

# PATENT ANALYSIS FOR COMPETITIVE TECHNICAL INTELLIGENCE AND INNOVATIVE THINKING

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## ABSTRACT

*Patents are a very useful source of technical information. The public availability of patents over the Internet, with for some databases (eg. Espacenet) the assurance of a constant format, allows the development of high value added products using this information source and provides an easy way to analyze patent information. This simple and powerful tool facilitates the use of patents in academic research, in SMEs and in developing countries providing a way to use patents as a ideas resource thus improving technological innovation.*

**Keywords:** Patent, Bibliometry, Information Analysis, Innovative Thinking, Innovation, Think-tank, Competitive intelligence, Competitive technical intelligence

## 1 INTRODUCTION

Patents are a wide field, where techniques, products, applications and legal considerations are very mixed. Most of the time, this is also a field often dedicated to the industrial users and, for example, the academic community do not cite patents very often. Nevertheless, patents are a unique source of information since most of the data and information published in patents are not published elsewhere. However, using and managing a set of patents is rather complicated because most of the tools available today are either expensive and complicated or necessitate a strong expertise in the field of intellectual property. The cost of patent databases, if people want to perform complete searches (involving a large number of patents) or to automatically establish relationships between patents is very high and most of the time out of reach of middle sized enterprises (Dou, 97), academic laboratories, or developing countries. Working in the field of Competitive Intelligence (CI) and Competitive Technical Intelligence (CTI) for more than 20 years, we have had the opportunity to use patents in many circumstances and then from these uses develop a basic knowledge to design and develop various tools to integrate patent data in Competitive Intelligence or Competitive Technical Intelligence as well as in innovative thinking (Quoniam, 93).

A large literature exists about using patents to build up various indices related to R&D, to ascertain quality of inventions, to compare patent production in various countries, to evaluate the R&D policy of firms within or outside a country, etc... The following references will provide the reader with information about these uses (Lederberger & Kurt, 2003), (Youichirou, 2002), (Pilkington, 2002), (Biju & Soumyo, 2001), (Karki, 1997), (Ernst, 1998). In our opinion patents could be used also to promote ideas and to view the background of an invention. To do this, bibliometrical analysis of various sets of patents is one of the best tools. In the following section, we will present an overview of the software available and we will focus on the ones that give the best compromise between facilities, prices and results.

## 2 PATENTS AVAILABILITY AND STRUCTURE

If we want that to increase the use of patents among new groups of people, it is necessary to provide a very simple system and with a good ergonomics to:

- Perform easy patent searches over the Internet;
- To automatically download sets of selected patents;

- To structure these patents in a local database to facilitate automatic analysis;
- To enable the updating of this database;
- To present the reader with all the information fields needed to help their technological thinking;
- To provide the reader with automatic analysis enabling them to map most of the interactions (Applicants, IPC, inventors, Dates, ...) from the patent data;
- To print out and save the analysis;
- To regroup patents into families according the user interest;
- To selectively annotate a patent;
- To automatically write a report (word format), for integration into a CI or CTI report;
- To be able, on demand, to retrieve the full text or first page of the patent;

## 2.1 Various software available in the patent field

Many software have been developed in the patent field, to provide various facilities for specialists or for researchers and R&D practitioners. In the following paragraph we will described various utilities, and we will indicate most of their features, to provide to the reader a functional analysis tool.

Most of the software are briefly described and can be reached through the following gateway:

<http://www.ipmenu.com/ipsoftware.htm> . This gateway structure the software available in various categories: IP Software, IP Drafting Software, IP Filing Software, IP Management Software, IP Miscellaneous Software.

We present here some large extracts from this site, and we added when this is available the price of the software, and we indicate also if the software deals with bibliométric an innovative aspects of patent bibliometric analysis.

Other information can be obtained from the PUIG (Patent User Information Group) :

<http://www.piug.org/vendor.html#bmTools> which present various software and vendors, with an emphasis on online analysis from various hosts.

### 2.1.1 IP Analysis Software

- **ANAQUA** <http://www.anaqua.com/Home.asp>  
"ANAQUA is a web based Enterprise Intellectual Asset Management system (including licensing, litigation & conflict resolution). It enables IP practitioners to control the complete life-cycle of their IP (in addition to docketing). ANAQUA increases revenue, decreases costs & risks and eliminates duplication of effort & re-keying of data. It facilitates collaboration between all involved in the IP process, including brand managers, business units, law firms and (for patents) inventors. ANAQUA has been used by Ford & British American Tobacco since Sept 2002 and has more than 5000 users (including over 200external law firms)."

Global platform for managing all types of IP throughout the lifecycle Unlike many IP systems that focus on one area of IP management, ANAQUA fully manages all IP rights including patents, trademarks, designs, domain names, and copyrights. This new approach dramatically improves on traditional siloed records management or docketing systems. IP leaders gain visibility into their global portfolio and the knowledge needed to proactively support their firm's business strategy.

- **AURIGIN** <http://www.aurigin.com/static/index.htm>  
The Aurigin Intellectual Property Asset Management System (IPAM) provides a set of analysis tools and databases for organizing and analyzing the intellectual assets in a company intellectual asset portfolios.

Micropatent, and Patsearch are also available through its host.

- **CREAX Information Technologies** <http://www.creax.com/>  
"CREAX, as Innovation expert, is a soundboard for individuals, companies and organisations, for everything concerning innovation, creativity and problem-solving. CREAX helps individuals, companies and organisations innovate products, services and processes in a systematic way, resulting in sustainable benefit, higher efficiency and reduced technical and financial risk. The company is focussed on Patent based research and Systematic Innovation methodology based on TRIZ (Russian acronym for Theory of Inventive Problem Solving)"
- **Gene-IT's GenomeQuest** <http://www.gene-it.com/GenomeQuest-Patent.html>  
"GenomeQuest allows IP bioanalysts to quickly establish freedom-to-operate and easily monitor competitor sequence IP positions. GenomeQuest works similar to premier web search engines, rapidly bubbling relevant records to the top. The software automates the reporting of the most important and

relevant matches, minimizing tedious research, while providing advanced search algorithms so no relevant sequences are ever missed."

- **DATAVIEW** – <http://crrm.u-3mrs.fr>

Bibliometric software which analyses patents according the various patent fields available in a formatted patent database.

- **MAPIT** <http://www.mnis.net/>

Manning and Napier Information Services provide a patent data mining tool, which searches and analyzes United States, international and other patent data.

Allows access to IP.COM (<http://www.ip.com/>),

- **MAPOUT** <http://www.mapout.se/>

"MapOut Pro® is a software (patent pending) that works as a hub for strategic information where you can gather information from most of the available bibliographic patent- technology- and business databases."

MapOut Pro® is a software (patent pending) that works as a hub for strategic information where you can gather information from most of the available bibliographic patent- technology- and business databases

- **Matheo Analyzer and Matheo Patent** <http://www.imcsline.com> <http://www.matheo-patent.com>

**Matheo Analyzer** "database processing software: importation of your data, statistical analysis, visualization (graphs, networks, matrices)"

**Matheo Patent** "is a software designed to exploit quickly and professionally the EspaceNet and USPatent patent database."

This software perform automatically bibliometric analysis of patents according their field structure (applicants, inventors, IPC, ECLA, PR dates, Ap Dates or groups of patents designed by the users), presents histogram, charts, matrix and networks. It allows you to build up and update local patent databases from Espacenet and USPatent . Automatic reports may be design as well as comments. Databases in text format may be made from any local databases built up from Matheo Patent.

Matheo Patent is available upon a yearly subscription of 600€

Matheo Analyzer is available for a cost of 2500€

- **Patentmaps.com** <http://patentmaps.com/3i/>

"Patentmaps.com provides technology intelligence consultancy services to deliver patent based technological and industrial intelligence. We gather information that you need and systematically analyze them to ensure that you have concise and actionable intelligence. In particular, we specialize in patent mapping and analysis."

Download available through the site <http://patentmaps.com/3i/3i-download.htm>

- **PatenTrust** <http://www.patentrust.com/>

"PatenTrust delivers automated intellectual property analysis reports for business and investment decisions. We use software to analyze the contents of patents and to present relevant information for strategic business and investment decisions.

Our reports help companies:

- Identify more patent and license opportunities;
- Reduce inadvertent infringement during development;
- Uncover competitive intelligence."

PatentTrust is available on an hourly rate (40 to 50 \$US)

[http://www.patentrust.com/test\\_site/index.php?action=purchase\\_services](http://www.patentrust.com/test_site/index.php?action=purchase_services)

- **PATLIST** <http://www.raytec.co.jp/EngPages/IndexEng/index.htm>

"PAT-LIST, Powerful Software for the reformatting of Patent, results from Derwent World Patents Index (DPWI) and/or IFI CLAIMS on DIALOG, STN and QUESTEL. ORBIT. PAT-LIST is quite useful for Patent Specialists in constructing their own Patent Strategies."

The price is around 5000 \$US

- **Trakker Technologies, Inc.** <http://www.patentrakker.com/>  
"We prepare and distribute the PatentTrakker Technology Awareness Reports, via e-mail on a semi-weekly basis. Our personalized reports assist inventors and their management by monitoring (only) those newly-issued U.S. Utility Patents and just published and still pending Patent Applications of most interest and relevance to their selected research area".
- **VantagePoint** <http://www.thevantagepoint.com/>  
VantagePoint provides Competitive Technical Intelligence professionals and Technology Managers with new, powerful, and unique capabilities to help extract knowledge from text databases.

The price is around 7500€US

- **WISDOMAIN** <http://www.wisdomain.com/index.htm>  
"Focust - solutions for the new economy - Comprehensive system for maximizing patent value. Our Focust is a suite of integrated solutions and services that help companies derive tangible results from intangible assets in the new economy. Through Focust, companies can realize the full value of patents and take the right actions. Be innovative with your innovation assets! Wisdomain brings you new opportunities that you have not yet recognized."  
The "Focust" system includes
  - Patent Citation Analysis
  - Text Mining
  - Genealogy & Normalized Assignee Databases
  - PatentLab-II is free software to analyze patent data downloaded from the Delphion Intellectual Property Network.

Wisdomain PatentLab-II Version 1.45, is available free for the Delphion users only  
<http://www.wisdomain.com/DownPLII.htm>

### 2.1.2 IP Drafting Software

- **AlphaPatent Associates Ltd** <http://www.wisdomain.com/DownPLII.htm>  
Software for automatic renumbering of claims for use with Microsoft Word for Windows versions 6, 7, 97 or 2000.  
One software AlphaPatent is available free, it allows to download US Patents.  
<http://www.alphapatent.com/3.htm>
- **MightyMacro**  
<http://www.patentseminars.com/main.asp?mainpage=softwaredescriptionsbody.asp&navigation=descripmenu.asp%22&menu=Software>  
Silicon Valley Seminars' MightyMacro is a Microsoft Word macro which includes the following features:
  - \* Automatically renumbers patent claims and their dependencies
  - \* Automatically calculates the USPTO filing fee, without having to manually count the claims
  - \* Automatically calculates, in real time, a table of pictorial references and insures the accuracy of reference numbers.An evaluation copy is available.
- **PatentEase**  
<http://www.patentseminars.com/main.asp?mainpage=softwaredescriptionsbody.asp&navigation=descripmenu.asp%22&menu=Software>  
"With the PatentEase program you can draft your own patent application and file it in the United States Patent and Trademark Office (PTO) without the aid of a patent attorney or patent agent. This program guides you through the entire process of organizing your drawings and written description. It even includes documentation known as "formal papers," which you or your attorney must send to the PTO along with your application." Available through IPBookStore.  
"If you love calculating patent fees and renumbering claims, by hand, then this software and this site are not for you. However, if you've got better things to do, the MightyMacro™ is for you!"
- **PatentPRO** <http://www.patentpro.us/>  
PatentPRO is a patent drafting package from KernelCreations, Ltd, for patent applications in the USA.

- **PatentWizard** <http://www.patentwizard.com/>  
PatentWizard, by Michael S. Neustal of Neustal Law Offices, LTD, is a software program that helps businesses and inventors prepare and file a U.S. Provisional Patent Application with the U.S. Patent Office  
The cost of PatentWizard is 249\$US. A free version (**PATENTHUNTER 2.0**) to download US patents is available.

### 2.1.3 IP Filing Software

- **BMBConnect** <http://workflow.bmb-bbm.org/>  
BMBConnect is a combination of some webservices and a webserver consumer tool for e-filing of trademarks for the Benelux Trademark Office (BTO). The webserver consumer can be configured to read data for a trademark application from a 3rd party IP management software system and send it as XML to the BTO.  
  
