valuation you can note down, here again it is customizable, ok.

(Refer Slide Time: 09:41)



Now, moving further you can just go and you can add some information if we have created that trademark or geographical indication or industrial design. I can say that if you are engineering college probably industrial design will be definitely there if you have filed some

patents and all. Suppose, a trademark there is definitely possibility, but number may be less ah.

So, trademark possibly even I can just tell you the example that the name of your college probably you have taken a trademark for that particular thing or if you have developed some instrument and for that instrument probably you have given some name. So, I just remember one of our client, he has given Chatur as a name to the barcode related machine. So, something like that probably you have developed. So, you can just note down that if yes, we have developed this or machine and this this is trademark protected.

And, it may be application stage, it may be already registered; so, note down that also that what is the status of that trademark. Also, note down the year of that trademark when it is created, ok. So, that we can get the idea about the renovation because after every 10 years, we are going to renew it fine.

Then, the things related to industrial design, you have we have to write down who is a who have developed that design, who is a owner of that. Obviously, if you are academic institute, the institute will known as per the policy generally.

But, check out your IP policy and then note down the year of creation actually, ok. Geographical condition very rare, but if you are say agricultural institute in a particular domain and then probably what will happen in that scenario, that you becoming a part of the association; because association is required for geographical indication registration and being in that geographical location and there is a possibility.

So, I am just saying that there is a possibility that you may have that geographical indication also, but it is a very rare, but we cannot deny the possibility actually. So, I have covered this patent, copyright, trademark, geographical indication and industrial design; 5 types. Which are remaining now out of 8? Yes, semiconductor, there may there may be creation of that, protection of plant varieties and farmers right and the traded secrets.

So, again semiconductor if you are working in that domain, you can add that information. Protection of plant varieties and farmers right, again there is a possibility if you are a agricultural related activities are going on in the college, maybe small department is there or you are like a whole agricultural college institute you might be.

So, if you are in that domain probably you have so many plant varieties created and we have to note down that particular thing, ok. Let us move further and see what further things we can add into this framework.

(Refer Slide Time: 12:46)



So, now we have talked about the intellectual capital actually, you know that there is a human capital, structural capital, relational capital. Now, here you can see here the relational capital is there and then the human capital is there. Structural capital we have not put here because the infrastructure related things we have to note down. So, we have not considered or we have

not added this here, but if you want you can just note down that infrastructure or a structural capital also.

Now, relational capital and this human capital, in that human capital I will just give you a little bit idea, again revise it we have already studied that thing. So, all stakeholders may be all students on all faculty, I am just focusing on academic institute. So, I can say all students, all faculty members, then lab person, then staff, everybody who is working in this organization always they are probably getting that innovation environment and they might be creating the that something that they may be contributing into the innovation activities.

So, we can consider that human capital and the total number you can put there, just to give you idea that these are the faculty members, this is the number of students actually and all that things ok, and then the relational capital. Now, what is that relational capital? We say that ok, what are the different collaborations institute have, what are which are the funding agencies and it may be government organization, it may be industrial organization.

Then, some visitors are coming to your campus and probably through that exchange; obviously, know how transferred or IP will be created, ok. So, all this that that data probably you can note down that relational capital ok, just to get the idea about that particular how rich we are considering this relational capital and considering the human capital, fine. Because, we are not numbering that thing, we are not considering in final score this this particular thing, just to get the idea we can note down that particular, ok.

(Refer Slide Time: 15:01)



So, let us move further and now we will focus on very important things like a contracts. So, what happened one of the IP we have not considered yet and that is a trade secret. We do not have statutory arrangement for that particular thing, right. So, now, you can just see here that trade secret is there or agreement is there. So, what exactly we want to cover?

There are so many agreements actually, all faculty they have a service contract, all staff have a service contract. Then, there is a development that research and research and research and development is going on related that so many agreements, MOU's are signed, contracts are created. So, all this will come under this agreement and contracts actually.

The trade secret, the only way to protect trade secret is again contract. So, suppose non-disclosure agreements are there, confidentiality agreements are there. So, all this we have to note down and again this is a big topic just to contracts and how to maintain that and all.

But now you just put the number and because we are just doing a basic level auditing of the organization or institute or startup, whatever we are focusing on, ok.

So, just put the number ok, these many contracts are there and you can give the title whatever titles are there just put make a record of that particular thing, ok. And, even trade secret again; obviously, it will be very limited to limited group and we know the definition of trade secret. So, accordingly we have to just put the data, whatever information that whatever things are there related to trade secret, ok.

