Patent Search For Engineers And Lawyers
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Lecture - 24
Introduction to patent landscape (Contd.)

Welcome, to the lecture on the patent landscape search. We continue with the discussion in relation to patent landscapes. Let us understand the importance of patent portfolios.

The importance of patent portfolios is realized in relation to all technologies rich industry. Patent portfolios help build strength in relation to specific technology areas. They also help in relation to preventing or rather delaying the entry of competitors into a given segment. Licensing of patent information is facilitated based on the portfolio that one acquires in relation to an area. They also help generate a lot of revenue in relation to companies.

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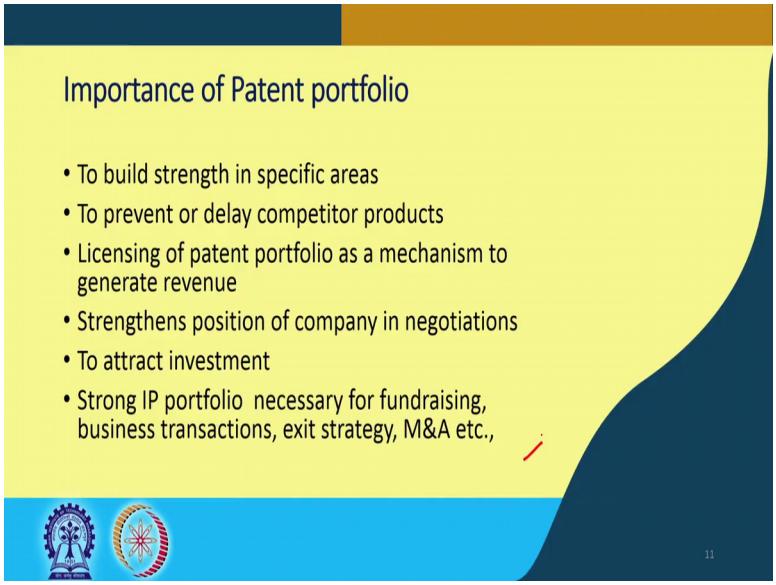

The another important aspect of patent portfolios is strengthening the market position. So, they leverage in terms of providing dominant position in the market. Patent portfolios also help in attracting investments and so, therefore, today companies are looking at acquiring a whole lot of patents in a given area.

So, one must understand that in relation to the patent landscape when you are looking at a series of patents being filed by a particular company and you having grants in relation to them. The value of that is from the point of view of actually building the portfolio. A strong IP portfolio is necessary in relation to all type of business transactions also the collaborations as well as company's outward looking position in relation to acquiring as well as merging.

Let us understand further aspects of the value of patent portfolios today as we see.

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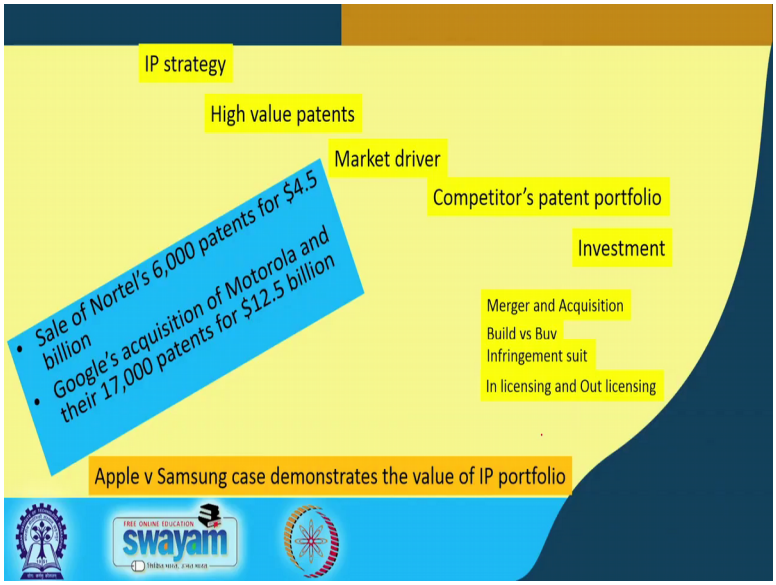

News is replete with a lot of information in relation to the value of patent portfolios. You must have heard of the Nortel's patent portfolio and the sale of it. Similarly, Google's acquisition of Motorola involved a whole lot of patents with the value of so many billions. Patent portfolios are also heart of litigation.

