



Shaping Business Strategy Through Competitive Intelligence – Strategic Use of Intellectual Property Information

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List of Contents



Patent information General



Search Strategy



Usage of Patent Information



Patent Landscape Report

**Source: WIPO Guide to Using Patent Information, WIPO
WIPO Patent Information Section**

Patent Information General

How does the patent system work?

- **Protection:** A patent allows the patent holder to exclude others from commercially exploiting the invention covered by the patent in a certain country or region and for a specific period of time, generally not exceeding 20 years.
- **Disclosure:** A patent gives the public access to information regarding new technologies in order to stimulate innovation and contribute to economic growth.
- **Since the protection offered by a patent is territorial, covering only the jurisdiction in which the patent has been granted, the information contained in a patent document is global, available as a disclosure to any individual or organization worldwide, thus allowing anyone to learn from and build on this knowledge.**

Why use patent information ?

- **Patent information is an important resource for researchers and inventors, entrepreneurs and commercial enterprises, and patent professionals.**
- **Patent information can assist users to:**
 - **Avoid duplicating research and development effort**
 - **Determine the patentability of their inventions**
 - **Avoid infringing other inventors' patents**
 - **Estimate the value of their or other inventors' patents**
 - **Exploit technology from patent applications that have never been granted, are not valid, or from patents that are no longer in force**
 - **Gain Intelligence on the innovative activities and future direction of business competitors**
 - **Improve planning for business decisions such as licensing, technology partnerships, and mergers and acquisitions**

What information does a patent document contain 1

- Patent information comprises all information which either been published in a patent document or can be derived from analyzing patent filing statistics and includes:
- Technology information from the description and drawings of the invention
- Legal information from the patent claims defining the scope of the patent and from its legal status
- Business related information from reference date identifying the inventor, date of filing, country of origin, etc.
- Public policy-related information from an analysis of filing trends to be used by policymakers, e.g., in national industrial policy strategy

What information does a patent document contain 2

- Patent information comprises all information which either been published in a patent document or can be derived from analyzing patent filing statistics and includes:
- Applicant
- Inventor
- Description
- Claims
- Priority filing, Priority date
- Filing date
- Designated states
- Legal status
- Citations and references
- Bibliographic data

Where can patent information be found

- Many national and regional patent offices provide free online access to their own patent collections as well as to selected patent documents from other offices. An extensive list of national patent databases can be found at:
www.wipo.int/patentscope/dbsearch/national_databases.html
- WIPO offers free online access to all international patent applications within the framework of the PCT and their related documents and patent collections from National and Regional Offices through its PATENTSCOPE search service:
<http://patentscope.wipo.int/search>
- A number of commercial and non-profit providers also offer free patent information databases online. Certain commercial providers have established value-added services for access on a fee-paying basis including translations of patent information and additional systematic classification

How can patent information be used

- **Prior art searches**
- **Gathering business intelligence**
- **Avoiding patent infringement**
- **Patent valuation**
- **Identifying key trend in technology development**

Search Strategy

Which strategies can be used to search patent information

- Among the search criteria that can be used to find relevant patents are:
- **Keywords**
- **Patent classification**
- **Dates (e.g., priority date, application date, publication date, grant date)**
- **Patent reference or identification numbers (application number, publication number, patent number)**
- **Names of applicants/assignees or inventors**
- **Most search services permit users to search bibliographic/front page data, that is all data contained in a patent application except the description and claims.**
- **Some search services, including the WIPO PATENTSCOPE search service, allow full-text searches, including the description and claims.**

Search by Keyword 1

- To target searches effectively, the following tools can be used:
- Word operators: “AND”, “ANDNOT” (“NOT”), “OR”, “XOR”, “NEAR”
 - tennis AND ball : having both the word
 - tennis ANDNOT ball : having the word “tennis” but not “ball”
 - tennis OR ball : having either the word or both
 - tennis XOR ball : having either the word but not both
 - tennis NEAR ball : having both the words within a certain number of words of each other
- Truncation: words can be truncated, i.e., shortened to their primary root or stem, by reducing its length using an operator called a wildcat, usually an asterisk(*), so as to increase the coverage of the search, for instance: elect*, all words based on the word stem “elect”, e.g., electricity, electrical, electron

Search by Keyword 2

- **Nesting:** Nesting refers to the use of parentheses to organize search queries in order to resolve potentially confusing search syntax, for example:
 - **tennis AND ball OR racket** : two potential search outcomes to be resolved (the default order in which different operators are applied in the absence of parentheses may vary between search services)
 - **(tennis AND ball) OR racket** : having either the words “tennis” and “ball” or the word “racket”
 - **tennis AND (ball OR racket)** : having the word “tennis” and either the word “ball” or “racket”
- **Phrases:** If you surround a group of words with quotation mark (“), everything surrounded by those quotation marks will be treated as a single search term. This allows you to search for a multi-word phrase rather than specifying each word as a separate term, for instance: “tennis ball”, having the phrases “tennis ball”

Search by patent classification 1

- **All patent documents are individually classified using a standardized system identifying the technology group or groups to which the innovation described in the document belong**
- **A widely used system is the International Patent Classification (IPC) System (www.wipo.int/classifications/ipc)**
- **In its latest edition, it subdivides technology into almost 70,000 fields or groups. Each group describes a specific technology and is identified by a “classification symbol” consisting of a sequence of numbers and letters.**
- **The IPC system is organized according to hierarchical levels. From highest to lowest; these levels are: sections, classes, subclasses, and groups (main groups and subgroups)**

Search by patent classification 2

■ Each section has a title and specific letter code, as follows:

- **A: Human Necessities**
- **B: Performing Operations; Transporting**
- **C: Chemistry; Metallurgy**
- **D: Textiles; Paper**
- **E: Fixed Constructions**
- **F: Mechanical Engineering; Lighting; Heating; Weapons; Blasting**
- **G: Physics**
- **H: Electricity**

■ From section to subgroup, the code “C21B 7/10” can, for instance, be broken down as follows:

- **Section C: Chemistry; Metallurgy**
- **Class C21: Metallurgy of iron**
- **Subclass C21B: Manufacture of iron or steel**
- **Main group C21B 7/00: Blast furnace**
- **Subgroup C21B 7/10: Cooling; Devices therefor**

Search in specific data fields 1

- It is often desirable to search for words, numbers, or combinations thereof in a particular data field

The screenshot displays the WIPO Patentscope search interface. The browser address bar shows the URL: <http://patentscope.wipo.int/search/en/structuredSearch.jsf;jsessionid=CA15EE05ED88A8ACC9CEBBCEA432CC5B.wapp2>. The page title is "WIPO - Search International and National Patent Collections".

The main content area is titled "PATENTSCOPE" and "Search International and National Patent Collections". Below this, there is a navigation menu with options: Search, Browse, Translate, Options, News, Login, and Help. The current page is "Field Combination".

The "Field Combination" section contains a table of search fields. The first field is "Front Page". Below it, there are several rows of search criteria, each with an "AND" operator, a field name, and an equals sign followed by an empty input box. The fields listed are:

Operator	Field Name	Input
AND	WIPO Publication Number	
AND	Application Number	
AND	Publication Date	
AND	English Title	
AND	English Abstract	
AND	Applicant Name	
AND	International Class	
AND	Inventor Name	
AND	Office Code	
AND	English Description	
AND	English Claims	
AND	Licensing availability	<input type="checkbox"/>
AND	Inventor Name	Is Empty: <input checked="" type="radio"/> N/A <input type="radio"/> Yes <input type="radio"/> No

At the bottom of the search options, there is a "Language" dropdown set to "English" and a "Stem" checkbox checked. Below this is an "Office" dropdown menu.

The Windows taskbar at the bottom shows the Start button and several open applications: WIPO Applicatio..., Absences Calen..., 받은편지함 | D..., WIPO - Search..., C:\Documents a..., Microsoft Power..., and Inbox - Microsoft... The system clock shows "오후 2:24".

Search in specific data fields 2

- In the advanced search of the WIPO PATENTSCOPE search service, the filed code “DE” is associated with the “Description” field

The screenshot shows the WIPO PATENTSCOPE search results page. The search criteria are 'DE/semiconductor', 'Office(s):wo', 'Language:EN', and 'Stemming:true'. The results are displayed in a table format, showing the first 10 results. The table has columns for Countries, Main IPC, Main Applicant, Main Inventor, and Pub Date.