The site of BMB is available in French and Netherlands languages only.
- **IP Document Assembly System (IPDAS)** <http://www.ipdas.com/efiling.asp>  
"E-filings are easy, fast, and require no special user training using IPDAS, the industry's leading document assembly system for both paper-based and electronic filings. When e-filing, IPDAS users simply write or cut-and-paste into the blank MS Word®-based specification template and submit their entire e-filing package directly to the USPTO from within the IPDAS program where the specification is stored and later available so that IPDAS can automatically format amendments and renumber claims. The fully automated e-filing submission process (automatic conversion of documents to XML files and data validation) takes no more than four minutes. The USPTO's immediate acknowledgement receipt is stored and automatically populated into a client-reporting letter when generated. IPDAS knows to send an email notification with filing receipt information to specified recipients. AutoDocs, LLC is a USPTO Electronic Filing Partner and the first EFS partner vendor to offer a commercial e-filing service."
- **IP LegalForm** <http://www.legalstar.com/>  
IPLegalForm by LegalStar electronic patent, trademark, and service mark forms accepted by the USPTO (United States Patent and Trademark Office); copyright forms approved for use by the U.S. Copyright Office; and, PCT forms approved for use by the World Intellectual Property Organization (WIPO).  
  
Basically this is an IP filing software, which is free, you paid only for the filling you do. Various other software are available, with a price between 600 to 1000 \$US. For instance Invention Disclosure Management Software (to disclose invention through the Internet) cost 995 \$US.
- **ipWorkflow** <http://www.aspengrove.net/>  
Aspen Grove markets an IP application and tracking management system called ipWorkflow. Aspen Grove was recently chosen by USPTO as one of five companies to integrate electronic filing.
- **EPO Services - EPOLINE** <http://my.epoline.org/portal/public>  
EPOLINE website for online filing, online file inspections, online patent register and online fee payments  
  
Epoline is a service of the European Patent Organization. More information on Epoline can be obtained from: [http://docs.epoline.org/pres/whatis\\_en.pdf](http://docs.epoline.org/pres/whatis_en.pdf)
- **PatentIn 3.1** <http://www.uspto.gov/web/offices/pac/patin/patentin.htm>  
"PatentIn 3.1 is a computer program designed to expedite the preparation of patent applications containing nucleic acid and amino acid sequences. PatentIn 3.1 generates sequence listings that comply with all format requirements specified in the World Intellectual Property Organization (WIPO) Standard ST.25 and the related U.S. final rule, "Requirements for Patent Applications Containing Nucleotide Sequence and/or Amino Acid Disclosures," 37 CFR §§1.821 – 1.825 effective July 1, 1998."
- **The Patent Software Company** <http://www.patent-software.com/>  
A software package, requiring Word for Windows, which provides all forms required for initial filing of a US utility patent application, application outline and claims outline.

- **PCT-EASY** [http://www.wipo.int/pct-safe/en/pct\\_easy/welcome.htm](http://www.wipo.int/pct-safe/en/pct_easy/welcome.htm)  
PCT-EASY is an Electronic Application System for PCT applications - hosted on the WIPO website.
- **PCT-EDI** <http://www.wipo.int/pct/edi/en/> (added by the authors)  
WIPO PCT Electronic Data Interchange Service information site. PCT-EDI provides a flexible, secure mechanism for the exchange of intellectual property information between Offices and the International Bureau over the Internet. More specifically, the PCT EDI service offers new efficient means to exchange data and documents between national Offices and the International Bureau

#### 2.1.4 IP Management Software

- **ANAQUA** <http://www.anaqua.com/Home.asp>  
"ANAQUA is a web based Enterprise Intellectual Asset Management system (including licensing, litigation & conflict resolution). It enables IP practitioners to control the complete life-cycle of their IP (in addition to docketing). ANAQUA increases revenue, decreases costs & risks and eliminates duplication of effort & re-keying of data. It facilitates collaboration between all involved in the IP process, including brand managers, business units, law firms and (for patents) inventors. ANAQUA has been used by Ford & British American Tobacco since Sept 2002 and has more than 5000 users (including over 200 external law firms)."
- **AURIGIN** <http://www.aurigin.com/static/index.htm>  
The Aurigin Intellectual Property Asset Management System (IPAM) provides a set of analysis tools and databases for organizing and analyzing the intellectual assets in a company intellectual asset portfolios.
- **CPA Software Solutions** <http://www.cpasoftwaresolutions.com/home.asp>  
CPA Software Solutions is a leading provider of Intellectual Property (IP) software solutions for companies and IP attorney firms. We offer customised IP software to manage IP portfolios, including patents, trademarks, domain names.
- **CPI Patent Management System** <http://www.computerpackages.com/>  
The CPI Patent Management System allows users to track information necessary from the disclosure stage, into filing and prosecution, and then into issuance and maintenance for patents. This system is provided by Computer Packages, Inc.
- **CPI Trademark Management System** <http://www.computerpackages.com/>  
The CPI Trademark Management System allows users to track information necessary, from the proposal stage, into filing and prosecution, and then into registration and renewals for trademarks. This system is provided by Computer Packages, Inc.
- **Edital-Intellectual Property Network**  
Edital – IPN have been innovating in the field of IP management systems for the last 16 years. They produce WorldSuite, a client-server system to manage office workflow as well as Trademarks, Patents, Designs and Domain Names. Used by international firms who share their information across the globe, WorldSuite offers a very high degree of automation. For smaller portfolios, WorldMark Plus is a trademarks-only programme. Edital also maintains a website, <http://www.edital.com/>, with information tools in the fields of Trademarks and Patents."

The cost are variable, for instance a research on similitude of mark is about 200€ for a country and up to 3800€ for 25 registers for the European Community

[http://www.edital.com/Brochures/Tarif\\_SWFR2005web.pdf](http://www.edital.com/Brochures/Tarif_SWFR2005web.pdf)

To search for trademarks online, you need a credit of 500€ The cost for a full description is 0.6€

<http://www.edital.com/Content/Pricelist.asp?sLang=EN&Res=1024>

- **EIDOLOGIC** <http://www.eidologic.com/eido/en/index.htm>  
EIDOLOGIC provides IP management software solutions including PATmonitor and EIDOpat.
- **EPILOG** <http://www.epitheteonline.com/index.aspx>  
The EPILOG IP Management software range includes Epithete Brevets (Patents), Epithete Marques (Trademarks) and Sybaris Contracts.

- **EP Mark** (note from the authors: could not be found on the Internet)  
"EPMARK, solution for the management of trademarks portfolio for Network system for WINDOWS 00/98 / 95 / NT or 3.11 (local network system Ethernet type - TCP/IP or others and distant network system). EPMARK software is available in French / English / Spanish / German."
- **First to File** (note from the authors: could not be access from the Internet)  
First to File, from [FTF Technologies](#), offers a patent automation system to generate, protect and manage intellectual property.
- **FoundationIP** <http://www.foundationip.com/product.html>  
"FoundationIP is a web-based, enterprise class case management system for patent and trademark attorneys. With it, attorneys can manage all aspects of their clients' matters; provide controllable access to clients; manage docketing; bill; send and receive and file messages; manage IDS references and interface with USPTO, using an eIDS document that is auto-generated and ePAVE to efile IDS's in minutes".
- **Innovation Asset Group (IAG)** <http://innovation-asset.com/overview/maximize.htm>  
"Innovation Asset Group (IAG) empowers companies with DECIPHER™, an integrated software solution for the management of intellectual property assets and the contractual agreements that surround them."
- **InProma** <http://www.cpasoftwaresolutions.com/home.asp>  
The InProma Intellectual Property Management System by [Maxim](#) is a suite of software designed to handle the registration and management of intellectual property such as patents, trademarks, and designs.
- **IAMS** <http://www.dennemeyer.com/>  
[Dennemeyer's IAMS](#) IP Management and Automation application provides a MS SQL Server/Oracle based patent, trademark, agreements and matter management, docketing and documentation system.
- **Intellectual Property Online, Ltd** <http://www.ippo.com/>  
IPPO Trademark Administrator is Trademark Practice Automation Software which provides full text record keeping and trademark document assembly.
- **Inteum C/S** <http://www.inteum.com/>  
Interum C/S®, by [Inteum Company, LLC](#), is a relational information management system for the management of intellectual property and technology licensing.
- **Intra Data Management Solutions** <http://www.intra-dms.com/>  
"Providing data management solutions since 1997, INTRA is dedicated to custom tailored information systems as well as inexpensive shelf products. A leader in IP management solutions, our powerful PETROS software took more than four years to develop."  
  
The best, easiest to use, and most affordable IP management software for companies. Control your IP assets in-house. Available at a cost of 4000\$US <http://www.intra-dms.com/Products/prod.asp?page=PR&sub=PRPU&id=1>  
  
Complementary Billing system to manage all financial documents and activities, linked to Petros Pro and Petros Pro SQL. Available for a cost of 4500\$US <http://www.intra-dms.com/Products/prod.asp?page=PR&sub=PRPU&id=5>
- **IP Document Assembly System (IPDAS)** <http://www.ipdas.com/>  
"Prepare paper-based or electronic-filing-ready documents with this document assembly system that contains both an extensive library of over 400 PTO and PCT forms, letters, and administrative documents used in prosecution and a superbly-designed database that stores names, addresses, citations, priorities, and other information used (and reused) during document preparation. Constantly updated forms are automatically and substantially completed during document creation with data that has been typed only once. IPPAS is a significant time saver, dramatically reduces typographical errors, and offers a shared tool for managing a prosecution practice."
- **IPSoft, Inc.** <http://www.ipdox.com/default.htm>  
"IPDOX is a powerful web-based intellectual property portfolio management platform, providing multi-user remote collaboration. Its cornerstone is a highly functional, scaleable IP warehouse, continually populated and updated through the normal business process of IP docketing and IP asset management."

IPDOX manages the prosecution workflow for 14 IP types across 170 countries. Providing superior security with "role based rights", IPDOX delivers true remote collaboration to the stakeholders of the enterprise. Highly scalable to fit the needs of small and large corporations and law firms."

- **IP IntelliFile** [http://www.legalstar.com/IP\\_IntelliFile/](http://www.legalstar.com/IP_IntelliFile/)  
IP IntelliFile by LegalStar (IP LegalForm & IP LegalDock) is software for the electronic filing of patent applications and related correspondence with the United States patent and Trademark Office. We are one of only three companies currently authorized under contract with the USPTO to develop and distribute software for the electronic filing of patent applications with the USPTO.
- **IP LegalDock** <http://www.legalstar.com/>  
IP LegalDock by LegalStar is a docketing program that tracks actions and calculates due dates in more than 200 countries.
- **I.P.M.S.** <http://www.ipms.com.tr/>  
"Intellectual Property Management Software I.P.M.S.® is a help ware designed for the management of intellectual and industrial rights assisting the right owners and/or their representatives. It can organize all files, correspondences, documents, and expenses in one single system operating in a multilingual environment. Additionally, the "On line View" and the "Sending Instruction" facilities permit the correspondence to be able to access the I.P.M.S.® database via the Internet for consultation purposes or sending instructions for filing or else."
- **IPscore@ 2.0** <http://www.ipscore.com/>  
"IPscore® 2.0 is unique database software offers brand-new opportunities for documenting the value of patents and development projects. It is an uncomplicated and user-friendly tool, which can be used by all companies with a larger or smaller portfolio of patents and development projects. IPscore® 2.0 provides your organisation with the notably improved opportunity to:
  - prioritize patent portfolios and development projects based on value and potential
  - get an overview on new projects from the outset
  - discover the value of existing portfolios
  - create a reference for the assessment of patents and development projects"This software can be considered as a good complement of the bibliometric technical analysis made from various patent searches of various patent portfolios. The price is 18000 DKr = 2417€
- **IPSS** <http://www.ipss.com/pages/1/index.htm>  
"The IPSSdotNET solution is a step beyond Client-Server systems and works as follows; the database and software are installed on one of your servers, and that's it! As long as the server is on your internal network, you simply use Internet Explorer to access the system from any networked PC in your organisation. There is no need anymore for each user to have the software installed on their PC - this is just time consuming, costly and unnecessary. The system's powerful functionality, built up from 30 years of IPSS experience, enables comprehensive management of Patents, Trade Marks, Designs, Domain Names, Expenditure, Licensed Agreements and Royalties plus 'special' features, AND includes unlimited user access."
- **ipWorkflow™** <http://www.aspengrove.net/solutions/ipworkflow.asp>  
ipWorkflow™ by AspenGrove is a web-based knowledge management system for the IP workplace. With ipWorkflow™, law firms and corporate law departments can easily manage and track all patent applications.
- **Jurivox** [http://www.mioinc.com/index\\_e.asp](http://www.mioinc.com/index_e.asp)  
"Finally, an integrated software solution for intellectual property professionals that perfectly fit whatever the size and needs of the practice, from a reliable firm with more than 15 years experience in the industry."
- **Knowledge Sharing Systems** [http://www.knowledgesharing.com/body\\_default.html](http://www.knowledgesharing.com/body_default.html)  
Knowledge Sharing Systems (KSS) designs, develops, maintains, and operates Internet-based knowledge sharing systems that manage intellectual assets and share knowledge,
- **ManIPulate Systems** <http://www.manipulate.co.za/>  
"ManIPulate™ is the complete management solution for a Corporate Intellectual Knowledge portfolio – comprehensive administration of trademarks and patents, a complete contracts agreements facility with advanced document handling and archiving capabilities, litigation, registered users and associations in an easy, user-friendly environment. The package also takes care of such vital and time consuming tasks



as keeping track of, and offering advanced warning of renewal, expiry and other important dates with powerful reporting, e-mail and external file linking functionality. ManIPulate™ is the only system to give the user direct access to their live data as it is produced from their legal representatives. Vital information such as litigation outcomes, updated records and a host of other essential data is available in an intuitive user-friendly environment."

