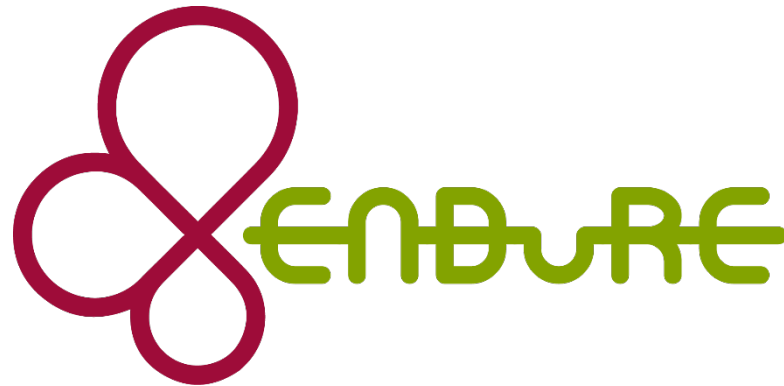




Technology Intelligence



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PART 1 – WHY PATENTS

A common view about patents

A common view about patents



A wider view about patents



A wider view about patents



A wider view about patents

Patents are not just **legal**, defensive tools to protect existing innovation and to consider *after* the development process has already taken place.

The patent corpus is a **business** tool, a goldmine of information that can be used, starting from the early stages of the innovation process, to create more value for the company.

IP and R&D

Patents are a unique source of technical information

80% of the information contained in patents is not available elsewhere (Terragno 1979, Kütt et al. 1998),

Only a part of 90M world patent corpus is still active.

Patents often anticipate publications or market launch

Invention	Patent	Elsewhere	Delay
Punched cards	1889	1914	25
Television	1923	1928	5
Jet engine	1936	1946	10
Cast iron	1939	1947	8

IP and R&D

Why studying the innovation scenario?

- Avoid reinventing the wheel (license + do R&D elsewhere)
- Keep updated on state of the art
- Use as an indicator of the degree of development
- Find ideas, inspiration or complementary technologies
- Inventive principles (see TRIZ)
- Import solutions from different field (crossover)
- Discover new clients or new applications for your invention

IP and business - market

- Protect your market share / deter copying
- Increase your market share, via direct patenting, buying, license, or M&A
- Enhance product and company image
- Mislead competitors
- Block area / solution, keeping off everyone else
- Aggressive threats, mining, trolling, etc.

IP and business - finance

- Generate patent licence revenues
- Foster cross-licence / partnerships w. third parties
- Improve negotiating position
- Attract investments (e.g. VC)
- Increase chances of other funding (e.g. banks)
- Increase value leveraging IP (e.g. in M&A)

IP and strategy

- Strategic comparison against competitors
- Identify potential partners and opportunities

insight

- Characterize recent technologies and their advantages and disadvantages
- Detect characteristic development patterns
- Identify technology trends

foresight

IP and start-up

- Patents are very important for reputation / promotion
- Patents are sometimes the only parameter to value start-ups
- Patents attract investments. The broader the technical areas covered, the better
- Start-ups tend to underestimate the presence of potential competitors with alternative technologies, as well as legal risks.

A case of too much aggressive strategy



Beta
B

VS.



- Sony had a very aggressive strategy on Betamax cassettes
 - JVC was less protective on the licensing of his VHS
- ⇒ Betamax, despite a higher quality, lost the market and VHS became a standard and a great success for JVC

Example courtesy of Domenico Golzio, EPO

A case of non aggressive strategy



- Philips had a free-license policy for his Music cassettes provided the mechanical dimensions were not changed
- MCs became standard and Philips got the “backward compatibility”, i.e. cassette from other manufacturers could be used on their music recorders/reproducers

Example courtesy of Domenico Golzio, EPO

IP is pervasive



© Nokia

Example courtesy of Domenico Golzio, EPO

IP is pervasive

Trade marks:

- Made by "Nokia"
- Product "N95"
- Software "Symbian", "Java"



© Nokia

Copyrights:

- Software code
- Instruction manual
- Ringtone

Trade secrets

Patents:

- Data-processing methods
- Semiconductor circuits
- Chemical compounds

Designs (some registered):

- Form of overall phone
- Oval shape of buttons' arrangement
- 3-dimensional wave form of buttons

Example courtesy of Domenico Golzio, EPO

Anticipating some questions

Patents are granted to inventions which are Novel, Inventive (non obvious), suitable for Industrial Application when considered against the Prior Art.

An **invention** means an idea of an inventor which permits in practice the solution to a specific problem in the field of technology.

Industrial application implies **possibility**, not probability.

Prior art: EVERYTHING made available to the **public**, by any means, e.g. oral or written description, use etc before the **filing date** of the application.

Beware of “self-made” prior art !

Anticipating some questions

The following **are not considered to be inventions** in EU:

- Discoveries, scientific theories and mathematical methods
- Aesthetic creations
- Schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers
- Presentations of information
- Inventions whose commercial exploitation would be contrary to "ordre public" or morality
- Plant or animal varieties or essentially biological processes for the production of plants or animals
- Methods for treatment of the human or animal body by surgery or therapy; diagnostic methods practised on human or animal body

Anticipating some questions

Program for computer "as such" is excluded from patentability, but...
Not excluded from patentability if, when running on a computer, it causes a "**further technical effect**" going beyond the "normal" physical interaction between program (software) and computer (hardware).

Example 1: A program for controlling an x-ray apparatus having instructions adapted to carry out the following steps: Step 1, Step 2, ..., Step n

Further effect generated by the program running on a computer:
Control of the x-ray apparatus. This further effect is technical.

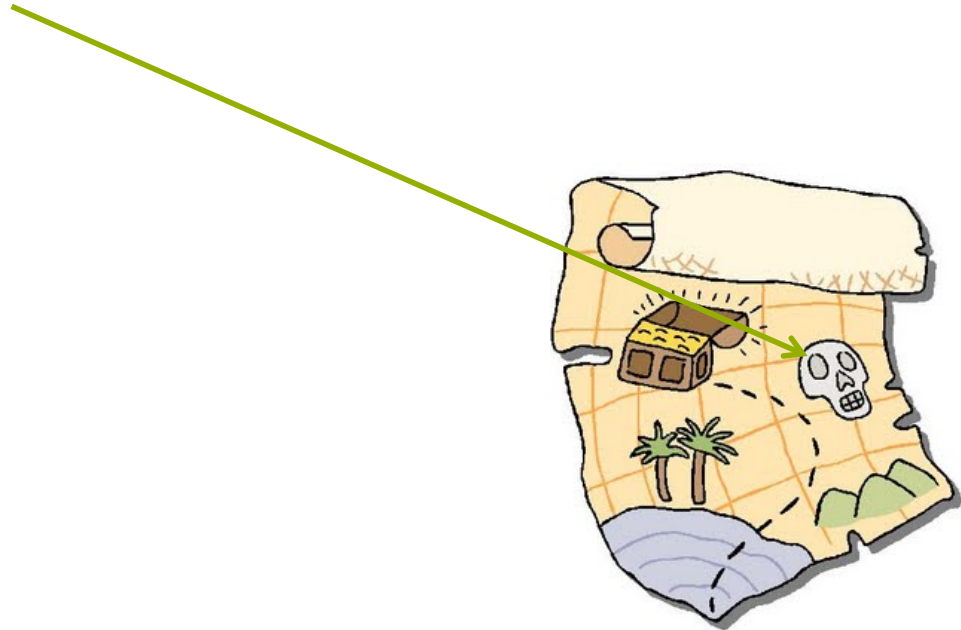
Example 2: A program for checking the spelling of a word having the following instructions: Instruction 1, Instruction 2, ..., Instruction n
Further effect generated by the program running on a computer:
Decision of orthographic correctness. This further effect is not technical.

With a good map you can...



With a good map you can...

Spot obstacles...



With a good map you can...

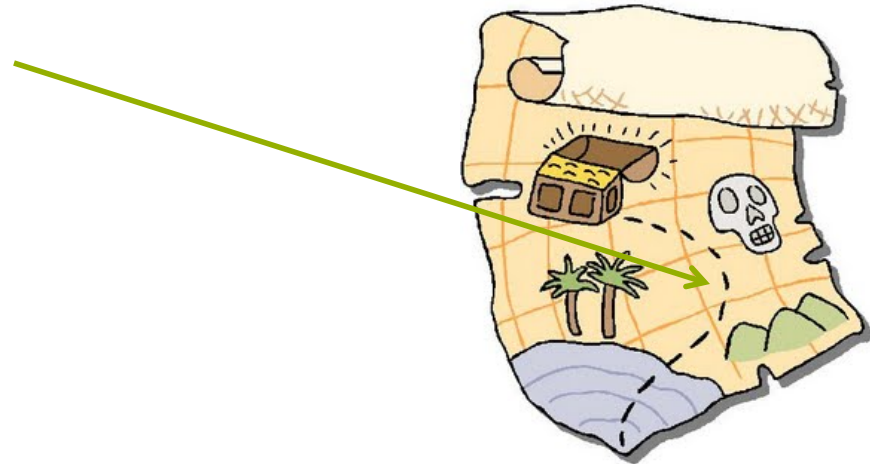
Spot obstacles... and find a way around them
(i.e. infringements ... and design around)



With a good map you can...

Spot obstacles... and find a way around them
(i.e. infringements ... and design around)

Explore new territories



With a good map you can...

Spot obstacles... and find a way around them
(i.e. infringements ... and design around)

Explore new territories
(i.e. guide R&D)

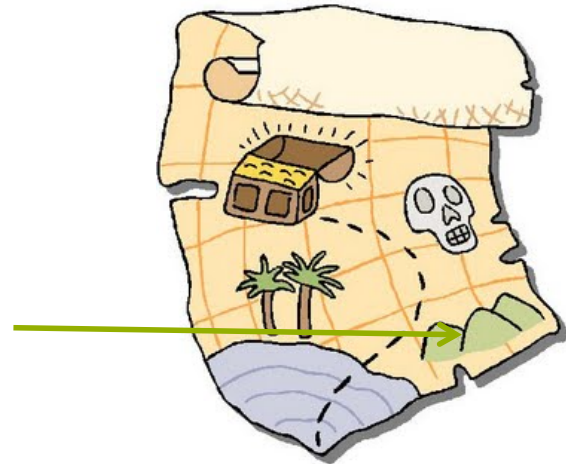


With a good map you can...

Spot obstacles... and find a way around them
(i.e. infringements ... and design around)

Explore new territories
(i.e. guide R&D)

Detect technical trends
Track competitors, partners, clients



With a good map you can...

Spot obstacles... and find a way around them
(i.e. infringements ... and design around)

Explore new territories
(i.e. guide R&D)

Detect technical trends
Track competitors, partners, clients
(i.e. competitive intelligence)



With a good map you can...

Spot obstacles... and find a way around them
(i.e. infringements ... and design around)

Explore new territories
(i.e. guide R&D)

Detect technical trends
Track competitors, partners, clients
(i.e. competitive intelligence)

Find hidden treasures



With a good map you can...

Spot obstacles... and find a way around them
(i.e. infringements ... and design around)

Explore new territories
(i.e. guide R&D)

Detect technical trends
Track competitors, partners, clients
(i.e. competitive intelligence)



Find hidden treasures
(i.e. M&A, investments, license, new markets...)