Results 1-10 of 130,561 for Criteria:DE/semiconductor Office(s):wo Language:EN Stemming:true

Refine Search: DE/semiconductor

Analysis

Options: Table (selected), Graph, Options, bar, pie

Countries		Main IPC		Main Applicant		Main Inventor		Pub Date	
Name	No	Name	No	Name	No	Name	No	Date	No
PCT	130561	H01L	26402	KONINKLIJKE PHILIPS ELECTRONICS N.V.	3166	YAMAZAKI, Shunpei	259	2003	6708
		G06F	10347	INTERNATIONAL BUSINESS MACHINES CORPORATION	2662	SILVERBROOK, Kia	124	2004	6869
		G01N	4461	APPLIED MATERIALS, INC.	2403	WALKER, Jay, S.	123	2005	8046
		G02B	3959	INTEL CORPORATION	2137	MIRKIN, Chad, A.	65	2006	9133
		H04L	3350	MICRON TECHNOLOGY, INC.	1225	FORREST, Stephen, R.	53	2007	10413
		H04N	3029	NOKIA CORPORATION	1209	ISHII, Fusao	53	2008	11608
		G11C	2936	ADVANCED MICRO DEVICES, INC.	1209	AISENBREY, Thomas	51	2009	10853
		A61B	2926	HEWLETT-PACKARD	985	BONORA, Anthony, C.	51	2010	10092
		C23C	2539			HABA, Belgacem	51	2011	10944
		G03F	2466			KATHIRGAMANATHAN	51	2012	12149

Using citations and reference information 1

- Patent applications often contain references to earlier patent documents, particularly in the description section of the application.
- Citations contained in search reports can be a useful way of identifying additional documents related to the technology being investigated or help uncover further search criteria.
 - **Category X:** Document that, taken alone, anticipates the claimed invention, as a result of which the claimed invention cannot be considered novel or cannot be considered to involve an inventive step
 - **Category Y:** Document that, in combination with one or more other such documents, anticipate the claimed invention, insofar as such combination can be considered obvious to a person skilled in the art
 - **Category A:** Document providing technical background information on the claimed invention

Using citations and reference information 2

id00000019983358[1].pdf - Adobe Reader

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2 / 4 51%

Comment Share

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2012/053657

A. CLASSIFICATION OF SUBJECT MATTER
 INV. G08B21/04
 ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 G08B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2 920 575 A1 (OMICRON SOC RESPONSABILITE LIM [FR] OMICRON [FR]) 6 March 2009 (2009-03-06) the whole document	1,2, 4-10, 15-18 3,11-14
Y	US 2010/321184 A1 (DREUILLET PHILIPPE [FR] ET AL) 23 December 2010 (2010-12-23) paragraphs [0001], [0002], [0051] - [0056], [0139] - [0146]; figure 9	3
Y	US 7 916 066 B1 (OSTERHEIL JOSEF [US]) 29 March 2011 (2011-03-29) column 1, lines 50-55 column 5, lines 33-35 column 6, lines 3-23 column 6, line 61 - column 7, line 19 column 17, lines 23-44 column 18, lines 13-42	11-14

-/-

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance: the claimed invention cannot be considered novel or obtained by an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"S" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search	Date of mailing of the international search report
12 December 2012	07/01/2013
Name and mailing address of the ISA/ European Patent Office, P.O. 2010 Patentstr. 2 NL - 2200 HV Rijswijk Tel. (+31-70) 340-2040 Fax (+31-70) 340-9018	Authorized officer: Fagundes-Peters, D

Form PCT/ISA/210 (prev. ed. 01/04) (April 2012)

page 1 of 2

1

Start WIPO Applica... Absences Cal... 받은편지함... IB201205365... C:\Document... Microsoft Po... Inbox - Micro... id00000019... << 오후 2:46

Good practices in searching patent documentation 1

- **The most effective searches exploit all the search options, by using and combining keywords, IPC, and number/date ranges.**
- **Effective searching of patent documentation is a step-by-step process, moving from an initial broad search to increasingly more focused searches.**
- **Ultimately, however, the number of search results must be limited to a reasonable number to allow the individual records to be examined in detail.**

Good practices in searching patent documentation 2

- **Broad vs. specific search terms: the keywords and IPC used in the first rounds of searching should cover the broad field of technology to which the innovation in question belongs**
 - **searching information on light-emitting diodes**
 - **initially search using keywords: “semiconductor” or IPC such as the subclass: H01L (semiconductor devices)**
 - **rather than the group H01L33/00 (semiconductor devices specially adapted for light emission)**
- **Inclusive/exclusive search operators: certain search operators can be used to broaden your search (inclusive operators), while others serve to narrow your search (exclusive operators)**
 - **Inclusive operators: “OR”**
 - **Exclusive operators: “AND”**

Usage of Patent Information

How can patent information be used

- **Prior art searches**
- **Gathering business intelligence**
- **Avoiding patent infringement**
- **Patent valuation**
- **Identifying key trend in technology development**

Prior art searches

- **Novelty: Is an invention new?**
- **Non-obviousness/Existence of an inventive step: Is the invention sufficiently different from existing technologies?**
- **Searching patent documents is an important step in determining whether an invention is ultimately patentable.**
- **Determine the characteristics of the invention: derive essential words and phrases that will be used in search**
 - **What problem does your invention solve?**
 - **What does your invention do?**
 - **What effect does your invention produce?**
 - **How is your invention construed?**
 - **What materials or methods are used in the construction of your invention?**

Practical case

- **You have developed a method for printing solar cells onto aluminum foil at low temperatures using a nanoparticle “ink”**
- **Step 1: Identify central concepts related to your innovation**
 - **“solar cell”(product), “aluminum foil”, “nanoparticle ink”(materials used in the production process)**
- **Step 2: Determine keywords for your search**
 - **the next step is to find synonyms and related keywords and phrases for the concepts identified in the first step:**
 - **solar cell: photovoltaic cell (synonym)**
 - **aluminum foil: aluminium foil (alternative spelling),
metal foil (related term)**
 - **nanoparticle: nanoparticle solution (related term),
nanoparticle suspension (related term)**

Practical case

- Step 3: locate the pertinent IPC symbols through IPC publication, search terms (<http://web2.wipo.int/ipcpub>)
- Term “solar cell”, identifies H01L 31/00 as a relevant IPC symbol

The screenshot shows a Microsoft Internet Explorer browser window displaying the WIPO IPC publication search results for the term "solar cell". The search results are displayed in a table format with the following columns: IPC Class, Title, and Description.

IPC Class	Title	Description
H01L 31/00	Semiconductor devices sensitive to infra-red radiation, light, electromagnetic radiation of shorter wavelength, or corpuscular radiation and specially adapted either for the conversion of the energy of such radiation into electrical energy or for the control of electrical energy by such radiation; Processes or apparatus specially adapted for the manufacture or treatment thereof or of parts thereof; Details thereof (H01L 51/42 takes precedence; devices consisting of a plurality of solid state components formed in, or on, a common substrate, other than combinations of radiation-sensitive components with one or more electric light sources, H01L 27/00) [8]	<ul style="list-style-type: none"> • adapted as conversion devices [2] • including a panel or array of photoelectric cells, e.g. solar cells [5] ••• collapsible or foldable [5] ••• encapsulated or with housing [5] ••• characterised by special interconnection means [5] ••• with cooling, light-reflecting or light-concentrating means [5] ••• including means to utilise heat energy, e.g. hybrid systems, or a supplementary source of electric energy [5]
H01L 31/04		
H01L 31/042		
H01L 31/045		
H01L 31/048		
H01L 31/05		
H01L 31/052		
H01L 31/058		

The search results also include a list of related IPC classes and their descriptions, such as H01L 31/04, H01L 31/042, H01L 31/045, H01L 31/048, H01L 31/05, H01L 31/052, and H01L 31/058. The search results are displayed in a table format with the following columns: IPC Class, Title, and Description.

The search results also include a list of related IPC classes and their descriptions, such as H01L 31/04, H01L 31/042, H01L 31/045, H01L 31/048, H01L 31/05, H01L 31/052, and H01L 31/058.

Practical case

- Step 4: Perform first search (WIPO PATENTSCOPE advance search)
 - Should be relatively broad, using “OR” Boolean operator, using a wildcat operator to include plural forms, and “International Class”
 - “solar cell*” OR “photovoltaic cell*” OR IC/ H01L-31*
 - This search produces over 103,000 results

WIPO PATENTSCOPE
Search International and National Patent Collections

Home > IP Services > PATENTSCOPE

Results 1-10 of 103,037 for Criteria: "solar cell*" OR "photovoltaic cell*" OR IC/H01L-31* Office(s):all Language:EN Stemming:true

Refine Search: "solar cell*" OR "photovoltaic cell*" OR IC/H01L-31*

Analysis

Countries		Main IPC		Main Applicant		Main Inventor		Pub Date	
Name	No	Name	No	Name	No	Name	No	Date	No
PCT	44533	H01L	25704	SHARP CORP	1259	TANIGAWA, HIROYASU	317	2003	3782
European Patent Office	23245	F24J	6854	KYOCERA CORP	788	BEVEC, Dorian	312	2004	4117
Japan	19747	A61K	2481	SANYO ELECTRIC CO LTD	707	YAMAZAKI, Shunpei	115	2005	4665
Republic of Korea	9592	H02J	2269	LG ELECTRONICS INC.	552	ROSEN, Craig, A.	103	2006	5313
Israel	2099	E04D	1856	CANON INC	540	MORI, KEI	65	2007	5979
Russian Federation	1266	H01M	1641	MITSUBISHI ELECTRIC CORP	470	YAMADA YASUSHI	50	2008	7319
South Africa	1113	C03C	1591	MITSUBISHI HEAVY IND LTD	463	FORSELL, Peter	48	2009	9119
Russian Federation (USSR data)	660	C23C	1455	APPLIED MATERIALS, INC.	459	OSHIMA	47	2010	10767
Spain	609	B32B	1415	MATSUSHITA ELECTRIC IND	432			2011	13991
		GR2R	1413					2012	10471

Practical case

■ Step 5: Sharpen search

- the search should be limited using more specific terms and linked using the “AND” Boolean operator
- in order to capture results containing wording such as “nanoparticle solution” as well as “solution containing nanoparticles”, define the distance between 2 words
- (“nanoparticle suspension”~5 OR “nanoparticle solution”~5 OR “nanoparticle ink”~5) AND (IC/“H01L31” OR “solar cell”~5 OR “photovoltaic cell”~5) AND (“aluminum foil” OR “metal foil”)
- This search produces much smaller results
- Among the results are several international applications by Eastman Kodak Company, Hewlett-Packard Development Company L.P.
- “Method of forming a transistor having a dual layer dielectric” etc.

