

Evaluating Large Patent Portfolios – TT Consultants’ Hybrid Approach

Evaluating large patent portfolios for infringement and evidence of use (EoU) is a daunting task, being both time and labor-intensive. We have developed a methodology that simplifies the whole process. Our hybrid approach is spread across 3 phases:

- **Phase One:** Automated ranking & categorization based on the likelihood of infringement
- **Phase Two:** Manual detailed analysis for EoU on leading databases
- **Phase Three:** Drafting of customized claim charts

Phase 1: Ranking & Categorizing The Patent portfolio

Phase 1 involves Automated Patent Portfolio Pruning, wherein, using our proprietary tool XLPAT we rank the patents in a Patent Portfolio into three categories – Gold, Silver & Bronze.

Gold patents are the ones that have a high likelihood of getting infringed by products manufactured by competitors followed by silver and bronze patents. There are 25+ parameters taken into consideration by XLPAT while pruning the portfolio, a few of which are:

- **Ontologizer** : Categorization based on claims
- **ML Based corpus:** Generation of a Corpus-based on Machine Learning that captures all possible semantic/contextual variations of a word and provides synonyms for each key concept
- **Contextual analysis:** Identifies contextually relevant patent documents in fractions of a second
- **Patent Assertive characteristics:** Indicates the commercial scope of patents and helps identify patents that are valuable in the portfolio
- **Competitive Analysis:** Identification of patents that overlap competitive technology
- **Patent strength Index:** Is defined as the aggregate strength of a patent w.r.t other patents in the portfolio based on its technical, commercial, and legal scope

This is a brief description of the process XLPAT follows in the pruning/ranking of the patent portfolio:

- **Ranking based on comprehensive parameters:**

XLPAT ranks a patent portfolio according to standard parameters. These parameters include claim scope, 102/103 rejection data, among patent strength.

- **Ranking against a target potential infringer:**

The platform ranks a patent portfolio against a potential infringer by comparing it to the potential infringer’s portfolio and products. The outcome of this ranking is gold, silver, and bronze patents ranked based on their likelihood of being infringed with Gold ranking highest.

- **Implementing NLP for Ranking based on Standard Essential Patent (SEP) check:**



The ranking tool evaluates if a patent is a SEP or not. If a patent is identified as a SEP, a score for the SEP is calculated, the patent becomes worth more. Consequently, it is ranked higher.

- **Assistance in identifying unknown potential infringers**

Besides ranking, the tool also assists users in identifying unknown potential infringers. Since the tool is trained on patent data, its AI helps identify potential competitors/infringers.

With the process defined above, we have seen that XLPAT has helped our search teams save a lot of time & effort while ranking/pruning a patent portfolio. This time can be better utilized while searching for competitor products and drafting claim charts.

Phase Two: Analysis for Identifying Relevant Competitor Products & Preparing of Claim Charts

Our Subject matter experts (SMEs) start with an initial evaluation of the gold category patents.

Here too we employ a two-pronged approach by using both human intelligence and our in-house tools to identify EoU effectively & accurately.

Our advanced analytics tools that use NLP help identify and search for Standards and further map them with patents. The latest addition to our smart tool arsenal is one that converts YouTube video speech to text. This tool helps our SMEs analyze videos linked to competitor products rather quickly.

In addition to using the above-mentioned tools, our SMEs also manually conduct searches on Web Sources

- Product Literature
- Datasheets
- User Guides
- Repair Manuals
- Technical Standards Relevant to The Given Technology
- Product Test Results

This is primarily done to gather the necessary information to draft the EoU claim chart. In the case of CRM/CPP claims (Computer-Readable Media claims), we also conduct a detailed source code analysis and use reverse engineering techniques to gather relevant information for the preparation of EoU claim charts.

Lastly, our teams also conduct thorough data analysis to make sure that the product is a relevant candidate for possible infringement claims and not prior art.

Implementing Natural Language Processing in identifying EOU's from SEP documents



We have created our in-house tool that is integrated with advanced analytics for searching standards and mapping standards to the patents. These include:

- **Contextual analysis:** Identifies contextually relevant standard documents in fractions of a second
- **Visualizations:** Provides visualizations representing relevant excerpts from large standard PDFs that contextually match the technical keywords used in the search query
- **Date Filters:** Easily refines the search by publication and creation date filters
- **Periodic Updates:** Provides regular updates on newly published standards and the latest versions of the previous standards
- **Future essentiality checks:** Maps previously declared patents to newly published standards or the latest versions of previous standards

Data Sets Covered in the Present Version of the In-house Intelligent Tool

Standards: All ETSI published standard documents including drafts and latest 5G standard documents (Full Text, Technology Clusters, Publication Dates, Rapporteur, and Supporting Organizations)

SEP Declarations: Around 400,000 patent documents declared essential to ETSI standards. Developments are underway to include more datasets including standard data from various SSOs like 3GPP, IETF, RFC.

Intelligent YouTube Video Search

Another advancement is the use of our in-house intelligent data scraping algorithms to extract videos containing identified keywords within closed captions. We use NLP to search for keywords within YouTube videos to help identify potential infringements that may not have a presence in the text.

Main Features:

- 1000s of videos searched in one go
- Intelligent algorithms scrutinizing video titles as well as subtitles to create exhaustive indexes
- Searchable captions for voice videos sans text
- Grouping based on tech domain/channel type e.g., “wireless” and “unboxing” correspondingly

Phase Three: Drafting of customized claim charts

With the completion of the EoU analysis, our teams then start to prepare claims charts for the products identified. The EoU claim charts consist of the earliest launch date of the product/service, proof of sale, proof of use, revenue generated by the product, and additional information that could prove relevant for the client.

For a personalized demonstration of our hybrid approach, to prune patent portfolios and make claim charts, please email us at projects@ttconsultants.com



Author
Kanishak Sharma