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Lecture - 08 Introduction to patent search

Welcome to the lecture on the Introduction to patent search in this we will be covering various concepts in relation to this particular topic.

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The identification of the purpose is the first aspect of patent search wherein we need to understand for what is it that we are searching patents for. Understanding historical aspects is a second part of this particular lecture, we will also understand the third aspect of how harmonization of patent law has been important and what impact has it had on patent search and documentation. We will also understand in the introductory aspects of patent search on the value of databases in relation to search.

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Patents are searched for various purposes often it is the very first thing that you would do in a patenting process in order to determine how the invention is different from the existing patents. One also searches to understand the legal implications associated with patents; today there are more than 192 different patent offices issuing out more than 100 million patent documents. So, there is a whole wealth of information available for searching for with respect to patents.

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Patents are searched for various purposes and by various people. So, often there are many questions that come to searchers mind and it is important to understand therefore, the intention with which we are searching for patents. Is it a part of a normal business process in terms of looking at what are the technology developments and sometimes a company is planning to bring out new products into the market. And so therefore, wants to understand whether it has a clearance or rather it is doing what we call the freedom to operate search, we will come about with this particular detail in a little later part of the lectures.

Sometimes we defensively are also interested in filing patents. So, is it or we looking at filing patents as a follow on patent to secure our portfolio? In a merger and acquisition scenario we are also looking out on who has the maximum wealth of patents in a particular area and make a decision on whether we are going to merge with that particular company or not. The question that also comes to mind is what is the level of search work that you would be undertaking? Would it mean that you are looking at a simple search or are you really looking at an in depth search these things matter.

How critical it is and how it is how important it is for crisis management? Sor instance let us say we are in a litigation and looking at the different status of a particular patent across different jurisdictions. It is important to look at are we going to limit the damage that is if you are looking at certain patents they actually could not there may be an issue of novelty in which case, yes we need to understand what are the other related patents.

Are we looking at a long term strategy for a particular company in terms of what should be the patent in landscape going forward, how many different patents does the company need to file? If we know that there is not many people operating in the area then maybe you could take a you know comfortable time to go and file for the patents. For instance if we know that in a particular technology area there are many people who are operating, then we need to really look at a gainful patent filing. So, therefore, we need to understand whether it is for a short term or it is for a long term that we are filing for patents. Today most of you may also be aware of what we call patent holdups.

So, today companies may not be actually manufacturing those patents, but actually are holding up by having a lot of follow on patents in a particular area. So, as a part of a search are you also engaged in a one off kind of a search it is also important to know

that, what kind of information is the second important consideration when we when we come across the aspect of the purpose of a patent of search. Is it purely for technical reasons that we are looking at patents, are we really in some cases looking at legal information? Is it a scenario where we want to avoid in infringement issues, are we looking at a greater enforcement of patents? Then yes we are looking at patents and you know what is the status of patents and how the portfolio of patents is being built.

Many a time it is also to extract the commercial values. So, are we interested in extracting a commercial value of the invention? There could be very close competitors, so patent search may also be directed towards understanding who your competitors are what are they doing and where are the people who are the prolific inventors and who are the most active applicants. So, again it is also to understand where are the clusters in particular in a particular area of patent. So, many a time when we conduct a analysis of patents based on search we also understand where are the hotspots in a given technological area.

And how is it, that you can defend your portfolio well and what is the kind of information that others need in relation to patents is one of the important consideration. Today the area has become so competitive that patent search itself is an important area as a profession many people take it up. It is also important to organize the results of your search. So, therefore, it is also important to understand who is going to be looking at your results accordingly you will also be making this search is it a business manager who is interested in knowing the portfolio of a competitor in which case your search is directed towards understanding competitors portfolio in relation to patents.

Again who are the ones who are taking decision for instance a CEO of a company may call you and ask you that what are the kind of different patents, we need to advance into the pipeline. So, then you are looking at well these are the existing set of patents these are the new technologies which are developed these have been filed some are in the publication. So, you are getting an entire gamut of the status of applications, portfolio all of that.

Sometimes it is also important to leverage competitive intelligence information. So, it is also important to understand the different formats in which patent search information is reported. And so therefore, depending on how you want to who wants to see the results

of your invention the results of your search you also would actually prepare the search oriented towards that particular purpose. So, in this you are able to understand that one is that patent search is done for different purposes and patent search has to have a specific focus in relation to why we are doing the search.

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To bring it all that into a nutshell patent search essentially is for these various purposes; one is to determine how to direct future R and D and the other area is to look at opportunities in terms of leveraging patents that is either by licensing opportunities or by merger an acquisitions. To understand how to avoid risks in patent litigation, to conduct strategic research and technology planning it is important at this stage to realize that today we are no longer in the area of what we call autonomous inventions.