The importance of the map

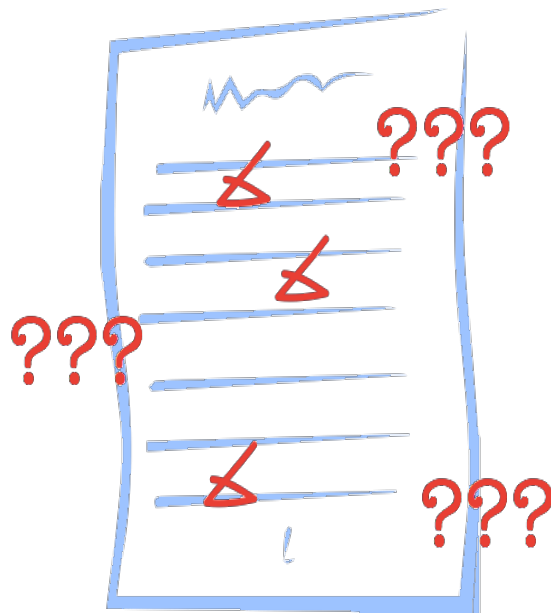
A proper analysis of IP landscape has the potential to address the above mentioned issues.

The **quality** of the patent search becomes then the limiting and crucial factor.

Detecting the *right set of the patents relevant for the technology* is the key for a successful analysis.

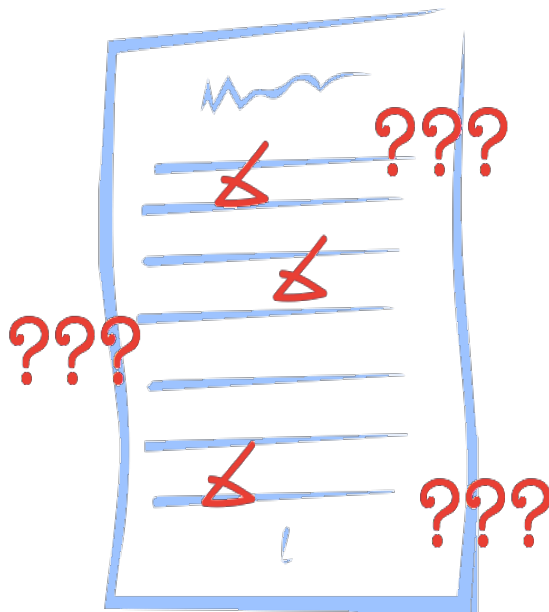
- A wrong definition of the search focus provides misleading or incomplete results.
- Inadequate recall loses important elements.
- Low precision and noise produce poor results.

Patent research can be a tricky task



Patent research can be a tricky task

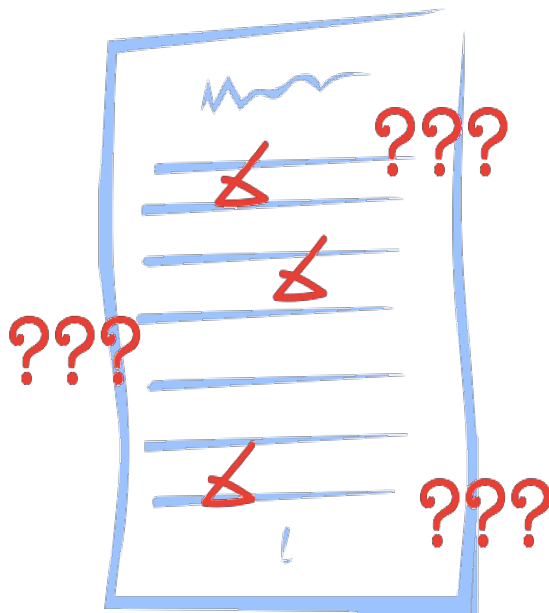
Content-related issues



- Great number of potentially relevant patents
- Signal to noise, not just recall vs precision
- Granularity, from single patent to whole field
- Methodology to select, compare, organize IP
- Presence of technical variants
- Partial overlap of content

Patent research can be a tricky task

Data-related issues



- Natural language: alternate spellings, synonyms, technical slang, polysemy
- Obscure or ambiguous language, often intentional
- Incompleteness, omissions: non-standard classes, “hidden” assignees, ...
- Plain mistakes by inventors, lawyers, or examiners

PART 2 – PATENTS AND INNOVATION

A case study

The initial condition

- Medium sized global company
- Company had already invested **2 million Euro** in the R&D of two devices
- Products were already at **prototype** stage when the study was performed

Goals

- File as many patents as possible, to guarantee **market exclusivity** and **attract investments**
- Awareness of **all competitors** movements; big players are known but small start-ups are not
- Need for a **Freedom to Operate** in US or **patentability** of inventions

Reducing the risk

Between the 2 devices, a total of **14 inventive ideas** has been identified as potential innovations to be protected

For each of the 14 ideas, scan of the patent db to look for similar solutions

Analysis of the most relevant documents. As a result:

- **4** ideas were truly new and could be **patented** straight away
- **6** ideas already exist in expired patents. Safe to use but **not patentable**
- **3** ideas in infringement of valid patents, but possible a **design around**
- **1** idea very similar to valid patent, but enough prior art to guarantee **FtO**

Increasing the value

- 3 solutions needed a design around of existing patents
- Mapping the IP scenario allowed to spot **gaps** that could be exploited as well as uncharted technical areas.
- Hints and useful technologies to be imported from different fields had also been looked for.
- Taking advantage of the previous analyses,
6 additional innovative **solutions** were designed
- As a result, the final devices were not just legally safer, the redesign **improved** their functionality even more.

Outcome

- Combining initial solutions and redesigned ones, company filed **7 patents**
- A full **Freedom to Operate** in the US market for the two devices
- The company attracted further **investors** for its project
- The two devices are now in the **market** and a third variant is on the way
- A pool of design solutions and a full **map** available for future reference

Tools to support design (and redesign)

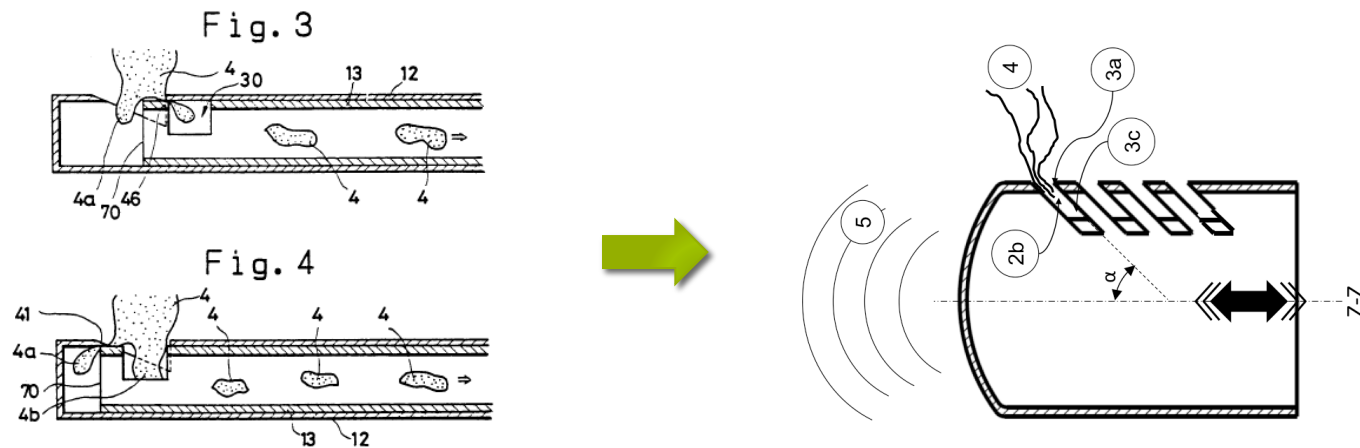
Is it possible to make the process systematic?

- Of course, good mapping to detect white spaces, crossover etc..
- “Creativity as an exact science”:
G. Altshuller and his 40 inventive principles
- Formalization of problems to find solutions by analogy.
- Functional analysis.
- Heuristics (*eu* = good + *risko* = to find).
-

How to design around

The starting point is mapping the **functionalities** of the product. Those functions must be maintained or increased.

- Find a different way (e.g. a different physical effect) to achieve the same goal / perform the same function.
- Remove a component and assign his function to another part.
- Remove harmful functions (if present), ...
-



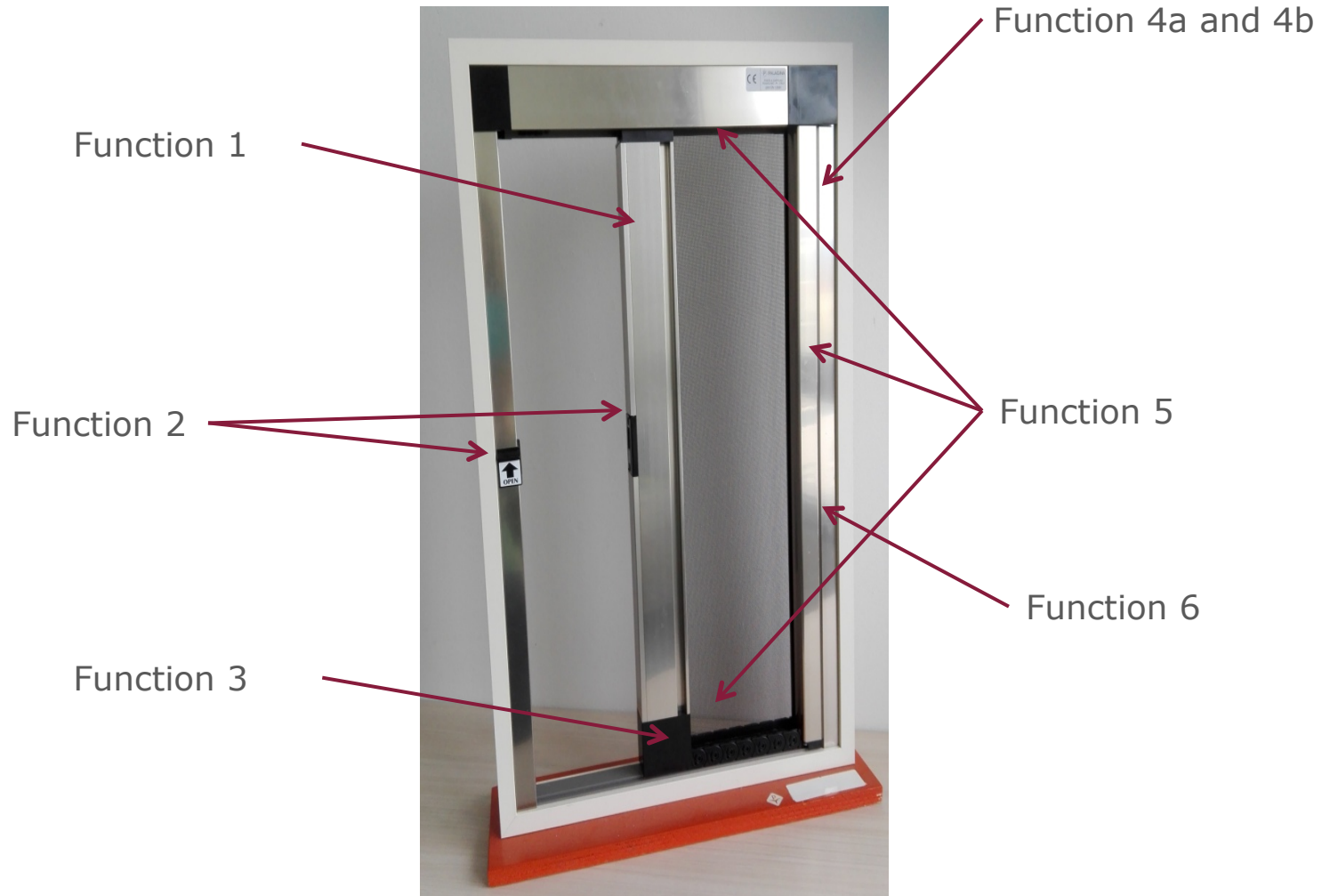
Patents and conceptual design

A well constructed patent map offers various advantages during the conceptual design stage (and the innovation process in general)

- Constitutes a reference map for brainstorming moderators
- Provides hints for idea generation to designers
- Avoid running into obstacles
- Allow to import solutions from different technical sectors
- Speed up the identification of complementary technologies
- Allow a systematic exploration of all functional variants (e.g. all the physical effects that could be used to obtain a certain goal)
- Supports with objective data the evaluation of ideas