Although it can be used with various patent portfolios, this system is mainly related to South African Attorneys and information database.

- **Master Data Center, Inc** <http://www.masdata.com/>  
**Master Data Center, Inc.** is a provider of Patent Management Software and Trademark Management Software - (PC Master and PC Master Lite).

This software allows you to search, share and co-operate between various people in a safe environment. [http://www.masdata.com/docs/mdc\\_ipmaster\\_datasheet\\_final.pdf](http://www.masdata.com/docs/mdc_ipmaster_datasheet_final.pdf)

- **MindMatters Technologies, Inc** <http://www.us-mindmatters.com/>  
"MindMatters Technologies, Inc., is an Enterprise Innovation and Intellectual Asset Management Solution provider delivering detailed visibility into the innovation processes of corporations--enabling companies to leverage and profit from intellectual assets. MindMatters' patent pending solution, Innovator™, accelerates the "time-to-commercialization" of new innovations and ideas by capitalizing on the latent intellectual capital that exists within corporations. With the Innovator, companies can more effectively inspire, manage and protect their developing innovations and intellectual assets."

PPG Industries, headquartered in Pittsburgh, is one company that has recently launched such a digital innovation solution. A global supplier of coatings, chemicals, glass, and fiberglass, PPG partnered with MindMatters Technologies, an emerging Pittsburgh-based solutions provider, to develop a Web-based innovation management solution. Innovator™ Enterprise Innovation Management System (EIMS) is a comprehensive platform for managing in-process ideas and proprietary information assets--the very essence of competitive strength for companies in the so-called "knowledge economy." The Innovator creates Digital Innovation Networks™ that help companies leverage latent intellectual capital and accelerate commercialization of promising innovations. [http://www.us-mindmatters.com/resources/steering\\_the\\_ship.asp](http://www.us-mindmatters.com/resources/steering_the_ship.asp)

There is also the possibility to use an innovative gateway to share informal information for Competitive Intelligence.

- **MyIP - Easy Database** <http://www.easydatabase.co.uk/>  
"Easy to use Intellectual Property Asset Management Systems. Intellectual Property (IP) is at the heart of an increasing number of businesses, and is often an organization's most valuable asset. It can be a source of competitive advantage, for example, through Patenting, and Licensing IP can provide a significant revenue stream. Frequently IP is poorly managed through a mixture of paper and spreadsheet systems. The loss of IP can be disastrous. MyIP provides technology transfer professionals with an easy-to-use system that brings discipline to the management of intellectual property data".

Some benefits of this software are linked to detection and analysis of start up companies. <http://www.easydatabase.co.uk/products.htm>

- **NetsPat** <http://www.netspat.com/>  
NetsPat is a secure, online database of YOUR complete patent portfolio.
- **Patent-Management.Net** <http://www.patent-management.net/>  
"Patent-Management.net system is a comprehensive online patent management system designed to address the professional and clerical needs of IP professionals. It is a browser based system using a MS SQL Server database manipulated by web pages. The information is stored in a MS SQL Server Database capable of handling large amounts of data consistent with multiple high-volume cases."
- **paTex** (notre from the authors: site not available from the Internet)  
Intellectual Property Management software for patent and trade mark property.
- **Patrix** <http://www.patrix.com/>  
Patrix produce IP Management software called **Patricia**. Patricia was developed by a Swedish Patent Bureau, Göteborgs Patentbyrå AB in 1975. During the first 15 years it was an inhouse IP software and

re-written two times. In 1994 Patricia was re-written the for the third time, into Windows. Patrix also produce **Patricia Web** which is an extra feature in Patricia allowing client access to case information on the Patricia database.

- **PATTSY** [http://www.pattsy.com/abt\\_0.htm](http://www.pattsy.com/abt_0.htm)  
PATTSY® by [OP Solutions Inc](http://www.op-solutions.com) is an Intellectual Property Management System that has unparalleled features and an intuitive, easy to use interface.
- **PATVIN** <http://www.krug-und-partner.de/>  
PATVIN by [Krug&Partner GmbH](http://www.krug-und-partner.de/) is a "professional patent management system".

This is a professional patent administration and information system for your patent department or law chambers. Patvin is a software package enabling you to manage extensive portfolios of industrial patent rights smoothly and safely for their whole term.

- **PLXware** <http://www.pl-x.com/>  
PLXware, by [PLX Systems](http://www.pl-x.com/), is a suite of software modules designed to provide comprehensive portfolio management, valuation analytics, financial accounting, audit control, decision support and reporting across the maturity cycle for IP assets.
- **Pro Delta Systems Ltd** <http://www.prodelta.pdshosting.com/cgi-bin/prodelta03/index.pl>  
"Pro Delta Systems provides the leading Intellectual Property Records Management system, PROGRESSOR, for practice or corporate department. Using our knowledge and experience gained from servicing the IP profession over 18 years, we have created a powerful and flexible 'one-stop' Records Management solution, with an integrated product range comprising Records (Records Management), Accounts (Multi-Currency Accounting), Billing (Agent Fee Recharging), and Time Recording (Professional Time Recording & Charging). Now, Progressor Online, our state-of-the art web-browser interface, takes records management forward into a new era. PROGRESSOR is the most versatile and performant IP Management solution."
- **Rapidpat** <http://www.rapidpat.com/>  
"Rapidpat provides compressed digital patent copies of the US and of more than 25 other world patent authorities on CD, DVD, and via Internet delivery. Our proprietary compression achieves a 12:1 ratio over standard PDF format, with no loss of quality! Documents are 100% Adobe Acrobat Compatible (version 5.0+). We also compress prior art and other materials, in functional digital format (PDF). Rapidpat specializes in high-speed transmission of alerts of patent documents and full-text data, and produces custom patent and trademark portfolios on CD and DVD. Rapidpat Complete offers the complete US patent collection (1790-present) on 42 DVDs for a single, non-recurring fee. No proprietary software is needed to use Rapidpat, as we specialize in Adobe Compatible formats".

To download a US patent cost 2.99\$US and to buy in one time the full collection of US Patents from 1790 to date cost 7995 \$US

- **RightsLine, Inc.** <http://www.rightsline.com/>  
RightsLine is a leading provider of business applications software, enabling companies to increase revenue from existing intellectual property, across all lines of business. In a time when shareholders are pushing management to do more with less, RightsLine provides the first software solution focused on increasing revenue from intellectual property. From automating licensing and sales divisions to streamlining marketing, corporate brand management and contracts departments, RightsLine provides a proven set of rights management, licensing and royalty products, empowering our customers to increase revenue while reducing risk and improving efficiencies.
- **TM Web Services Ltd** <http://www.tmwebservices.com/pricing.htm>  
"TM Web Services Ltd provides a hosted asp version of WebTMS, the most comprehensive trademark record keeping, docketing and management software system. For small portfolios up to 2000 records, use the system online without any investment in hardware or software. For large portfolios, install the system on your own servers. WebTMS is modular, with full text records and integrated images. It consists of a MS SQL Server back end database manipulated entirely by web pages."

US Edition Pricing

International Edition Pricing

US\$1.00 per record  
per user per year

GB£1.00 (€1.50) per record per user  
per year

- **unycom** [http://www.unycom.com/en/index\\_html](http://www.unycom.com/en/index_html)  
 "unycom provides expert software solutions and services in the field of intellectual property. The unycom IP management server realizes the comprehensive integration of a large company's complete IP-capital within all enterprise divisions. Research & Development are just as much part of the solution as for example Marketing, Controlling and Production. Electronic links to external contacts and sources of information established by the unycom IP management server allow seamless and simple transmission of data and easy access to information: Patent Offices, clients, business partners, subsidiaries, inventors, data providers, licensees - the possibilities of integration are almost unlimited and will be adapted precisely to fit the individual needs of your company."
- **Vinsoft** <http://www.dennemeyer.com/>  
 "Vinsoft is the industry's first true lifecycle intellectual asset management solution that supports the range of intellectual property (IP) activities in an integrated toolset. The Vinsoft suite enables companies to manage their intellectual assets from the product planning stage through commercialization and licensing".
- **WINPAT** <http://www.gsi-office.de/gsi/>  
 "GSI OFFICE MANAGEMENT GMBH produce IP Management software called WINPAT. WINPAT includes a sophisticated workflow management engine for business process engineering. WINPAT is a software that handles all aspects of IP and that can be customized to meet your requirements"

The site is only in German language.

- **Xen-IP** <http://www.xensis.com/>  
 Xen-IP, by Xensis, is an intellectual property management system. Xen-IP supports all IP types including Patent, Trade Mark, Designs and Domains, and is fully featured to support the application and management of IP

**xen-IP Range** - Enterprise strength IP Management functionality, scalable from a single user on a single PC to hundreds of users on an international network. The xen-IP range is listed below, click on the links for more information. Also, why not take the Quick Tour ?

**Table 1.** Prices range

<a href="#"><u>xen-PAT Professional</u></a>	Patents, Designs, etc.	£2,000 per user
<a href="#"><u>xen-TM Professional</u></a>	Trade Marks, Domain Names, etc.	£2,000 per user
<a href="#"><u>xen-IP Professional</u></a>	Combined xen-PAT/xen-TM system for all types of IP data	£3,500 per user
<a href="#"><u>xen-ProView Professional</u></a>	View-only version of xen-IP Professional	£1,000 per user
<a href="#"><u>xen-Comm Professional</u></a>	Commitments, Agreements, etc. (included in all the above)	£1,500 per user
<a href="#"><u>xen-CommView Professional</u></a>	View-only version of xen-Comm Professional	£750 per user
<a href="#"><u>xen-Web</u></a>	Web-browser interface to view data for all the above	£200 per user

**xen-SE** - Small Enterprise IP Management system, suitable for one to five users. Suitable for all type of IP data, 495£ per user

### 2.1.5 IP Miscellaneous Software

- **AusInvent** <http://www.ausinvent.com/casestudies.php>  
 AusInvent's role is to provide an Internet service to promote innovation and stimulate the development of new products and business expansion. AusInvent Innovation Services provides Self Assessment Software Lets you assess the likelihood of your innovation being technically and commercially viable.

The self Assessment Software will let you assess your innovation idea online, by answering a set of 32 questions. This is supported by the NSW Department of State and Regional Development of Australia.

- **CENTREDOC** <http://www.centredoc.ch/>  
CENTREDOC is a Swiss company specialising in broking information relating to technological, competing and strategic surveys in particular the search for patent, literature information and marketing.

This is a Swiss company specialized in Technology Watch. Two services online allow you to get informed on patents (RAPID) and professional publications on Technology Watch and Marketing (eLit). The site is in French language.

Example: Centredoc launches RFID Patent a new portal to watch patent on RFID Technology.

- **Global IP Estimator** <http://www.globalip.com/>  
Software which will generate cost estimates for patent, trademark and design applications around the world.
- **GetIPDL** <http://www.ujihara.jp/GetIPDL/en/HowToOrder.html>

Free patent downloader from IP Digital Libraries. GetIPDL downloads patent documents including text and images from JPO, USPTO, esp@ce.net, DEPATISnet, IP Australia, CIPO and WIPO amongst others.