Gathering business intelligence

- **Knowing which companies or individuals are technology leaders in your area of business**
 - **can play important role in planning your commercial and research and development activities**

- **Patenting activity and patent ownership**
 - **can be important in identifying principal innovators in different area of technology**

Practical case

- Your company produces farm equipment and would like to keep track of new developments in plough technology on the international market.
 - Step 1: Determine criteria for your search
 - use IPC symbols to find relevant applications
 - searching the IPC according to “plough”
- (<http://web2.wipo.int/ipcpub>) reveals several technology

The screenshot shows the WIPO IPC Official Publication website. The browser address bar displays the URL: <http://web2.wipo.int/ipcpub/#refresh=page&viewmode=a¬ation=scheme&hlf=plough&lang=en&version=20130101&symbol=>. The page title is "WIPO IP SERVICES International Patent Classification (IPC) Official Publication".

The main content area shows a search result for the term "plough". The results are organized into a table with columns for Scheme, RCL, Compilation, Catchwords, and Corrigendum. The search results are as follows:

Scheme	RCL	Compilation	Catchwords	Corrigendum
A			SECTION A — HUMAN NECESSITIES	
			AGRICULTURE	
A01			AGRICULTURE; FORESTRY; ANIMAL HUSBANDRY; HUNTING; TRAPPING; FISHING	
A01B			SOIL WORKING IN AGRICULTURE OR FORESTRY; PARTS, DETAILS, OR ACCESSORIES OF AGRICULTURAL MACHINES OR IMPLEMENTS, IN GENERAL (making or covering furrows or holes for sowing, planting or manuring A01C 5/00 ; machines for harvesting root crops A01D ; mowers convertible to soil working apparatus or capable of soil working A01D 42/04 ; mowers combined with soil working implements A01D 43/12 ; soil working for engineering purposes E01 , E02 , E21)	
A01B 1/00			Hand tools (edge trimmers for lawns A01G 3/06)	
			Ploughs	
A01B 3/00			Ploughs with fixed plough -shares	
A01B 5/00			Ploughs with rolling non-driven tools, e.g. discs (with rotary driven tools A01B 9/00)	
A01B 7/00			Disc-like soil-working implements usable either as ploughs or as harrows, or the like	
A01B 9/00			Ploughs with rotary driven tools (tilling implements with rotary driven tools A01B 33/00)	
A01B 11/00			Ploughs with oscillating, digging or piercing tools	
A01B 13/00			Ploughs or like machines for special purposes (for drainage E02B 11/02)	
A01B 15/00			Elements, tools, or details of ploughs	

The left sidebar contains navigation options such as "IPC Home Page", "Version" (2013.01), "Current symbol" (A01B), "Language" (English, French, English/French), "View mode" (full, hierarchic), and "Search" (Terms, Cross-references).

Practical case

- Step 2: Include all relevant groups by using “OR” Boolean operator
- WIPO PATENTSCOPE advance search: “International Class: field code (“IC”)
- IC/ A01B 3 OR IC/ A01B 5 OR IC/ A01B 7 OR IC/ A01B 9 OR IC/ A01B 11 OR IC/ A01B 13 OR IC/ A01B 15 OR IC/ A01B 17
- This search retrieves around 2140 results

WIPO - Search International and National Patent Collections

Home > IP Services > PATENTSCOPE

Results 1-10 of 2,140 for Criteria: IC/ A01B 3 OR IC/ A01B 5 OR IC/ A01B 7 OR IC/ A01B 9 OR IC/ A01B 11 OR IC/ A01B 13 OR IC/ A01B 15 OR IC/ A01B 17 Office(s): all Language: EN Stemming: true

Refine Search: IC/A01B 3 OR IC/A01B 5 OR IC/A01B 7 OR IC/ Search

Analysis

Countries		Main IPC		Main Applicant		Main Inventor		Pub Date	
Name	No	Name	No	Name	No	Name	No	Date	No
European Patent Office	659	A01B	1742	MITSUBISHI AGRICULT MACH CO LTD	110	VAN DER LELY, CORNELIS	39	2003	101
PCT	741	A01C	79	C. VAN DER LELY N.V.	62	VAN DER LELY CORNELIS	30	2004	107
Japan	432	A01D	77	ISEKI & CO LTD	56	BOM CORNELIS	19	2005	112
South Africa	56	E02F	30	KUBOTA CORP	53	JOHANNES GERARDUS	19	2006	104
Israel	23	B62D	26	KUBOTA CORP	53	WAKUTA TAKESHI	19	2007	92
Republic of Korea	15	A01G	20	LELY NV C VAN DER	48	STARIK, Crister	18	2008	97
Russian Federation	6	B60K	15	DEERE & COMPANY	29	VAN DER LELY, ARY	16	2009	88
		B60D	13	KVERNELAND KLEPP AS	26	MINAGAWA ISAO	14	2010	91
		B25G	6	YANMAR AGRICULT EQUIP CO LTD	26	SATOJI HISAYUKI	14	2011	60

Practical case

- Step 3: Analyze the data
- Navigate to in-depth analysis and visualize the patent activity in tabular or graphical format

The screenshot shows the WIPO PatentSCOPE search results page. The search criteria are: **A01B 3 OR IC: A01B 5 OR IC: A01B 7 OR IC: A01B 9 OR IC: A01B 11 OR IC: A01B 13 OR IC: A01B 15 OR IC: A01B 17 Official Use Language EN Stemming true**. The results show 1-10 of 2,140 results.

The analysis section displays a bar chart showing the number of patents for various main applicants. The top applicants are:

Main Applicant	No. of Patents
MITSUBISHI AGRICULT MA	110
C VAN DER LELY N V	62
ISEKI & CO LTD	56
KUBOTA CORP	53
LELY NV C VAN DER	48
DEERE & COMPANY	28
KVERNELAND KLEPP AS	26
YANMAR AGRICULT EQUIP CO LTD	26
MAASLAND NV	25
HONDA MOTOR CO LTD	25

The analysis section also includes a table of main applicants with columns for Name, No., and Date. The table is as follows:

Countries	Main IPC	Main Applicant	Main Inventor	Pub Date
Name	No	Name	No	Date
European Patent Office	858	A01B 1742	MITSUBISHI AGRICULT MACH CO LTD	110
PCT	741	A01C 78	C VAN DER LELY N V	62
Japan	432	A01D 77	ISEKI & CO LTD	56
South Africa	58	E02F 30	KUBOTA CORP	53
Israel	23	B62D 28	LELY NV C VAN DER	48
Republic of Korea	19	A01G 20	DEERE & COMPANY	28
Russian Federation	5	B60K 15	KVERNELAND KLEPP AS	26
Spain	4	B60D 13	YANMAR AGRICULT EQUIP CO LTD	26
Mexico	1	B25D 6	MAASLAND NV	25
		F18D 6	HONDA MOTOR CO LTD	25

Practical case

- Step 4: Keep track of current information
- By subscribing to the RSS feed, you can remain up-to-date on the latest international applications relevant to your business

The screenshot shows a web browser window displaying a patent search results page. The address bar shows the URL: <http://patentscope.wipo.int/search/rss.jsf?query=IC%2F+A01B+3+OR+IC%2F+A01B+5+OR+IC%2F+A01B+7+OR+IC%2F+A01B+9+OR+IC%2F+A01B+11+OR+IC%2F+A01B+13+OR+IC%2F+A01B+15+OR+IC%2F+A01B+17>. The page content includes a yellow box with the following text:

PATENTSCOPE: IC/ A01B 3 OR IC/ A01B 5 OR IC/ A01B 7 OR IC/ A01B 9 OR IC/ A01B 11 OR IC/ A01B 13 OR IC/ A01B 15 OR IC/ A01B 17
 You are viewing a feed that contains frequently updated content. When you subscribe to a feed, it is added to the Common Feed List. Updated information from the feed is automatically downloaded to your computer and can be viewed in Internet Explorer and other programs. [Learn more about feeds.](#)
 Subscribe to this feed

On the right side, there is a sidebar with the following information:

Displaying 300 / 300
 All 300
 Sort by:
 Date
 Title

The main content area displays several patent abstracts:

TILLER HOUSING
 2013년 3월 1일 금요일, 오전 1:00:00 →
 A tiller (10) includes a tiller frame (12) and an upright assembly (24) extending from the frame. The frame is supported by at least one wheel (14) and defines a cavity (26). A transmission assembly (390) is supported by the frame and has an output member that is configured to be drivingly coupled to a first power source in a first battery-powered configuration and to a second power source in a second electric-powered configuration. A tilling implement (22) includes a drive shaft (48) that is driven by the output member. The tilling implement comprises at least one tine plate (50). The cavity (26) is configured to removably receive a battery (30) in the first battery-powered configuration and removably receive a ballast (356) in the second electric-powered configuration.