Patents and conceptual design

Innovation of a mosquito net



Patents and conceptual design

Innovation of a mosquito net

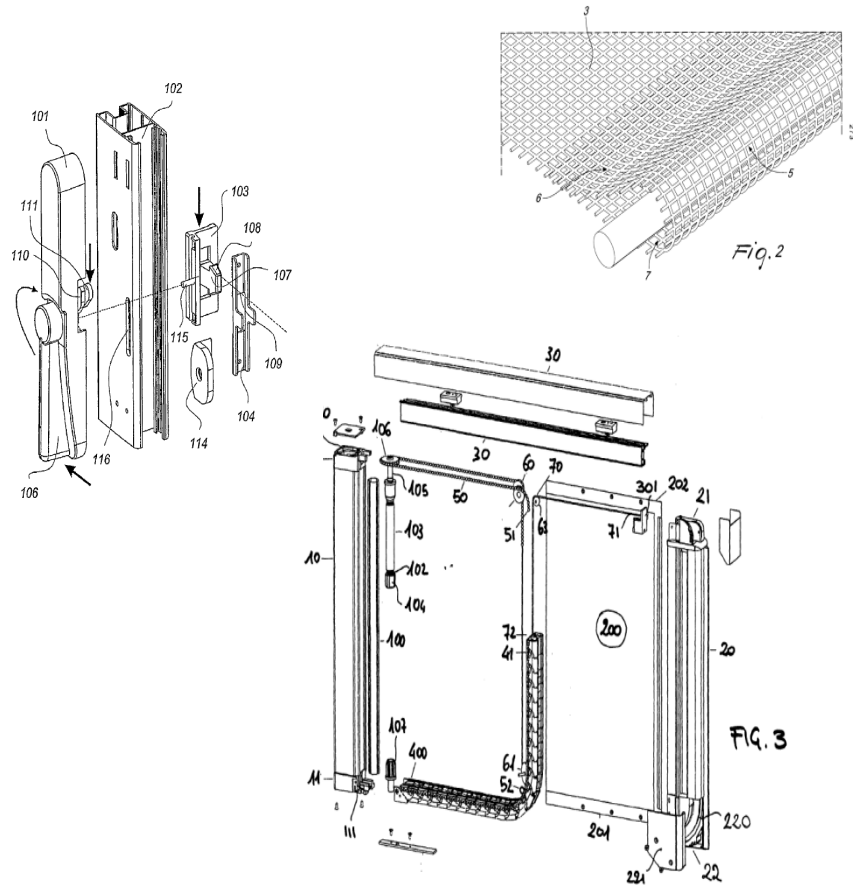
Function 1 → 400 patents

Function 2 → 600 patents

Function 3 → 1000 patents

Function 4 → 1300 patents

Function 5 → 1100 patents



Patents and conceptual design

Innovation of a mosquito net

Function 1 → 28 concepts

Function 2 → 56 concepts

Function 3 → 40 concepts

Function 4 → 75 concepts

Function 5 → 20 concepts

After evaluation, 3 final prototypes



PART 3 – PATENTS AND COMPETITION

Understanding the market



BIOINFORMATICS

Of course big players are present, but 3/4 of the patents in the field come from specialized companies, research centres, start-ups

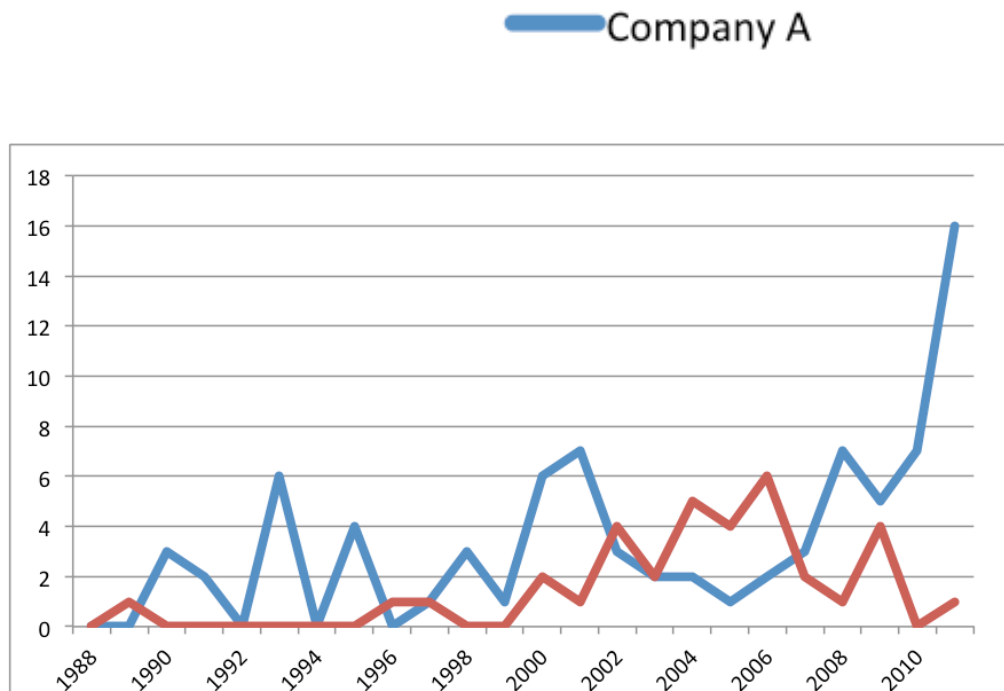


GAS TURBINES COMPONENT

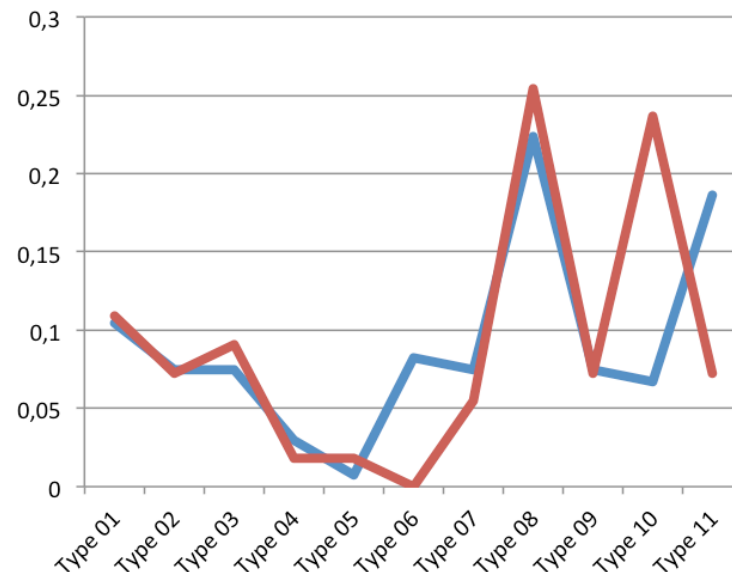
Large companies dominate.
Among them GE detains almost half of the patents

- Single inventor(s)
- Public (research, government)
- Small and Medium enterprises
- Large enterprises