**Table 2.** Prices range

Units From	Up to	Price Per Unit
1	1	€74.50
2	9	€66.00
10	19	€57.50
20	49	€49.50
50	Unlimited	€41.00

- **ipMAGNET** <http://www.mayamiya.com/>  
"ipMAGNET by MayaMiya Technologies is a one-stop, multi-purpose world-wide Patent Search and Download utility. With an intuitive and practical user interface, ipMAGNET provides a fast, flexible and *cost-effective way to search and download patents from USPTO, ESP@CENET, DEPATIS and CIPO.*"
- **IPtoGO** <http://web.ncf.ca/ex133/>  
"IPtoGO is offering PatentPleeze. With this software (US\$45 per year) you can download full patent documents from most countries. You can merge all document in a single PDF. Also included: Display text and image side by side, search facility of local database, notes on PDF, One click email of selected patents, ranking according to keywords + free utilities. (21 days trial)"
- **IPManuals** <http://www.ipmanuals.com/>  
Leading IP information provider, with daily updated information on IP PRACTICE and LEGISLATION for more than 210 countries, available on-line.
- **Legal IT Solutions** <http://www.legal-it.nl/>  
"Legal IT Solutions specialises in providing tailored technology solutions for the legal industry. Our primary focus is to assist intellectual property practices in the selection and implementation of the most appropriate systems for their needs.  
Our mission is to fuse the gap between IT and business requirements thereby enabling law firms to actively implement IT systems which are compatible with their long term business strategies."
- **PatMate** <http://www.patmate.com/>  
"PatMate is a patent image downloader that enable you to download full pages, specific page, drawings, description and claims selectively for free EPO, DEPATISnet, USPTO, JPO, Delphion and KIPRIS. PatMate can perform reservation, multi-page concurrent download, windows shut down after download and merging download files into one file."
- **PatSee** <http://www.imageapps.com/software.html>  
This software, by Image Applications Limited, can be used to download and print complete copies of EP, WO, GB, US, CA, DE and FR patents. The software accesses patent specifications from the USPTO, EPO and CIPO websites.

PatSee is an application that allows you to download patent specifications from free Internet servers or any files from a web page automatically. It saves the time and expense of ordering patent on CD and will deliver them straight to your desktop. The price is 250€

- **PatSee / INAS Patent Downloading and Analysis Software**  
"IAL (UK) and WinsLAB (Korea) have announced improvements in their software for harvesting and analysing patent. More specifically, PatSee™ PRO has now been modified to semi-automate the downloading of free patent data from the USPTO for use with INAS Patent Analysis Software.....
- **Lawra <http://www.patrix.com/>**  
A computerised resource for trademark handling in 100 different countries, including necessary forms, such as Assignments and Powers of Attorney, to be filled out on your computer screen and printed by Patrix.
- **MentoringPros <http://www.mentoringpros.com/>**  
"Making Rain" is a unique web-based training system which helps attorneys and other professionals get new clients and develop new business relationships.
- **Patent Value Predictor <http://www.patentvaluepredictor.com/PatentWatcher-purchase.asp?Unique=5222005125353>**  
On demand service and subscription where you specify a patent or company and then receive Patent Value Predictor's determination of the value of the patent or company's patent portfolio.  
  
Patent Watcher searches the patents and published applications databases of the U.S. Patent and Trademark Office web server, the cost of one license is 200\$US
- **TM Alert - "Helps Businesses Protect Valuable Corporate Trademarks" <http://www.tmalert.com/>**  
"TM Alert is a patent pending downloadable desktop tool which enables users to automatically monitor the U.S. Trademark registry for the publication and registration of trademarks and service marks. TMAAlert can monitor for publishing, cancelled or registering marks. TMAAlert does a job for which most law firms charge hundreds of dollars. The system can be set to automatically update, and can track according to trademark product class, competitor name or keyword. The tool also includes a customized reporting tool. The tool which is priced at \$99.97 is being introduced at \$69.97. Users can "test drive" the product before buying".
- **SAS Innovation Analysis - <http://www.sas.com/news/preleases/052504/news2.html>**  
"Available now to customers worldwide, SAS Innovation Analysis uses a concept-based pattern recognition algorithm to probe a 15-terabyte database of patent submissions from virtually every patent office in the world. Going beyond existing software that offer only keyword search capabilities, SAS Innovation Analysis instantly identifies concepts with the same meaning; for instance, a SAS Innovation Analysis search for "cup" would return patents relating to "cup," "glass," "tumbler," "goblet," "mug" and "containment vessel for consumable aqueous solutions," among others. This functionality allows users to rapidly differentiate patents that contain true innovation from those that are simply functional forgeries using different words"

## 2.2 Information sources

First of all, let us say a few words about patent databases. Today, various patent databases are freely available, even though they are usually more complete or sophisticated. This is very important since commercial databases are often expensive eg. WPIL (Thomson Scientific, 2003). Among these free patent databases, we focused our attention on the European Patent Database (EPO: European Patent Office) named ESPACENET which is freely available over the Internet. The EPO database does not cover all the patents produced in the world, but because it covers most of the countries where potential users are located, we may say that this database is quite suitable to give an overview of intellectual properties in various technical fields. To support this point of view, it is obvious that the most important inventions are protected in USA, Europe, and Japan, and, by implication (giving rise to patent families), patents covering these inventions are present in the EPO database. We do not want to develop a comparison between the coverage of the various databases neither with the cross literature links between patents and scientific publications (eg. Chemical Abstracts for instance) or with the various academic research in this field. For more information on this subject see (Faucompré, Quoniam, Dou, 1997).

## 2.3 Information source availability

Even if patents are available over the Internet, it is obvious that to individually retrieve hundreds of patents is rather difficult and time consuming. This is the reason why, we have developed a software which will provide for the EPO database and USPTO database (United States of America Patent Office patents databases), perform automatic patent searches, automatically download and analyze the patents and create automatic reports. The various descriptions which will be given in this paper are all available through this software (Matheo Patent, 2003). This paper focuses to the Espacenet database.

## 2.4 Information fields present in a patent useful for CI, CTI and Innovation

A patent record is composed of different fields such as inventors, patents assignees, dates, IPC, claims, etc ... These fields are useful since they will help the reader to easily obtain precise information, since all the data has been introduced upstream by information scientists and patent analysts. Moreover, many fields allow the development of various correlations such as histograms for the most simple, or matrices and networks (mapping) for the most complex.

Two groups of data available in the EPO database that are useful for the use of patents in CI, CTI and innovation may be considered. The first group of data may give rise indirectly to various correlations, while the second group provides immediate information about the patent content to the user (reader). The fields, as well as their use in patent analysis, are indicated in the Table 1. In this table, *Searchable* means that a boolean query may be made, *Available* means that this field is present when the patents are downloaded, *may be selected* means that there are various choices available before downloading the patents set, *offline* means that the order to download a patent to build a family or to access the full text of the patent is launched in the EPO database after local analysis of the set of patents.

**Table 3.** The various fields and uses available for patent analysis

<b>Group 1</b>		<b>Group 2</b>	
<b>Fields</b>	<b>Uses</b>	<b>Fields</b>	<b>Uses</b>
Patent Assignee (PA) Applicants	Histogram, matrices Network, Competencies Research potential Available Searchable	Title searchable	General information
Inventors (IN)	Histogram, Inventors networks, PA human competencies, IN competencies Available Searchable	Invention description Abstracts searchable	General information
International Patent Classification IPC Provides access to technologies and applications	Histogram, Network of related technologies or applications, PA competencies, IN competencies Available Searchable	Claims Available	General information
EC Class	Available Searchable	First page (pdf) May be downloaded if selected	General information
Equivalent Patents (EQP)	Available Searchable via PN	Drawing (pdf) May be downloaded if selected	General information
Cited Patents (CP)	Available	Full text May be downloaded if Selected offline	
Priority date (PD)	Available Searchable		
Application Date (AD)	Available Searchable		
Patent Family	To be constructed offline		

Patent Number (PN)	Identification of the patent Searchable		
Patent Country	Mapping countries		
Patent groups	To be constructed offline		

### 3 HISTOGRAMS FROM PATENTS AND THEIR USE IN CI, CTI AND INNOVATIVE THINKING

In CI and CTI, one of the most important question which must be solved is to know the mapping of most of the interactions of a company with its environment. Various environments may be analyzed such as the technical situation, the potential competitors, the regulations, the economy of the field, the trends in technologies and social demands, etc... It is not in the scope of this paper to present the whereabouts of CI or CTI, but to place in this context the results of patent analysis (Paoli, 2003).

In fact, because patents are a unique source of information, it is quite obvious, that before making any assumption, supposition or guideline, a patent analysis should be performed. The technologies linked to a product, the uses of a technology, the various applications made with a crude material (eg; a natural product for instance), ... have to be rapidly analyzed to brush the scope of the field as well as possible. This mapping could be later integrated into the value-map (Brandenburger, 1998) to complete all the relationships existing between the set of "players" in this competitive field. To facilitate the lecture of this paper, we will present the main useful set of correlation as well as an overview all the facilities which are necessary to help the user in patent analysis. If the reader likes to get a more complete information he will have to consult the following internet host: <http://www.imcslines.com>.

#### 3.1 Access to patent information

During the course of the DEA (CRRM, 2004) Competitive Intelligence made in Manado in the North Sulawesi in Indonesia, we use patent analysis to stimulate the innovative thinking of the students (Dou, 2003). The students have various projects linked with the development of local resources such as cloves, coconuts, seaweeds, etc. We noted that in the course of the projects, development, improvement, were all grounded to the tacit knowledge of people. Tacit knowledge which limited the innovation, since new applications and uses were unknown to the students. To stimulate their thinking and to show that technological applications was one of the keys to develop value added products, we use patent information. This is a free information source and this is important for developing countries and also which bear new products and applications directed linked to their local natural resources.

We operate in the following way: (this is an example extracted from the DEA 2003-2004)

First we made a large search with the terms COCONUT OR COCONUTS in the title and abstracts of the patents, for the last 20 years. The EPO database was used as an information source. We retrieved 1125 patents, which are presented in figure 1:

The screenshot shows the 'Mathéo Patent 4.0 - [coconut]' application window. The main area displays a table of patents with columns for N, C, D, Pertinence, Number, Title, P.N., and P.D. The patent with Number 'US2003089152' and Title 'Plant growth media and processes for production thereof and compositions for use therein' is highlighted. Below the main table, there are two summary tables: 'Summary' and 'Resources'. The 'Summary' table has columns for Inventors, IP Class, Applications, Date, and Equivalents. The 'Resources' table has columns for Applicants, EC Class, Priority, Date, and Cited.

N	C	D	Pertinence	Number	Title	P.N.	P.D.
				CN2329998	Coconut carved artistic clock		21/07/1999
				SK281189	USE OF A PREPARATION CONTAINING OVERHEAD DISTILLATE OF FATTY ACIDS OF COCONUT OIL AS		18/01/2001
				CN2494604	Coconut milk machine		12/06/2002
				TW457331	Turtle shaped door closer/stopper cum bootwiper/bootscraper/bootmat made mainly of coco fiber and manufac		01/10/2001
				US2003116226	Products from organic and refuse things(P.O.R.T.) set	US2003116226	26/06/2003
				W003033632	Cholesterol lowering structured lipids containing omega 6 polyunsaturated fatty acids and the process thereof	US2003077340	24/04/2003
				US2003077340	Cholesterol lowering structured lipids containing omega 6 polyunsaturated fatty acids and the process thereof	US2003077340	24/04/2003
				W003035226	Biological filter for the purification of waste gases	US2003082794	01/05/2003
				US2003082794	Biological filter for the purification of waste gases	US2003082794	01/05/2003
				US2003078298	Cholesterol lowering structured lipids containing omega 3 polyunsaturated fatty acids and their process thereof	US2003078298	24/04/2003
				W003033633	Cholesterol lowering structured lipids containing omega 3 polyunsaturated fatty acids and their process thereof	US2003078298	24/04/2003
				W003043526	FLUOROSURFACTANT-FREE FOAM FIRE-EXTINGUISHER	W003043526	30/05/2003
				US2003089152	Plant growth media and processes for production thereof and compositions for use therein	US2003089152	15/05/2003
				W003041487	Plant growth media and processes for production thereof and compositions for use therein	US2003089152	15/05/2003
				US2003091804	Fiberboard which includes coconut mesocarp and process for making the same	US2003091804	15/05/2003
				RU2201200	REMEDY FOR HAIR WASHING WITH INCREASED ACTIVITY OF COMPONENTS	RU2201200	27/03/2003

Inventors	IP Class	Applications	Date	Equivalents
vetanovetz richard p	A01G 31/00	US20010045224	09/11/2001	
yelanich mark	C05F 11/00			

Applicants	EC Class	Priority	Date	Cited
oms investments inc		US20010045224	09/11/2001	

**Figure 1.** First screen after downloading the patents. General presentation

The patents are listed by title and patent number. The cursor on the right allows a particular patent to be selected. The bottom of the screen gives a summary of the patent data. By clicking on the resources screen one gets the abstract, claims and description of the invention from the local database:

### 3.1.1 Abstract

A pre-mix composition is disclosed for use in the treatment of a plant growth medium to promote improve wetting and re-wetting with a mixture of coconut coir pith and a culturally acceptable surfactant. A process for treating a plant growth medium utilizing such a pre-mix composition is also disclosed as well as the treated plant growth medium.