In the celebrated case of the Apple versus Samsung, the value of IP portfolio became important from the standpoint of understanding its value in relation to litigation. From an extensive series of cases in relation to Apple versus Samsung one understands the value of a portfolio in relation to the litigation, from the point of view of the validity of the IP on one end then the technology area itself.

So, therefore, when we look at patent portfolio we are looking at the value with respect to patent portfolio. And, today patent landscapes essentially represent a whole lot of

patent portfolio in relation to a given area. So, when we look at company information from the point of view of a patent landscape, we are actually capturing into what segments the company has a patent portfolio and how does it look with respect to the competitors patent portfolio.

Based on that one understands what are the key market drivers from the point of view of which are the technology areas which are favorable from the point of view of practice in the market. So, high value patents are regarded as assets by companies and so, therefore, looking for information in a patent landscape on high value patents is imperative.

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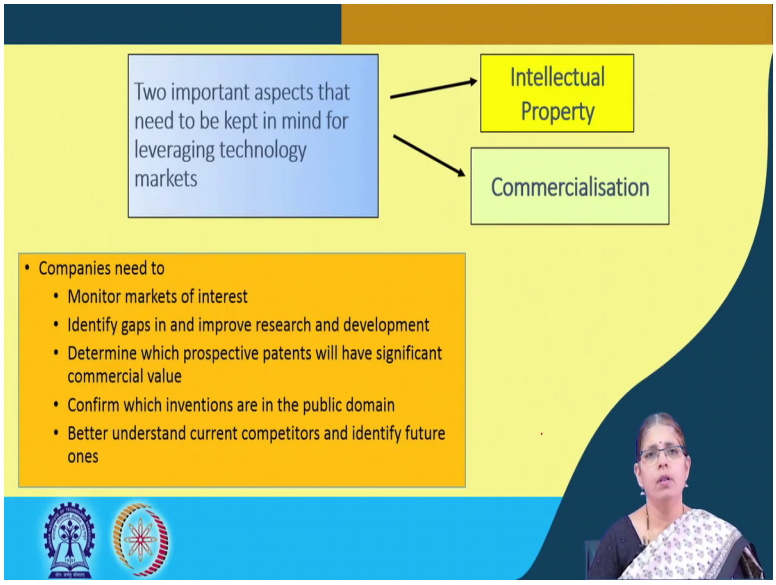

There are two important aspects that one needs to keep in mind in relation to leveraging technology markets: one is the intellectual property aspect and the other is the commercialization aspect. So, a company focuses not only on the filing of IP and the progress on the or the monitoring of the IP through the entire prosecution, but also looks at the parallel aspect of introducing them into the market. So, leveraging the market advantage is as much important for companies.

So, therefore, when we look at a patent landscape, we are actually taking into consideration both these factors and so, therefore, the information that is captured for the patent landscape should provide for the intellectual property strengths in relation to a particular area which the company can leverage. And, looking at the information in relation to the competitor portfolio understanding how the commercialization aspect

should be dealt with. So, to that extent the future aspects of IP can be realized well from a patent landscape.

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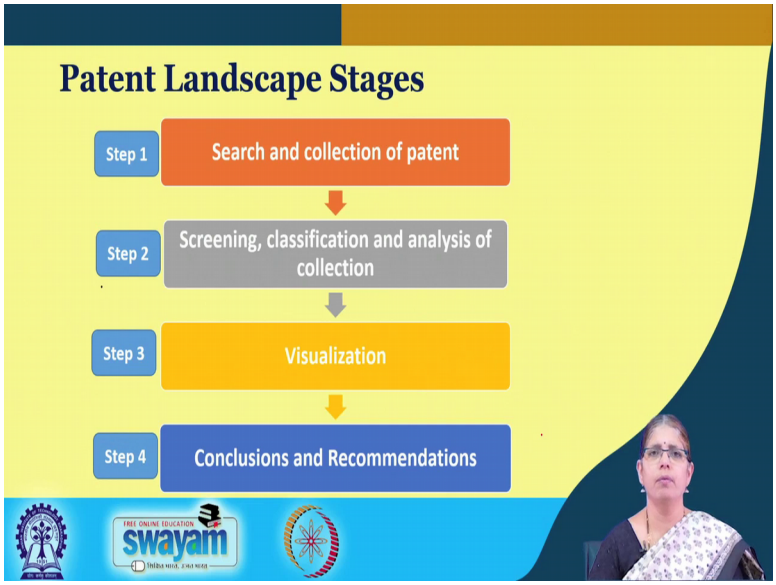

There are several stages involved in a patent landscape. In fact, among the different types of patent searchers, patent landscape is the most exhaustive of the type of searches. It also involves a lot of time unlike other types of patent search.

