

STRATEGIC PATENT PORTFOLIO ANALYSIS

for business-relevant insights

“Go far beyond
bibliographic
information and
reference counting”

Draw meaningful portfolio comparisons to
recognize absolute quality or strength



Translate descriptive
commentaries into
more profound
findings

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ABSTRACT

Different approaches to analyzing large patent portfolios

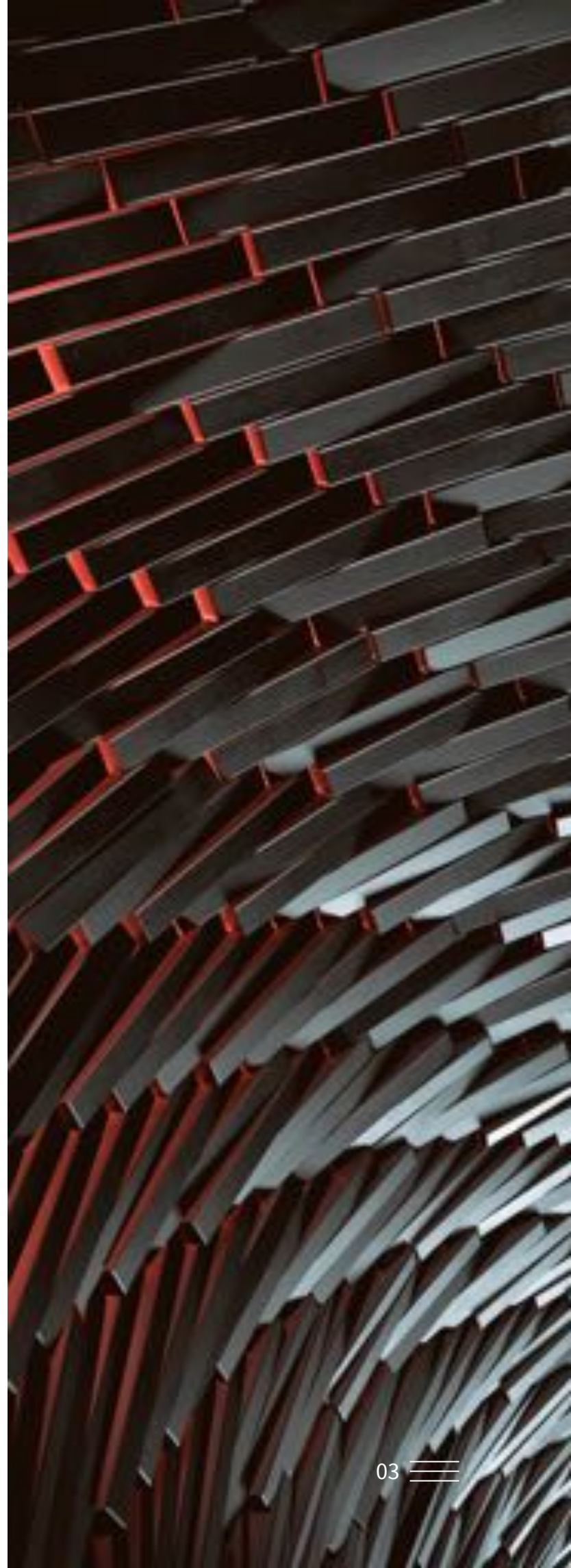
The analysis of large patent portfolios requires different approaches compared to legal attorney opinions provided only for a limited number of cases. The authors present a stepwise approach, starting with a simpler landscape-type of portfolio analysis which is subsequently refined for deeper insight by additional attributes in a second phase.

Initial landscaping is always required to achieve a solid understanding of a patent portfolio before adding further amending parameters for a deeper analysis. Taking this first step greatly reduces the risk of misunderstandings and false interpretations at a later point.

To support the understanding of a patent portfolio's absolute quality or strength, comparisons and benchmarks with other portfolios are crucial. If the impact of a comparable portfolio is already known, the benchmarking results can provide objective and measurable insights in contrast to pure descriptions.