Claims (extract):

1- A pre-mix composition .....

### 3.1.2 Description of the invention (extract)

The present invention relatesa pre-mix compositions to used in plant growth media .....

If the abstracts, claims and description are not present in the EPO database, it is possible to download the full text of the patent from the EPO database by clicking the right mouse button on the selected patent title. This process is shown in Figure 2:



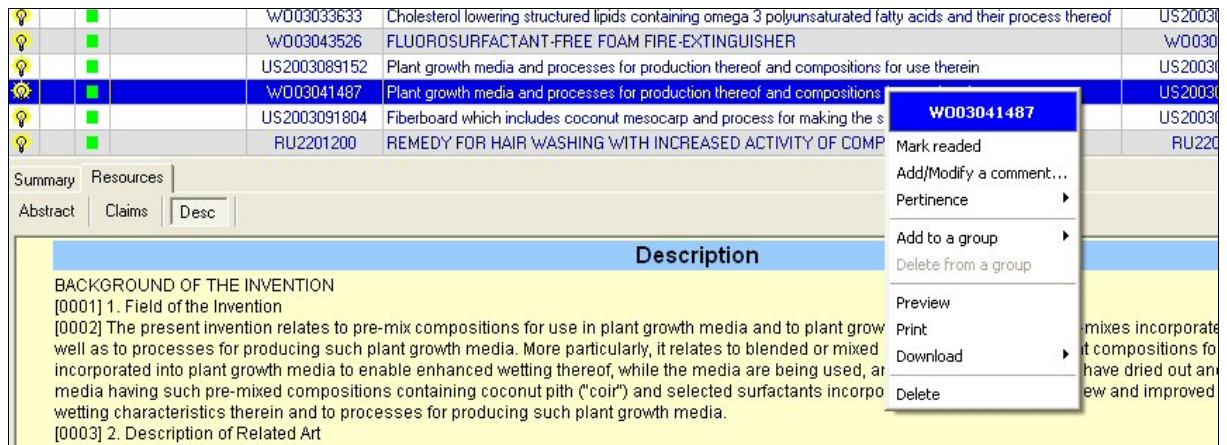


Figure 2. How to access patent information and to download the patent

### 3.2 Histogram frequencies, general considerations

Histograms are useful because they provide a overall view of all the items present in the set of selected patents according their presence in a selected field (eg. Applicants, Inventors...). The use of histograms allows an item to be positioned along with all the other items present in the patent set. Because the patent set can be updated at any time, it is possible to perform histograms at different periods of time, and then to monitor the trend of the item considered during a certain period of time.

As histograms are useful for the user, we provide two easy ways to view histograms. Firstly viewing histograms within the context of patent titles and secondly by viewing histograms in general in a single screen.

#### 3.2.1 Histograms in context

This is presented in the Figure 3.

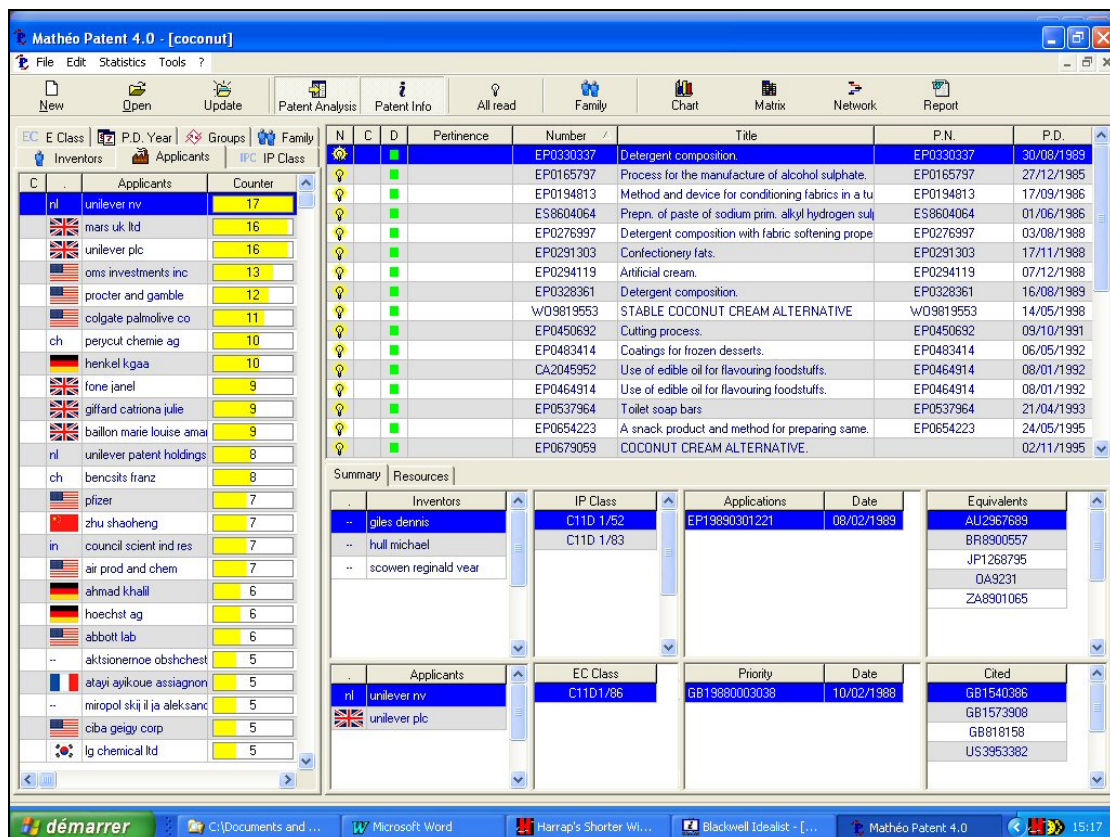


Figure 3. Access to histograms with in the context of patent titles and general information

To access to this function, it is necessary to click the patent analysis option at the top of the screen. On the left side of the screen the histogram will open according the selection made by the user. Several type of histograms are available: Inventors, Applicants, IP Class, E Class, PD year, Groups, Family. This is represented in Figure 4:

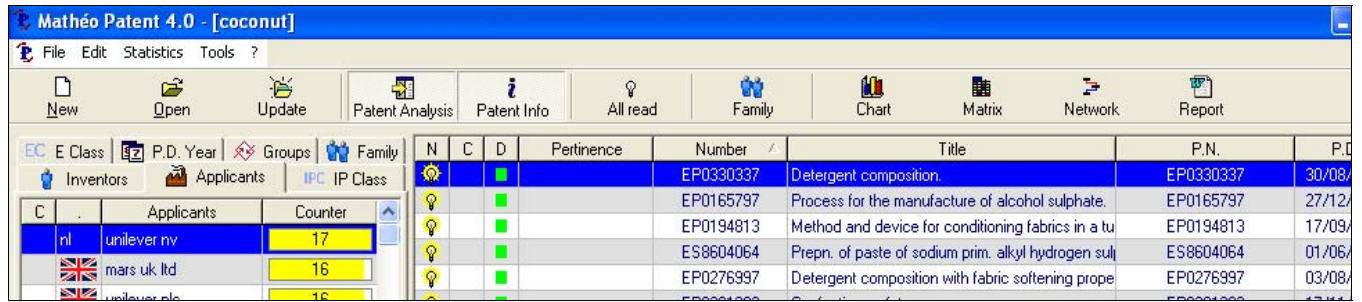


Figure 4. Access to various histograms

For instance in this example, Unilever from the Netherlands has 17 patents and the titles and Patent Numbers are shown on the right side of the screen. At the bottom of the screen (not shown in Figure 4), patent information may be accessed as shown in Figure 3.

Showing histograms in this way is interesting for the people who like to select patents according their importance to group them together or to give a performance indice to a patent. The indices facilitate understanding because they will appear in the Pertinence colum before the patent number and title. Figure 5 shows how to implement or create a group or to attribute pertinence indices by using the mouse’s right button.

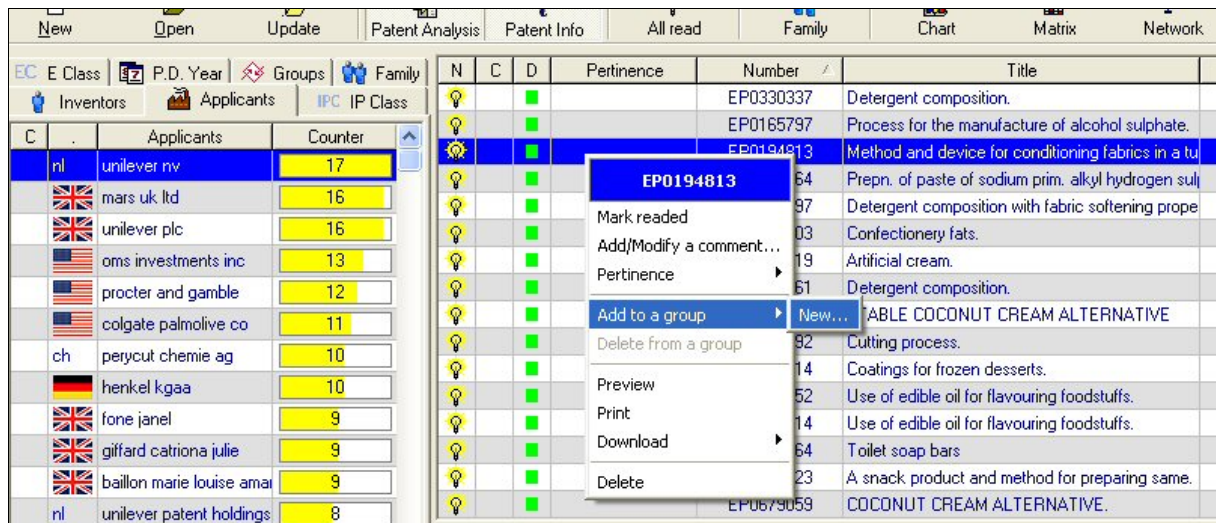


Figure 5. How to implement or create a group (the patent concerned is the one selected in the blue area of the screen. (Method and device ...)

### 3.2.2 Stand alone histograms

To view, print or store histograms, you select the Bars and Chart menu at the top of the screen. As shown in Figure 6.

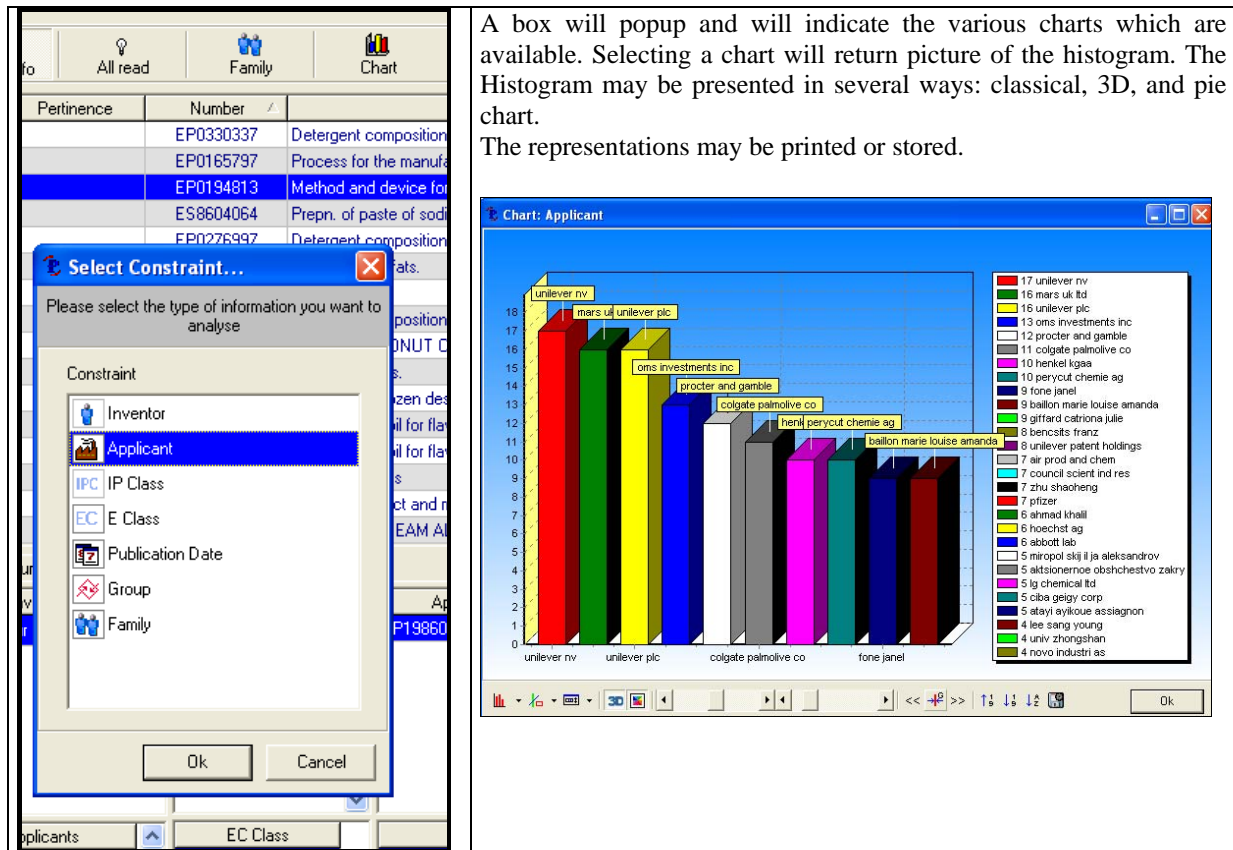


Figure 6. Access to various chart representation

Histograms can be seen 10 items at a time or globally if necessary. Buttons and cursors at the bottom of the histograms window allow the type of charts and the various views to be selected.

