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White paper

On

Patent Database Service

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Scope of Report

This report provides an analysis of the patent database services market. Various patent database service providers have been analyzed and compared, to provide a comprehensive analysis of the tools and services offered by them. Further, this report elaborates on the role of Knowledge Management (KM) and Information Technology (IT) tools in the extension of tools and services offered by patent database service providers & other vendors. We have also analyzed various Information Technology Tools pertaining to this in the report.

Business Case

Patents are important sources of technical and business information. They provide an insight on technology, business, and competition, and have the potential to affect key decisions, such as those related to the Research and Development (R&D) strategies and business strategies of an organization. Strategies that are based on the effective utilization of patents and patent information can significantly boost the profits of an organization. Researchers in research, development and corporate organizations, as well as those in universities, utilize the technical information obtained from these patents as starting points for their research. The use of patent information helps them in avoiding the 'reinvention of the wheel', because they can potentially license and use patented technologies instead of wasting time and money in developing identical technology.

Most corporations and research enterprises use available patent information while formulating their R&D and business strategies, and they particularly utilize this information while conducting competitive analysis and 'due diligence' with respect to mergers and acquisitions.

The key challenge faced in utilizing patent information effectively is sifting relevant information from spread data. Patent data is spread across multiple databases and is written in multiple languages. Moreover, an organization needs to engage the services of experts to identify and analyze the relevant information.

The patent database services market comprises companies that provide products and services related to searching, mining, analyzing, and managing patents and patent-related information. The common products and services offered by these information service providers include:

- Advanced patent databases: These databases combine patent information from multiple sources. Additionally, the providers modify and enhance this patent information to provide more refined information.
- Search tools for accessing the patent information stored in the patent databases
- Analysis tools for analyzing patent information
- Visualization tools for presenting the analysis

Knowledge Management (KM) Information Technology (IT) and Patent Analysis (PA) tools enable patent information services and software solutions. The scope of the patent information services provided by various service providers are largely limited by the inherent capabilities – or their lack – of underlying KM and IT tools. Although the current state of the art demands significant human intervention for a meaningful analysis, a host of advanced KM and IT tools are likely to be used in the near future. Even though many available tools are currently not customized for patent information services, some of the features offered by them are relevant for their potential use in the patent information

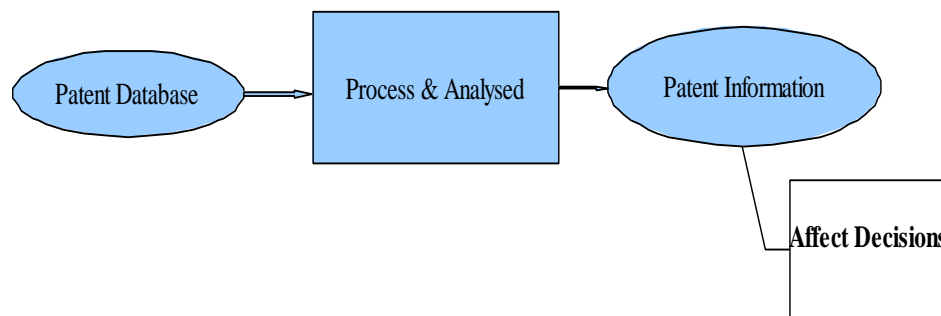


services area. our analysis indicates that advances in KM , IT and PA tools will help in providing better patent information services, since they will reduce the level of human intervention involved in analyzing patent information. Moreover, with the enhancements provided by these tools, the deciding factors for choosing a patent information service provider will move from cost and familiarity to search methodologies and services supported by the service provider. Together, these will lead to the emergence of new business models in the patent information services market.

Strategic Importance of Patent Database

Patent Databases are important sources of technical and business information. They provide insights on technology, business and competition, and have the potential to affect key decisions, such as those related to the R&D strategies and business strategies of a company, research organization and/or university.

