



Patent documents usecases with MyIntelliPatent

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Objectives and contents of this presentation

This presentation:

- identifies and motivates the most significant uses of Patent Information.
- suggests how to carry out these tasks with MyIntelliPatent effectively and efficiently.

This presentation includes also some background on Patent Informatics and references to MyIntelliPatent information.

Index

- Patents and patent documents.
- Patent document usecases.
- MyIntelliPatent in summary.
- Searcheing patents with MyIntelliPatent.
- Analysing patents with MyIntelliPatent.
- Conclusions and follow-up.



Patents and patent documents

Patents

Patent documents: why useful

Patent document structure

Patent metadata

A patent

A patent is a set of exclusive rights granted by a state to a patentee for a fixed period of time in exchange for the regulated public disclosure of certain details of a device, method, process or composition of matter which is new, inventive and useful or industrially applicable.

Patent documents: why useful

A patent document is a **rich source of information** since:

- the description must be sufficiently **detailed** to allow everyone to reproduce the solution when the legal protection expires.
- the description summarizes the **status of the art** and explains **why the solution is new and inventive**.
- moreover, the description **should provide adequate reference to other relevant background information**, e.g. scientific papers, also in non patent literature.

A patent document is a **source of information not available elsewhere**; a USPTO report identified that **“80% of patents contains technologies not disclosed in non-patent literature”**, after the analysis of a statistical significant patent set.

Patent documents structure (1)

A patent document is structured into:

■ **Description**, a *technically oriented text* which can be further distinguished in these sections:

- Technical field
- Background art
- Summary of the invention
- Description of drawings
- Preferred embodiments
- Industrial applicability
- examples

■ **Claims**, a *legally oriented text* which describes what is legally protected. Claims are typically structured into a hierarchy and can be further distinguished into independent claims and dependent claims, which depend from others independent and/or dependent claims.

Patent documents structure (2)

- **Drawings**, which integrate the description and have a specific value in some technology areas, as mechanics, in order to understand quickly the technical part of the patent.
- **Title and abstract**: certainly useful, *although it is not a so uncommon that the patent writer uses an ambiguous style specifically in these sections, to disguise competitors.*

In summary, a patent is a structured document, in which:

- *claims and description as well as descriptions and drawing are referenced together.*
- *description is structured into prescribed sections.*
- *claims are structured as a layered network of nodes.*

Patent metadata and processing

Metadata can be distinguished into:

- applicant provided metadata (e.g. applicant and inventor).
- patent office provided metadata (e.g. application area).
- other metadata coming from other data bases and evolving with the patent life, as the patent status.

Besides that, it is possible to add other *application specific* metadata, as:

- metadata computed from the original metadata: e.g. citations received from citations provided in documents.
- metadata extracted by the text, as substance names.

Some metadata are typically used to retrieve patents (e.g. applicant, IPC, year), other can be used as proxies indicating the R&D relevance (as citations received) or the M&S relevance (family size).



Patent documents usecases

- Patent usecases motivations
- Patent usecases categories
- Patent documents searches
- Patent based technology analysis
- Patent based competitors analysis

Patent usecases motivations

- Assessment of the novelty of your technical ideas.
- Evaluation of patent literature before writing a patent.
- Identification of the relevance of a patent to a product or a standard.
- Monitoring specific technologies or players.
- Supporting trend analyses for technologies.
- Identifying technical suggestions not covered by patents in force.
- Identifying opportunities for your patents or known-how.
- Supporting the value analysis for a patent or a set of patents.

In the following we will analyze in more details this list, structuring it into different categories.

Patent usecases categories

Patent document usecases can be categorized into:

- **patent searches**, since different kind of patent searches can be required along a patent life. *These searches are the most standardized usecases.*

- **patent set analyses**: these analyses can be further distinguished by different motivations, from technology intelligence to competitor intelligence. *These analyses are less structured than patent searches. In this presentation we try here to make also a categorization of these subcases.*

- **others to mention**, as:

- patent alerts, with different motivation.
- patent categorization.
- single patent analysis and navigation.
- patent management.

In the following we will detail “patent searches” and “patent set analyses”.