### 3.2.3 The use of IPC charts to stimulate innovation

We saw that Indonesian students very often develop projects on the basis of tacit local knowledge. On the other hand, local hightech facilities may not be available. Then, to stimulate innovation, it is necessary to move step by step. That is to say, that patents and especially International Patent Classification (IPC) classes (WIPO, 2004) will be used to show new uses, new products, new applications available. IPC classes are technological codes recorded with the patent during its examination, those codes are an international standard. However, it will be necessary to focus our attention on applications that can be developed through locally available facilities. This is very important, because if the examples given to the students can not be done locally, there will be only a very small chance of this application succeeding. As a result, students will become discouraged.

Thus, using IPC is important. The global IPC view (IPC standing alone), will show the students the main IPC classes appearing within the 1125 patents. This is an overview of what is happening in the field of coconuts. However although this knowledge is important in showing the existing gap between western countries inventions and local processing of the resource, it is not often actionable, because the laboratories, man power, general facilities and money will not be locally available for these technologies. We then use the IPC in context, to view the various IPC concerned by the patents dealing with coconuts one after the other. The purpose is the following: Knowing the local facilities, the students will choose possible applications (eg by selecting the right IPC classes) which will be locally actionable to make products with their own resources. This will constitute the first step on the ladder towards innovative thinking to the top. Figure 7 show the global IPC classes involved in the 1125 patents.



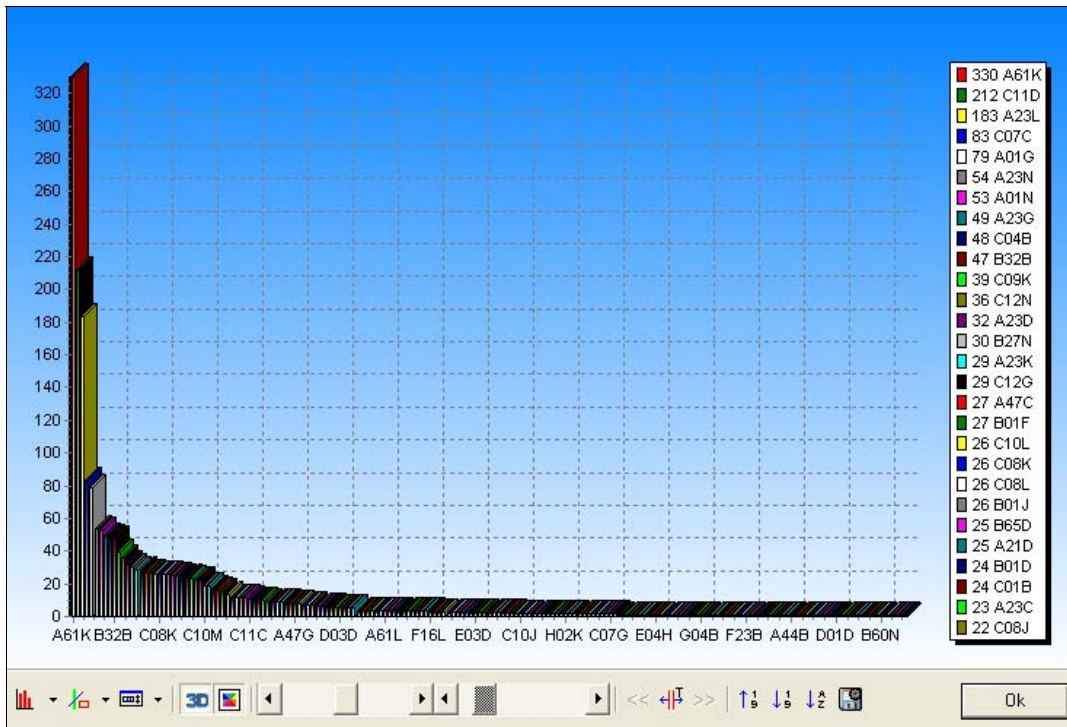


Figure 7. IPC classes in decreasing order

IPC classes may be represented in descending, ascending or alphabetical order, in a pie chart with the % of each IPC. Here, we represent the IPC in descending order, the box on the right side of the chart presents the IPC by color as in the chart, and give the frequency and the first four digits of the IPC.

From the IPC in context, we selected the various classes (first 4 digits) giving access to new products or applications that could be made from coconuts, with local facilities and which were unknown to the students. This is represented in Table 2.

Table 4. Selected IPC classes according to local facilities and expertise

IPC (first 4 digits)	Frequency	Products or applications
B27N	Frequency 19	<b>MANUFACTURE BY DRY PROCESSES OF ARTICLES, WITH OR WITHOUT ORGANIC BINDING AGENTS, MADE FROM PARTICLES OR FIBRES CONSISTING OF WOOD OR OTHER LIGNOCELLULOSIC OR LIKE ORGANIC MATERIAL</b> (containing cementitious material <a href="#">B28B</a> ; shaping of substances in a plastic state <a href="#">B29C</a> ; fibreboards made from fibrous suspensions <a href="#">D21J</a> ; drying <a href="#">F26B 17/00</a> )
C04C	Frequency 22	<b>LIME; MAGNESIA; SLAG; CEMENTS; COMPOSITIONS THEREOF, e.g. MORTARS, CONCRETE OR LIKE BUILDING MATERIALS; ARTIFICIAL STONE; CERAMICS</b> (devitrified glass-ceramics <a href="#">C03C 10/00</a> ); <b>REFRACTORIES; TREATMENT OF NATURAL STONE</b>
A47C	Frequency 21	<b>CHAIRS</b> (seats specially adapted for vehicles <a href="#">B60N 2/00</a> ); <b>SOFAS; BEDS</b> (upholstery in general <a href="#">04</a> )

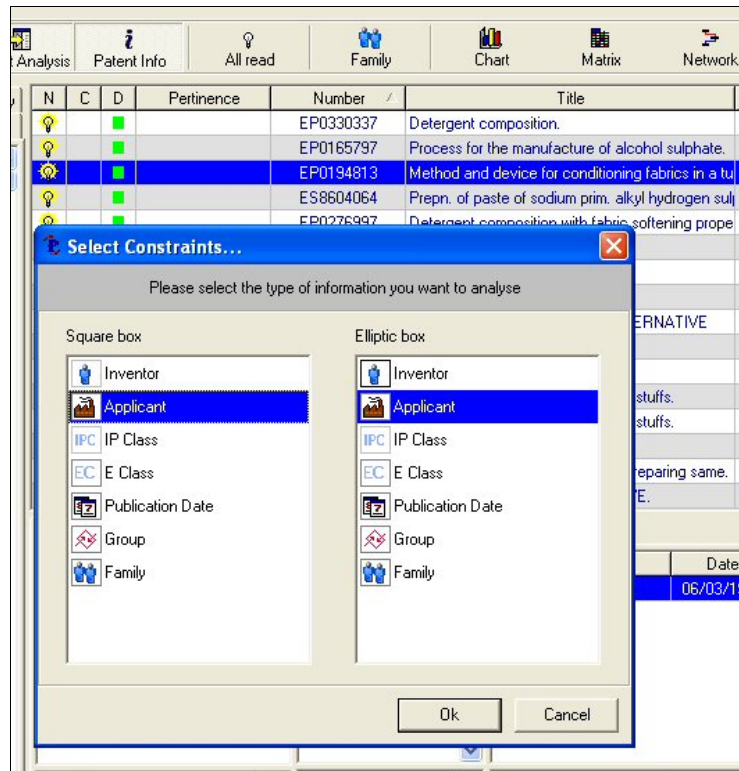
It is also noticeable, that the location of the town of Manado in North Sulawesi is very close to the deep sea Port of Bitung. This will facilitate shipment of products developed from the various technologies.

## 4 EXTENDED CORRELATION WITH SIGNIFICANT PATENT FIELDS

### 4.1 Networks

Although histograms are useful, they however do not show the links which exist between these different fields. For instance the IPC histogram and the Applicants histogram will not give rise directly to Applicant Expertises. This correlation can only be made if a matrix between applicants and IPC is built and if a network of expertise is drawn from this matrix. In the same way, networks of applicants (when several applicants appear in the same patent) will show the related companies, etc ...

To achieve these functionalities we will use the Network option at the top of the screen of Matheo Patent. Clicking the box will open a popup window displaying all the fields which may be correlated and used to build networks. This is presented in Figure 8.



**Figure 8.** Field selection to build networks.

For instance Applicants may be correlated with IPC, this will give rise to the competency network, IPC with IPC will give rise to the technological network, Inventors with inventors will give the inventor network, inventor with IPC will give the inventor competencies, etc.

In Figure 9, we present the network of Applicants and Inventors. The cursor in the bottom of the windows help to select frequency of forms (eg. Applicants or Inventors) or the frequency of pairs (Applicants-Inventors).

However if we used a large number of patents such as the set of 1114 selected in this paper, the networks which will be obtained will be complicated and the time needed to interpret them far too long. This is what we advise the user, when he selects a large number of patents to build up patent groups. Another possibility, because Matheo Patent works very rapidly on the EPO database would be to make a new database by adding the selected IPC (4 digits), for instance A47C (Chairs) to the original query. This will build a database related to chairs, mattress, ... in which coconuts are involved. Working this way will also make possible to develop other databases by keeping the original IPC A47C and combining it with this other terms such as palm, cotton, wood, etc... If you think that many terms, classes, years, applicants may be combined in a single search, you can see how innovative thinking, comparisons, value-maps, can be achieved. Only the people ideas and their mapping (TheBrain, 2004) with true patent information will be the limit of innovation.

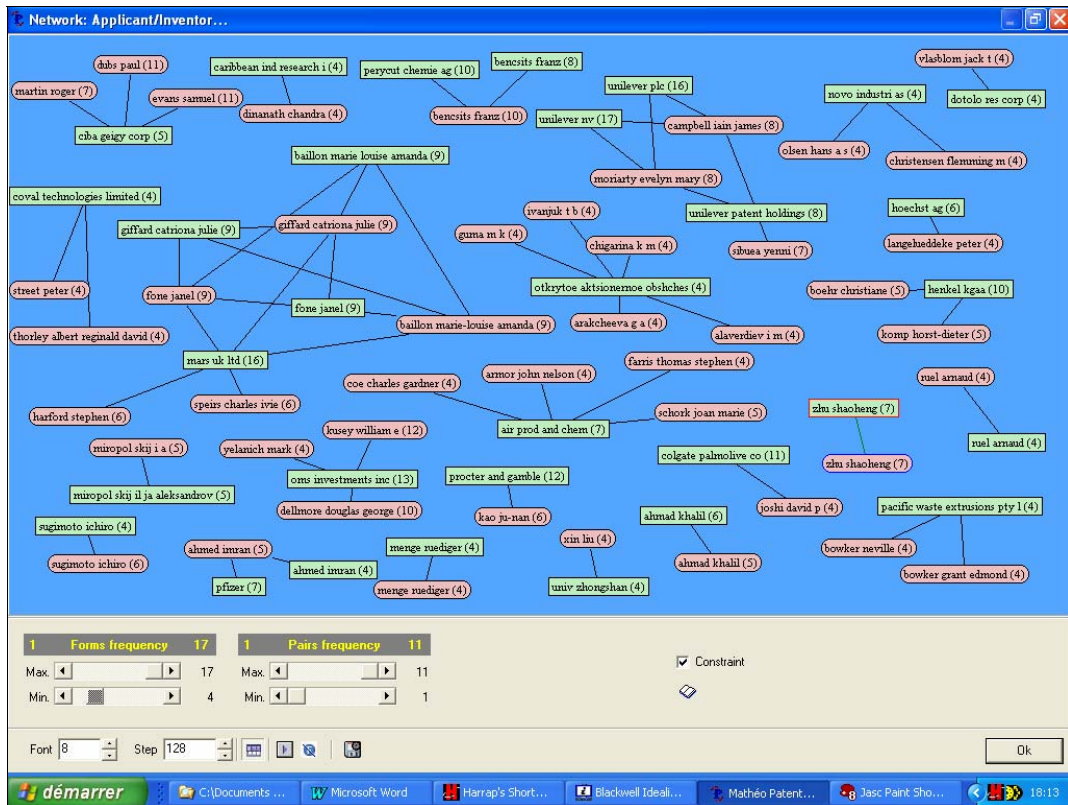


Figure 9. Network of Applicants/Inventors

## 4.2 Matrices

Very often, people working with statistical representations use various software such as Statistica (2004) to represent information. Other statistical treatments are also possible if adequate data are provided to the user. It was with these constraints in mind that we develop an option to get various type of matrices. To create these matrices it is necessary to click the Matrix option in the upper right corner of the screen. A window will pop-up, allowing the components of the matrix to be selected, as show in Figure 10.