Understanding the market

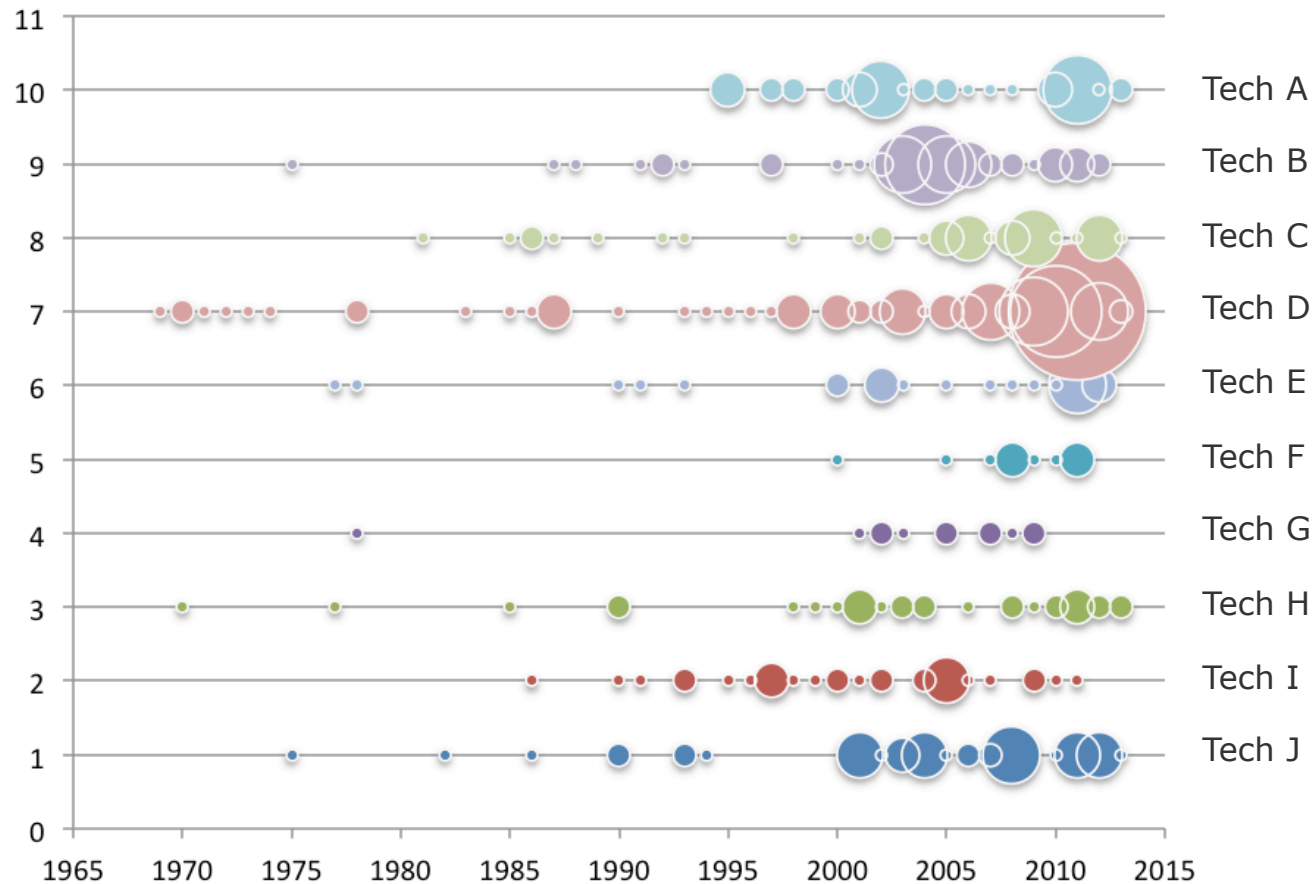


Filing activity over years



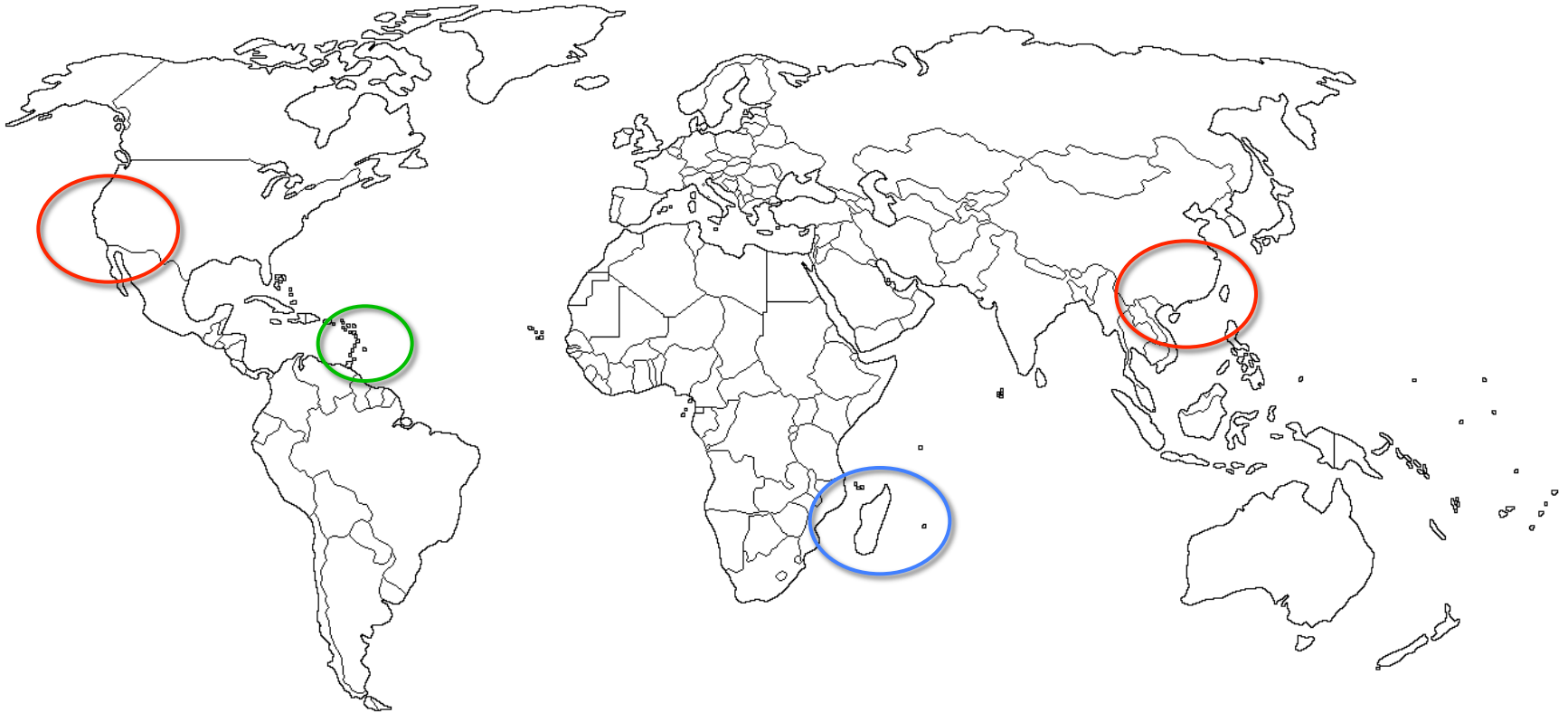
Filing activity over sectors

Comparative evolution of similar techs



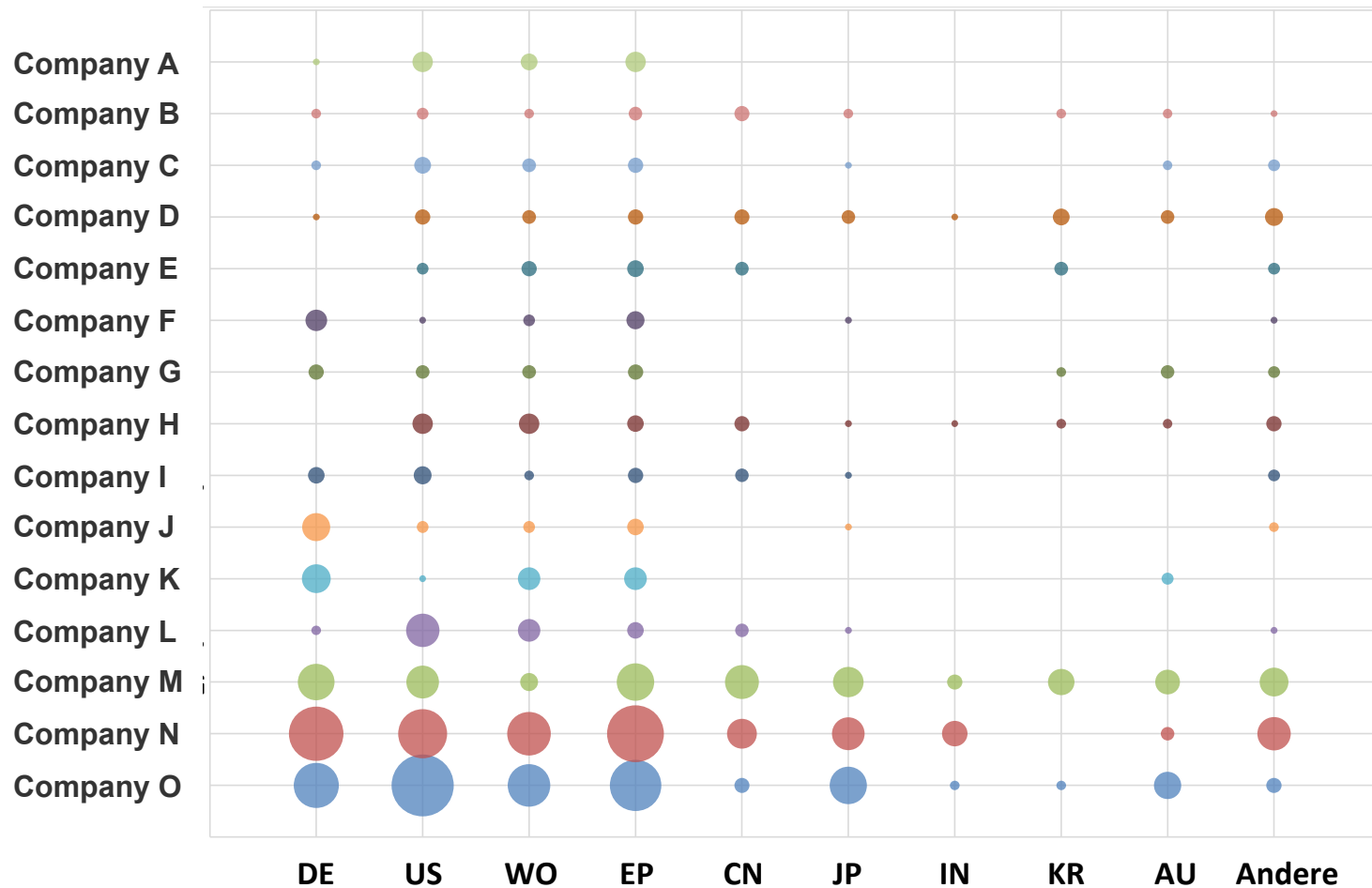
Activity by year in each technical area (can be done for individual assignee)

Understanding the market



Where is the action taking place? Geographical distribution of assignees.

Understanding the market



Where is the action taking place - take 2: extensions to various jurisdictions.

Threats and opportunities

- Usually companies already monitor their direct competitors. However threats can come also from start-ups (newcomers), parties external to the sector (incomers), or even “friends” such as suppliers or existing clients.
- The study of changes of ownership characterizes the market and highlight potential dangers.
- On the positive side, the patent landscape can help to identify possible technical partners or potential clients.
- The same analysis also allows to identify the potential use of proprietary technologies in different markets.
- Indirectly, it is possible to forecast about materials and components availability.

Threats and opportunities

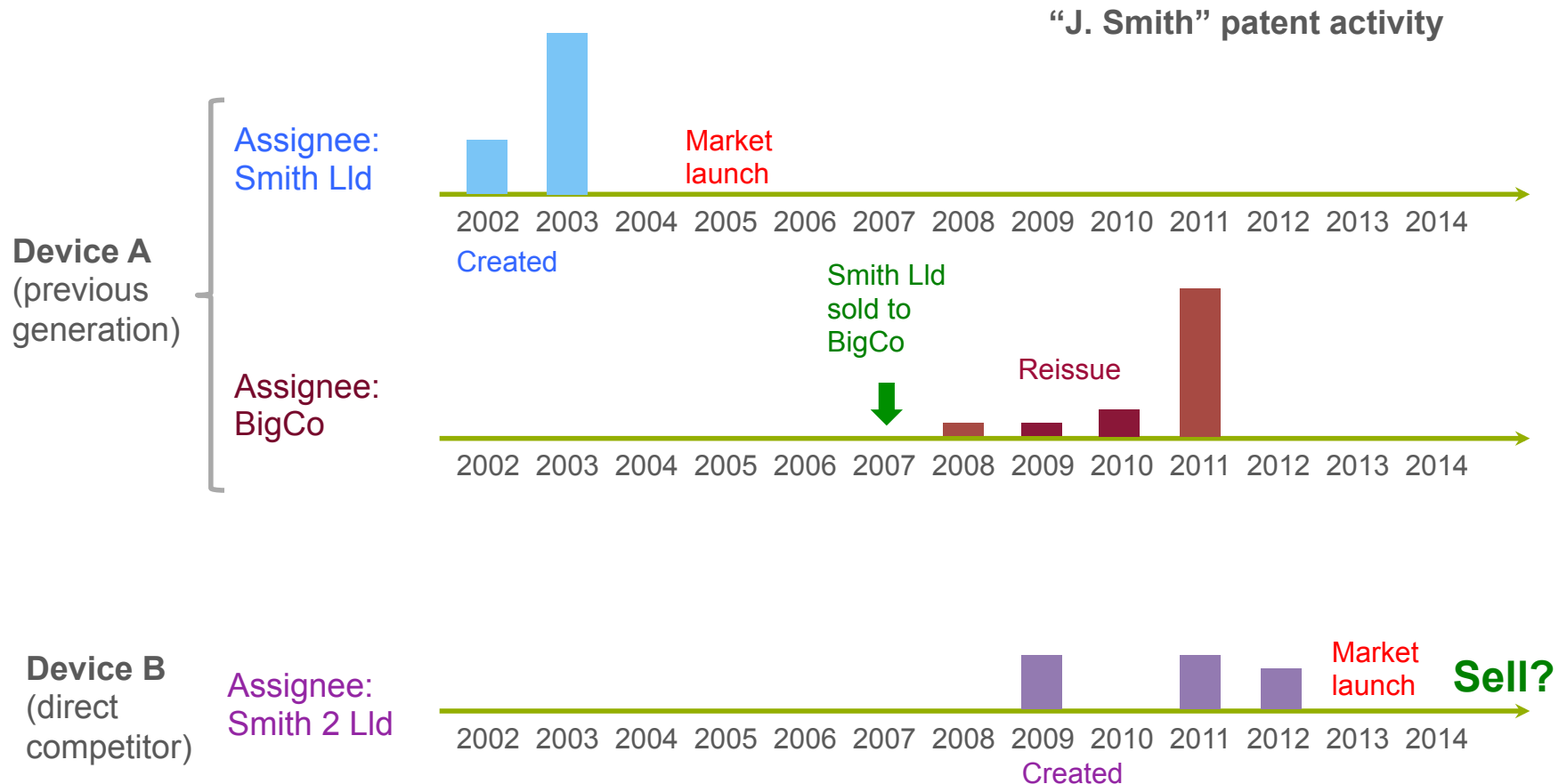
In the case study,

one of the client's planned solutions was infringing a patent by "J.Smith".

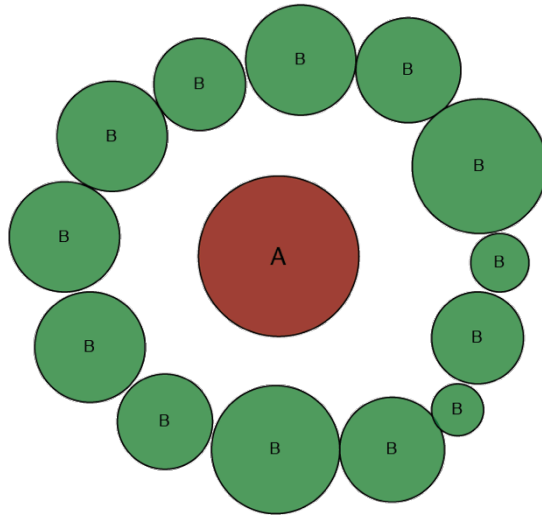
Such patent is owned by an independent, small start up.