TURF TREATMENT
 2013년 3월 1일 금요일, 오전 1:00:00 →
 A method for the treatment of turf (11) comprising grass (12) growing in a matrix (15, 16) comprising removing matrix (15, 16) including any thatch and other infestation by blading (18) moving through the matrix (15, 16) to a predetermined depth (d). The method may be used to treat turf (11) reinforced with artificial grass (13). Equipment for carrying out the treatment comprises a bladed rotor (17) rotating about a horizontal axis.

AGRICULTURAL TRACTOR LINKAGE CONTROL SYSTEM
 2013년 3월 1일 금요일, 오전 1:00:00 →

The browser's taskbar at the bottom shows several open applications: Start, WIPO Applications f..., 5 Internet Explo..., Inbox - Microsoft Ou..., N:\Orgsme\SHARED\..., C:\Documents and S..., Microsoft PowerPoin..., and the system clock showing 3:47 PM on a Friday.

Avoiding patent infringement

- **Having identified relevant patent documents, the first step is to examine the legal status of the patent application:**
 - **Has the patent been granted, rejected, withdrawn, or is it still pending?**
 - **In which countries?**
 - **Is the patent still valid, or has it expired?**

- **If a patent is in force in a particular jurisdiction in which you wish to market your product, the second step is to appraise the claims made under this patent**

- **Potential infringements can be avoided by modifying your product to take into account these claims**

Patent valuation

- **Patent documentation can provide an indication as to the value of patents that you or your competitors have been granted.**
- **The citation information contained in patent documents subsequent to a particular patent can be useful for estimating the value of the patent in question.**
- **The number of times a patent is cited in later patent documents is indicative of its technical relevance and thus of its value.**

Identify key trends in technology development

- **Statistical data obtained from patent documents can be used to map key trends across different fields of technology and different countries**
- **Depending on the criteria according to which patent data can be broken down**
 - **it can be used to track the growth and changes in patent activity over time**
 - **examine the distribution of patent application in a country by residents compared to non-residents**
 - **identify the technology areas in which a country is predominantly active in terms of patenting activity**

Practical case

- Your government has identified the absence of adequate food preservation technology as a key obstacle to further development of agricultural export sector and is considering negotiating technology transfer agreement with other countries
- Step 1: Determine Criteria for your search
 - Field of technology: A23L 3/00 (“food preservation”)

The screenshot shows the WIPO IP Services website, specifically the International Patent Classification (IPC) Official Publication. The browser address bar indicates the URL: <http://web2.wipo.int/ipcpub/#refresh=page&viewmode=a¬ation=scheme&hlf=Food%7Cpreservation&lang=en&version=2013.01>. The page title is "WIPO IP SERVICES International Patent Classification (IPC) Official Publication".

The main content area displays a table of classification symbols and their corresponding descriptions. The table has columns for "Scheme", "RCL", "Compilation", "Catchwords", and "Corrigendum". The "Scheme" column shows "A23L" and "A23L 3/00". The "RCL" column shows "A23L 3/005", "A23L 3/015", "A23L 3/02", "A23L 3/10", "A23L 3/15", "A23L 3/25", "A23L 3/32", "A23L 3/34", "A23L 3/36", and "A23L 3/40". The "Compilation" column shows "Note(s)" and "Attention is drawn to the following places: C08B Polysaccharides, derivatives thereof; C11 Animal or vegetable oils, fats, fatty substances or waxes; C12 Biochemistry, beer, spirits, wine, vinegar; C13 Sugar industry." The "Catchwords" column shows "FOODS, FOODSTUFFS, OR NON-ALCOHOLIC BEVERAGES, NOT COVERED BY SUBCLASSES A21D OR A23B-A23J; THEIR PREPARATION OR TREATMENT, e.g. COOKING, MODIFICATION OF NUTRITIVE QUALITIES, PHYSICAL TREATMENT (shaping or working, not fully covered by this subclass, A23P); PRESERVATION OF FOODS OR FOODSTUFFS, IN GENERAL (preservation of flour or dough for baking A21D) [8]". The "Corrigendum" column shows "Preservation of foods or foodstuffs, in general, e.g. pasteurising, sterilising, specially adapted for foods or foodstuffs (preserving foods or foodstuffs in association with packaging B65B 55/00)".

The left sidebar contains navigation options: "IPC Home Page - Help", "Version" (2013.01), "Current symbol" (A23L 3/00), "Language" (English, French, English/French), "View mode" (path, full, hierarchic), "Standardized sequence", "Deleted entries", "Subclass indexes", "Guidance Headings", "Notes", "Search" (Terms, Cross-references).

Practical case

- Step 2: perform search and Step 3: Analyze the data
- WIPO PATENTSCOPE advanced search (IC/ A23L 3)

The left screenshot displays the search results in a table format. The right screenshot displays the same data as a horizontal bar chart, with the Main Applicant column expanded to show the names of the applicants.

Countries	Main IPC	Main Applicant	Main Inventor	Pub Date
Name # No #	Name # No #	Name # No #	Name No #	Date # No #
PCT	A23L 14916	NESTEC S.A. 20217 464	Кедренко Олег Иванович (RU) 978	2003 1963
European Patent Office	A61K 10949	UNILEVER N.V. 2343 404	SUZUKI KISAKU 75	2004 2335
Japan	A23B 4406	UNILEVER NV 1387 382	SUZUKI MAKOTO 58	2005 2289
Republic of Korea	A23C 3316	THE PROCTER & GAMBLE COMPANY 1352 380	PRAKASH, Indra 47	2006 2295
Russian Federation	A23G 3316	SOCIETE DES PRODUITS NESTLE S.A. 1119 359	SON, YOUNG SUK 43	2007 2116
South Africa	A21D 1342	NESTLE SA 1082 350	WAKASA AKIRA 37	2008 2278
Israel	A23F 866	NESTLE SA 862 327	AOKI MINORU 35	2009 2430
Mexico	A23D 966	UNILEVER PLC 822 327	Мартович Валерий Иванович (RU) 31	2010 2708
Spain	A23K 266	NESTEC SA 808 237	Корнева Елена Павловна (RU) 29	2011 1800
ARIPO	A23J 153	AJINOMOTO KK 762 235	YAMAZAKI AKIRA 25	2012 1264
		DSM IP ASSETS B.V. 206		2013 188

Practical case

Step 3: Analyze the data

- Visualization of search results by countries, by publication date

The screenshot displays the WIPO PATENTSCOPE search results for the criteria 'A23L 3'. The interface includes a search bar, navigation options, and two main visualization components: a pie chart and a bar chart.

Search Results Summary:
 Results 1-10 of 36,505 for Criteria: A23L 3 Office(s): all Language: EN Stemming: true
 Page 1 of 3651

Pie Chart Analysis:
 The pie chart shows the distribution of search results by country/office. The largest share is from the European Patent Office (EPO), followed by PCT, Japan, and the Republic of Korea.

Country	No #
PCT	14918
European Patent Office	10949
Japan	4486
Republic of Korea	3316
Russian Federation	1342
South Africa	966
Israel	266
Mexico	153
Spain	40
ARIPO	16
Singapore	3

Bar Chart Analysis:
 The bar chart shows the number of publications per year from 2003 to 2013. The number of publications generally increases over the period, peaking in 2009.

Year	No #
2003	1963
2004	2335
2005	2289
2006	2295
2007	2116
2008	2278
2009	2430
2010	2708
2011	1680
2012	1264
2013	188

The interface also includes a 'Pub Date' table and a 'Sort by' dropdown menu set to 'Pub Date Desc'.

Patent Landscape Reports

Patent Landscape Reports

- Patterns of patenting activity
 - Who is doing what (e.g. top applicants, inventors) ?
 - What is filed where ?
 - Market trends
- Patterns of innovation
 - Innovation trends/activities
 - Diversity of technologies
 - Innovation tracks
 - Collaborations
- What is in public domain ? e.g. FTO analysis
 - Requires evaluation of legal information