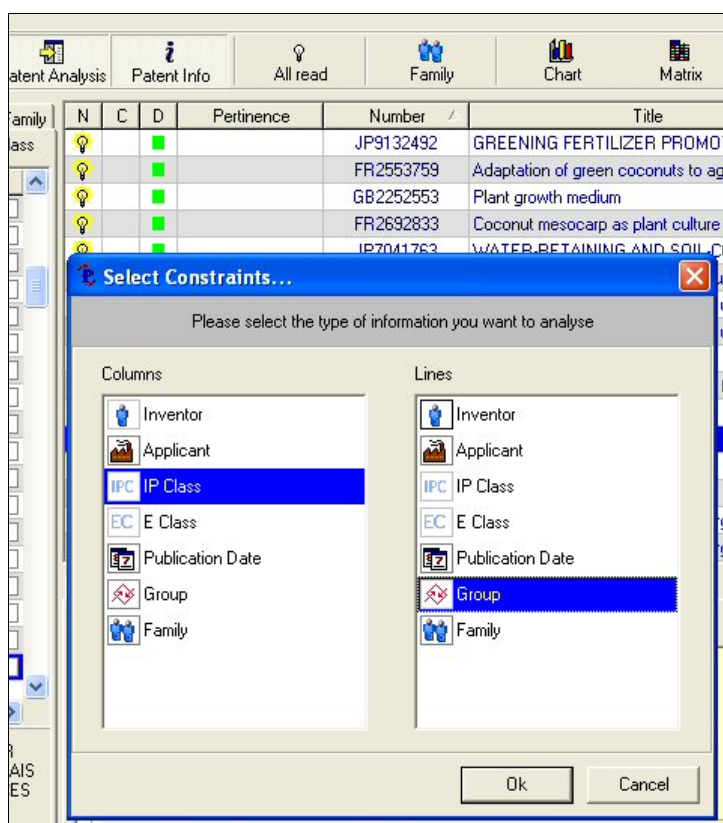


Figure 11. Selecting of the components of the matrix

We mentioned above that matrices may be useful for transferring data to other statistical software. But, there are many other more powerful applications. For instance, we will show a classic application dealing with the core competencies needed to develop a number of applications, from coconut components. By using the IPC histograms in context, we select some applications that were possible with the local knowledge. We created several groups with the patents related to these applications as show in this paper. The areas selected are presented in Table 3.

Table 5. Various areas of development for coconuts raw material

Name of the group	Number of patents	IPClass
Chairs, mattress	27	A47C
Fertilizers	19	CO5F
Buildings, walls, insulation	10	E04B
Building materials	48	C04B
Horticulture	79	A01G
Separation, filtration	24	B01D
Waste water, purifier	22	C02F
Textiles, fabrics	12	D04H
Objects from particles	30	B27N

All the groups have been selected according to local specificity, for instance the group building materials is important because it allows the development of low weight materials, which are important because existing local experience in region’s prone to earthquake. Textiles are also important because existing expertise in fabrics production in the region, etc.. When all the groups were selected, it is easy to build up a matrix between groups and the IPC. The matrix shows the IPC classes common to most of the groups. This underlines the core technologies and applications which can capitalize on the new knowledge. The Figure 11 gives a partial representation of the matrix;



	A01C	A01D	A01G	A01K	A21D	A23C	A23K	A23L	A23N	A23P	A24B	A24D	A47C	A61K	A61N	A61P	A62D	B01D	B01F	B01J	B09B	B21D	B27K	B27L	B27N	B28B	B29C	B29D	B29B	B60R	B65D	C01B	C02F
biodegradable pet litter A01K			2	11			2																										
Building materials C04B																		1							1		1						
Fodder, Animal food A23K			2	2	1	1	25	1		1				2		1												1		2		1	
Horticulture, cultivation A01G	1	1	3	2			2		1											1		1	1	2	3			1		2		1	
mattress chairs													21		1																		
Objects made from fibers B27N			3																			1	4		20		1	1	4		1		
Organic fertilizers C05F			5				1		1												2			1							1		1
Preparation of wines from fruits								5				1																					
Separation (gaz, etc.) B01D											3	3		1				22	1	7											2	1	
Textile D04H			2											1									1		1				3	1	2		
Treatment of Water C02F			1				1	2									1	1			1												18

Figure 11. Representation of the matrix Group of Technologies and IPC

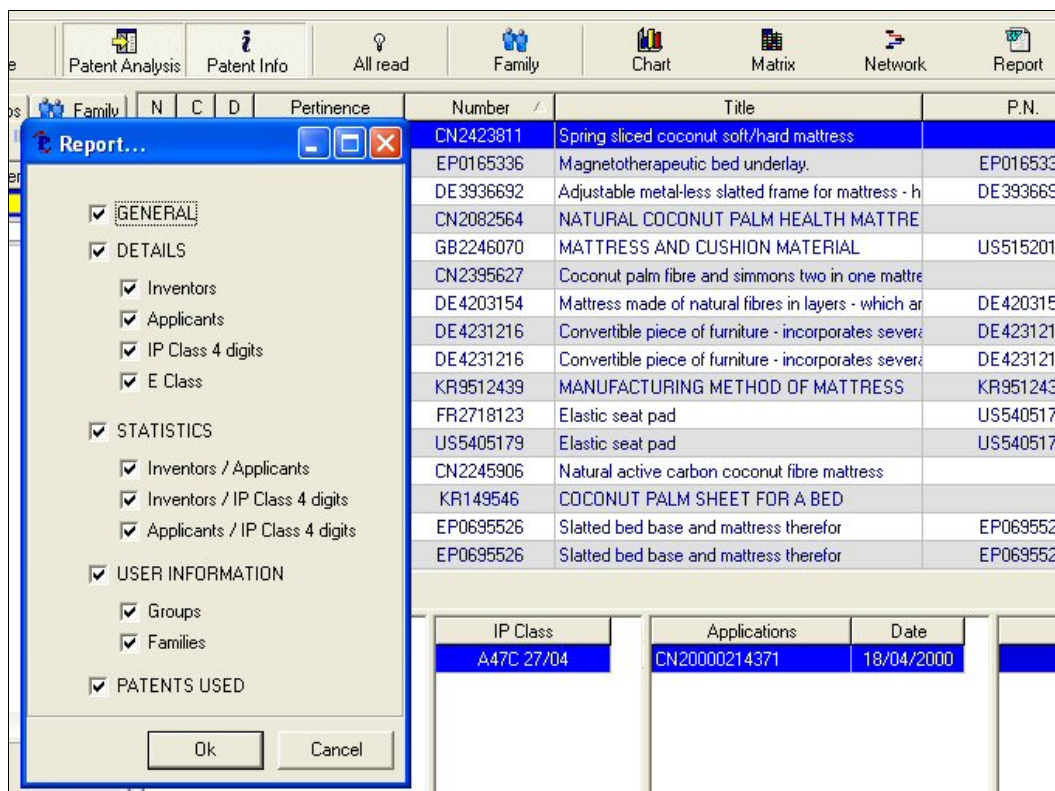
For each group of applications, the rows indicate the type of technologies which are involved in these applications. The use of this type of matrix is a very powerful way to detect for example technologies and applications shared by various companies, and applications depending on only from one company.

## 5 AN EXAMPLE FROM THE IPC A47C

This class covers the topic: **CHAIRS** (seats specially adapted for vehicles [B60N 2/00](#)); **SOFAS**; **BEDS** (upholstery in general [B68G](#)). This class was selected because the technologies (Indonesia has a strong background in furniture making) involved to develop chairs, mattress, bed based, convertible are already available in Manado, and also because even if the pieces of furniture are important in size the proximity of the Port of Bitung will facilitate their shipping.

### 5.1 The automatic report

The number of patents involved in a group is generally small, and easy to read. We used the Report facility offered by Matheo Patent to provide the students with a automatically generated report which is a first approach at understanding and analyzing the context. To automatically build the report, you can select various fields and formats, by clicking the available boxes. The selection process is presented in Figure 12.





**Table 12.** Popup window and selection of the contain of the automatic report

This report is presented in the following paragraph. In this report USER INFORMATION and PATENTS Used were not selected. The text of the report is below:

## 1. GENERAL

### - Request Information

Name: ChairMattresssofaC05F  
 Title: Chars, Mattress, Sofa from coconut fibers  
 Comments: Technology available in NS

### - Request Parameters

Request: coconuts OR coconut  
 Result: 21

### - Request Results

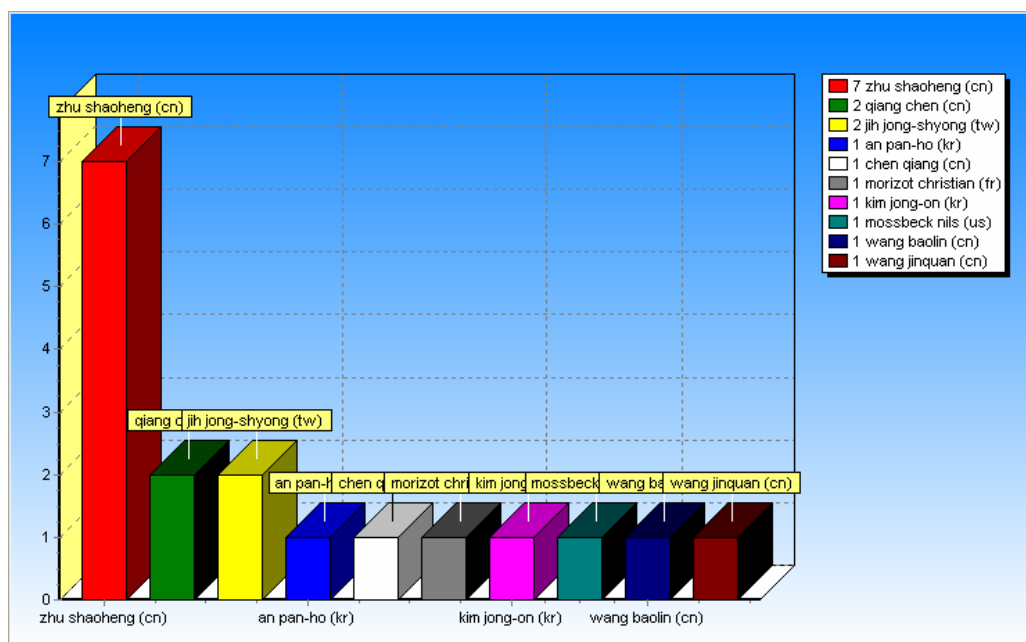
Inventors: 12  
 Applicants: 10  
 IP Class 4 digits: 2  
 IP Class Full: 16  
 E Class: 11