Autonomous inventions are the are the inventions which are generated out of genuine curiosity and which take time and by the way of R and D there are there are inventions coming out. Today we live in the area of what we call induced inventions where inventions need to be made in the sense of we need to be continuously doing application oriented research and look at greater improvements and newer areas in terms of capture in patents. So, therefore, strategic research and technology planning is one important reason why patent search is an undertaken. Enhancing the existing capability is also important that is how do you build a good patent portfolio.

Today it is no longer about single patents; it is about implementing a particular product in a market with a series of patents. It is also very true for the area of electronic inventions where they are not covered by single patents. So, we discussed in the earlier lectures about predictable arts and unpredictable arts, if you see the unpredictable arts largely in the area of let us say biotechnology inventions and pharmaceutical inventions it is more or less what we call fortress monopoly that is enterprises are built based on one or two or more what we call blockbuster patents large patents.

However, in the electronics area and in the inventions related to computers, the implementation is across areas. So, therefore, the need for building patent portfolio is much realized in the area of electronic inventions. So, therefore, the in hence enhancing the existing portfolio is important for the certain areas more so than. While, bringing new products into the market it is also important to undertake patent search, we talked about it from the point of view of clearing search.

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Today it is important to also realize that we have come a long way in terms of a patent documentation, cataloguing and indexing. So, its worthwhile to examine the historical aspects of patent search on how all of this began to today what we have a dedicated profession for searchers who are called the patent searchers.

So, if you look at some of the early patents and the documentation of it; it provides us some very interesting insights some of the earliest of the patents were simply a grant of monopoly they were read as a scroll in front of the royalty there was no official system of printing publication or indexing and since most of the jurisdictions at some point of time had what we call invention registration system. So, therefore, there was really not much of a wherewithal in terms of the institutional structure in terms of patent offices and also there was no formal examination of patents in many countries until the 1900s.

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So, what happened to searchers in that time and even for normal people to access patents, there was difficulty in accessing patents; one because of the high costs. Second because of there were multiple patent office's multiple branches of patent offices in a given country those were the times and patents were not numbered. So, all that you could do is check by only the patentee name and the date only. So, you can imagine at those days how it was with respect to you know searching for patents it was very very preliminary to that extent.

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Specific changes to patent policy and the development of institution structures has had a big role in shaping the area of the patent search. One is the appointment of patent commissioners opening up of what you call the examination system where formerly patents were examined which; obviously, brought in the requirement of indexing cataloging all of that. Not only that elaborate filing requirements also became an important consideration with respect to different patent documents.

Some of the earliest patents where maybe a one page or two page documents with the development of what we call the elaboration of specification norms patents needed to be written in a very elaborate fashion. In the earlier lectures we have talked about different categories of technical data such, so many different categories of technical data were not captured in some of the very early patents. Today you can have a patent which is let us say 10 pages you can also have a patent which is covered into 100 or more pages which means there has been an elaboration of what we call the specification requirements.

So, therefore, this is one important consideration which led to the change in the way patents were being stored and documented, not only that we discussed about the value of figures. So, therefore, greater the needs that came up with respect to representation of figures sequences when it comes to biotechnology photographs and again norms with respect to what kind of photographs could be represented. So, patent office's began to give a lot of importance in terms of indexing these cataloging these and also

documenting these for the purposes of access by not only the patentee, but also by others when it is published.

So, this is where you see a sea change in the entire aspect of why the imperative for patent search is realized more now because today there is a lot of access to patent documentation which was not available in the earlier times.

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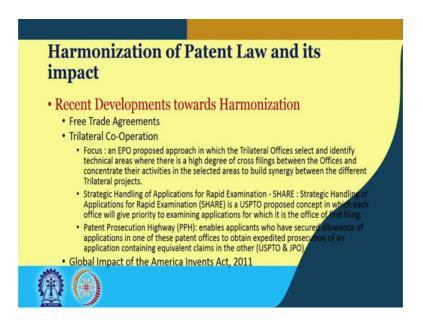
And of course, the computer era has really opened up the ease of search one is that its much more easy to search on an online mode because of the use of different patent databases based on online search which are basically developed based on different computer programs. Today we can access the entire file history wrapper of a particular patent when it was filed, what are the documents filed at different stages, when was the patent examined the response to the particular examination and to up to the grant and even beyond.

So, this ease of access is now available because of the computerization of the patent documents. Today we also have what we call the public access mode and the private access mode. So, in the public access mode you can access the patent once it is published and all the data that is available. In the private access mode attorneys can actually look at filing of documents and those part that part of it is not available for the public to search.