Patent Database---->Process & Analyzed---->Patent Information----->Potential To affect key Decisions



Deriving Value from Patent Database: Key Challenges and Solutions

Key challenges

- Sifting the relevant information from a multitude of data.
- Right inference is drawn from patent data before any decision is based on it.
- There are very few experts who can analyze and draw inference from patent data.
- Patent data is spread across several databases,3 and a comprehensive analysis involves accessing and analyzing the information stored in multiple databases.
- Patent data is spread across multiple languages.
- One cannot search for information stored in the form of images

Currently, several tools and services are available in the market, which help in deriving relevant information and indicators based on patent data. These tools and services facilitate access to and the analysis of patent information. Examples of such tools and services include advanced patent databases, tools for analysis, visualization of patent information, and various customized services. They reduce human involvement in analyzing and utilizing patent information. Though they are not perfect, intelligent usage of these tools and services can enhance productivity while using and analyzing patent information

Patent Database and its Uses

Patent Database is a starting point for researchers in corporate and academic organizations. They use the technical information contained therein. By using patent , they can avoid reinventing the wheel because they can potentially license and use patented technologies instead of wasting valuable time and money in developing identical technologies.

Patent Database in together Produces patent information which is useful in in getting overall technology state at present , identifying niche areas, wherein return on R & D investment is higher. most corporations and research enterprises use available patent information while formulating their R&D and business strategies. They utilize this information specifically while conducting competitive analysis and 'due diligence' with respect to mergers and acquisitions.

Patent Database Services

The patent database service market comprises companies that collect patent database, provide tools and services to facilitate the searching, mining, analysis, management and utilization of patent database. Patent database services market broadly Comprises of Following:

- Original Patent database Producers
- Patent Database Managers
- **IT , Knowledge Management & Patent Tools**

Original Patent database producers provide access to patent databases mainly which they are responsible to maintain and produce. Mainly they are patent offices of countries (USPTO, Patent office of India, JPO etc) , Inter Government Organizations (like EPO)and international Bureau of World intellectual Property Organization responsible of maintaining Patent Data. They offer full text or key word search options. They are the only source of worlds patent information.

Patent Database Managers collects and manages Patent Database from original patent database produces store them in there own servers, Provide advanced analytical and searching tools to retrieve data. These Managers tag the information contained in database through human intervention so that data is accurately and faster retrieved. Patent Database Managers overcomes the following challenges i.e Patent data is spread across several databases,³ and a comprehensive analysis involves accessing and analyzing the information stored in multiple databases.

IT , Knowledge Management & Patent Analysis Tools analyze patent data obtained from patent database producers & managers. These tools retrieve patent information from patent databases spread across several database then analyze and present it. Some patent database producers & managers also provide patent information analysis as customized services. These tools enable user to gain inferences from the obtained patent data. Tools-based analysis often utilizes predefined criteria (such as the assignee’s name, the year of the grant/publication/filing, the International Patent Classification (IPC) code, the inventor’s name, etc.) for analysis, and, is therefore limited in its applicability. Hence, manual intervention is usually required to analyze patent data

Table 1: Comparison of Various Players

Original Patent database producers	Patent Database Managers	IT , Knowledge Management & Patent Analysis Tools
Hosting of various patent database Data available <ul style="list-style-type: none"> • online through website • offline through CD Roms and Tape Search tools Keyword search field search Format of Data Full text Images Pdf & Tiff files Mostly Government & Inter Governmental organization Patent offices Free & Paid both	Collect & Host various Patent Database Data available online through website Search tool Keyword search Natural Language Search Multilingual Search Multiformat Search facility Enhanced and modified database through human intervention Advanced statistical analysis tool Visualization tool Paid Key Challenge Privacy	Online & offline application Collect Data in runtime from Orginal Patent database producers or patent database managers Search tool Keyword search Natural Language Search Multilingual Search Multiformat Search facility Advanced statistical analysis tool Visualization tool Enhanced and complex search services Value-added patent information Paid Key challenge Legal

Source: SIDDHAST Analysis

Original Patent database producers

As discussed earlier and shown through table they are the main source of all available patent data in the world. They are patent offices of countries (USPTO, Indian Patent office, JPO etc) , Inter Government Organizations (like EPO)and international Bureau of World intellectual Property Organization responsible of maintaining Patent Data.