**Provide
objective and
measurable
evidence**

to supplement conventional self-analysis



INTRODUCTION

The number of relevant assets determines the methodology options available

When conducting a patent portfolio review, the number of cases within the portfolio determines the methodology options available. While a smaller number of applications or patents can be analyzed "manually" by a competent person like a patent attorney or patent engineer, such a procedure would be wholly impractical for an extensive portfolio of hundreds or thousands of cases. Without solid support from analytics software and patent databases, the required effort and resulting cost would make a case-heavy review impossible.

Before choosing an appropriate software system, it is essential to clarify and define the purpose of the intended analysis. What is the main information expected from the assessment? Which kinds of insights and conclusions are expected? Does the analysis work sufficiently with only publicly available patent data, or is there a need for advanced attributes and specialized data to support the intended review and analysis?

Modern analytical software solutions offer the potential for deeper patent (strength) analytics that go far beyond bibliographic information and counting references.

A stepwise approach is suggested to avoid myopic conclusions based exclusively on details, made without a general, top-level understanding. Carrying out the analysis in this way provides an initial overview with additional further insights on every new level applied.

This procedure averts the common tendency to apply very advanced and complex analysis without achieving a good overview and understanding of the portfolio's condition. A front-loaded method bears the risk of misinterpreting more complex aspects and could lead to incorrect conclusions.

This white paper will recommend and describe an approach with an increasing level of complexity.

PATENT DATA AND INFORMATION

Locating and visualizing bibliographic data for enhanced analysis

Standard bibliographic patent data like publication or patent numbers, applicants, inventors, jurisdiction, International Patent Classification (IPC) or Cooperative Patent Classification (CPC) are typically available in public patent office databases like Espacenet (European Patent Office) or DEPATISnet (German Patent and Trademark Office).

Such databases provide all the bibliographic data required for an overview-type of patent analysis. Still, they are not comfortable to use and do not allow enhanced download functionalities for postprocessing and graphic visualization. Therefore, the use of commercial patent analytics software is advised for more ambitious analytic projects with a larger number of involved cases.

When evaluating one's own patent portfolio, additional business, technology, product, or strength information is often available to support the intended analysis significantly. For instance, company-internal technology classifications are way more specific than CPC classes; invention or patent assessments during filing and prosecution procedures indicate strength and relevance, while market forecasts indicate appropriate jurisdictions.

Such internally accessible information should be used to complement public patent data wherever possible.

Another dimension of patent portfolio analytics opens up where sophisticated analytical software is available.

Counting citations only supports an understanding of a case in a very basic way and can easily lead to misinterpretations. Including the speed of citations observed, the origin or broadness in terms of the technological field substantially enriches the options for portfolio analysis.

**Commercial
patent
analytics
software is
advised**

for more ambitious projects

LANDSCAPE-TYPE OVERVIEWS

Some basic but required overviews can be prepared based on typically available patent information. Such tables or charts allow a quick first understanding of a larger portfolio and its main characteristics and specifics.

The following information is suggested to generate an initial overview and insights:

1

Size of the portfolio with the number of alive patent families, applications and granted patents

5

Main applicants observed, preferably clustered by cases belonging to the same holding company

2

Filing trend(s) for priority applications over the last five to 10 years

6

Top CPC technology fields, using the first four digits to aggregate information

3

Filing trend(s) of all applications in all jurisdictions over the last five to 10 years

7

Main technology classification domains as suggested by the World Intellectual Property Organization (WIPO) (Schmoch, 2008)[1]

4

Top 10 jurisdictions of alive applications and patents, including numbers of cases

[1] U. Schmoch, Concept of a technology classification for country comparisons, Fraunhofer Institute, 2008



Generally speaking, such information does not already create strong insights but a basic understanding of a patent portfolio. It appears to be quite relevant whether a portfolio consists of 100, 1,000 or 10,000 cases, and the size of a portfolio already represents important information. Filing trends can be stable, increasing and decreasing and provide a first understanding of recent R&D activity, working under the assumption that innovation gets patent-protected accordingly and consistently.

In addition, relevant jurisdictions comprise a vital piece of information when studying a patent portfolio. The extent of protection can be focused on a few key jurisdictions or may show extensive coverage underlining the global relevance of the portfolio.