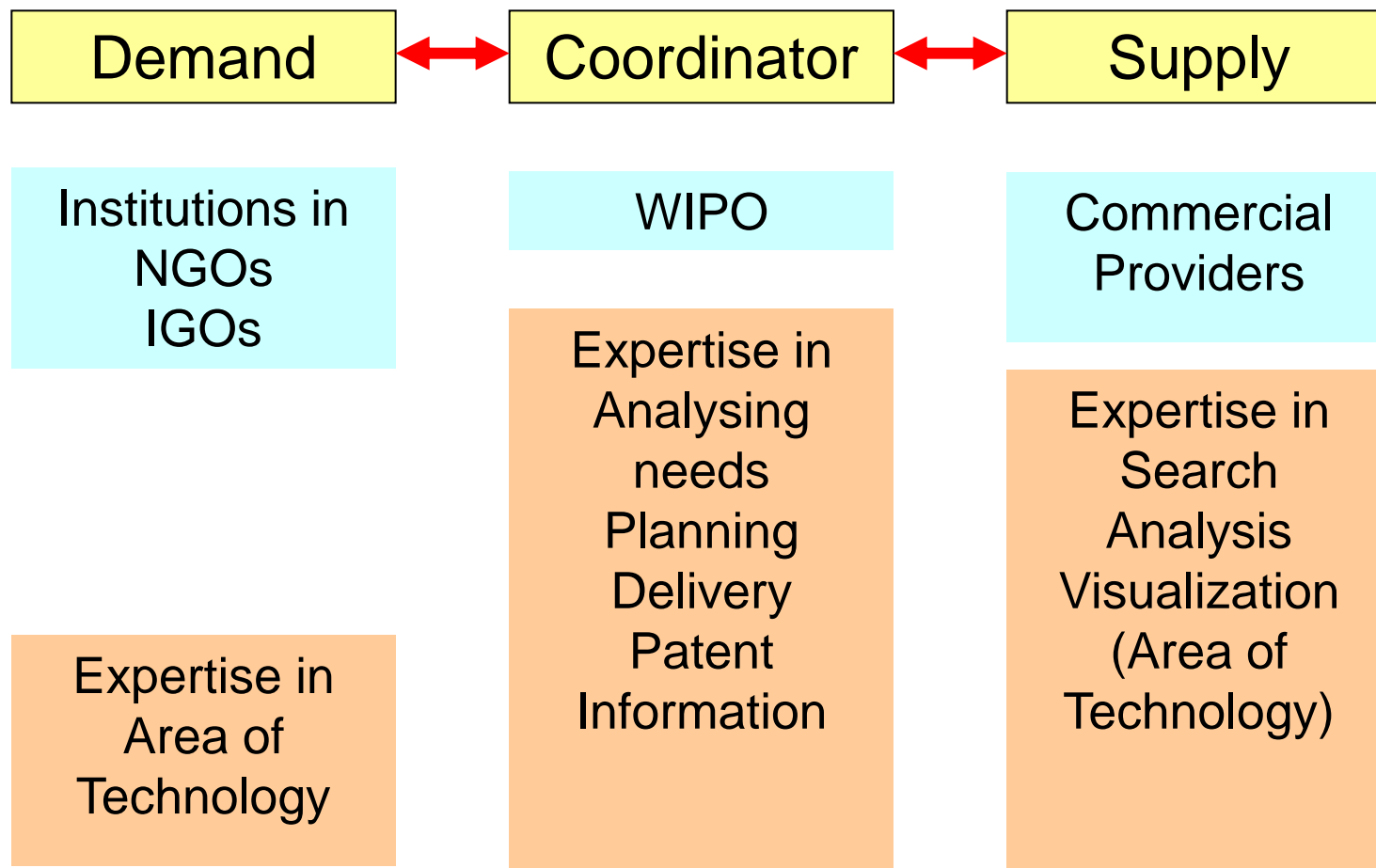
WIPO Patent Landscape project

- PLRs perceived as important tool for access to and exploitation of patent information
 - Business use (**includes public institutions!**)
 - Empirical evidence for policy discussions and strategic planning
 - Technology transfer (FTO, public domain; e.g. extensions)
- WIPO Committee on Development and Intellectual Property (CDIP) created project DA_19_30_31 as part of WIPO's Development Agenda
 - Bridging the knowledge gap
 - Promoting the use of patent information as a freely accessible (no copyright protection!) and globally available resource for technology information **and the use of patent analytics as an advanced tool for exploiting patent information**

Collaboration with users

- WIPO has usually limited technical expertise in areas of technology
- Partners having needs and expertise are valuable for assuring
 - relevance of each report
 - efficiency of preparation
 - sufficient utilization of completed report (impact)
- Each collaboration serves for partners as vehicle/means to familiarize themselves with patent information, analytics, patent system (> capacity building)

Matching needs



Sample of individual report website

Patent Landscape Report on Ritonavir

Ritonavir is an antiretroviral drug from the protease inhibitor class used to treat HIV infection and AIDS. Ritonavir is included in the [WHO Model List of Essential Medicines](#).

A major goal of this report is to highlight the technology timeline for Ritonavir from the [first filing](#) of this compound in July 1994 by Abbott Laboratories (WO1994014426) to the present filings in which additional patent families attempt to protect subsequent innovations to the compound, variants and derivatives, combinations with other chemicals, methods of production, methods of use, etc. The analysis of the researched patent documents showed that filings related to Ritonavir have increased dramatically since the initial disclosure and now include over 800 patent families.

This report identifies a number of innovation tracks that spun-off of the first Ritonavir patent document, WO1994014426. They are related to liquid dosage formulations, solid dosage formulations, synthesis of Ritonavir and its key intermediates, polymorphs and crystalline Ritonavir, as well as prodrugs of Ritonavir. These innovation tracks illustrate the continuation of important protection related to Ritonavir as subsequent generations of patents continue to narrow the scope of protection while still maintaining protection from the first Ritonavir patent, a phenomenon that is also sometimes termed "evergreening".

The reports also includes an analysis of statistical trends, e.g. 45% of the patent families have a patent grant as family member, and 90% of the families include a PCT application.

A comprehensive explanation of the search methodology and history (including all search queries), and of the evaluation of the search results is included and illustrates how patent information can be retrieved and exploited in the area of pharmaceuticals.

The searchable and sortable patent database includes all 805 patent families, relevant bibliographic data and some added information, e.g. whether the family relates to prodrugs. Each family is linked to the Espacenet database of the European Patent Office which enables verification of the INPADOC family information and related legal status of family members. The database is complemented by a visualization of various statistical analyses of the collection of 805 patent families.

For further information please [contact us](#).



Patent Landscape Report on Ritonavir

Download

- Full Report
- Executive Summary
- Database of Patent Families
- Interactive Anlysis Tool
- Appendices - Innovation Tracks:
 - Liquid oral dosage forms
 - Synthesis of Ritonavir
 - Structural Considerations and Polymorphs
 - Solid Dosage Forms

Three standard components:

Report body (.PDF)

Database (.xls)

Interactive visualization (Intellixir)