### - Patent information repartition

Groups: 1  
 Families: 0

## 2. DETAILS

### 2.1. Inventors (Top 10)



**Figure 13.** First 10 inventors

### 2.2. Applicants (Top 10)

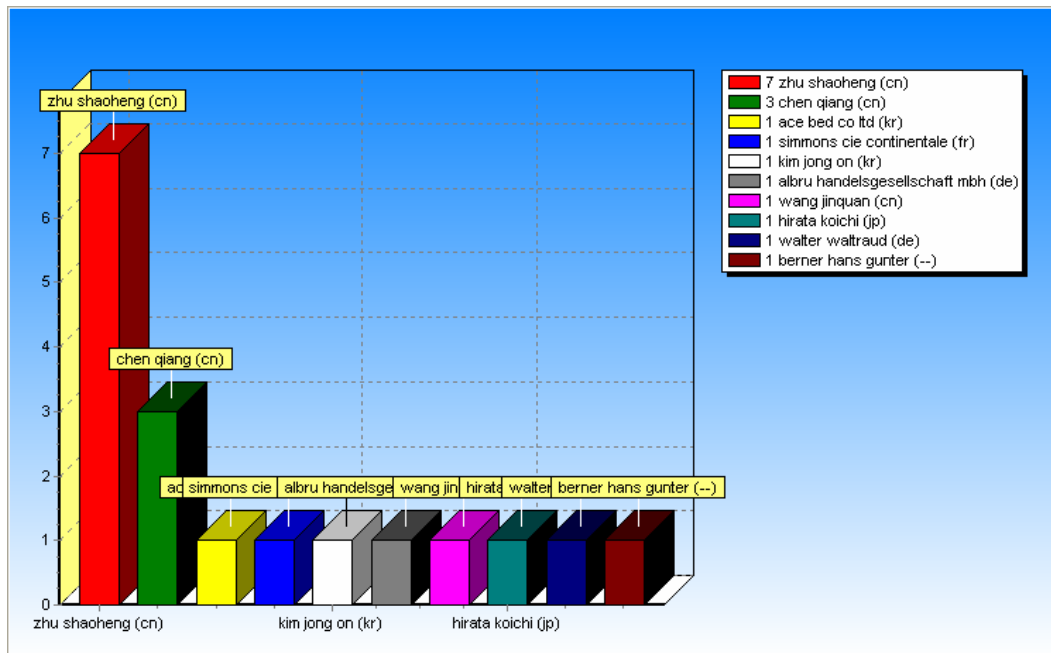


Figure 14. First 10 applicants

2.3. IP Class 4 digits (Top 10)

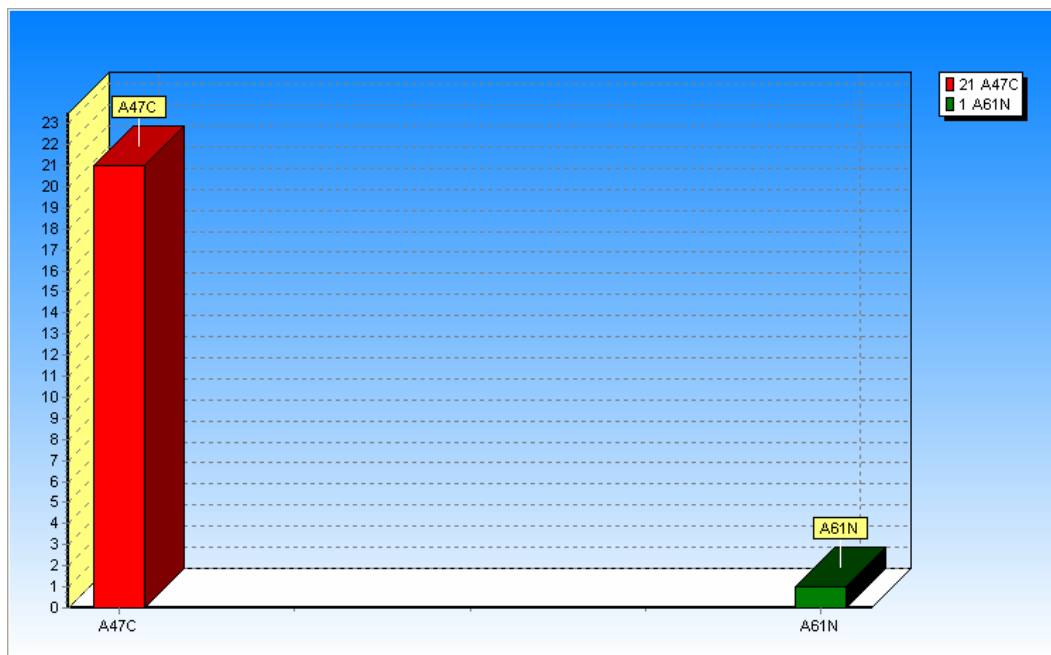


Figure 15. Top 10 IPC Classes

- A47C CHAIRS (seats specially adapted for vehicles B60N 2/00); SOFAS; BEDS (upholstery in general B68G)
- A61N ELECTROTHERAPY; MAGNETOTHERAPY; RADIATION THERAPY; ULTRASOUND THERAPY (measurement of bioelectric currents A61B; surgical instruments, devices or methods for transferring non-mechanical forms of energy to or from the body A61B 18/00; anaesthetic apparatus in general A61M; incandescent lamps H01K; infra-red radiators for heating H05B) [6]

### 3. STATISTICS

#### 3.1. Inventors / Applicants (Top 15)

**Table 6.** Top 15 inventors

zhu shaoheng (cn)	zhu shaoheng (cn)	7
qiang chen (cn)	chen qiang (cn)	2
an pan-ho (kr)	ace bed co ltd (kr)	1
chen qiang (cn)	chen qiang (cn)	1
morizot christian (fr)	simmons cie continentale (fr)	1
kim jong-on (kr)	kim jong on (kr)	1
mossbeck nils (us)	albru handelsgesellschaft mbh (de)	1
wang baolin (cn)	wang jinquan (cn)	1
wang jinquan (cn)	wang jinquan (cn)	1
hirata koichi (jp)	hirata koichi (jp)	1
berner hans-gunter (--)	berner hans gunter (--)	1
an pan-ho (kr)	chen qiang (cn)	0
an pan-ho (kr)	zhu shaoheng (cn)	0
an pan-ho (kr)	simmons cie continentale (fr)	0
an pan-ho (kr)	kim jong on (kr)	0

#### 3.2. Inventors / IP Class 4 digits (Top 15)

**Table 7.** Top 15 IP Classes

zhu shaoheng (cn)	A47C	7
qiang chen (cn)	A47C	2
jih jong-shyong (tw)	A47C	2
an pan-ho (kr)	A47C	1
chen qiang (cn)	A47C	1
morizot christian (fr)	A47C	1
kim jong-on (kr)	A47C	1
mossbeck nils (us)	A47C	1
wang baolin (cn)	A47C	1
wang jinquan (cn)	A47C	1
hirata koichi (jp)	A47C	1
berner hans-gunter (--)	A47C	1
berner hans-gunter (--)	A61N	1
an pan-ho (kr)	A61N	0
chen qiang (cn)	A61N	0

#### 3.3. Applicants / IP Class 4 digits (Top 15)

**Table 8.** Top 15 pairs Applicants versus IPC

zhu shaoheng (cn)	A47C	7
chen qiang (cn)	A47C	3
ace bed co ltd (kr)	A47C	1
simmons cie continentale (fr)	A47C	1
kim jong on (kr)	A47C	1
albru handelsgesellschaft mbh (de)	A47C	1
wang jinquan (cn)	A47C	1
hirata koichi (jp)	A47C	1

walter waltraud (de)	A47C	1
berner hans gunter (--)	A47C	1
berner hans gunter (--)	A61N	1
ace bed co ltd (kr)	A61N	0
chen qiang (cn)	A61N	0
zhu shaoheng (cn)	A61N	0
simmons cie continentale (fr)	A61N	0

## End of the report

### 5.2 Complementary information

Complementary information such as networks of applicants or IPCs, etc; are built-up by the user if necessary. When the best patents have been selected according the report complementary information about and details on the patents content (general, abstracts, claims, etc...) or the full text of the patents may be downloaded from the EPO database (use the mouse right button and click on the selected patent title, then follow the instructions given in the pop-up window. Of course, your computer should be linked to the Internet network).

## 6 CONCLUSION

Although patents are useful in protecting inventions, their cost is high and most of the time is out of reach of small companies and developing countries. But, being a unique information resource, they can be used as a think-tank to promote and stimulate innovation, and to provide free information sources to various users. Even in academic institutions, in western countries, patents are seldom cited by researchers. In our opinion, the barrier to using patents efficiently arises from their number and the difficulty of rapidly overiewing their content, relationships, etc, which enables the user to select the best patents for stimulating innovation and facilitating the creation of value added products from natural resources.

With this idea in mind, The Matheo Patent software has been developed. It allows fast access to the EPO and USPTO database, provides an easy way to build up patent databases and to automatically analyze patents.

It shows huge potential for use in developing countries for the monitoring of competitors and technological trends. We hope that these types of software will induce people to use patents more widely, firstly as an ideas resource, but also as a unique tool to secure and protect their own inventions.

## 7 REFERENCES

Biju, P.A & Soumyo D.M. (2001) Innovation assessment through patent analysis. *Technovation*, 21,245–252.

Brandenburger, A.M., & Nalebuff, B.J.(1998) *Co-opetition*. New-York, USA: Bantam Doubleday Dell Publishing Group Inc.

CRRM (2004) DEA Diplôme d'Etude Approfondi, equivalent to the Master of Science, prior to the PhD in the French curricula. Retrieved June 12, 2005 from the World Wide Web: [Http://crrm.u-3mrs.fr](http://crrm.u-3mrs.fr)

Derwent (2004) Host databases description. Retrieved June 12, 2005 from the Worl Wide Web: [Http://www.derwent.com/](http://www.derwent.com/)

Dou, H. & Manullang, S. (2003), The use of scientific indicators within the framework of the development of Indonesian Provinces, *Information Science for Decision Making, ISDM*, 7(65). Retrieved December 18, 2005 from the World Wide web: [Http://www.isdm.org](http://www.isdm.org)

Dou, H. (1997), Hearing 97 - Patents in Europe - Usage and dissemination of Patents as a tool to improve SME's strategies, *Hearing - Proceedings on the future patent politique d'information brevets de l'Organisation européenne des brevets* (pp.66-68). Munich, Germany: European Patent Office.

Ernst, H.(1998) Patent portfolios for strategic R&D planning, *J. Eng. Technol. Management*. 15, 279–308

- Faucompré P., Quoniam L. & Dou H.(1997) The function-application relation through a link between classification and indexing. *World Patent Information*, 19(3), 167-174
- Hicks, D., Breitzman, T., Olivastro D. & Kimberly, H. (2001), The changing composition of innovative activity in the US — a portrait based on patent analysis. *Research Policy* 30, 681–703
- Karki, MS. (1997) Patent citation analysis: a policy analysis tool. *World Patent Information*, 19(4), 269-272
- Kumiko, M. & Kyoichi, K. (2000), Complexity in Technology Management: Theoretical Analysis and Case Study of Automobile Sector in Japan, *Technological Forecasting and Social Change*, 64, 39–54
- Ledergerber, W. & Kurt, A. (2003), The Swiss Federal Institute of Intellectual Property's new search services to assist corporate strategic decision-making, *World Patent Information*, 25, 57–62
- Matheo Software (2004) Homepage of Matheo Patent. Retrieved Dec 19, 2004 from the World Wide Web [Http://www.matheo-software.com](http://www.matheo-software.com)
- Paoli,C., Dou, H., Dou JM., Jr, & Maninna, B.(2003) La constitution d'indicateurs brevets par domaines technologiques. *Cahiers de la documentation Belge* 2, 45-59
- Pilkington, A., Dyerson, R. & Tissier, O.(2002) The electric vehicle: Patent data as indicators of technological development. *World Patent Information* 24, 5–12
- Quoniam, L., Hassanaly, P., Baldit, P., Rostaing, H. & Dou, H. (1993), Bibliometric analysis of patent documents for R&D management. *Research Evaluation*,(3), 13-18
- StatSoft (2004) Homepage of Statistica. Available from the World Wide Web: <http://www.statsoftinc.com/>
- The Brain Technologies Corporation (2004) Homepage of the Brain. Retrieved June 19, 2004 from the World Wide Web: [Http://www.thebrain.com/Default.htm](http://www.thebrain.com/Default.htm)
- WIPO (2004) International Patent Classification- IPC7 English Version. Retrieved November 30, 2003 from the WIPO website: [http://www.wipo.org/classifications/fulltext/new\\_ipc/ipcen.html](http://www.wipo.org/classifications/fulltext/new_ipc/ipcen.html)
- Thomson Scientific (2003) Derwent World Patent Index Latest. Retrieved November 30<sup>th</sup>, 2003 from the World Wide Web: [Http://thomsonderwent.com/support/dwpioref/hosts/questelorbit/](http://thomsonderwent.com/support/dwpioref/hosts/questelorbit/)
- Youichirou, S. T. (2002), Organizational behavior in the R&D process based on patent analysis: Strategic R&D management, *Technovation* 2, 417–425