Is it a danger or an opportunity?

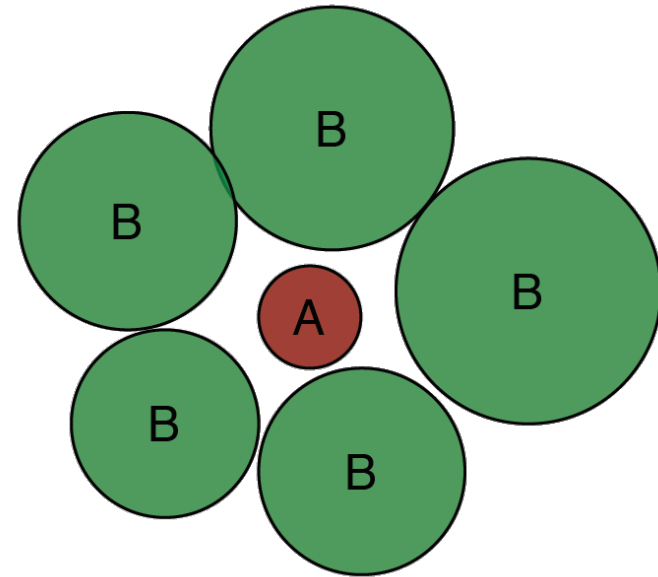
Threats and opportunities



Positioning a patent



Strong patent



Weak patent

Positioning a patent

Internal factors

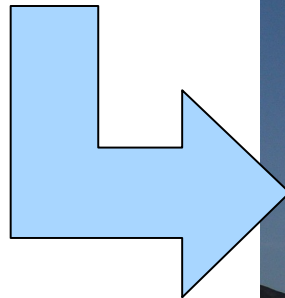
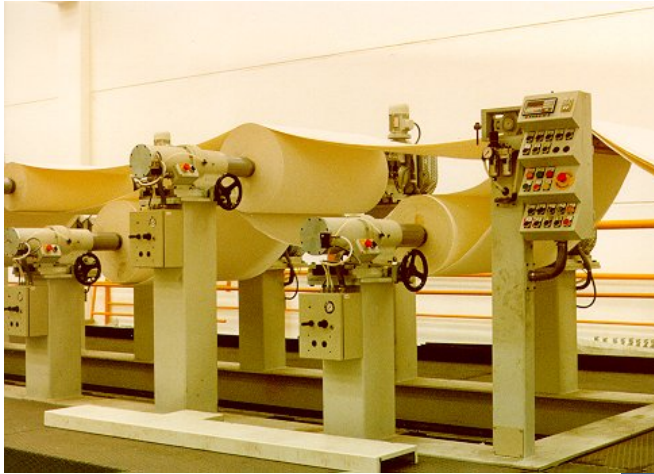
- Age of the patent
- Extension (EP, US, WO, ...)
- Status (A1, B1, ...)
- Quality of writing
- Quality of coverage
- Part of a strategy

External factors

- Trend of the field / IPC class
- Hype (e.g. Gartner)
- Number / type of other players
- Number of citations received
- Potential infringements

PART 4 – PATENTS AND STRATEGY

Crossover



Crossover and new markets

APPLICATION/CLASSES

MICRO-ORGANISMS OR ENZYMES COMPOSITIONS PROPAGATING, PRESERVING, OR MAINTAINING MICRO-ORGANISMS MUTATION OR GENETIC ENGINEERING CULTURE MEDIA

MEASURING OR TESTING PROCESSES INVOLVING ENZYMES OR MICRO-ORGANISMS (immunoassay G01N 33/53) COMPOSITIONS OR TEST PAPERS THEREFOR PROCESSES OF PREPARING SUCH COMPOSITIONS CONDITION-RESPONSIVE CONTROL IN MICROBIOLOGICAL OR ENZYMOLOGICAL PROCESSES

PREPARATIONS FOR MEDICAL, DENTAL, OR TOILET PURPOSES

SUGARS DERIVATIVES THEREOF NUCLEOSIDES NUCLEOTIDES NUCLEIC ACIDS

PEPTIDES

INVESTIGATING OR ANALYSING MATERIALS BY DETERMINING THEIR CHEMICAL OR PHYSICAL PROPERTIES

ELECTRIC DIGITAL DATA PROCESSING

FERMENTATION OR ENZYME-USING PROCESSES TO SYNTHESISE A DESIRED CHEMICAL COMPOUND OR COMPOSITION OR TO SEPARATE OPTICAL ISOMERS FROM A RACEMIC MIXTURE

SPECIFIC THERAPEUTIC ACTIVITY OF CHEMICAL COMPOUNDS OR MEDICINAL PREPARATIONS

NEW PLANTS OR PROCESSES FOR OBTAINING THEM PLANT REPRODUCTION BY TISSUE CULTURE TECHNIQUES

COMBINATORIAL CHEMISTRY LIBRARIES, e.g. CHEMICAL LIBRARIES, IN SILICO LIBRARIES

APPARATUS FOR ENZYMOLOGY OR MICROBIOLOGY

ANALOGUE COMPUTERS

PRESERVATION OF BODIES OF HUMANS OR ANIMALS OR PLANTS OR PARTS THEREOF BIOCIDES, e.g. AS DISINFECTANTS, AS PESTICIDES OR AS HERBICIDES PEST REPELLANTS OR ATTRACTANTS PLANT GROWTH REGULATORS

ANIMAL HUSBANDRY CARE OF BIRDS, FISHES, INSECTS FISHING REARING OR BREEDING ANIMALS, NOT OTHERWISE PROVIDED FOR NEW BREEDS OF ANIMALS

DATA PROCESSING SYSTEMS OR METHODS, SPECIALLY ADAPTED FOR ADMINISTRATIVE, COMMERCIAL, FINANCIAL, MANAGERIAL, SUPERVISORY OR FORECASTING PURPOSES SYSTEMS OR METHODS SPECIALLY ADAPTED FOR ADMINISTRATIVE, COMMERCIAL, FINANCIAL, MANAGERIAL, SUPERVISORY OR FORECASTING PURPOSES, NOT OTHERWISE PROVIDED FOR

HETEROCYCLIC COMPOUNDS (macromolecular compounds C08)

RECOGNITION OF DATA PRESENTATION OF DATA RECORD CARRIERS HANDLING RECORD CARRIERS

COMPUTER SYSTEMS BASED ON SPECIFIC COMPUTATIONAL MODELS

DIAGNOSIS SURGERY IDENTIFICATION (analysing biological material G01N, e.g. G01N 33/48)

ACYCLIC OR CARBOCYCLIC COMPOUNDS

BIOCIDAL, PEST REPELLANT, PEST ATTRACTANT OR PLANT GROWTH REGULATORY ACTIVITY OF CHEMICAL COMPOUNDS OR PREPARATIONS

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 PRESERVATION OF FOODS OR FOODSTUFFS, IN GENERAL

Pharmaceutical, agriculture, food processing, ...

Crossover and new markets

Company expanding to a new field, still in the R&D stage, interested in scouting business opportunities

Who will win?

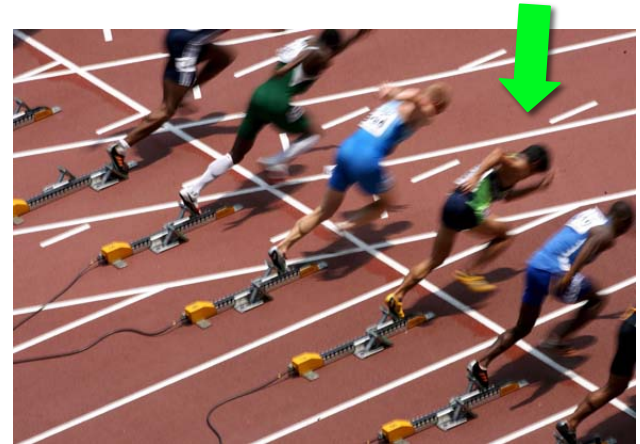


Crossover and new markets

Company expanding to a new field, still in the R&D stage, interested in scouting business opportunities

The client asked for...

- Smart classification of existing technologies
- Spot technical issues (even unexpected ones)
- Analysis of assignee, coverage, etc.
- **Ranking of significance** (given criteria)



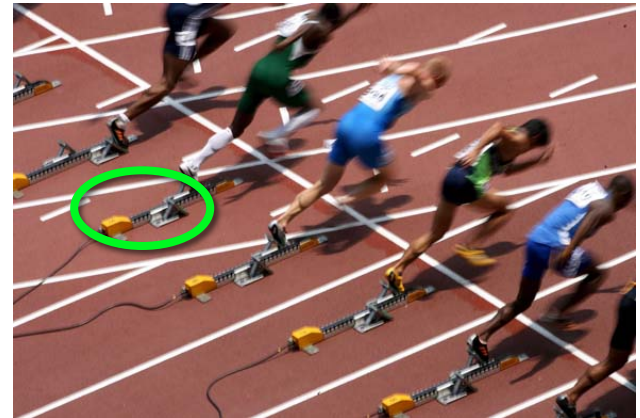
Crossover and new markets

Company expanding to a new field, still in the R&D stage, interested in scouting business opportunities

- Smart classification of existing technologies
- Spot technical issues (even unexpected ones)
- Analysis of assignee, coverage, etc.
- Ranking of significance (given criteria)

and it actually turned out that...

- Facilitate crossover
- Detect **complementary/supporting** technologies
- Detect **cross-product subsystems**



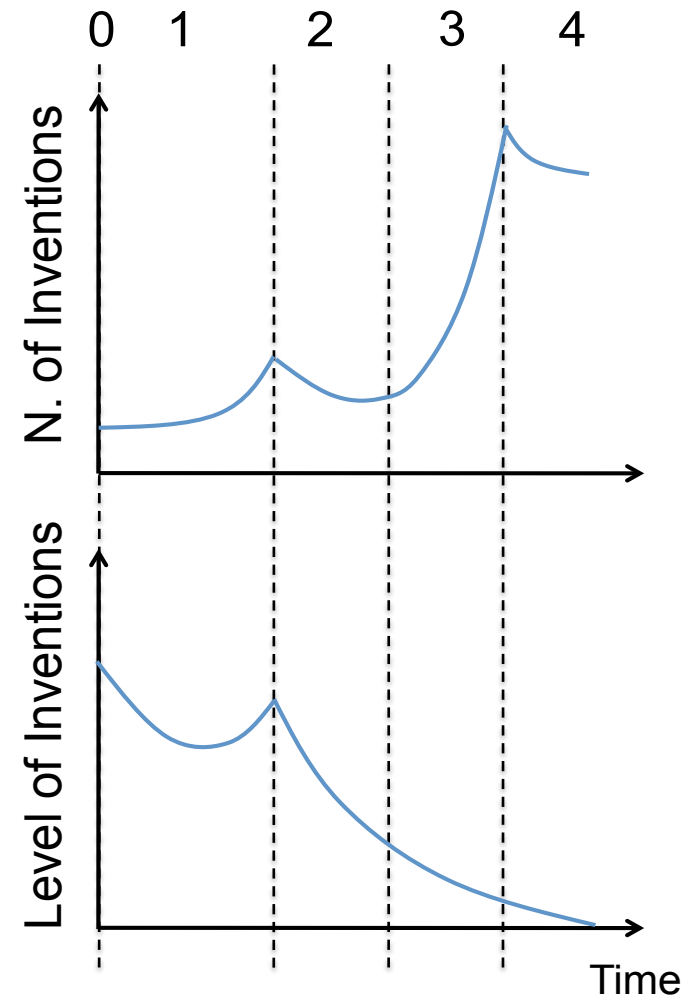
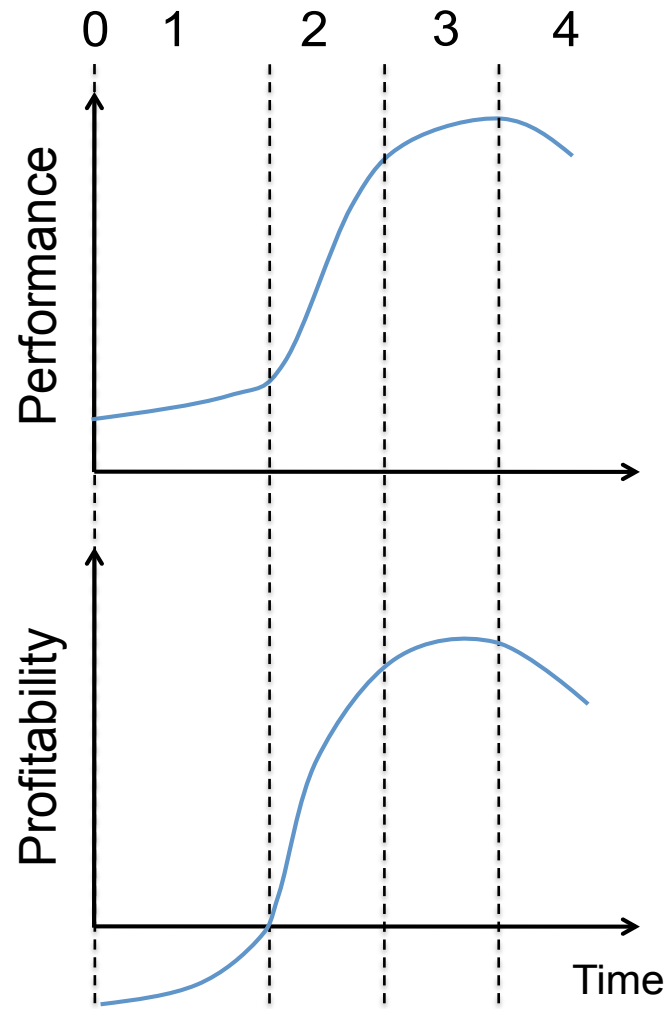
Evolution trends and foresight