Database of Ritonavir related patents

Publication number linked to Espacenet; sortable

Technology categories; sortable



	A	B	C	D	E	F	G	H	I	J
	Hyperlinked Publication	Title	Priority Document	Earliest Priority Date	Assignee / Applicant	Inventor(s)	Family Members	Family Size	Combinations	Prodrug
1	WO2010151495	MATERIALS AND METHODS FOR TREATING AND PREVENTING VIF	US20090220920P	2009-06-26	UNIVERSITY OF FLORIDA RESEA	JOHNSON HOWARD M US None		1	Yes	
2	WO2010150100	THE USE OF SPINOSYNS AND SPINOSYN COMPOSITIONS AGAINST	US20090220059P	2009-06-24	ENTARCO SA	KRITIKOU CHRISTINE GR SA None		1	Yes	Yes
3	WO2010148323	DIAGNOSIS AND TREATMENT OF DISEASES OR DISORDERS ASSOC	US20090268933P	2009-06-18	WHITTEMORE PETERSON INSTI	MIKOVITS JUDY A US LOMB	WO2010148323A3 US2010167268A1	4		
4	WO2010148006	HEPATITIS C VIRUS INHIBITORS	US20090187374P	2009-06-16	ENANTA PHARM INC	OR YAT SUN US PENG XIAO	US2011008288A1 US2010316607A1	3	Yes	Yes
5	WO2010144806	PROTEASE INHIBITORS	US20090186768P	2009-06-12	NEKTAR THERAPEUTICS	RIGGS-SALTHIER JENNIFER U	US2010144869A3	1		Yes
6	WO2010143207	TASTE-MASKED ORAL FORMULATIONS OF INFLUENZA ANTIVIRAL	IN2009MU01405	2009-06-11	RUBICON RESEARCH PRIVATE L	PILGAONKAR PRATIBHA SUDHI	None	1	Yes	Yes
7	WO2010132664	COMPOSITIONS AND METHODS FOR DRUG DELIVERY	US20090467230	2009-05-15	BAXTER INTERNATIONAL INC.	RABINOW BARRETT US BAI	US2010290983A1	2		
8	WO2010132663	PEGYLATED AZAPEPTIDE DERIVATIVES AS HIV PROTEASE INHIBIT	US20090216086P	2009-05-13	CONCERT PHARMACEUTICALS	HARBESON SCOTT L US TU	None	1	Yes	
9	WO2010132511	METHODS OF REDUCING THE RISK OF DRONEDARONE USE IN CE	US20090177409P	2009-05-12	SANOFI	SCARAZZINI LINDA US	US2010320099A1	2	Yes	
10	WO2010132494	COMPOUNDS AND METHODS FOR TREATING AIDS AND HIV INFE	US20090177086P	2009-05-11	GHOSH ARUN K	GHOSH ARUN K US	None	1	Yes	
11	WO2010132163	MACROCYCLIC COMPOUNDS AS HEPATITIS C VIRUS INHIBITORS	US20090177853P	2009-05-13	ENANTA PHARM INC	GAI YONGHUA US OR YAT S	US2011033420A1	2	Yes	Yes
12	WO2010127272	HYDROXYETHYLAMINO SULFONAMIDE DERIVATIVES	US20090214977P	2009-04-30	CONCERT PHARMACEUTICALS	HARBESON SCOTT L US TU	US20103035173A1	2	Yes	
13	WO2010127099	PHARMACEUTICAL COMPOSITIONS COMPRISING EPA AND A CAR	US20090173759P	2009-04-29	AMARIN CORP PLC	MANUK MEHAR GB ROWE	None	1	Yes	Yes
14	WO2010122087	METHODS FOR IMPROVING PHARMACOKINETICS	US20090172722P	2009-04-25	F. HOFFMANN-LA ROCHE AG	TRAN JONATHAN C Q US	US2010272682A1	2	Yes	
15	WO2010121351	USE OF (HEXENOYL TRANS-3)HGRF[1-44]NH2 AND RITONAVIR IN	IN2009MU01862P	2009-04-20	THERATECHNOLOGIES INC	MARSOLAIS CHRISTIAN CA	US2010267635A1 WO2010121351A8	2		
16	WO2010116248	ORGANIC COMPOUNDS AND THEIR USES	US20090168408P	2009-04-10	NOVARTIS AG	BRANDL TRIKI CH RAMAN F	UY32551A US2010260709A1	3	Yes	Yes
17	WO2010115981	7-AZADISPIRO [3.0.4.1] DECAN-8-CARBOXAMIDES AS HEPATITIS	US20090168415P	2009-04-10	NOVARTIS AG	BRANDL TRIKI CH RAMAN F	UY32554A	3	Yes	Yes
18	WO2010111238	IMPROVED BIODEGRADABLE POLYMERS	US20090162653P	2009-03-23	MICELL TECHNOLOGIES INC	TAYLOR DOUGLAS US MCCL	WO2010111238A3 US2010256746A1	2	Yes	Yes
19	WO2010107831	NANOCARRIER COMPOSITIONS AND METHODS	US20090160575P	2009-03-16	RUTGERS, THE STATE UNIVERSI	SINKO PATRICK J US STEIN S	None	1		Yes
20	WO2010100381	NOVEL ANTIVIRAL AGENT	FR20090051347	2009-03-04	CENTRE NATIONAL DE LA RECH	CHABRIERE ERIC FR ELIAS N	FR2942717A1 FR2942717B1	2	Yes	
21	WO2010099527	HEPATITIS C VIRUS INHIBITORS	US20090156131P	2009-02-27	ENANTA PHARM INC	QIU YAO-LING US CE WANG	US2010260715A1 US2010233122A1	3	Yes	Yes
22	WO2010099458	COMBINATION OF A NUCLEOSIDE POLYMERASE INHIBITOR WITH	US20090156414P	2009-02-27	INTERMUNE INC F. HOFFMAN	PORTER STEVEN B US BRAC	US2010221217A1	3	Yes	Yes
23	WO2010096462	LINKED DIIMIDAZOLE DERIVATIVES	US20090153234P	2009-02-17	ENANTA PHARM INC	OR YAT SUN US PENG XIAO	US2010226883A1 US2010221216A1	2	Yes	Yes
24	WO2010091413	LINKED DIBENZIMIDAZOLE DERIVATIVES	US20090151079P	2009-02-09	ENANTA PHARM INC	QIU YAO-LING US WANG CE	US2010221215A1 US2010266543A1	2	Yes	Yes
25	WO2010089767	DUAL RELEASE PHARMACEUTICAL SUSPENSION	IN2009DE00030	2009-01-09	PANACEA BIOTECH LTD	JAIN RAJESH IN SINGH SUKI	None	1		
26	WO2010089763	POLY(N-VINYL CAPROLACTAM-CO-ACRYLAMIDE) MICROPARTICLE	IN2008MU01366	2008-06-30	RELIANCE LIFE SCIENCES PVT L	VADDE RAMESH BABU IN R	WO2010089763A3	1		
27	WO2010086844	POLYMORPHS OF DARUNAVIR	US20090148055P	2009-01-29	MAPI PHARMA HK LTD	MAROM EHUD IL	None	1	Yes	
28	WO2010077740	NOVEL ANTIVIRAL COMPOUNDS, COMPOSITIONS, AND METHOD	US20080120948P	2008-12-09	CYTOKINE PHARMASCIENCES IF	SIELECKI-DZURDZ THAIS M US	WO2010077740A3	1	Yes	Yes
29	WO2010077734	NOVEL ANTIVIRAL COMPOUNDS, COMPOSITIONS, AND METHOD	US20080120939P	2008-12-09	CYTOKINE PHARMASCIENCES IF	SIELECKI-DZURDZ THAIS M US	WO2010077734A3	1	Yes	Yes
30	WO2010077317	PROTEASE INHIBITORS	US20080138428P	2008-12-17	AMPLIX PHARMACEUTICALS IN	MUTZ MITCHELL US BARR H	WO2010077317A3	1	Yes	Yes
31	WO2010077061	PHARMACEUTICAL FORMULATIONS CONTAINING ANTIVIRAL DRU	US20080141983P	2008-12-31	HANALL BIOPHARMA CO., LTD	KIM SUNG WUK KR JUN SU	WO2010077061A3	1		
32	WO2010075065	METHODS FOR ENHANCING THE RELEASE AND ABSORPTION OF	US20080122497P	2008-12-15	BANNER PHARMACAPS INC	FATMI AQEEL US KIM TAE K	US2011052682A1	3		
33	WO2010068899	NANOPARTICLES COMPRISING COMBINATIONS OF ANTIRETROVI	US20080122139P	2008-12-12	CRIGHTON UNIVERSITY	DESTACHE CHRISTOPHER J US	None	1		
34	WO2010065118	ANTI-INFLAMMATORY COMPOSITIONS AND METHODS	US20080131508 US2008	2008-12-02	SEARETE LLC	HERDE RODERICK A US MALJ	US2010136094A1 US2010137246A1 US201013	3	Yes	
35	WO2010065079	ANTIBODIES TO IL-6 AND USE THEREOF	US20060801412P	2006-05-19	ALDER BIOPHARMACEUTICALS	GARCIA-MARTINEZ LEON US	AR074227A1 US2009291089A1 JP201052761	17	Yes	
36	WO2010059883	DEGRADABLE HYDROGEL COMPOSITIONS AND METHODS	US20080115962P	2008-11-19	RUTGERS, THE STATE UNIVERSI	SINKO PATRICK JOHN US DE	None	1		Yes
37	WO2010057048	THERAPIES FOR HEMATOLOGIC MALIGNANCIES	US20080114434P	2008-11-13	CALISTOGA PHARMACEUTICAL	GALLATIN MICHAEL W US U	US2010202963A1	4	Yes	Yes
38	WO2010047819	HYDROXYETHYLAMINO SULFONAMIDE DERIVATIVES	US20080197190P	2008-10-24	CONCERT PHARMACEUTICALS	HARBESON SCOTT L US MA	WO2010047819A8	1	Yes	
39	WO2010045266	THERAPEUTIC ANTIVIRAL PEPTIDES	US20080105766P	2008-10-15	INTERMUNE INC	SEIWERT SCOTT US BEIGELI	AR073880A1 US20101119479A1	5	Yes	Yes
40	WO2010041241	HIV-1 INTEGRASE DERIVED PEPTIDES AND COMPOSITIONS	US20080103036P	2008-10-06	YISSUM RESEARCH DEVELOPMI	LEVIN AVIAD IL HAYDUKA Z	WO2010041241A3	2	Yes	
41	WO2010038237	COMPOSITIONS EXHIBITING DELAYED TRANSIT THROUGH THE G	IN2008MU02020	2008-09-22	RUBICON RESEARCH PRIVATE L	PILGAONKAR PR	None	1		Yes
42	WO2010037566	IMPROVED NANOPARTICULATE COMPOSITIONS OF POORLY SOLU	EP20080165747	2008-10-02	CAPSULATION PHARMA AG	GONZALES FERR	None	1		
43	WO2010037402	MOLECULAR VACCINES FOR INFECTIOUS DISEASE	DK20080001384 US2008	2008-10-02	DAKO DENMARK A/S	SCHODLER JOE	None	1		
44	WO2010036937	DISSOLUTION OF ARTERIAL PLAQUE	US20050739143P	2005-11-22	Z & Z MEDICAL HOLDINGS, INC	ZADINI FILBERT	None	1		
45	WO2010033614	STABLE SOLID ORAL DOSAGE CO-FORMULATIONS	US20080097479P	2008-09-16	SEQUOIA PHARMACEUTICALS	LUDTKE DOUGL	None	1		
46	WO2010017432	PHARMACEUTICAL FORMULATIONS OF AN HCV PROTEASE INHIB	US20080086997P	2008-08-07	SCHERING CORP	SHETH ASHLESH	None	1		
47	WO2010014130	COMPOSITION AND METHOD TO PREVENT OR REDUCE DIARRHE	US20080125250	2008-07-28	DIGESTIVE CARE INC	SIPOS TIBOR US DAS SIMAN	US2010021505A1	2		
48	WO2010012466	ANTITUMOR PROPERTIES OF NO MODIFIED PROTEASE INHIBIT	US20080085555P	2008-08-01	GANIAL IMMUNOTHERAPEUTICS	MICOLETTI FERDINANDO IT	WO2010005770A8 WO2010005637A3 US200	4		
49	WO2010009335	DRUG DELIVERY MEDICAL DEVICE	US20080081691P	2008-07-17	MICELL TECHNOLOGIES INC	MCCLEAN JAMES B US TAYL	WO2010121187A2 WO2011009096A1 US201	14	Yes	
50	WO2010000459	CYCLOPROPYL POLYMERASE INHIBITORS	EP20080159396	2008-07-01	CENTOCOR ORTHO BIOTECH IN	JONCKERS TIM HUGO MARIA	AP2010055050D UY31950A EP2141172A1	10	Yes	Yes

WO1994014436

Annual Statistics <> Landscape <> Prior art

■ Size of patent collection for landscape report

- Macro level >10 000
- Meso level 1000 – 10 000
- Micro level <1000

<> patentability search: 1-20

■ Search methodology and scope of search; data cleaning

- Tailored searches for specific technology
 - Recall: Need to find all relevant patents ?
 - Precision: Can we tolerate noise, ie irrelevant patents ?
- Generic searches
 - Predefined technology concepts/spaces (e.g. IPC codes)
 - Predefined time periods/geographies