The general steps involved in patent landscape stages are step 1, which is the search and collection of the patent set. So, here you are looking at the technology focus, and then identifying what are the sub areas, and then looking for collecting the entire patent dataset. Now, the patent data set can be with respect to different countries, it can focus on only certain geographies.

Step 2 is the screening classification and analysis of the collection. So, often a whole lot of information is obtained from the initial step of collecting the patent information. Depending on the focus of the patent landscape search, it may be necessary to screen out certain patents where you are looking at screening out the dataset or rather filtering the data set with respect to certain specific categories. Once the screening of patents is taken up then the classification of patents happens and further on the analysis of the collection.

Step 3 is the visualization of the data set. Based on the analysis done in relation to patents, one can actually visualize what are the trends in relation to a particular data set.

So, it could mean simple trends in terms of bibliographic information, data in terms of periodic filing, it could mean also the visualization as per as per technology domains as per sub domains in a relation to a particular technology.

So, today, there are a lot of automated tools available to provide for enhanced visualization of patent landscapes. And so, therefore, it provides a great option to the patent searchers to sit through data from one image to the other to pull out external information in relation to a particular data point and this has helped because of the automation technologies that are involved in visualization. And, it is important also to note that today artificial intelligence tools are also being used took now catalog and provide for greater visualization of information.

The step 4 is the final step in which conclusions are drawn based on the information gathered in relation to the patent landscape. The recommendations are the important part of the document which provide for information in relation to what the business is looking at from the point of view of let us say a strategy to invest into further R and D, it could be a m and a scenario. Similarly, for an R and D, it is about what are the new technologies that the R and D should focus on.

So, step 4 is an important step in terms of not only drawing the conclusions, but also making recommendations in relation to the patent landscape.

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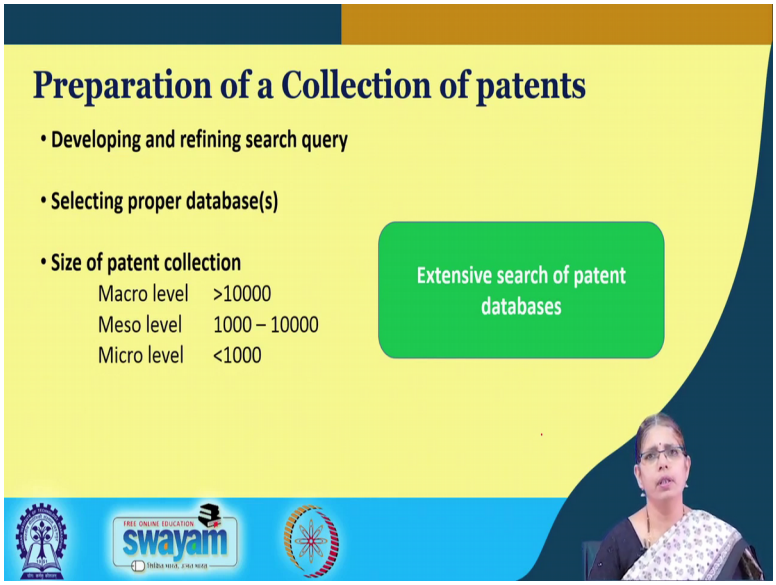

Let us understand further details in relation to each of these individual steps. The first step is actually the critical step which is the collection of the patent data set often as a patent searcher it is difficult to look at a whole lot of information in relation to patent data. So, understanding the technology focus or the objective of the patent landscape is fundamental.

So, the first aspect is to outline the technology focus in a particular area. So, for instance we are looking at let us say electric cars as one segment. So, understanding what an electric car is, what are the facets of development of electric cars, electric car represents what major technologies and what sub technologies. So, cataloging that is important and then based on that looking at the specific aspects of electric car are the considerations.

So, one can do a general landscape on the electric car and the technology is involved in development of an electric car. One can go into a narrow landscape search where you are looking at certain interventions in relation to electric car developments. So, the objective is therefore, very important in relation to a patent landscape search.

Once we look at the technology focus collecting the patent dataset can happen by way of keyword or classification search. So, developing the query and refining their search query is very important from the point of view of the patent landscape search. It is also important to select the proper databases. So, here the identification of the major markets becomes a important reference point for collection of patent data set.