Following are common features of product and service offered by Original patent database producers

- Quantity of Number of patent available in database.
- Additionally some database provider enhance there data and include include patent database of other countries
- Search tool for accessing the patent information stored in Patent database
- Provide full text , CD ROMs, and Paper copies of patent data available with them
- Limited access to search facility is free for common man. Database is also sold to large Database users offline through CD ROMS or online to privilege access

Key Players in Original Patent Database Producer

Key Players available in original patent database producers include the following:

Table 2: Key Players in Original Patent Database Producer

USPTO(United state patent office)	BIE(Dutch Patent office)
EPO(European Patent office)	UPRP(Polish Patent office)
WIPO(Patent Scope)	INPI(Portuguese Patent office)
PFC India(Ekaswa from Patent facilitation center)	OEPM (Spanish Patent office)
CIPO(Canadian IP Office)	PRV(Swedish Patent office)
IPA(IP office Australia)	IGE(Swiss Patent office)
UK Patent office	Korean Patent office
INPI(French Patent office)	Surf IP(Intellectual Property office of Singapore)
IPONZ(IP office of New Zealand)	DKPTO (Danish Patent office)
JPO(Japan Patent office)	EPA(Estonian Patent office)
DPMA(German Patent office)	PRH(Finnish Patent office)
Austrian Patent office	OPI(Greek Patent office)

Mostly online searching from above database is free for general public use. They also provide paid service for heavy use and further reselling of there data.

Table 3. Provide a comparison of Original Patent database Producers in terms of subscription cost and Quantity of Database.

OriginalPatent Producers	Database	Subscription Cost	Comment
EPO(ESPACE Global Pat)		Euro 3500.00	Derived from the First Page database,English language collection of nearly all of the literature. Contains US, EP and WO world's patent literature. Contains data from US, WO, EP etc. upto 2007
Patent Abstracts of Japan Mixed Mode		Euro 3500.00	Data Upto 2007

Source: Respective Patent office websites & Siddhast Analysis

Patent Database Managers

Patent Database managers are companies who collect and manage Patent Database from original patent database producers store them in their own servers. As shown in Table 1 they provide advanced analytical and searching tools to retrieve data. These companies tag the information contained in database through human intervention so that data is accurately and faster retrieved. Patent Database Managers overcome the following challenges i.e Patent data is spread across several databases,³ and a comprehensive analysis involves accessing and analyzing the information stored in multiple databases.

The following are common products and services offered by **Patent Database Managers**

- Advanced patent databases that combine patent data from multiple sources
- Additionally, some providers modify and enhance this patent data to provide more refined information
- Search tools for accessing the patent information stored in the patent databases
- Analysis tools for analyzing the patent information
- Visualization tools for presenting various kinds of analysis
- Multilingual services for patent information in different languages
- Ready made or customized reports based on user requirements

Some factors that often differentiate one patent database Manager from another include:

- The number of patent databases covered
- The search and analysis tools offered
- Searching through non-patent literature
- Globalization (in terms of translation services and interface languages)
- Specialized content such as refined patent abstracts⁵
- Searching with the help of chemical structures and diagrams, e.g., 'Markush Structures'
- Subscription costs

Key Players and their Comparison

Table 2 provides a summary of the comparison of services offered by these patent database providers. This is based on the following criteria:

- Type of search tools
- Quick search
- Standard search
- Special search
- Complex search
- Language support
- Machine translation
- Analytical/visualization tools and services
- Analytical tools
- Visualization tools
- Customized manual analytical services