Drawings can be now searched because images are stored in what we call the dot gif format. So, there is a specific search that you can do even for accessing drawings at a particular patent office. Now, greater and greater database structures are changing with respect to how the patents are represented and so therefore, you have newer ways of actually representing patent data we are also; obviously, influenced by the artificial intelligence.

So, in the artificial intelligence using those tools we have now have a high very high end tools available for really looking at saving out a large amount of patented data and also making it very user friendly and at really very great speeds. So, from a very simple representation of patents to now we have the greater prevalence of online system for the availability of patent search documents.

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So, one of the important developments that has happened which has really helped a lot of patent office's is the development of computers the advanced computer programs for you know making the interface is really very user friendly, that has been on one hand where the computer area has really made great changes to the way in which patents are documented.

The other important change that has happened is the harmonization of patent law and its impact. Some of the aspects of free trade agreements that is understanding between different countries on certain IP matters. Specifically when you look at patent office's the

trilateral cooperation is one area where in the very first instance of experiment of the US, the Japanese patent office, the USTO and the EPO together you know looking at joining together to make the practices uniform in relation to certain category of filings a sharing of exhumation practices has helped bring in what we call the uniform documentation of patents. And this strategic handling of applications has helped because of to build what we call the rapid examination.

So, we would believe that there is something like a prosecution highway that opens up between the trilateral offices where given examiners who is looking at a particular application can get the entire documentation of another patent office simultaneously and that helps in you know looking at the examination of applications. So, that is one way of what we call share as a mode of strategic handling and of applications for rapid examination that is one concept.

And of course, we have also what we call the Patent Prosecution Highway which is called the PPH which is again available at many patent offices and many patent offices are also signed up which encompass JPO, EPO many of the middle east countries Korea and many other countries are part of the PPH again which brings in uniform documentation in relation to a given set of applications.

And of course, there is also been an impact of the America invents act in the case of US and how some changes have helped you know have also made big thing you know changes with respect to a certain amount of documentation at the patent office in relation to the aspect of the US patent code.

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There are also these important patent offices which often are also the major jurisdictions of filing. And if you really look at the spread of those they come into three major economic regions one being the USPTO, the other being the Japanese patent office JPO and also the European patent office where you have large filings from different regions. And if you really look at the emerging markets and the greater expansion of the IP you can also consider the patent offices which are of importance which is China, India and South Korea. And another major chunk of a applications are filed through what we call the PCT mode and hence understanding the value of PCT filing as a major documentation is also important for a searcher.

So, these are generally the most important patent offices which are considered, but one must keep in mind that it is possible that you need to also sometime look at let us say Ross patent which is Russian patent database or you may go to a spat which is an of the Australian patent database, for some considerations those jurisdictions are important. So, while these are the major patent office's that one would look at one must not discount individual search at the at the some specific patent offices this actually depends on where and you are looking for patents and it is possible that many other jurisdictions are also actually quite relevant.

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Patent search History

Few historical events at USPTO

- . 1790: First U.S Patent Act
- 1790: The **first patent granted**, was to Samuel Hopkins on July 31,1790, for "Making Pot and Pearl Ashes".
- 1830: The first U.S. Patent Office classification of patents was initiated with 16 classes.
- 1836: Adoption of its basic principles of examination for novelty by other nation
- 1861: Authorization for the printing of patents, laws, and decisions and printed patents available to the public at low cost
- 1872: The Official Gazette was first issued





So, when we looked at the historical aspects of the patent search in terms of how the documentation was in those days it is worthwhile to examine to really look at the aspects of how some of the patent offices developed from the point of view of you know documentation and how it has helped searchers to really look at patent information. So, while the very first a patent was granted in 1790 was for very simple was very very simple representation and documentation that was available at that point of time not until the time of an examination of patents happened.

Now, at the USPTO that is sometime around in 1836 to about the necessary incorporation of the need for printing of patent and making it available to the public worthy to notice that that there was a time when there was a major laws of patents at the USPTO due to a certain fire. And then again once again the documentation of patents needed to be done. Today they are different they are different resource centers available in the United States where one can actually access patents and at you know of the different inventions and the very aspect of the issuing of the official gazette started you know in a much later time.

So, the development of the publication of patents itself is an important consideration when it come to search because unless patents are published there is no way one can search patents. So, this gives you an insight into actually when did the publication requirement and the way public patents are published at different patent offices.

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So, here in this illustration you see one of the very first patents which are awarded in nineteenth in 1790 was to you know this particular the machine which is again the value that was generated was great even in those times.