So, when we know that electric car implementation happens in certain markets, also the innovations that are coming up in electric car are majorly with respect to certain geographies in which case we look at the patent data set collection from those specific countries. Sometimes a worldwide patent search is carried out utilizing a subscribed database which provides for all the collections available at the different patent offices.

So, one important consideration that comes to a patent searcher who does a patent landscape is what is the limit of the patent data set to be considered. As we discussed, a patent landscape can represent a broader patent landscape or a narrow patent landscape. So, when we get the collection of patent data set it can run in different levels, we can have a macro level which typically represents patent collections greater than 10000.

Then there is a meso collection which represents data set which is less than 10000 patent collections, but begins from at least 1000 as a collection point. And, then there is a micro level collection which is essentially the patent data set which represents the patent collections which are less than 1000 patents.

So, how do you determine what should be the level at which patent collection should be taken into consideration. It actually depends on the state of the art in that particular area. For instance, today we are looking at patents representing the landscape in relation to artificial intelligence we would go for a micro level because anyone in the area can understand that the implementation of artificial intelligence in relation to certain areas is not that rapid. So, therefore, there may not be many grants and so, in that case the data set collection would be less than 1000.

Now, if you are looking at let us say mobile technologies that is an area which is very diverse and also there has been a tremendous growth over the period of years. So, spanning across let us say at least two decades in which case one actually can go for a meso collection and sometimes even for a macro collection of the data set. So, it all actually depends on the technology growth in that particular area and also the technology focus.

So, once you determine what is the level at which the patent collection data set has to be considered one actually embarks on the further steps. So, a patent landscape essentially considers an extensive search of patent databases for patent literature. Remember, the patent landscape search is actually a state of the art search and so, therefore, extensive collection of information is mandatory in relation to patent search.

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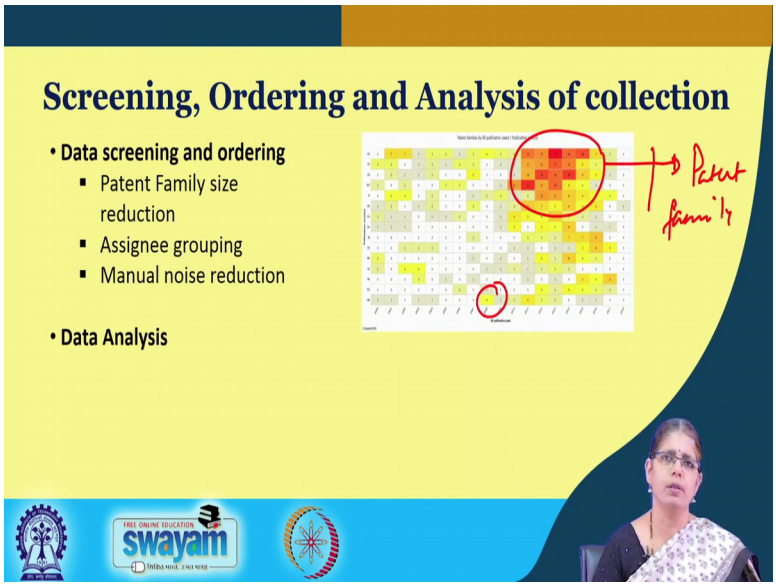

The next step is the search the screening of the data, ordering and the analysis of the collection. So, once you decide what is the patent collection that you have at hand, the next step is to look at screening the data. What are the different ways in which data is screened? Let us imagine that the patent dataset collection largely represents a patents from given geographies.

So, one can actually filter it out based on only the major countries. Filtering of data can be done based on the major classification codes. So, many a time patents are clustered into the major IPCs and some other IPCs may actually have a very minor number of patent datasets. So, therefore, one can filter out with the major IPC; so, take the major set for the further data analysis.

So, there are several tools now available in the public domain to carry out the grouping of patents. Now, due to the growth of software tools in this particular area today one can actually do assignee wise grouping, an IPC based grouping, a patent family based grouping. One can actually also reduce the total number of patent families that would be considered for further analysis. So, screening of the data is very important in relation to the patent collection.

It is possible that you start with a broader patent landscape, and they decide on that these are the sub areas that you would like to work on; either because the sub area is more clustered or because the sub area does not represent many patents. So, keeping in view

the objective of the patent landscape at every step is critical in relation to the screening of the data set. And, the software tools have a very convenient way of filtering the data set using multiple means. So, you can apply actually multiple filters to come with the actual data set that you would like to analyze further and that way you work with the smaller set of patents and analyze them further.

