

INTELLECTUAL PROPERTY PORTFOLIO MANAGEMENT

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Welcome friends and we were discussing about intellectual property portfolio management and we discussed that it is important to have a strong portfolio. Now, from where the strong portfolio will come and for that purpose we need to see that generating IP itself is a very challenging part and it is a important part of your entire IP portfolio management. Without having enough IPs It is impossible to manage them.

Only when resources are there, assets are there, then the management will come. If I have no money in my pocket, what is the meaning of financial management? So, the same is without having IP in your IP portfolio, there is no meaning of management. And for that purpose, generation of innovation is because only when innovations will be there these will be protected by different types of IP and then the other discussions of IP management will take place.

So, in this particular session we are going to discuss about this important aspect of innovation management that what are the various components of innovation management. Then during this process of innovation how the different types of IP are may support you and in that case we will also discuss about open and closed innovation processes because these days lot of collaborative innovations are also happening and we will see that how we are going to manage our IP in this open innovation process. Now, here when we are talking of innovation management. We have three very important aspects.

We have discussed these three things by some different names in our other sessions also. One is generation of ideas. Then once the idea is there, you need to develop that idea. It is like initial you have this seed. then you are developing the seed into a plant and then you are getting the fruits out of that plant.

All these three important things are the important component of your innovation management. We are right now going to focus more about generation of ideas and that is new ideas and new ideas with respect to products, new ideas are possible with respect to services, new ideas are possible with respect to processes. So, anywhere these new ideas are possible and these new ideas which we are now thinking must be with the objective of value addition to the organization. We focused about this concept of value.

Now, when I am saying value, it is with respect to customer because customer is the ultimate person who is going to realize the value of your organization. So, the ultimate objective is whether it is helping in meeting the customer requirements or not. Customer has some level of expectations. Whether these new ideas are helping in improving those expectations, exceeding the expectations, that is the most important way of understanding the concept of value. The second level at which you can understand the value is the organization itself, employees.

Whether these things are making value. my process is safe, safe process, efficient process, waste minimization in the process etcetera etcetera. So, you can see from the employees point of view also. You can also see from the stakeholders point of view also. So, there may be different you can say point of view, different perspectives through which this concept of value addition for the organization can be seen.

So, your new ideas may give you new products, new services, new processes and these new products, services and processes will add value either to customer or to employees or to different stakeholders who are investors, regulators etcetera or the suppliers for your business. So, that is the initial role of innovation management. So, why I am saying these things? Generally the innovation management new ideas we consider from a very narrow perspective. The narrow perspective is new ideas are only for product development.

Generally we keep this very narrow view. But it is possible this is enlarged view. So, we need to have this enlarged view then only you will have a bigger IP portfolio. You will see more opportunities of innovation in your organization. Now, as we want to discuss the various stages components of the innovation management activity.

It starts with the idea generation. You can generate new ideas or you can collect ideas. And when I say ideas, it may be solution, it may not be solution. It may only be the problems. You may not solve all the problems on your own.

Innovation is a very collaborative activity. We will be talking about collaboration with respect to open and closed innovation. But innovation is a very collaborative activity. In the collaborative activity there may be somebody who is identifying the problems and there may be a different person who is providing solution of those problems. He may not be able to think problem on his own.

But he is very creative and he can give solution of those problems but he cannot give solution in absence of problems. So, the role of problems are equally important rather I feel it is more important to identify good problems which can be solved and then there are people who are ready to solve those problems. There are people in all IT companies there are millions of coders who are working they are solving the problems but unfortunately they are not able to identify the problems. So, there is a customer, there is a user who is identifying the problem and then the company gives the entire logic, solution, code, application, software to solve that particular problem.

So, for me solving the problem is not a big issue, identifying a good problem is more important. So, idea generation, collection of idea is one important component of your innovation management program. Idea evaluation, selection of idea, many different type of solutions may come. I want to develop a better writing device. This is a pen which I am using.

Now, I am not very happy with this pen. It has some problem and therefore, I want to develop a better solution. There may be somebody who will start innovating around this particular pen only and there may be a different set of persons. who may start thinking altogether a new solution. They may think that can I have a small writing aid on my fingertip and I can use my fingertip for writing and I need not to carry because the problem which I am facing sometime I put pen in my pocket and sometime I forget and when I am travelling if it is requirement of writing I do not have anything to write.