So, this is like all 8 types; patent, trademark, copyright, industrial design, semiconductor, layout designer, design, then there is a protection of plant varieties, farmers right act. So, under that you have developed plant varieties and breeders varieties actually. So, we are protecting that semiconductor, it IC. So, that particular thing we will consider and then the trade secret. And, along with that 8 capital, intellectual capital which consists of human capital, structural capital and relational capital.

And, along with that the agreements which may be confidentiality agreement and service contracts are there somany MOU's are there with maybe government, maybe maybe private organizations, some kind of that arrangements whatever we have created; all these things we have now noted, ok. So, we have done the first task. Now, now we have to move further and we have to check that how the what is our score actually, IPR score.

(Refer Slide Time: 17:39)

So, this patent information is there, then you can see here there is a copyright information is there. Then, you can check here that there is a details related to agreements, trade secrets, geographical indication, then there is an industrial design. So, then capital intellectual, capital all things we have put together.

So, you can just check here that this patent is there, copyright and all this IP other types of IPs, then there is a agreements and a trade secrets are there, ok. So, hold this together is like a

you are noting down all the details actually and we are getting the idea about that particular thing fine.

(Refer Slide Time: 18:24)



IPR	Credence
Patent	03
Copyright	01
Industrial Design	02
Trademark	1.5
Layout Design of IC	02
Geographical Indication	1.5
Trade Secret	00
Plant Varieties and Farmers' Rights	03

Now, let us move to calculate the IPR score. Now, how we can go for calculation actually? So, here you can just see that there is a credence actually. So, 1 patent equal to 3 credence or 1 copyright is there, 1 credence or if it is a industrial design, it is a 2 units actually or trademark is there 1.5 unit is there or if you have created IC, then the credence is like a 2 or if geographical indication it is a 1.5.

Trade secret we are not able to give anything because we do not know what exactly it is. So, we but it is a we have to understand it is a such a important, indispensable many times means if you are developing a complex technologies, definitely there will be trade secret and that is a very very important actually.

But we are not able to score that particular thing. So, we have kept it as a 0 actually ok, and then for plant varieties are there, there we have given this, there you can see that it is again the the 3 actually. So, we know now that what is the credence actually for that particular IP.

So, ah so, that is the the the based on our research and analysis we have developed that credence actually ok, conjoined analysis method we have used for that particular thing. Now, what we will do? We will now apply that particular thing to our example, one we will take some example and we will apply that.

(Refer Slide Time: 19:55)



IP Audit Framework

IPR	Credence
Patent - 3	03
Copyright- 10	01
Industrial Design-2	02
Trademark-1	1.5

$(3 \times 3) + (10 \times 1) + (2 \times 2) + (1 \times 1.5)$
 $9 + 10 + 4 + 1.5$
24.5
IPR SCORE- 24.5

Now, you can just check here, let us suppose you are a academic institute, ok. The number is very very small actually considering academic institute. But, we will just for understanding

take this example. Let us suppose we have a say 3 patents, then probably we have a 10 copyrights ok, the research papers or something like that, that you have noted already.

Then, suppose you have that 2 industrial designs and 1 trademark is there, very very I guess I have taken a very small number. It is it should not be the case of the academic institute, but I have just taken for the example. So, let us apply that particular thing. So, 3 patents are there, copyright 10, industrial design 2 and a trademark is like a 1. So, this is suppose the data it is in front of you, ok.

Now, how you will calculate the IPR score for that particular thing? So, you just check here that yes, we know that for patent the credence is 3. So, 3 into 3, then we know that for copyright it is a 10 into 1, because 1 is for copyright. So, we have now 10 copyright that number is 10, we have created 10 copyright materials so, 10 into 1. Industrial design suppose you can just check here that ok; we have developed 2 industrial designs and the credence is 2. So, 2 into 2 and 1 trademark is there.