What you see on this screen is the patent family information. So, you can see the spread of the patents and the number of patent families a given area is represented by. What you see in this corner is the number of patent families for that particular area. Now, the color coding represents the increased number of patent families in that particular area. So, you may not want to look at the distal information. So, in which case you filter out this particular part of the information on patent families, and then take that for further analysis.

So, today these software visualization tools provide us this great opportunity to screen the data on the online mode. Of course, one can also do a manual reduction of the data. So, what happens is you can actually port this information into an excel sheet, screen out on a manual mode what are the patent data said that you would like to consider for the further analysis. So, in which case you can actually manually sort out the data using excel option and then look at the collection.

This is quite useful in certain cases where you are looking at a specific area of technology or maybe you are looking at certain specific assignee wise technology focus. In that case, it helps to actually even manually bring the data into a proper condition from the point of view of applying the different filters.

The next step is the data analysis today there are a lot of analytical tools available as part of free databases as well as fee-based databases. And, so, once the patent collection is available, this can be put through the data analytical tool which gives you a whole lot of information in the form of graphs, pie-charts and other ways of visualizing of the data.

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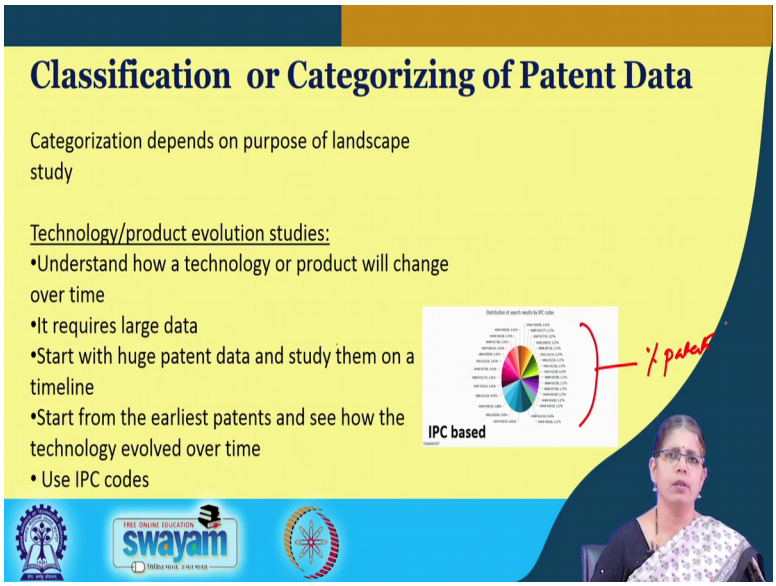

One of the important steps in relation to classifying the data is the categorization of the patent collection. So, the categorization of patent collection is very important step in the patent landscape analysis. There are several ways of classifying or categorization of the patent data. Normally the important reference point in relation to classification is the technology classification in that particular area.

So, in a given technology the areas are classified as per the technical classification that may be adopted in relation to classifying the patent dataset. Otherwise, in some other there are also areas where there is no technical classification available in which case one needs to prepare a vocabulary of terms that represent the improvement in the particular area and then look at classifying the data set.

So, one of the ways in which studies that involve technology or product wise studies are the places where one looks at understanding the technology or they focus in that particular area. So, such a kind of a patent landscape it involve a large amount of data and over a given time line. So, it may span across one decade or even two decades in relation to assembling the data.

So, if the focus of the landscape is to look at the evolution of the particular technology then one would go to the earliest of the developments, start with that lead patent, and then plot the developments in relation to different time points. So, you can have several leads in the same area of technology. Wherever there is a large data set that needs to be

considered particularly when you are looking at technology trends over a given period of time the use of IPC codes can be best realized; so, where the data can be obtained in relation to those specific technology classes.

What you see here is an example of the distribution of the search results based on the IPC codes. So, one can actually make this particular type of a spread of information in relation to a particular set of IPC codes. So, this also represents which are the major IPCs in relation to the percentage of patents that are available in that particular IPC. So, this is where one can actually see the data spread in relation to IPC codes.