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So, those were some of the very early representations. So, today of course, we have a very elaborate documentation that is available at the USPTO. In fact, the USPTO was a very one of the very first offices to develop a very the electronic or the online mode of documentation was began from there. Of course, there is also search rooms that are

available which are part of what we call the patent and trademark and depository libraries that are available at the USPTO which can be searched for patents and of course, the in those times patents were into you know the US patent classification code development itself started.

And of course, you had later times the documentation of patents in the form of micro films and then CD-ROMs and people there was of course, a lot of difficulty in terms of storing access indexing to what we know today of you know access of patents from this kind of data as well.

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And, it is pretty much the case with many other patent offices also during that time. For instance if you look at the EPO they also had the paper copies and the microfilm based storage of patent documents and they have the SRS service which is the Science References Information Service was the major service available at the patent office to store patent data and establish the norms for it and not only had European patent documentation it also had the entire PCT published application documentation as a grants of European patents.

Also what is important is that the relation in to the individual national countries. So, a lot of patent applications from national phase to the EP phase the documentation of that developing of norms in relation to that was also important. So, a total of 27 libraries throughout the UK have the data available in relation to one the publications in relation

to UK, PCT part and also expansion into foreign patent publication as well. So, from the very preliminary way of storing information to developing databases and information systems, one can also realize that see if you really look at the historical aspects of patents it is actually the library information specialists who were the ones who really used to be involved in patent documentation cataloging.

So, they pretty much knew the way the people who actually were involved in the entire patent documentation. So, the area of the practice of library information specialists was pretty much with respect to patent documentation. So, at every USPT like patent offices you had these people who were involved in this practice.

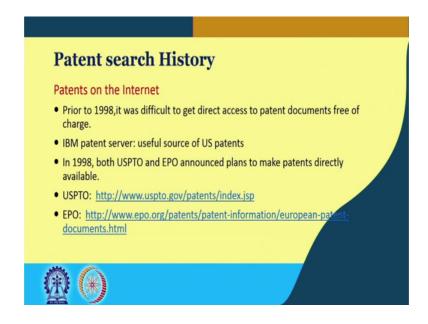
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Searching by the CD-ROMs was a predominant way of looking at accessing patent applications. So, you have a space EPA which is one set of applications that could be accessed. And of course, then there has been this European patent information and documentation systems which again looked at the different sub offices of the EPO and the data relation to that.

So, again under the EPIDOS you also have different internal databases in relation to you know how you can search for specific access of information which is either the PCT applications only in which case you are looking at ESPACE and ESPACE access is where you are looking at the entire aspect of looking at the bibliographic data as well as the abstracts of all the EPO and the PCT applications.

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So, this is another way of accessing the information and of course, in the late 1990s is the time when we look at the patents on internet which is the internet bit direct access of patent documents free of charge. So, from a time when one had to pay high cost for patents to today we can access patent documents available on the internet.

And of course, there are also dedicated patent severs developed by IBM for certain patents particularly US patents and we today have pretty much the links available on the internet on how to access patents at each different patent offices and many a time today it is a one stop shop for or the first starting point for you know for all people who are involved in search everyday. So, what you see here is as the USPTO link shown to you and the EPO link shown to you on the screen.

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Patent search History

Search for patents at the JPO

- Japan Patent Information Organization (JAPIO)
- For Japan, the database JAPIO has been available from the end of 1985and gives English language abstract of all Japanese early published application from 1976
- Also IPDL(Industrial Property Digital Library) has collection of Japanese and other.
- · Patent Abstracts of Japan (PAJ) Search
- Link: http://www19.ipdl.inpit.go.jp/PA1/cgi-bin/PA1INIT?12554





So, the Japanese patent office was also gone through a whole series of changes when it comes to storage of patents where, the you have the JPO which is the database that is available and in 1985 since the time when all English language abstracts of Japanese published applications were available. And of course, you there was also this digital library which is the intellectual property digital library which also is had a entire set of collection of Japanese and other patents and abstracts itself can be searched at batch which is the patent abstracts of Japan search. So, each different patent office's has a different way of actually cataloging the patents.

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Harmonization of Patent Law and its impact

- Two main factors from patent office point of view which necessitates the harmonization of patent laws
 - · Rapid growth of patent applications
 - · Development of advanced technologies





There has been the impact of harmonization of a patent office practices also which has had a big role, we have discussed that a bit earlier itself some of the treaties for instance if you look at the patent law treaty which harmonized on the filing practices also brought in changes with respect to patent applications. And, so incorporation that into the individual patent offices as relevant also has made change to certain documentation which is again relevant to for us to consider from the point of view of the consideration in relation to the search itself.

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The requirements that are specified under each of the different treaties, beginning with the Paris convention.