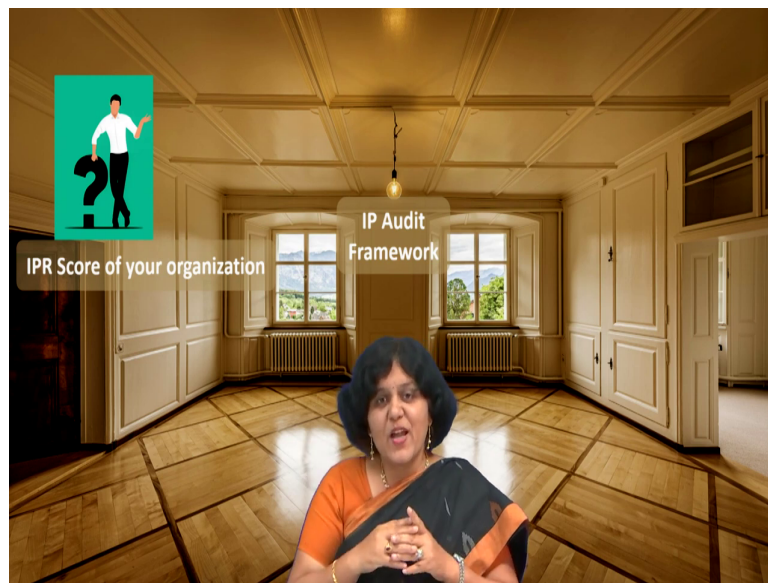
So, 1 into 1.5 ok, simple calculation, very simple calculation. And, now what we are getting? That 9, 3 into 3, 9; 10 into 1, 10, 2 into 2, 4 and then 1.5 and if we add up that particular thing just check that it is a 24.5. So, what is the IPR score of this academic institute? It is a 24.5 ok, such a simple calculation actually. So, we can say that so, for example, now suppose you are a academic institute and suppose you have a 10 departments or the schools in the academic institute.

Just do school wise analysis or school wise IP scoring and we will get the idea mechanical engineering have say score of 2000 or the civil it may have 100; so, something like that. So, we will get that score actually and when you combine that add up all this score of each school, we will get the score for that particular academic organization fine or you can just apply for an individual. So, probably any individual there are patent like one individual is filing 4000 plus patents also that is a scenario also.

But we can just take example like this and we can apply for an individual also, researcher also. So, in that way we can calculate that IPR score and it is just like a very basic framework

to get the idea where exactly we are standing in IP creation. So, this is the framework which you can utilize for this IP knowing that what is the score of that intellectual property, whatever we have created ok, what is that status.

(Refer Slide Time: 23:10)



And now the quiz time ok, but before that what we will do, we will watch one video actually and let us try to understand that something new about the intellectual property.

(Refer Slide Time: 23:24)



We have shared with you an example of Genentech; you know what happened in this case. Here the inventor, a domain expert work hard and invented novel technology, but he could not understood the potential IP in this invention and publish this invention. The IP potential is understood by the technology officer and he has taken efforts to file that patent.

Now, to avoid such instances we are giving you the IP identification tool. So, in this module you will see what that IP identification tool is. You can directly apply this tool to your research or project already you are working on it or if there are some ideas in your mind and if you are planning to proceed to explore that idea, then you can apply this tool. This tool is nothing but an algorithm which if you follow it will help you in potential IP identification as well as better research planning.

(Refer Slide Time: 24:35)



So, starting with the idea. You know the thinking mind. So, many ideas pop up in your mind. It is not necessary that all the ideas which comes in your mind you consider for the project or you start working on it. You will take an example. Suppose, you are we will take that example some example. Suppose, you are working on some project, you are a project staff or you are a student and working on the project or you are a researcher and you are working on some of your research topic.

How you should proceed so, that you can identify the IP in your work or you can consider it in other way, how you can plan your research so, that at a particular time you think of filing the patent application? It may be a professional patent or it may be a complete specification whatever it may be. So, here the first thing is that the idea. Selection of idea from that pool of idea is the first task, then the next task is that a prior art search.

So, from the pool of ideas, you have selected ok, at this time I will work on this idea. So, the next step will be the prior art search. Now, you know what that prior art search is, what is the state of the art is that terminology also you are aware about. So, it is your first duty or rather we can say that it is mandatory. Now, that before proceeding any research related activity, you will check the prior art, that is the part of a literature review, right. It is nothing, but a deep in-depth literature review.

So, here normally you follow a literature review where you just go through the research papers or a magazines, whatever the out published in the magazines and that kind of publications you explore and try to understand what is the current scenario in your domain. But, when now you are knowing about a patent, you should think about the patent also. So, you should go through the patent documents along with that research papers, magazines, newspapers, books etcetera.

In this way you will do the prior art search that is a primary requirement. Now, what is the advantage of that or what will be the benefit out of this activity? You will get the idea about what is currently going on in your technology domain, what the work is going on. Now, once you know that state of the art, then you can plan your research activity. Many times, you will experience that whatever you are thinking of exploring through the patent search, you realize that this work is already done.