Patent searches

Kind of search	When to do	Documents to search	Why to search
State of the art	Before starting an R&D activity	Patent in force or expired, scientific papers, news, books	Any relevant document can describe the status of the art
Prior art (patentability)	Before applying a patent or for granting an applied patent	Patent in force or expired, scientific papers, news, books	These document can impact the novelty and the inventive level of your patent
Validity (or invalidity) search	To verify the validity of a patent of a competitor, of a partner or of yourself	As in prior art, but taking into account the priority date of the patent	This search is typically activated in business sensitive situations
Freedom to operate	Before selling a product in a nation	Only patents in force for that nation	Only patents in force in that nation can stop you to sell your product

Technology based patent analyses

These analyses can be further distinguished into:

- **technology basic analysis**, to identify the different elements and alternatives in a technical domain.
- **technology advanced analysis**, with the following subcases:
 - **technology evolution analysis**. It adds the time dimension to the basic analysis, also to try to infer possible evolutions.
 - **key contributions analysis**, to identify the most influential patents in your collection.
- **technology crossfertilization analysis**, to identify potential reuse of similar technologies in different fields. It can be used to find unexpected ways to license your patents.
- **technology based players analysis**, to find also unexpected players (e.g. universities) in your field of interest.
- **technology based inventors analysis**, to find more prominent inventors in your field of interest.

Players based analyses

These analyses can be further distinguished into:

- player overview.
- player detailed analysis:
 - player technology analysis.
 - player market strength analysis.
 - player internal strengths.
 - player external networks.
- complementarities of our company with another player.

Depending on the “player” (known competitor, unknown competitor, other) these analyses can be motivated by preventing or confining aggressive moves or by identifying eventual opportunities.



MyIntelliPatent in summary

MyIntelliPatent: what is

MyIntelliPatent: why it useful

MyIntelliPatent: how it works

MyIntelliPatent other information

MyIntelliPatent: what is

- A patent search and analysis tool, for supporting patent professionals in their patent analyses with efficiency, intelligent and user-specific behavior.
- Provided as SaaS (Software as a Service), with a company specific password.
- Uses a customer-specific patent repository and personalized knowledge database.
- Structures the user interaction into three phases:
 - collect a patent set (for achieving recall).
 - analyze a patent set (for achieving precision).
 - analyze single patent.

MyIntelliPatent: why useful (1)

- It extends the usual patent metadata, as IPC, dates, applicant with new metadata:
 - some of which inferred from existing metadata, **as the number of citations a patent receives.**
 - other inferred from the patent text, **as most relevant concepts present in your patent set**, as “adaptive modulation”, *inferred through the **tag** function.*
 - some metadata can be used as proxies to identify the R&D and/or the M&S relevance of a patent.
- It separates recall from precision requirements.
 - the recall is dealt with the **collect functions.**
 - the precision with the **search function.**
 - The **collect** functions allows to collect in your local repository a larger set of patents than strictly needed, the search function allows to identify the most relevant.

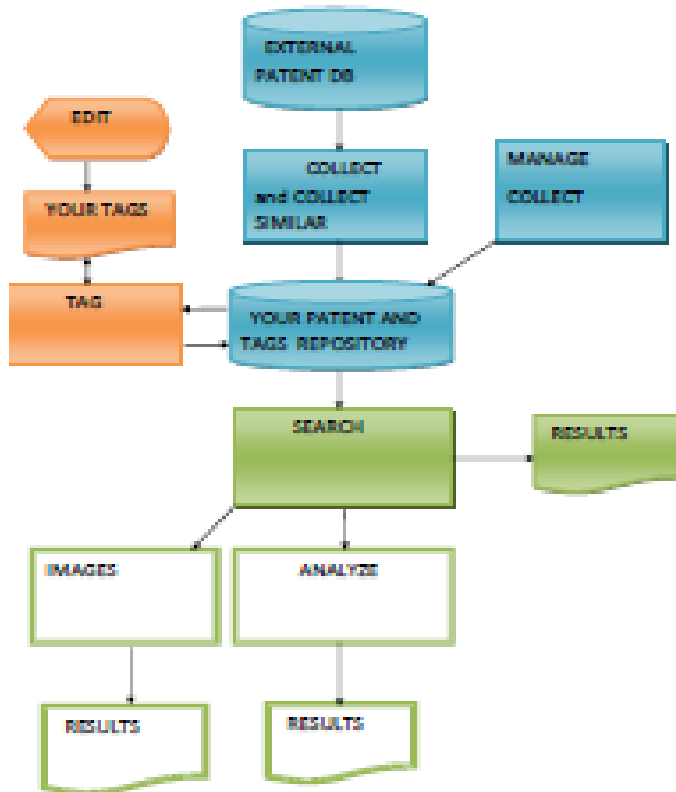
MyIntelliPatent: why useful (2)

- It provides different kind of **collect functions**. Depending your initial knowledge, you can start collecting patents:
 - belonging to specific IPCs and companies (**collect**).
 - **similar to a patent** you already know.
 - **similar to a text** you collected (e.g. a news) or edited (e.g. an abstract).
- It provides a **powerful faceted search function**, which allows you to perform interactively and iteratively:
 - **the identification and selection** in your collected patents of those characterized by specific values (high number of citations received, large family size), or even by a combination of values (e.g. patents belonging to different IPCs) which can constitute a warning signal for you.
 - **the ranking** of your patents according to different criteria, as citation received, relevance to a concept etc.