IDEALITY = Σ Useful functions / Σ Not useful functions

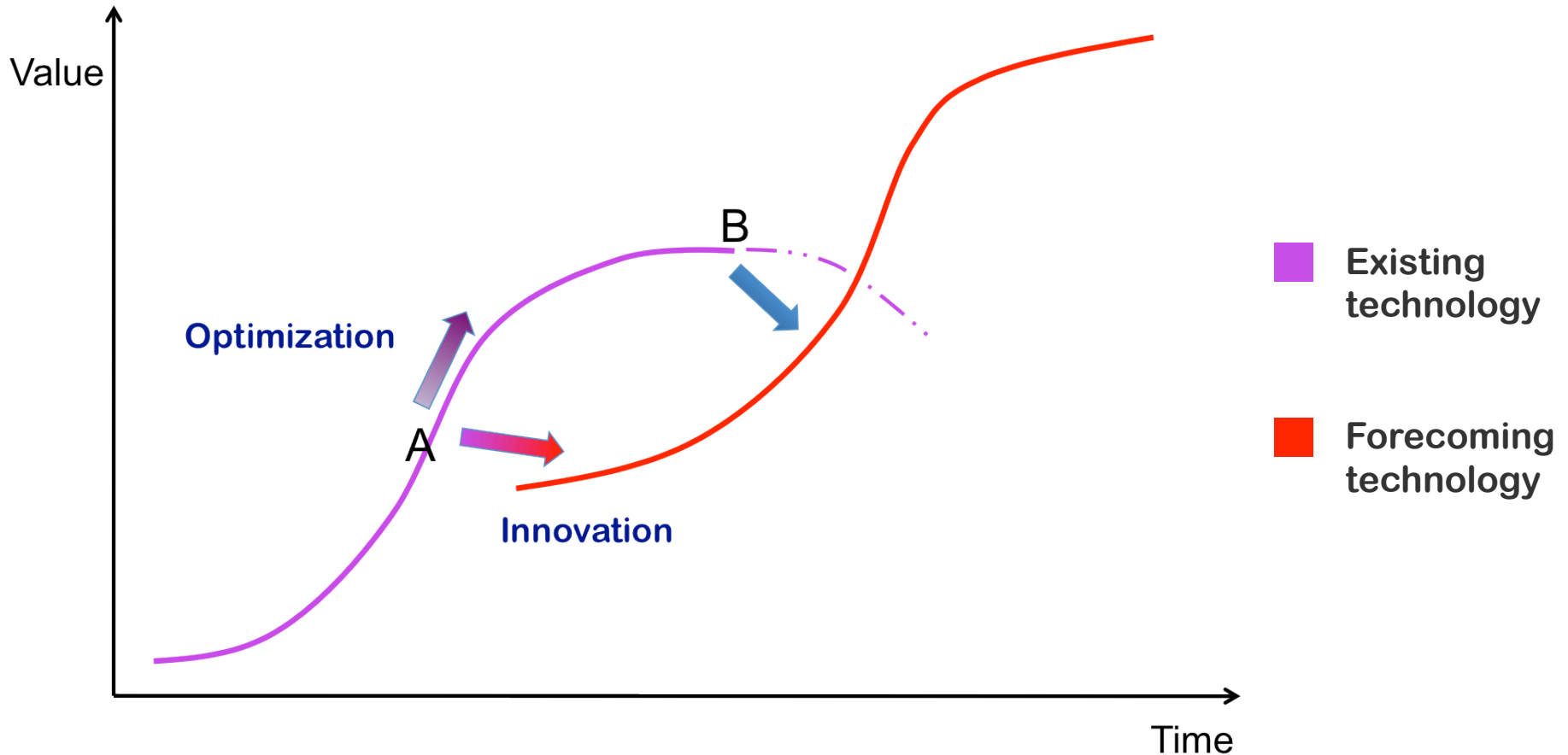
IDEALITY = Σ Benefit / (Σ Cost + Σ Harmful side eff.)

**Technological systems tend to evolve
in the direction of increasing ideality**

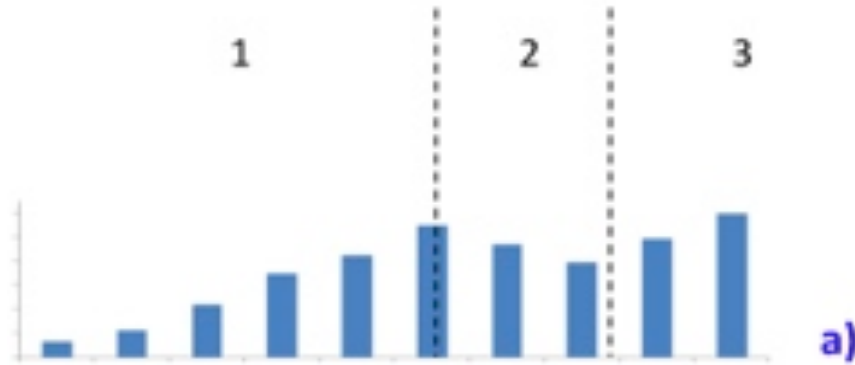
The 4 stages of tech evolution



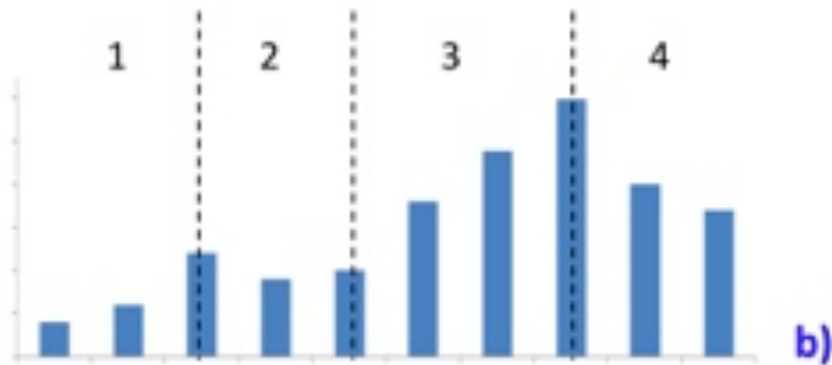
Two kinds of innovation



Comparison of technologies



Investing still makes sense



Investing is pointless

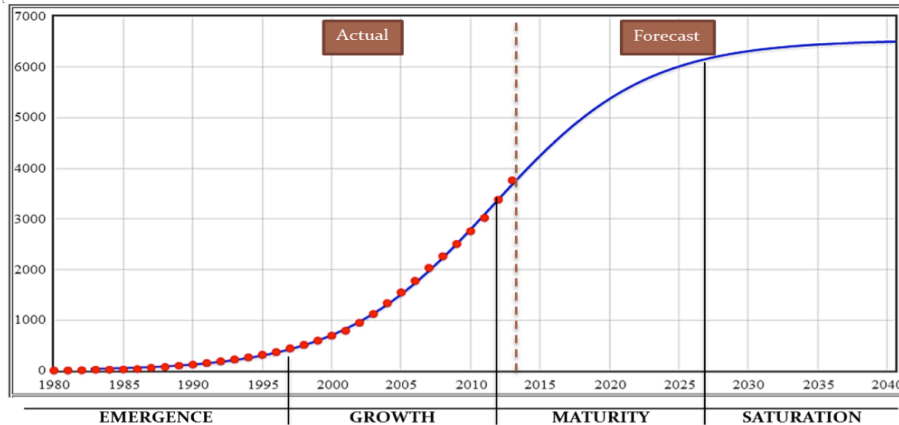
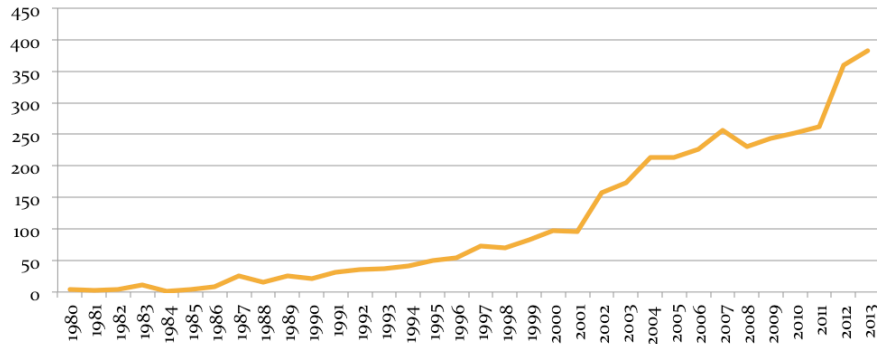
Comparison of technologies

Additive manufacturing

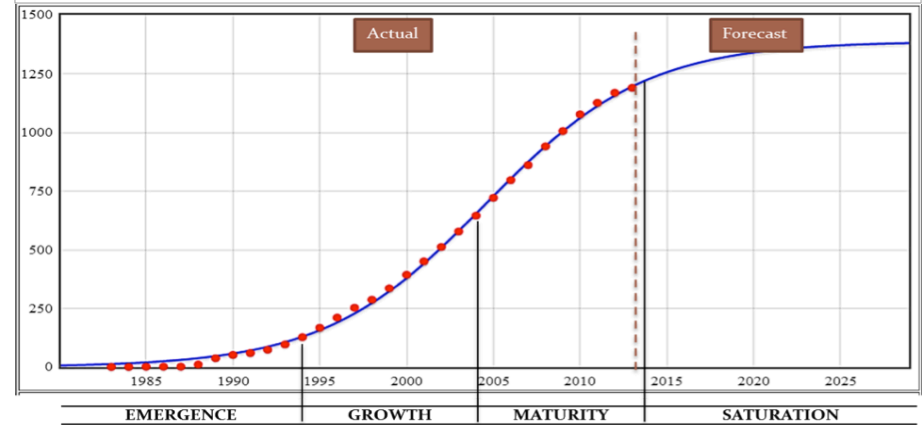
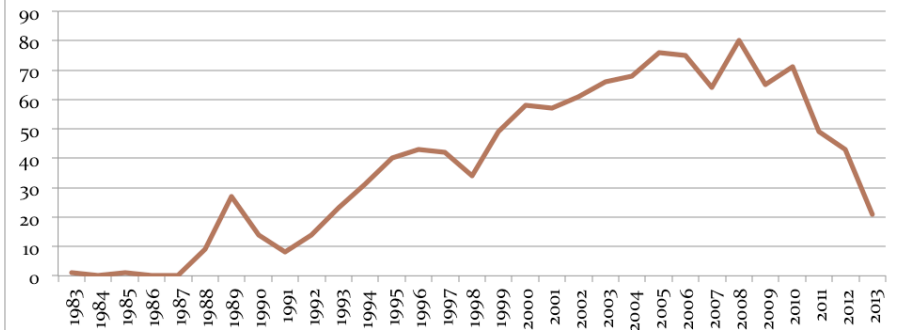
vs