Table 4 Comparison of service provided by Patent Database Managers

Patent Database Managers	Comparison Criteria							
	Search Tool					Analytical Service & Tool	Professional Service	Access Mode
	Quick Search	Standard Search	Special Search	Complex Search	Search Type			
Patent web	Yes	Yes	Yes	Yes	Natural Language	Yes	Yes	Online
Patent Cafe Prosearch	Yes	Yes	Yes	Yes	Keyword Concept	Yes	No	Online
Q PAT	Yes	Yes	No	No.	Keyword	Yes	Yes	Online/Offline
STN Easy	Yes	Yes	Yes	Yes	Keyword Structure	Yes	No	Online
Surf IP Patent search	Yes	Yes	Yes	Yes	Keyword	Yes	Yes	Online
Thomson Delhion	Yes	Yes	Yes	No	Keyword	Yes	No	Online
Thomson Derwent	Yes	Yes	No	No	Keyword	Yes	Yes	Online/Offline
Thomson Dialog	Yes	Yes	No	No	Keyword	Yes	No	Online
Google Patent	Yes	Yes	Yes	Yes	Keyword	No.	No	Online
Uninventio	Yes	Yes	Yes	No	Keyword	Yes	Yes	Online
WIPS Corp	Yes	Yes	Yes	Yes	Keyword/Concept	Yes	Yes	Online/Offline
SPI	Yes	Yes	Yes	Yes	Keyword	No	No	Online
IFC Patent Database	Yes	Yes	Yes	No	Keyword	No	No	Online Offline
IP.com Prior art database	Yes	Yes	Yes	No	Keyword	No.	No	Online

Source: Company Website and SIDDHAST Analysis

Deciding factor in for selecting patent Database manager in most cases seems to be cost. However, considering the growing importance of patent information in making critical decision easy availability of tools for complex analysis it is likely that other factors will grow importance.

Table 3 Provides Comparison of Database manager on the basis of Subscription cost.

Catogarisation on Free/Paid, Institutional/Private	Product	Company	(in US \$)	Comment
Paid/Private	Patentweb	Micropaten t	\$70/ day	Full text search INPADOC search.
paid/Private	PatentCafe ProSearch	Patent Cafe	\$500/ month	ideal for professional researchers conducting patentability, invalidity, clearance or infringement searches
Paid/Private	QPAT	Quest.Orbit	\$400/per year	The downloading of patent copies via the PDS functionality included in the QPAT service is limited to ten thousand (10,000) patent copy downloads per month and User ID. Patent copy downloading that exceeds this limit will be deemed abuse and can result in suspension or cancellation of Customer access to the QPAT service.
Paid/Private	Google Patent	Google	Free	
Paid/Private	STN Easy	STN	\$2/per search term	
free/Gov Singapore	Surflp	SurfIP	Free	
Paid/Private/	Uninventio	LexisNexis	\$600/per	Only data in XML formate

			yr	
Paid/Private	WIPS	WIPS	\$400/month	
Paid/Private	Delphion Unlimited	Thomson	\$249/month	Single user license
Paid/Private	Thomson Derwent(D WPI)	Thomson	\$398/ to \$150 per connect hour	
Paid/Private	Thomson Dialog	Thomson	\$170/per month	For Us Patent only

Source: Companies Websites

IT, Knowledge Management & Patent Analysis Tools

IT, KM and PA tools help in creating and managing patent databases, searching these databases, and analyzing and representing the results.

The IT, KM & PA tools used in patent Database services can be broadly categorized under the following categories:

- Database management tools
- Search engines
- Analytical tools
- Visualization tools

Database management tools are required to create and manage databases in which patent information is stored. **Search engines** facilitate the identification and extraction of relevant information from these patent databases. **Analytical tools** help in analyzing extracted patent data to identify relevant information, which can then be used to make strategic decisions. **Visualization tools** help in representing patent data or the results of the analysis in a user-friendly format.

At present, one cannot completely rely on these tools for an intelligent analysis of patent information, but they are very important because they reduce the quantum of data that needs to be analyzed manually.

Current trends in utilizing patent information involve a mix of human expertise and KM and IT tools. These tools are used to perform basic operations on patent data such as

first-level filtering of patent data and statistical analysis. Thereafter, experts perform the required analysis of this data.

With patent data increasing rapidly and continuously, the role of IT, KM & PA tools is gaining importance. It is no longer feasible to manually analyze a large quantum of data, due to cost and resource constraints.