If a portfolio under review does not belong to the same holding company but shows diverse applicants, it is vital to identify the main players involved. Information about principal inventors can be relevant but typically contributes much less to strategic insights than similar data about corporate applicants.

The first analysis of CPC classes or technology domains is essential to understand a portfolio's breadth and technological relevance. Where a small number of distinct technology fields is observed, the general and global relevance of the portfolio might be limited and specific to certain businesses, products and their underlying core technologies.



PATENT ANALYTICS

Make informed and strategic decisions in the course of patent research

Whereas a landscape-type portfolio analysis provides a general overview rather than strong insights, the same patent information can be further enriched by adding additional attributes.

Some further aspects to increase the level of insight are:

1. Main legal status information (alive or dead)
2. Advanced legal status indicating the prosecution status of a case differentiating between pending applications, granted patents or cases under opposition
3. Oppositions filed specifically for European and German cases, including the three potential results
4. Text cloud and semantic technology cluster information ("concepts")
5. Strength and relevance characteristics, for example:
 - Average patent family size
 - Average application or patent age
 - Patent or portfolio strength and value
 - Simple backward and forward citations
 - Advanced citation aspects including, for example, citation speed, origin, self- or non-self-citations, technology environment, etc.
 - Economic importance of protected countries

- Risk of litigation, opposition, or invalidation
- Technological diversity
- Rich (or poor) neighborhood analysis

All the parameters mentioned above can be evaluated individually but benefit from a combination of different attributes in a smart way. For instance, combining a 20-year filing trend review with legal status may raise the question of why there are cases in the portfolio not achieving a grant after 10 years of prosecution. Another question may arise as to why a particular part of the portfolio faces a proportionally higher rate of oppositions and even the unfortunate result of being invalidated.

In general, combining numerous attributes often transforms what would otherwise be mere descriptions and observations into solid and valuable insights.

COMPARING RESULTS

Direct benchmarking for an objective way to test portfolios

Even a smart combination of several patent attributes described above does not adequately address the questions of "How much is good?" and "How little is bad?" Some patent aspects provide simple answers to this question.

Coverage in a larger country is preferable to a smaller one, and a patent successfully maintained in light of a post-grant opposition procedure demonstrates strength and enforceability. Also, a more significant number of filings is typically better than a smaller number. But does this statement remain valid if the many applications are only maintained for a shorter period while the fewer applications are maintained much longer?

Direct comparisons and benchmarking are required to provide an objective basis to compare different portfolios against each other and satisfactorily answer these questions. To illustrate, imagine that a particular patent analytics software program ascribes a portfolio a score of six out of 10 on strength or value. This rating on its own does little to provide insight. Comparing a relevant patent portfolio, A, with a score of six, with another portfolio, B, achieving a score of eight definitely does. The understanding and insights resulting from such benchmarks can be even increased if one participant of the benchmark is well known – typically the own portfolio.

Suppose the well-known strength of a part of your portfolio is put into perspective with other unknown portfolios. In that case, an orientation for the absolute quality, achievement or strength becomes possible.





SUMMARY

Continually develop your analytics skills for greater insights and success

We have shown how a stepwise approach to portfolio analytics can translate descriptive observations into more profound insights and conclusions. We have emphasized the importance of first clarifying the purpose of the analysis to determine the most suitable approach. This is to be followed by data verification as an essential success factor for later results, as incorrect data cannot lead to

correct conclusions. Based on this foundation, it is possible to start simple landscape overviews, add supplementary data and translate that data into advanced information and insights.

These insights will answer the hypotheses and contribute to a stronger foundation for your patent strategy and even your overarching business strategy.

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Burkhard Josuhn-Kadner is a member of the Dennemeyer IP Consulting team in Munich with over 30 years of experience in Intellectual Property and R&D.

In his former executive positions at General Electric, Alstom and ABB, he managed sizeable industrial IP portfolios and led global IP, technology and engineering teams. The ongoing challenge to build strong patent portfolios with remarkable business impact based on limited budgets always required intelligent and innovative solutions. He shares his experience analyzing patent portfolios efficiently and how to derive different levels of insights and conclusions, including related visualization and communication.

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