This may not be guessed by you, you may not able to identify that thing with a research paper analysis, but probably the patent will help you to get this realization that ok, already this work is done, patent is filed. So, if such kind of thing is there you can refine the research topic and objectives and after going thoroughly, then you can thoroughly through the patent documents you can plan your research activity further or you can plan your project activity. So, that is a second step.

The next is a research activity. So, from the idea you have selected that one idea, now you have done the prior art search, now you have started your research actual the experiment. So, whatever procedures, methodology you have decided you have followed that, right.

Now, the next is a invention disclosure. Now, generally what happened that invention disclosure is a step in the research and that is a very important step, you have to plan properly and you have to decide properly when you will give that invention disclosure. So, this is the point or a time during your research, you feel that my research is going pretty well and it is well enough to file now the invention disclosure.

So, that judgment you have you have to judge that thing and you have to file the invention disclosure. If you are a PhD student or if you are a student doing a project or you are working in a MSME or you might be working in a R and D department of a corporate or you may be a scientist working in a research laboratory, you have to review the timeline you have decided before starting the project.

So, before planning that before starting your research, you might have planned some activity and at that time only you have to decide at what time you will file the patent or probability of filing the patent is. So, probably you can plan this review that after 6 months to check if there is something which can be considered for patent filing.

So, maybe in your research activity, after every 6 months you just review your activity whatever research activity is there and you just explore, is there possibility of filing a patent that way you can just identify, that if there is any potential patent. So, we follow this and then the we generally follow this when we are doing a research publication.

Whenever you are confident ok, now, I can write a research paper then you start research paper and communicate with the publisher. So, same thing you have to do with the patent. And again, important that no publication without patent, because rule is first to file. You can we cannot predict any time, we cannot predict any timeline for what at what time means the patent will be that invention disclosure will be filed.

However, generally for a PhD, if you are doing a PhD or a research in that academic institute; this stage generally that is a invention disclosure filing stage generally comes in the 3rd year

or a 4th year. So, whenever your research is mature, then at that time you can think of a filing a invention disclosure.

It there may be a possibility a different possibility in other setups. So, for example, if it is a MSME or if you are doing a student of the projects in a student projects in the engineering colleges or in a science colleges or if you are a corporate, this stage may differ. It may come in 1 year also.

So, good research planning will help you to anticipate this timeline, this patent filing step. This it will be a director activity and chances of identification of potential patent will be more. So, this is the identification of a potential patent and then filing the invention disclosure. Now, after that you have to check the patentability or you have to perform the novelty search. What is that novelty search? This we have already seen. Then, what are the various patentability criteria? That also you know.

So, now with this awareness you have to think about the that you are also knowing what is a patent, what is patentability criteria. You can check out your invention whether it falls under the invention whatever given in the patent act. So, you will check if the invention can be considered further for patent filing. You yourself can do this patentability search; you will require patent database to check that novelty. There are free public patent databases.

In upcoming module in this week only, we have dedicated one module on how to use a public databases, public patent databases. So, this will help you to dig out the patents and to check the patentability. Also, in week 6 we are dealing with the patent database, use of patent database for a research project.

In this week, one of the modules we are sharing list of various patent databases which you can explore. By using this data databases, you can dig out the related patents from the public databases and you can check the patentability.

So, this way the patentability search can be done. Now, the next is a patent filing procedure. If IP management system in your organization where you are working is a well established then

obviously, you need not to worry about the patent filing. Please take help from that system. Officers there will help you in patent filing.

You can understand invention disclosure procedure system from that offices and you can proceed for filing the invention disclosure form that filing may be manual or it may be a digital filing. So, depending on the setup in your organization, you have to proceed for a invention disclosure.

I hope you enjoyed this this video and now quiz time actually. So, again obviously, the simple quiz, apply the framework to your institute, research organization or lab or as a individual you can apply this. And, please write down what is the name of institute and what is your IPR score in the comment box below. It is very simple, just you have to note down that particular score and suppose if you are not able to as individual know the details about the institute, just find out for your own department, ok.

So, that you need not to go here and there to collect the data actually. So, maybe or you can just apply to yourself, that if you are in a that research activity you can apply it for yourself actually. So, that that work is very easy, ok. Apply that and find out what is that score and let us check that what is the IPR score of you or your institute or research organization or industrial organization or a startup.

And, that will give us a status that ok, today I am like standing at this position and probably this will help you to plan further that how I can increase the IPR score. And, by doing this course by the end of this course, you will clearly get idea that how you will manage that IP and how you can plan to increase that score of the IP, ok.

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So, let us conclude the session here.

Thank you so much.