MyIntelliPatent: why useful (3)

- It is **personalized**, since it includes:
 - **your local store** of patents (1M and more) you collected, organized by different collection sessions you activated.
 - **your terminology** of your domain of interest. The **tag function** allows you to learn automatically this terminology from your patent set, to edit it and to tag all your patents with tags you confirmed. These tags (e.g. substances or apparatus names) are additional metadata which can be used for the faceted search.
 - **your patent notes and scores** you have defined in the **analyze** function.

How it works



The **collect function** and the **collect similar finction (to a patent or to a text)** collect patent sets in the internal repository, the **manage collect** manages these collections.

The **search function** is applied to patents in the internal repository: they can be aggregated by different criteria, whose related statistics are updated as well.

These statistics can be saved or used for identifying a specific patent **to analyze** textually, e.g. to identify the most similar patents and to extend with your comments. The **image** allows you to access figures and pdf pages..

The **tag function** allows to define your own tags and tag classes (as «application» , «method» «substance» and to annotate your patents accordingly.. You can edit tags suggested by the system and based on patents you have collected.

MyIntelliPatent: other information

- More detailed information about MyIntelliPatent can be provided in the presentation “MyIntelliPatent 1.2 Overview”: a 20 slides presentation of the present release.
- Here in the following we do not duplicate this background information, but we focus on suggesting you how to use efficiently and effectively MyIntelliPatent for supporting you in patent documents usecases previously described.



Patent searches with MyIntelliPatent

Status of the art search
Prior art search
Validity
Freedom to operate

State of the art search

- **Reasons why:** identify the status of the art before starting R&D and patenting activities on a field.
- **Suggested method**
 - enter the page “**collect by similar text**”.
 - write an abstract which summarizes the domain you want to search, copy and paste this text and search similar patents to this text, activate the collect.
 - enter the page “**search**” and analyze the set of collected patents. Different criteria can be followed.
 - select patents making more citations and order them from the newest to the oldest.
 - enter the page “**analyze**” for patents higher in your search list and read more specifically the part of the description describing the status of the art. It is also useful to identify and read cited documents.

Prior art search

■ **Reasons why:** identify patent or non patent literature which can impact the novelty and inventiveness of your draft application.

■ **Suggested method:**

■ enter the page “**collect by similar text**” with the text of the draft application or “**collect by similar patent**” with the application number; collect these patents.

■ enter the page “search” and analyze the set of collected patents.

■ enter the page “analyze” for patents in your set:

■ read more specifically the part of the description describing the summary of invention and the drawings (if relevant for your sector) and score those which can impact your application.

■ identify and read cited documents, also in non patent literature.

Validity

- **Reasons why:** methodologically similar to “prior art search”, for a patent in force.
- **Comment:** this search is typically business critical.
- **Suggested method:**
 - enter the page “**collect by similar patent**” with the patent number you want validate or invalidate, collect these patents.
 - enter the page “search” and analyze the set of collected patents, *excluding patents whose date can not affect the validity of the patent since they are more recent.*
 - enter the page “analyze” for patents in your set
 - read more specifically the part of the description describing the summary of invention and the drawings (if relevant for your sector) and score those which can impact your application.
 - identify and read cited documents, also in non patent literature.

Freedom to operate

- Reasons why: before selling a product in a nation.
- Suggested method:
 - enter the page “collect by similar text”
 - copy and paste a data sheet or abstract of your product, search similar patents, activate the collect tuning it in such a way to maximize the recall.
 - enter the page “search” and analyze the set of collected patents, selecting only patents in force for the specific nation of interest.
 - enter the page “analyze” and analyze those patents.



Patent analyses with MyIntelliPatent

Introduction
Technology analysis
Players analysis

Introduction

In the following we distinguish two categories of analyses:

- **technology analyses**, whose first step is a **collect** function collecting a patent set related to a technology, e.g. to a IPC; they are ***basic technology analysis, advanced technology analysis, technology crossfertilization analysis, technology based players and inventors analyses.***
- **players analyses**, whose first step is a **collect** function collecting a patent set related to an **applicant.**

Basic Technology analysis

■ Reasons why

- to identify the different elements and alternatives in a technical domain.