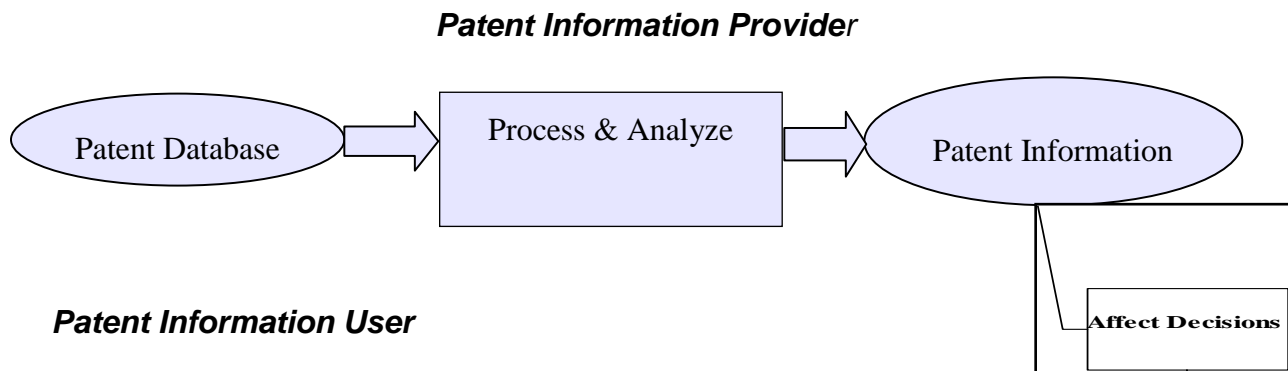
IT, KM & PA Tools

Key Players in IT KM & PA Tools

Autonomy (IDOL)	IP Discover
BizInt (Smart Charts for Patents)	Entrieva Product Suite
ClearForest Tools	IBM (Intelligent Miner for Text)
PatentiNSIGHTPro	Micropatent (Aureka)
OpenDX (Open source)	MineTech (Search Incite)
Verity (K2 Enterprise)	MNiS (MAPIT)

Patent Information Provider

They collect patent data from patent data Managers or Producers, analyze that information with help of KM and IT tools. They act as an interface between Patent Database and its user.



Patent Information User

Value-added patent information

Value-added patent information provided by patent information providers include

Patentability analysis: An analysis of the novelty of an invention in light of existing patent prior art

Patent portfolio analysis: The identification of the value generation potential of a patent portfolio, by identifying the diamond, medium value and triage patents in the portfolio

Patent infringement analysis: The identification of patents and/or products that may map onto to a set of patents - based on the analysis, infringers can be detected and appropriate action initiated

Patent licensing analysis: The identification of the licensing potential of a portfolio of patents, which usually also involves a valuation of the patents

Potential licensee identification: The identification of a list of potential licensees for a given set of patents

Technology landscaping: The identification of patent gaps in a technology domain, which also includes an assessment of the major players and a comparison of their patents

Value-chain analysis/Technology chain analysis: The identification of the value /technology chain of an industry and mapping the existing patents onto this value chain, which also involves identifying potential areas for R&D investment and/or IP acquisitions

Competitor analysis: The monitoring of the patenting activity of competitors and identifying their research focus

Patent watch: The identification of new patents in a technology domain, or monitoring a competitor's patenting activity

Key Players and their Comparison

The key players among patent information providers include the following:

- CHI Research
- Nerac
- SIDDHAST
- Evalueserve
- Global Prior Art
- LexisNexis
- Surf IP
- RWS Group
- Teltech
- IP.com
- TPR International
- Thomson Scientific

Future Outlook for Patent Database & Information Services

Patent database and derived patent information will continue to play an important role in technical and business decisions. SIDDHAST analysis indicates that advances in IT, KM and PA tools will facilitate better patent information services, since this will reduce human intervention in identifying and analyzing patent information. As the due to advancement in technology and reduce cost of hardware and software Database & IT, KM and PA tools will be easily available, however the need for human involvement will become prominent. Human intervention will be directed more towards the analysis of patent information, instead of searching for and identifying information. This will lead to the emergence of new business models in the patent information services market. We believe that in the long run service providers will work in close collaboration with users and database providers, to identify and use relevant patent information.

About SIDDHAST(www.siddhast.com)

SIDDHAST is a research and analytical company, which provide service in the following area- Intellectual Property , Market Research , Business Research, Technology Transfer. The company is Incorporated in March 2007, and has completed more than 100 assignments.

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<http://www-306.ibm.com/software/data/iminer/fortext/>
http://www.micropat.com/0/aureka_online.html
<http://www.minetech.com>
<http://www.mnis.com/mpt.html>
<http://www.textwise.com>
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