Stereolithography

Additive Manufacturing Patents Filing Trend (1980-2013)



PATENTS

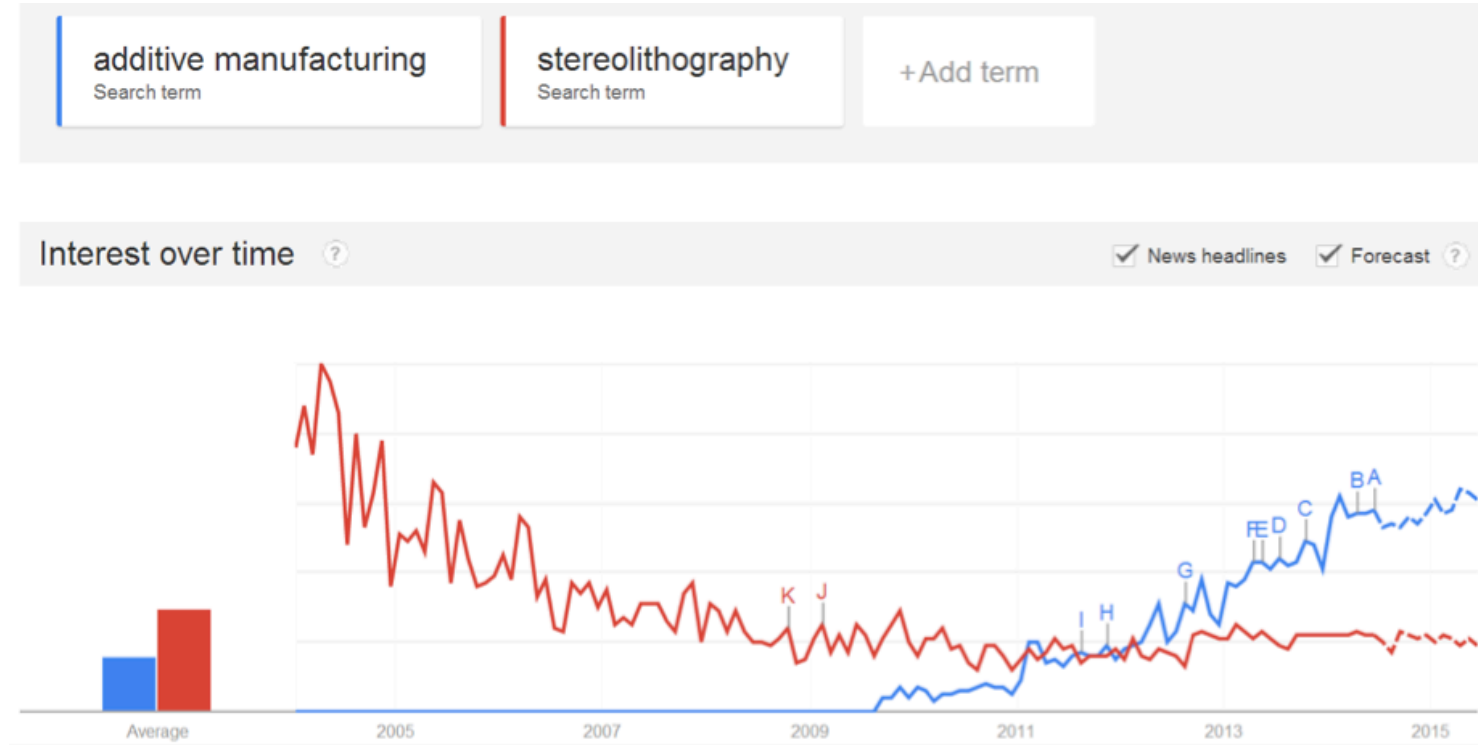


Comparison of technologies

Additive manufacturing

vs

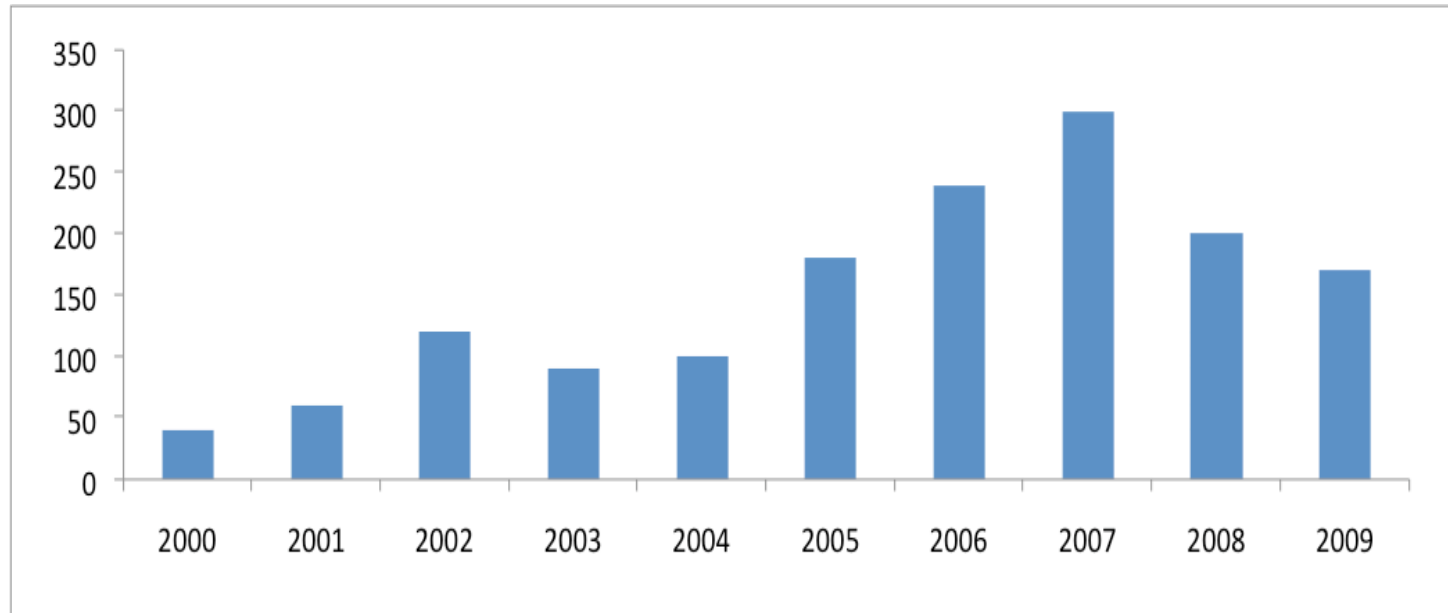
Stereolithography



Cross-checking with other data sources

A real case

Device for cancer treatment. Great hype, but...



... no new developments, too many side effects

Questions (1)?

PART 5 – HOW TO SEARCH FOR PATENTS

What to read in patent

- First page (Title, Abstract, Metadata)
- Description
- Claim(s)
- Drawing(s)
- Search Report
- EPO Register page

How to read a patent

First Page

- Bibliographic Data
 - Abstract
 - Figure(s)
 - **INID codes**
(Internationally agreed Numbers for the Identification Data)
 - (11) Patent publication serial number
 - (19) Issuing Patent Office
 - (21) Application number
 - (22) Date of filing
 - (30) Priority
 - (43, 45) Date of publication
 - (51) Int. Cl.
 - (56) References cited
 - (54) Title of Patent
 - (57) Abstract
 - Inventor, Applicant, Representative, Assignee (71-75)
- more details in WIPO Standard ST.9*

(19)	Europäisches Patentamt European Patent Office Office européen des brevets	(11)	EP 0 790 640 A2
(12)	EUROPEAN PATENT APPLICATION		
(43)	Date of publication: 08.08.1997 Bulletin 1997/34	(51)	Int. Cl. H01J 65/04, H01J 61/35
(21)	Application number: 97300881.6		
(22)	Date of filing: 12.02.1997		
(84)	Designated Contracting States: DE DE FR GB IT NL	• Mucklejohn, Stuart Albert Leicester, Leicestershire LE8 3YD (GB) • Girach, Mohammed Hanif Leicester, Leicestershire LE2 1LU (GB)	
(30)	Priority: 16.02.1996 GB 9603197		
(71)	Applicant: GENERAL ELECTRIC COMPANY Schenectady, NY 12345 (US)		
(72)	Inventors: • Forsdyke, Graham Malcolm Leicester, Leicestershire LE9 6RU (GB)		
(74)	Representative: Goode, Ian Roy et al London Patent Operation General Electric International, Inc., Essex House, 12-13 Essex Street London WC2R 3AA (GB)		
(54)	Electrodeless discharge lamp		
(57)	An electrodeless discharge lamp comprises a sealed discharge vessel (1) containing a fill capable of sustaining a discharge when suitably energised, and circuitry (6,7) for energising a solenoid (5) to produce an RF electromagnetic field in the vessel to energise the fill. A light transmissive, inherently conductive, polymer layer (20) is provided on the exterior of the discharge vessel for confining the RF field within the lamp. An outer, insulating layer (21) may also be provided over the conductive layer (20).		

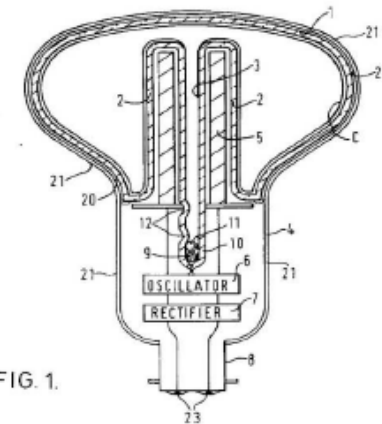


FIG. 1.

Printed by Jouve, 75001 PARIS (FR)

Abstract

How patents are classified

Several taxonomies existed in the past:

ECLA (Europe), IPC (international), USPC (United States), F-Term (Japan).

Now a new CPC (collaborative patent classification) has been established.

The scheme was initially based on the former European classification system (ECLA), which was an extension of the International Patent Classification and kept all the properties of the IPC (hierarchy, titles, expandability).

However, while the IPC has 70 000 entries and ECLA 160 000, the CPC has more than 250 000, making it much more precise.