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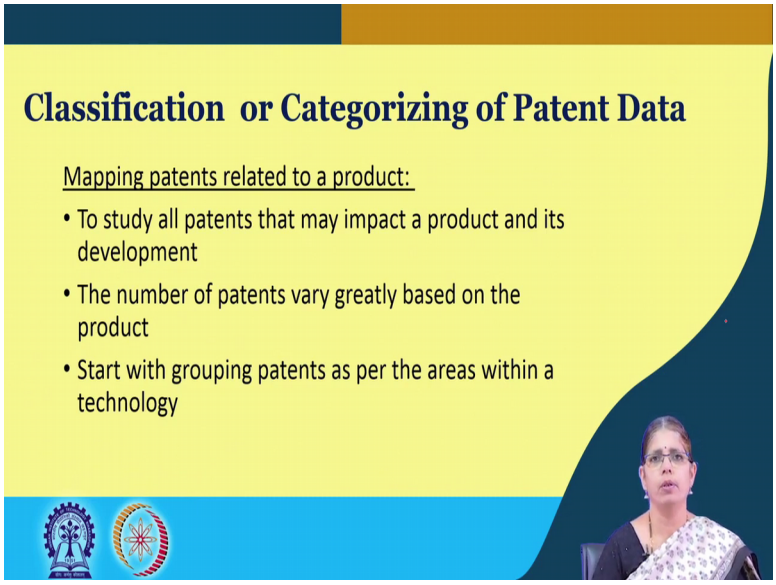

So, wherever the mapping involves patents in relation to a particular product here you can actually go across multiple technologies because in the earlier instance we are looking at a specific technology focus to the patents in relation to that. However, if you look at a product, a product can be implemented based on several different technologies. So, there we look at patents from multiple areas.

And, so, the number of patents will vary greatly based on the different types of technologies involved. In such a case of a patent landscape it is important to first group the patents as per the technology and then look at what is the contribution of the of a given technology in relation to the patent portfolio, what is their contribution of a given technology in relation to other technologies to the product.

So, therefore, one gets a enriched information in relation to not only a single technology, but technology emits the in its relation with respect to other technologies which are useful for the implementation of the product.

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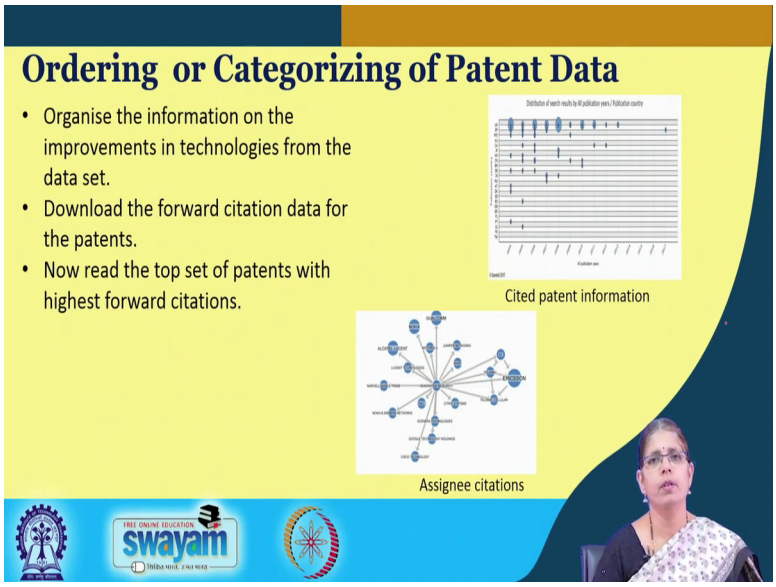

One of the important considerations in relation to a patent landscape is the ordering and categorization of the patent data. So, the categorization of the patent data is not only as per the technology focus, it can also be done based on other information. For instance, we are looking at let us say assignee citations, cited patent information, these provide for actually the strength in relation to the practice of a technology.

So, what you see here as an illustration is the distribution of search results based on the publication year and the publication country. So, cited patent information provides for that value in relation to the strength of a particular patent. Assignee citations also provide information in relation to who are the major assignees. For instance, this is one representation of the assignees in relation to a certain technology. Here you can see that Ericsson, Qualcomm, Nokia, Alcatel are the majors in relation to the patent data set collection that they have.

So, in relation to Ericsson, Nokia and Qualcomm one can understand where is the position of other players in the spread of patents in the patent landscape. So, it also provides us an opportunity to look at the opportunity value that is available in relation to

other players. And, this is relevant both for the big players as well as small players in the market.

Today, we must realize that some of the innovative technologies are also being made by startups. So, it is no longer the aspect that patents are only being captured by big companies. It is also some of those startups which are actually working on very innovative technologies. So, the value of a patent landscape can be realized from the point of view of looking at who are the people who have these technologies and assignee citations help us provide that information in relation to patent landscapes.

Thank you.