Now if there is a system that something is inserted in my finger tip and I start writing whenever I want without requirement of keeping any external ad like this type of pen that is possible or not possible I do not know. But if these types of ideas are coming we need to check the feasibility whether it is actually feasible or not. the market potential may be the cost of this idea that inserting that tip in my finger is so expensive it requires a medical procedure and therefore it may not be at all feasible idea to carry this type of fingertip writing ad. The technical requirements lot of medical issues are there because you are inserting some foreign element

in your human body. So, lot of technical, medical clearances. So, it becomes a very complicated solution. And when it becomes a complicated solution, I will drop this idea. Okay, this is a very imaginary idea, it is not a feasible idea.

But you see that many ideas which may look funny at this time, which may look very imaginary kind of idea at this time, may become feasible let us say after 10 years. When I was a kid, I used to think that can I fly and people used to laugh that it is almost impossible that how human can fly but now we see that there are drones coming through which even human can fly. So, things which are ahead of time may look very kind of innovative solutions to you may not be feasible today but it may become feasible after 10 years 20 years when technology will become that enabling factor. So, you have to evaluate the idea that what can be implemented today, what will be implemented tomorrow and what can be implemented in the long term.

Then you also need to iterate with the ideas. The idea which is coming to you may not be implementable immediately. You need to test various assumptions and that testing the assumption is basically experimenting with the idea. whether you are having enough technical knowledge to implement that idea, whether you have enough resources for implementing that idea, whether customer will accept that idea, all these things are important part of your experimentation with the idea. So, that is also a very important thing.

You have a very good idea and you feel that I can produce this idea and people are going to love this idea, it is not so easy. you need to do lot of experimentation then only you will have this confidence that yes this idea is going to work and process of innovation is requiring multiple experimentation and many of you must have heard about this concept known as design thinking. This design thinking actually facilitates the faster experimentations. faster iterations and therefore in the present environment where innovation has become a very important buzzword the design thinking which is helping us the helping us in reducing the cost of experimentation because when you are doing experiments there are chances of failures also and therefore, design thinking is a good way which can keep the cost of your experiment within the limits, you will fail, you will learn, its failure means learning new things.

So, you will learn new things and you will again experiment. So, in this way innovation management activities are carried out and then you are going to do prototype where you will make minimum viable product and with this minimum viable product you are now

ready to go into the market. You make your business model then you iterate your business model because you consider that this stream A is your source of revenue. But it is quite possible that stream A may not be the right source of revenue then you identify stream B, stream C. So, whatever business model you are considering

it may also require multiple iterations and it is only possible when you are having lean innovation system in your organization. If you are putting too much of assets, too much of investment on your innovation ideas, it will be very difficult to iterate with your business model. So, if model A is not working, in the language of startups we say that we need to pivot. So, that pivoting is happening when you are iterating with your business model, model A is not working go for model B, model B is also not working go for model C and so on.

You keep doing the required changes in your model. A very popular case you can read somewhere the red bus, a very popular application for booking the bus tickets and how they iterated their business model they thought a different source of revenue later on they realized that this source of revenue is not the appropriate source of revenue they change their entire business model and then even after going to the market launching your products innovations you need to do post launch evaluation. and then you do improvements and scaling by inviting the investment. So, this becomes the entire process of innovation management and during these steps of innovations you will realize that IPR can be integral part of every stage right from the idea generation collection of ideas

to the scaling of your enterprise you can use IPR very very effectively that we are going to see in subsequent slides. Like in this innovation process when you are collecting or generating the idea and you are going to the market so this is my step 1 and here we are going to step 7. Though in this diagram it appears to be a very straight line diagram. that from idea to market it looks very straight line, but this is a lot of iterative process. It is not a straight line, there are continuously forward and backward movements in this 1 to 7 stages.

Now, out of this entire activity up to here you can say that it is R&D phase and then this is the market phase, commercial phase. So, R&D phase and market phase these are the two broad areas of your entire innovation process. Now, in the R&D phase the IPRs which are going to help you that is patent, copyrights, all the secret know-how, which can be protected under the trade secret.

And when you go to the commercial phase, the trademark and designs, though this division of IPs in two phases is not very sacrosanct, it is always possible that you can think of using design in this phase also. And when you are in the commercial phase, you think of a new product at that time, And patent and copyright may be here also. But largely if I say the role of patent, copyright, trade secret etc. should be very carefully used in the R&D phase.