Patent Landscaping/Mapping stages

- **Defining scope of search/analysis**
- **Patent search and preparation** of a **Collection of patents**, e.g.
 - patents claiming inventions related to biofuel
 - patents filed by company X
 - patents filed in Brazil in 2012
- +
- **Cleaning, Ordering and Analysis** of collection
- +
- **Visualization** ("patent mapping") + narrative/explanation
- (+
- **Deriving conclusions, recommendations***)

***delicate task !**


Patent information analyses

- Patent information is available as
 - **structured data**: bibliographic data (metadata; INID codes)
 - **unstructured data**: description, claims, sequence listings
 - **(image data**: drawings, chemical formula)

- **Data mining**: structured data enable an easy
 - statistical analysis (e.g. applications per year, per IPC, per office)
 - network analysis
- **Text mining** of unstructured descriptions/claims/abstracts
 - Determining linguistic (semantic) content/meaning/concepts
 - Similarity between documents (clustering)
- **(Intellectual analysis**, e.g. claim analysis for FTO)

Structured/fielded data ("PDF view")

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World **Classifications** 

(43) International Publication Date **5 July 2007 (05.07.2007)** PCT (10) International Publication Number **WO 2007/076115 A2**

(51) International Patent Classification: **5727-107th Street, Edmonton, Alberta, T6G 2E9 (CA).**
A01H 5/00 (2006.01) *C12N 15/82* (2006.01) **THEODORIS, George** [US/US]
C12N 9/10 (2006.01) *C12N 5/04* (2006.01) **Vallejo, CA 94591 (US).**


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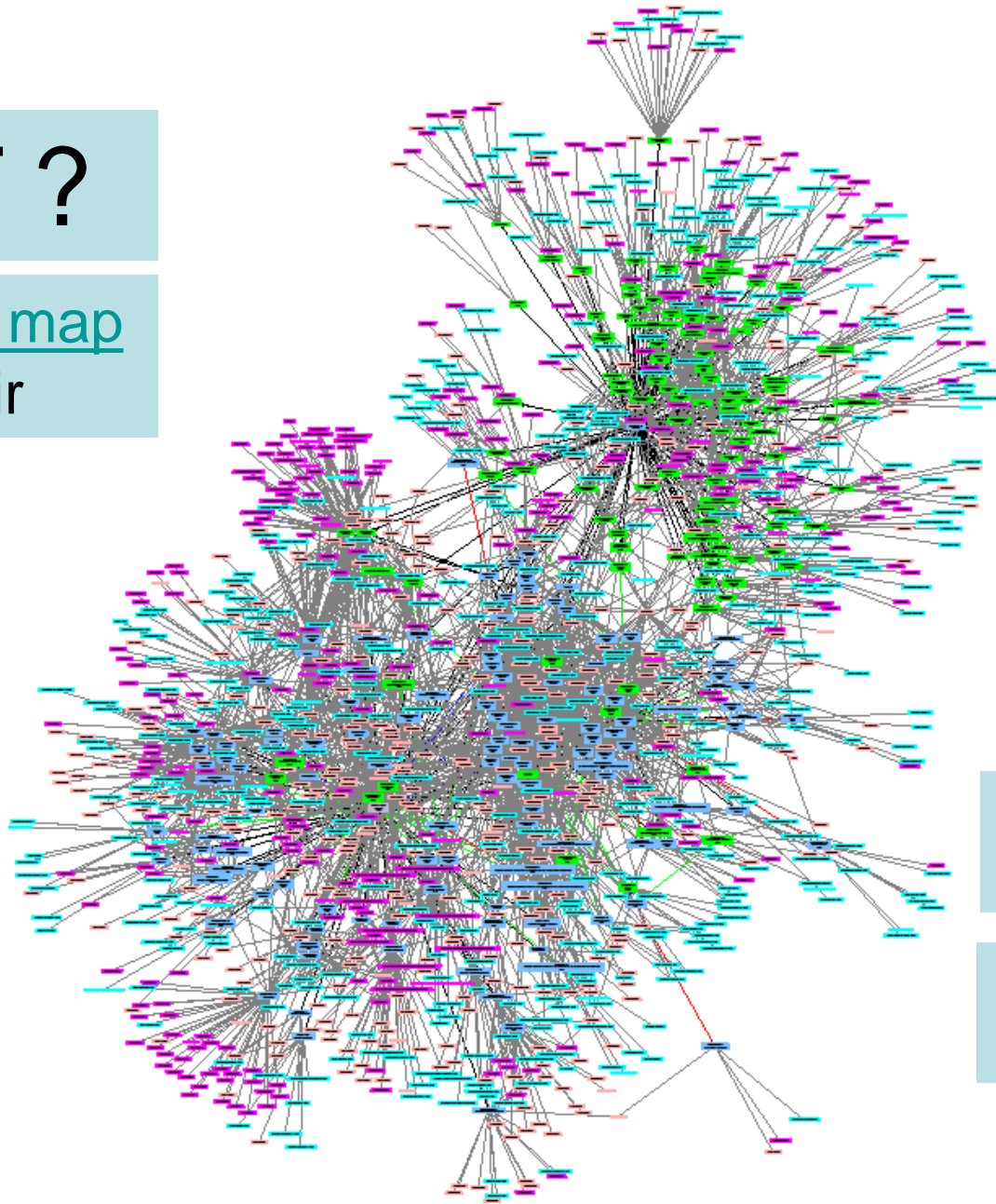
(54) Title: **NITROGEN-EFFICIENT MONOCOT PLANTS** **Title** *(Continued on next page)*



WORLD INTELLECTUAL PROPERTY ORGANIZATION

ART ?

Citation map
Ritonavir



Each box:
Patent family

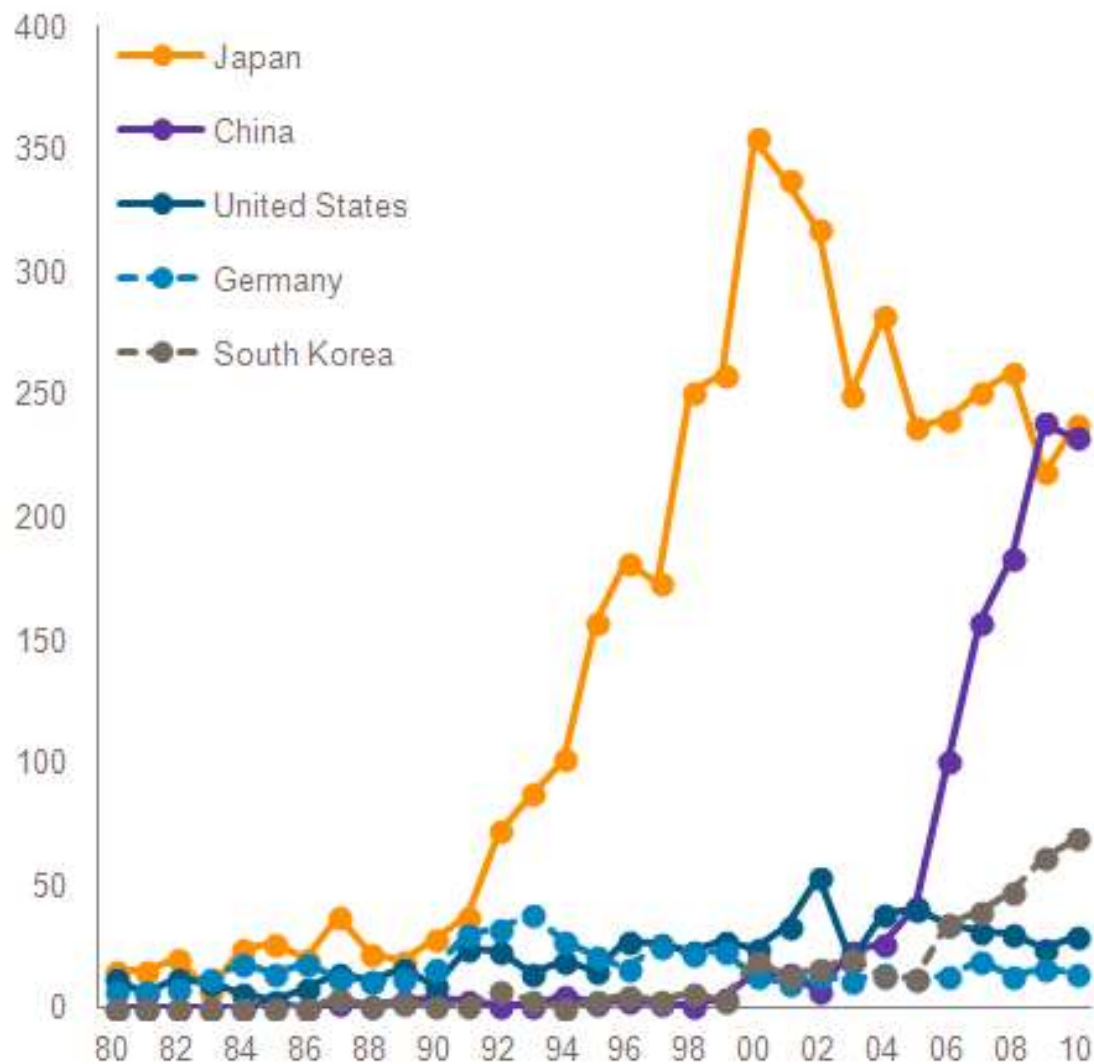
Each line:
Citation relation

Patent Information analyses

- What can we learn from such a network graph?
 - At first: Little
 - Too many details