■ Suggested method:

- activate the **collect** function with the IPC of interest.
- extract tags from the set of patents you collect, associate these tags with tag classes of your interest, activate the **tag** function for your patent set: *this is a more granular categorization than the IPC.*
- enter the **search** function and analyze the distribution of tags for any tag class; these distributions can be exported for documentation.

Advanced technology analysis

■ Reasons why:

- to identify the technology evolutions.
- to identify the most influential contributions.

■ Suggested method:

- after the basic technology identify for all tags of interest.
 - their temporal distribution, in order to verify whether the popularity of this topic.
 - if you want to proceed further, it can be interesting to analyze first patents in which this topic appears
 - the distribution of citations.
 - if you want to proceed further, it can be interesting to analyze patents with high number of citations received.

Technology crossfertilization analysis

■ Reasons why:

- to identify possible reuses of the know of in a specific area.

■ Comment:

- low effort, interesting business reasons.

■ Suggested method:

- activate the **collect** function with the IPC of your interest.
- enter the **search** function and analyze the distribution of IPCs; in fact a patent is characterized by many IPCs, hence you will find other IPCs besides the requested one.
- identify IPCs semantically more distant from your initial IPCs; these are the candidate Ipcs.
- select these IPCs and identify the corresponding patents, to identify key patents which can be applied in different sectors.

Technology based players and inventors analyses

■ Reasons why:

- **technology players analysis**, to find unexpected players.
- **technology inventors analysis**, to find prominent inventors.

■ **Comment:** low effort / interesting business reasons.

■ **Suggested method:**

- activate the **collect** function with the IPC of your interest.
- enter the **search** function and analyze the distribution of players and/or inventors;
 - these distributions can be exported in CSV form for further processing in Excel file.

- you can refine the analysis of a single player or inventor by selecting it and identifying the time evolution of patents or the distribution of citations received.

Player overview

■ Reasons why:

- identify the general characteristics of a player

■ **Comment:** this is only a quick method for obtaining a first level of information;

■ Suggested method:

- activate the **collect** function with the player of interest
- enter the **search** function, analyze and save as csv:
 - the distribution of IPCs, for identifying fields in which the player is active.
 - the distribution of patents by year, for identifying the time evolution of the patenting activity.
 - the distribution of patent family sizes, for identifying the market strength of this player.

Player detailed analyses (1)

- Reasons why: obtain a more refined analysis of a player from different aspects, as technology domain covered, market strengths.
- **Suggested method:**
 - activate the **collect** function with the player of interest.
 - activate the tag function for the patent collected.
 - enter the **search** function, analyze and save as csv:
 - the distribution of tags, for identifying with a higher granularity than IPCs the **technology characterization**.
 - the distribution of nations in which patents are applied to identify the **geographical characterization**.

Player detailed analyses (2)

- the distribution of patent family sizes, for identifying **the market strength of this player**.
- the distribution of inventors, for characterizing R&D efforts (e.g. concentrated or distributed).
- the distribution of coapplicants, for **characterizing cooperations**, e.g. to identify if the cooperation with companies and/or universities is common or not.
- then identify specific patents with high family sizes in order to identify specific patents more.

Players complementarities

■ Reasons why:

- identify complementarities between players from the point of view of technology or also geographical markets.

- **Comment:** typically you have to compare your company with another player.

- **Suggested method:** perform the detailed analysis of the selected two players and analyze differences of:

- the distribution of tags, for identifying with a higher granularity than IPCs the **technology characterization.**

- the distribution of nations in which patents are applied to identify the **geographical characterization.**



Conclusions and follow up

Conclusions
To proceed
References
Disclaimer

References, in order of relevance

- MyIntelliPatent 1.2 Overview”: a 16 slides presentation of the present release.
- MyIntelliPatent 1.2” : a detailed presentation of the present release.
- “MyIntelliPatent User Manual”: the user manual.
- “IntelliSemantic: an overview of the company and solutions” (slides, for a company presentation.
- “Patents and patent information: a quick overview” (slides, 2008).
- “State of the art and forecoming evolutions in patent. intelligence” (slides, 2008): this and the former provide a general background.
- <http://www.intellisemantic.com> - company site
- <http://www.intellipatent.eu> - patent products site

Disclaimer and contact

This presentation contains time sensitive information.

IntelliSemantic will update it regularly in order to align it with product releases and with eventual answers to frequent questions issued by customers and prospects.

In case that the version you have has a date different than the month of your use, contact IntelliSemantic to verify if the version you have is still valid or has to be updated.

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