You don't create a brand of your company. No problem. You need to give a proper name when you are entering into the market. So, trademark will come into the picture when you are in the commercial phase. But in the R&D phase, you are developing the manuals of your product, you are doing R&D with respect to your product, you have some information which you do not want to share with your suppliers, with your any other stakeholders.

So, that is the primary type of IPs which we are mentioning. when you are trying to get identity of your product in the market, therefore, design and trademark comes into the picture. So, it is very important. And all these things put together, patent, copyright, trade secret, trademark, design, etc., all these things put together make your IP portfolio. So, development of IP portfolio, you can say, development of

IP portfolio starts from idea generation and it will continue till entire innovation process. Many a time we miss this concept. that as we are moving we have to think of new types of IP and either we are very enthusiastic in the initial R&D phase or we think of IP when we are going for let us say investment for our scaling activities and by that time we have already lost novelty of our R&D activities. So, it is not possible to register as a patent etc. So, it is important that you should have this knowledge right from the beginning.

Then we come to very important thing as I said, when we are doing innovations, it is a collaborative activity. You cannot do innovation alone. You need help of people from the organization and outside the organization. So, these days open and close innovation processes are in discussion. And whether it is open, whether it is closed, it is all about collaborative innovation activity.

Now, when you are doing collaboration with the outside world, and anybody can be your collaboration, it is open innovation. And when the collaboration is within the organization, it is internal to the company, then it is closed innovation. So, open and closed means open, outsiders are also involved. For example, there is a company which is

collaborating with any higher educational institution. This becomes an example of open innovation.

Nowadays, not only in India, but in various other countries also, we have the concept of research park. These research park concepts are basically to promote open innovations. And good number of corporates are showing interest in the research part. Then another important example is COE, Centers of Excellence. For example, ISRO in our country, DRDO in our country, these type of science research organizations.

They are establishing their centers of excellence in various educational institutions. So, these are also becoming examples of collaborative innovation activities. Ultimately, anybody can be collaborators and that is open innovation examples. So, if you see on this diagram, idea, market. So, in open innovation process, you have universities,

R and D organizations, startups, all these different stakeholders are coming together. So, large organizations can create such kind of platform where they are creating enabling environments where universities, other R&D organizations and startups can come and they may collaborate for developing new ideas, new innovations. Then it becomes important that how are we going to manage IP in these open innovation systems. But before that, for the interest of our audience, let us see in black and white,

What are the differences between open and closed innovation process? So, closed innovation versus open innovation, it is the internal resources which we are emphasizing more in the closed, while in the open innovation external resources, external knowledge is also given very high importance. In the closed innovation, we have clarity of objectives and actions. You keep everything very confidential within the control. While in the open innovation, different people are collaborating and maybe some disruptive ideas may come.

Altogether, a very groundbreaking ideas may come. In closed innovation, because everything is controlled by one organization, it may have very high R&D cost. And in the open innovation, on the other hand, because nobody is actually the owner of this innovation. So, therefore, resistance to change and how IP rights will be shared the management of IP issues may also come and like in the example of close innovation Coca-Cola example of their recipe is very popular that is a trade secret example.

And in the open innovation, these days we know that every organization is organizing innovation hackathons, product development hackathons. These are examples of open

innovation where companies are creating platforms, anybody can come, participate and share their innovative ideas. When we talk of open innovation because we are trying to take the advantage of knowledge, resources, innovation capabilities available with the outside world. So, there are a lot of emphasis on these open innovation activities. It can be inside out open innovation.

Inside out means you are leveraging and commercializing companies know how and expertise which is available outside the organization. So, Those knowledge, those expertise which is available outside the organization. So, for example, company A is trying to take the advantage of one HEI. That is inside out.

I am trying to take the advantage of knowledge which is available with the outside experts. For example, I have IP resources available with me. But I am unable to utilize those IP resources and I am giving those IP resources to let us say some NGOs or some rural areas. They can be used on pro bono basis that is inside out open innovation activity. I have knowledge, I have resources and I am using these resources for giving benefit to the outside innovation.