- > Dig deeper: **mining of data for relevant details**
 - Data mining
 - Text mining
 - By using specific tools

Electronic waste management: top 5

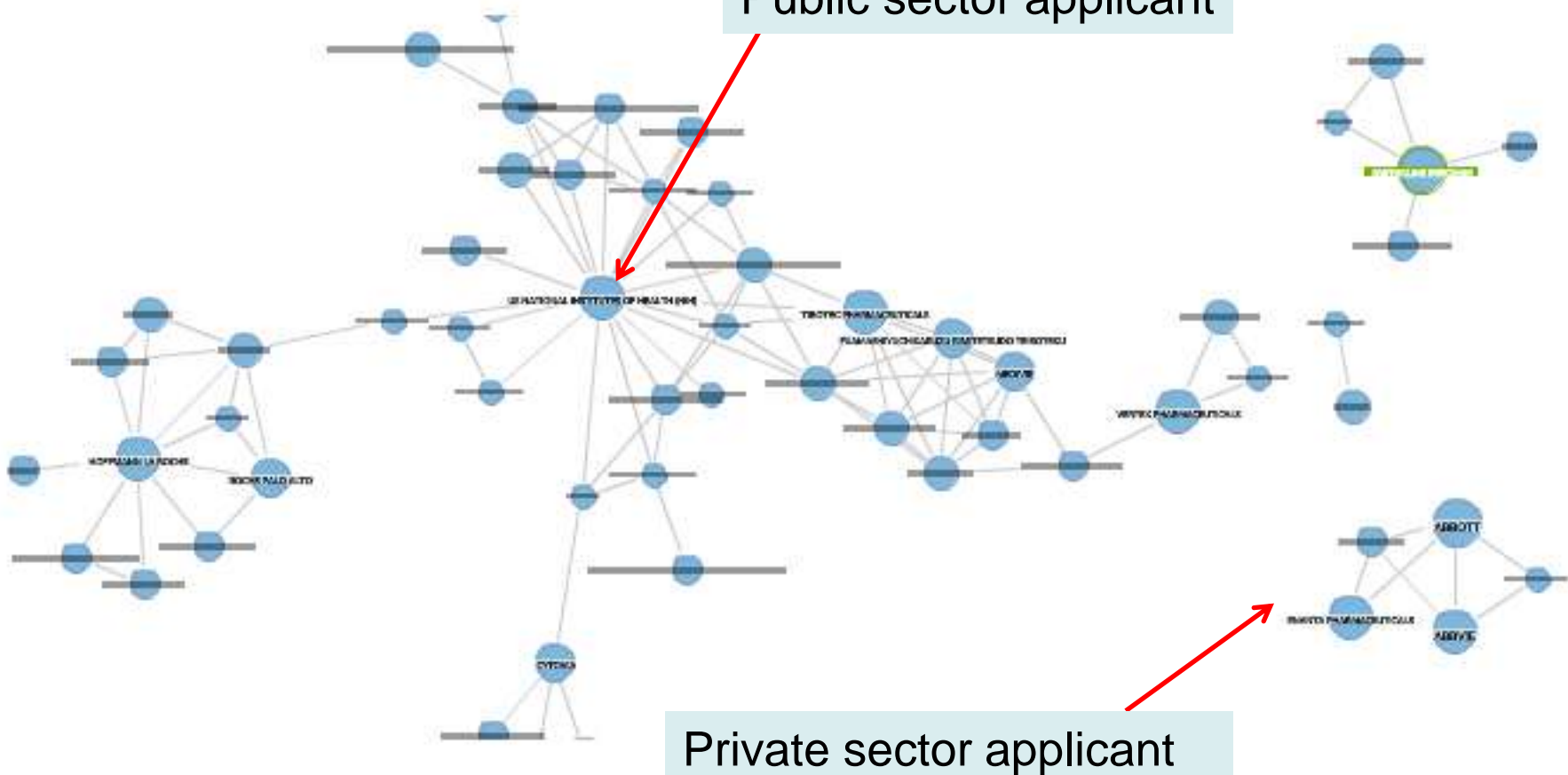


Statistical analysis
as an example of
“data mining”

Ritonavir co-assignments

Network analysis“ as an example of data mining

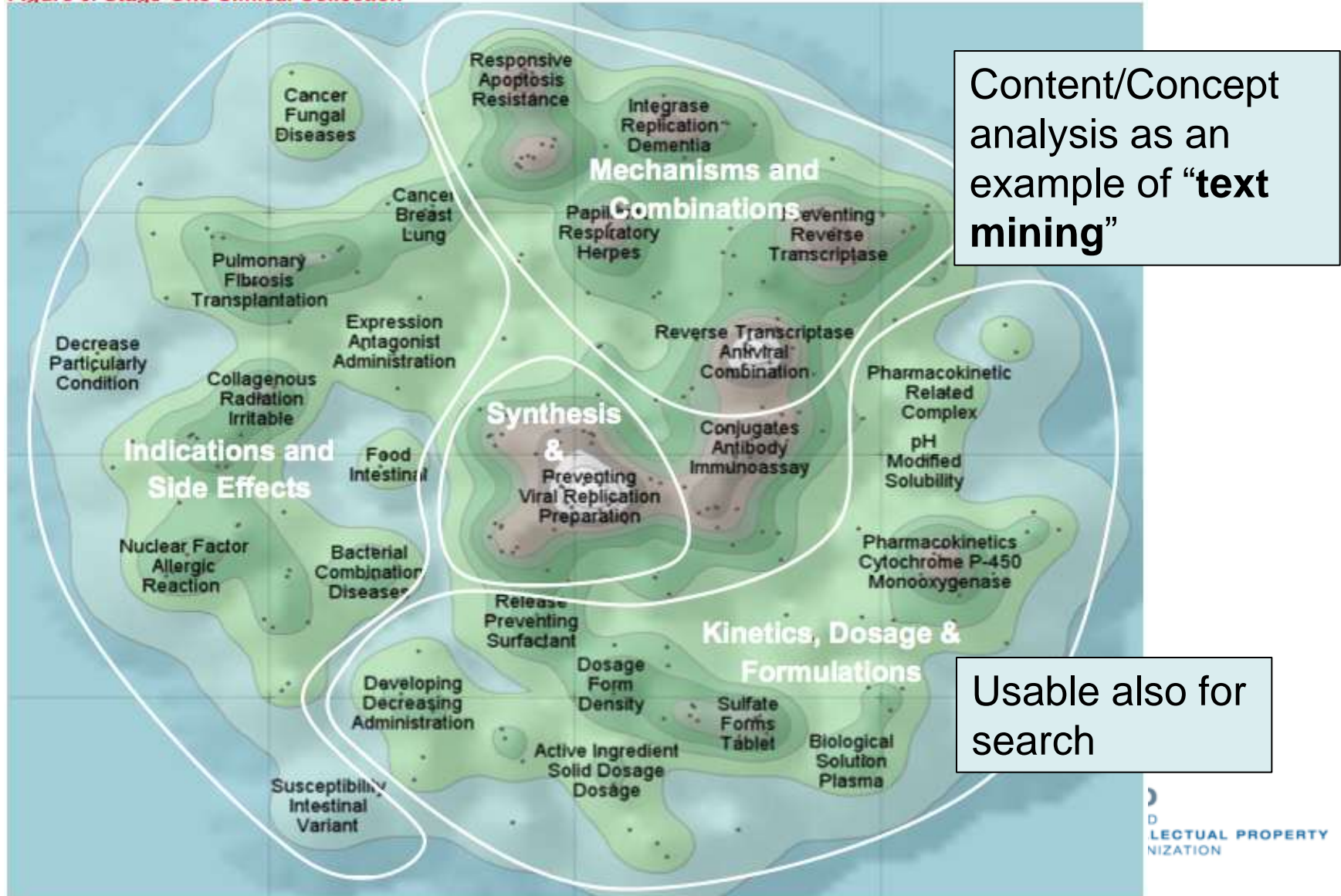
Public sector applicant



Private sector applicant

Atazanavir patent cluster map

Figure 6. Stage-One Clinical Collection



Business questions

- Which technology trends exist and how have they developed over time?
Emerging trends? Diversity of technologies?
- Where are the crowded areas ?
- Is it worth investing money in the development of a particular technology, or are there already solutions for our technical problem ?
 - Don't reinvent the wheel!
 - E.g. preparing request for research funding
- Are there any gaps or white spaces, i.e. areas with little patent protection, that permit business opportunities ?
 - What further applications or uses are possible ?
 - Which further adaptations or embodiments could be explored ?
 - What is not yet covered by patent claims ?

Business questions

- Which players are the most active ?
- Which other patents are most relevant for our own activities ?
 - Infringement, licensing-in, collaborations
- Is there freedom to operate ?
- Does a product infringe patent rights ?
- Which patents are about to expire ? Which technologies move in the public domain and provide business opportunities ?
- Patent portfolios of companies ? Their value?
- Who bought or sold IP rights ?
- What is the value of a patent portfolio ?
 - Preparing merger and acquisitions

Thank You for Your Attention!

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