At IIT Roorkee, we started one scheme which is known as TechSarthi and under this TechSarthi scheme, we started the provision that how we are going to create the ecosystem that the knowledge which IIT Roorkee professors, researchers have can be used by SMEs around us. So, the underutilized resources etc., which are available with us, now we are trying to give those resources to SMEs around Roorkee area. So, this is an example of inside out open innovation. And in this collaborative process, we are customizing our knowledge, our resources, our IP, so that it can be suiting to the requirement of those SME partners. outside in innovation activity you are acquiring knowledge and ideas from the external sources some local institutions it can be a university it can be some other expert they may have some technology they may have some idea and you are now partnering with them so that you can use their idea their resources their knowledge their ip

And in that way, you are developing a better product. So, this is outside in open innovation. And then the third is coupled open innovation, where you are creating a flow from both the sides. organization to environment and environment to organization. So, both the side flow is happening in the case of coupled open innovation.

So, these are the three open innovation processes which are possible and which can be leveraged for the benefit of the organization. But as we just discussed few minutes back,

there may always be a challenge of managing IP in the open innovation process. Because there are multiple stakeholders are there, it may sometime become difficult to identify who is bringing what knowledge, how much is the contribution of a particular stakeholder in developing the entire IP asset. So, therefore, there may be a little bit challenge in managing the IP in the open innovation process. So, you need to have a kind of a balanced approach.

between collaboration and protecting the innovation in the open innovation platform. And you have to identify that how much IP to be keeping and how much openness is to be there. So, that is also one important thing. cannot be put under the protection system because it is open thing, it is collaborative thing. So, you actually promote more openness in this open innovation system rather going for any kind of protection of IP.

Here, we also use effectively the non-disclosure agreements NDAs. We look for clear and specific collaborative agreements. So, that all the parties who are involved in this open innovation process, they understand their obligations because you are working in a team. So, what are the obligations of team? How the benefits will be shared?

These things need to be properly spelt out. So, the role of this collaboration agreement is very important. that how you are spelling your agreement that I think is the most important aspect of this open innovation process management IP. Then these days lot of digital rights management systems are also available and under this DRM you can use DRM to control access and uses of digital assets shared with the partners. For example, a lot of open innovations are happening these days in the field of softwares.

Lot of open innovations are happening in the field of softwares. And therefore, digital right management system becomes very important because of these digital assets which are created as part of the open innovation. You have collaborative platforms on which you different people can come and they can contribute in developing the new type of innovation activities. So, DRM is very useful in controlling and managing the all the assets which are coming in the form of digital things.

Then open source licensing as I just mentioned that software codes, design files and other digital assets which are coming in the form of softwares etcetera. So, open source licensing allows collaboration on a project with predefined licensing terms. So, there are lot of Linux for example, it is a open source licensing you can say platform and on which anybody will come and these days the purpose of OSL is having more collaborative activities.

In India, we got tremendous benefit of this OSL system during the COVID-19. The government of India developed a mobile app for tracking the health of people in that area. Now, there were so many people who wanted to help the local community in their area. So, the entire code was put in the open source and using those codes you can develop your local customized solutions.

So, that way the open source licensing allows collaboration on a bigger project. People may be at different locations and they may collaborate by using the open source codes which are available for variety of other applications development. Then these days as I am already mentioning that openness in the innovation process is continuously increasing. because of lot of new developments which are happening in the field of softwares, digital technologies it requires good amount of collaboration.

So, the nature of product which is mostly these days digital products that is the big reason of going into this open innovation systems. industry context that is the IT activity and it is also possible that one company cannot be competent enough to drive the changes in this new environment. So, you need more collaboration to drive the change. So, therefore, the industry context where collaboration is must for driving the change that is also a reason for adoption of openness.

The regulatory context because in this case nobody is going to have any kind of personal monopoly by using this kind of open innovation system. So, when I see that it is not possible for me to have a personal IP it is better to create this open IP system. So, that no individual organization can take monopoly behavior because of it. So, that is also a reason because of which more and more organizations are now advocating in favor of open innovation system.

So, with this We come to this particular understanding that right from the beginning of innovation management to the scaling of your innovation activities, IPR is possible at every stage. These days because of the nature of innovation is moving from close innovation to open innovation. The open innovation which is promoting collaboration. And because of the nature of open innovation which is supporting IT, digital, software kind of activities, we need to be very careful about management of IP in the open innovation.

Because you will not be having very clear idea who is owning how much of IP. So, it is better to have a very clearly transparent agreements between the collaborators for sharing

the benefits of IP in case of open innovation. With this, we come to end of this particular session. Thank you very much.