How patents are classified

		474	.. Motion planning or control
		475	.. Temporal interpolation or processing
		156	DISPLAY PERIPHERAL INTERFACE INPUT DEVICE
		157	. Cursor mark position control device
		158	.. Including orientation sensors (e.g., infrared, ultrasonic, remotely controlled)
		159	.. Having variable cursor speed
		160	.. Cursor key
		161	.. Joystick
		162	.. Positional storage means
		163	.. Mouse
		164	... Rotatable ball detector
		165	 Photosensor encoder
		166	... Optical detector
		167	.. Trackball
		168	. Including keyboard
		169	.. Portable (i.e., handheld, calculator, remote controller)
		170	.. Light source associated with each key
		171	.. Having foreign language capability (e.g., Japanese, Chinese)
		172	.. Having programmable function key
		173	. Touch panel
		174	.. Including impedance detection
		175	.. Including optical detection
		176	.. Transparent substrate having light entrapment capability (i.e., waveguides)
		177	.. Including surface acoustic detection
		178	.. With alignment or calibration capability (i.e., parallax problem)
		179	. Stylus
		180	. Light pen for CRT display
		181	.. CRT having tracking capability
		182	. Light pen for fluid matrix display panel
		183	. Light pen for controlling plural light-emitting display elements (e.g., LED, lamps)
		184	. Mechanical control (e.g., rotatable knob, slider)
		501	COMPUTER GRAPHIC PROCESSING SYSTEM
		502	. Plural graphics processors
		503	.. Coprocessor (e.g., graphic accelerator)
		504	.. Master-slave processors
		505	.. Parallel processors (e.g., identical processors)
		506	.. Pipeline processors
		519	. Integrated circuit (e.g., single chip semiconductor device)
		520	. Interface (e.g., controller)
		522	. Graphic command processing

How patents are classified

IPC		Definitions	Illustrations	RCL	Catchwords	Compilation	Help
D		SECTION D — TEXTILES; PAPER					
		TEXTILES OR FLEXIBLE MATERIALS NOT OTHERWISE PROVIDED FOR					
	D01	NATURAL OR ARTIFICIAL THREADS OR FIBRES; SPINNING (metal threads B21 ; fibres or filaments of softened yarns D02)					
		Note(s) In this class, the following terms are used with the meanings indicated: • "fibre" means a relatively-short, elongated member of natural or artificial material; • "filament" means an endless or quasi-endless, elongated member of natural or artificial material; • "yarn" means a unitary assembly of fibres, usually produced by spinning; • "thread" means an assembly of yarns or filaments, usually produced by twisting.					
	D01B	MECHANICAL TREATMENT OF NATURAL FIBROUS OR FILAMENTARY MATERIAL TO OBTAIN FIBRE SPINNING (crude extraction of asbestos fibres from ores B03B ; apparatus for retting D01C)					
		Note(s) Attention is drawn to the Note following the title of class D01.					
	D01B 1/00	Mechanical separation of fibres from plant material, e.g. seeds, leaves, stalks					
	D01B 1/02	• Separating vegetable fibres from seeds, e.g. cotton					
	D01B 1/04	• • Ginning					
	D01B 1/06	• • • Roller gins, e.g. Macarthy type					
	D01B 1/08	• • • Saw gins					
	D01B 1/10	• Separating vegetable fibres from stalks or leaves					
	D01B 1/12	• • Rippling					
	D01B 1/14	• • Breaking or scutching, e.g. of flax; Decorticating					
	D01B 1/16	• • • with devices dependent on a bending action to break or loosen fibre-bearing materials (crushing rollers D01B 1/22)					
	D01B 1/18	• • • with stamping devices					
	D01B 1/20	• • • with scraping devices					
	D01B 1/22	• • • with crushing or breaking rollers or plates					
	D01B 1/24	• • • with toothed or other pointed devices					
	D01B 1/26	• • • with beaters rotating about an axis parallel to the fibre bundle					
	D01B 1/28	• • • with beaters rotating about an axis perpendicular to the fibre bundle					

How patents are classified



IP SERVICES

This site is the IPC internet publication as from IPC version 2011.01.
See main changes associated to this version

WORLD INTELLECTUAL PROPERTY ORGANIZATION

IPC Home Page - Help

Version
2011.01

Current symbol

Go to

Language
☒ English
☐ French
☐ English/French

View mode
☐ path
☒ full
☐ hierarchic

☐ Standardized sequence
☒ Deleted entries
☐ Subclass indexes
☒ Guidance Headings
☒ Notes

Scheme RCL Compilation Catchwords

	A	SECTION A — HUMAN NECESSITIES
	B	SECTION B — PERFORMING OPERATIONS; TRANSPORTING
	C	SECTION C — CHEMISTRY; METALLURGY
	D	SECTION D — TEXTILES; PAPER
	E	SECTION E — FIXED CONSTRUCTIONS
	F	SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING
	G	SECTION G — PHYSICS
	H	SECTION H — ELECTRICITY

Where to search for patents

Espacenet

http://worldwide.espacenet.com/?locale=EN_ep

Google patents

<https://patents.google.com/>

Plus commercial search engines

Espacenet has an excellent guide not just on grammar but on tricks to construct good searches

How to search for patents

The various fields are connected with logical operator "AND"

Smart search

Advanced search

Classification search

Quick help —

- [How many search terms can I enter per field?](#)
- [How do I enter words from the title or abstract?](#)
- [How do I enter words from the description or claims?](#)
- [Can I use truncation/wildcards?](#)
- [How do I enter publication, application, priority and NPL reference numbers?](#)
- [How do I enter the names of persons and organisations?](#)
- [What is the difference between the IPC and the CPC?](#)
- [What formats can I use for the publication date?](#)
- [How do I enter a date range for a publication date search?](#)
- [Can I save my query?](#)

Related links +

Advanced search

Select the collection you want to search in [i](#)
Worldwide - collection of published applications from 90+ countries

Enter your search terms - CTRL-ENTER expands the field you are in

Enter keywords in English

Title: [i](#) plastic and bicyole

Title or abstract: [i](#) hair

Enter numbers with or without country code

Publication number: [i](#) WO2008014520

Application number: [i](#) DE19971031696

Priority number: [i](#) WO1995US15925

Enter one or more dates or date ranges

Publication date: [i](#) yyyyymmdd

Enter name of one or more persons/organisations

Applicant(s): [i](#) Institut Pasteur

Inventor(s): [i](#) Smith

Enter one or more classification symbols

CPC [i](#)

IPC [i](#) H03M1/12

[Clear](#) [Search](#)

How to search for patents

- Understand the field (not obvious), both for lexicon and for industry needs, and then segment your query
- Understand functioning (not obvious), functionalize your query (many engines offer proximity search)
- When using boolean operators, divide your query into sub queries

How to search for patents

Always check your engine for:

- Lemmatization (e.g. circle/circles)
- Stemming (e.g. circle / circular)
- Special characters: () - & ...
- Logical operators
- Wildcards

How to search for patents

Look for synonyms to increase recall but pay attention not to enlarge too much.

Avoid losing precision using various tricks (semantic, metadata).

Beware of generic words:

can (type of combustor) is also:

- to be able to (modal auxiliary)
- can bus
- cylindrical container
- preserve food

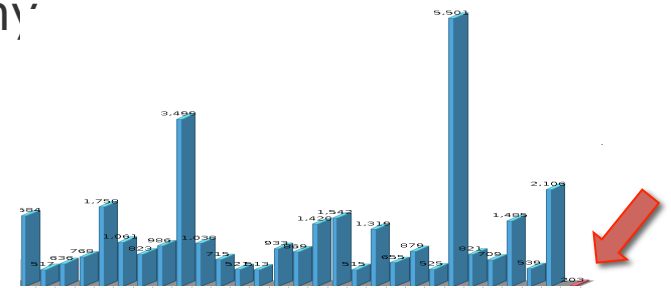
How to search for patents

Make clever use of the structure of patents
(title, abstract, claims, description, drawings)

Make clever use of metadata

Beware of metadata though:

- IPC - now CPC - not suitable for transverse technologies
- Companies cheat (e.g. windscreen)
- Alternative spellings (GE, Gen. Electric, General Electric)
- Inventors as assignee hiding big company
- One may not be aware of newcomers
- ...



Results

◀ About Espacenet Other EPO online services ▼

SearchResult list★ My patents list (0)Query historySettingsHelp

Refine search → Results page 1

Smart search

Advanced search

Classification search

Quick help

→ Can I subscribe to an RSS feed of the result list?

→ What does the RSS reader do with the result list?

→ Can I export my result list?

→ What happens if I click on "Download covers"?

→ Why is the number of results sometimes only approximate?

→ Why is the list limited to 500 results?

→ Can I deactivate the highlighting?

→ Why is it that certain documents are sometimes not displayed in the result list?

→ Can I sort the result list?

→ What happens if I click on the star icon?

→ What are XP documents?

→ Can I save my query?

Related links

+

Result list

☐ Select all

Compact

Export (CSV | XLS)

Download covers (0)

Print

Approximately 874 results found in the Worldwide database for:
bottle AND mineral in the title or abstract
Only the first 500 results are displayed.

Results are sorted by date of upload in database

☐ 1. NIPPLE AND CAP OF NURSING BOTTLE WITHOUT BRUSHING

★

Inventor:
YANG PENGFEI [CN]
YANG WENSONG
[CN]

Applicant:
YANG PENGFEI [CN]
YANG WENSONG [CN]

CPC:

IPC:
A61J11/04

Publication info:
WO2013016848 (A1)
2013-02-07

Priority date:
2011-07-29

☐ 2. Functional liquid container for use as e.g. reusable bottle for mineral water, has wall made of shape memory polymer, where container exhibits capacity volumes in switching states and one of capacity volumes is less than other volume

★

Inventor:
PRETSCH
THORSTEN [DE]

Applicant:
BAM BUNDESANSTALT
MATFORSCHUNG [DE]

CPC:
[B65D1/0207](#)
[B65D21/08](#)
[B65D2203/10](#)

IPC:
B65D21/08
B65D6/00
B65D65/38
(+1)

Publication info:
DE102011050569 (A1)
2012-11-29

Priority date:
2011-05-23

☐ 3. Handshake handle and racket and training device equipped with same

★

Inventor:
MINGGANG WANG

Applicant:
GUANGZHOU YIHONG SPORTS DEV
CO LTD

CPC:

IPC:
A63B49/08
A63B69/00
A63B69/38

Publication info:
CN202538279 (U)
2012-11-21

Priority date:
2012-04-26

☐ 4. Mineral water bottle

Results?compact=false&AR=bottle+AND+mineral&ST=advanced&locale=en_EP&DR=EPDOC#

09/06/16

ENDuRE – Riccardo Aprea, Erre Quadro s.r.l.

83

Results



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 European Patent Office
 Office européen des brevets

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Search Result list My patents list (0) Query history Settings Help

Refine search → Results page 2 → WO2012141612 (A2)

Bibliographic data
 Description
 Claims
 Mosaics
 Original document
 Cited documents
 Citing documents
 INPADOC legal status
 INPADOC patent family

Quick help

- What does A1, A2, A3 and B stand for after a European publication number?
- What happens if I click on "In my patents list"?
- What happens if I click on the "Register" button?
- Why are some sidebar options deactivated for certain documents?
- How can I bookmark this page?
- Why does a list of documents with the heading "Also published as" sometimes appear, and what are these documents?
- Why do I sometimes find the abstract of a corresponding document?
- What happens if I click on the red "patent translate" button?

Bibliographic data: WO2012141612 (A2) — 2012-10-18

★ In my patents list Previous 17 / 500 Next EP Register Report data error Print

DEVICE WITH A FILLER FOR SEALING A BOTTLE AND PROCESSING A LIQUID PRODUCT LOCATED IN SAID BOTTLE

Page bookmark [WO2012141612 \(A2\) - DEVICE WITH A FILLER FOR SEALING A BOTTLE AND PROCESSING A LIQUID PRODUCT LOCATED IN SAID BOTTLE](#)

Inventor(s): ZHERDEV PAVEL DMITRIEVICH [RU] ±

Applicant(s): ZHERDEV PAVEL DMITRIEVICH [RU] ±

Classification: - international: B65D41/34

Application number: WO2012RU00245 20120403

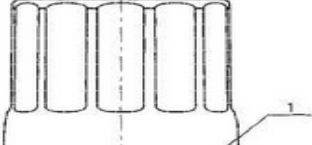
Priority number(s): [RU20110114543 20110414](#)

Also published as: [WO2012141612 \(A3\)](#) → [RU2456342 \(C1\)](#)

Abstract of WO2012141612 (A2)

Translate this text into Chinese powered by EPO and Google

The invention relates to the food industry. A liquid product, including vodka, is processed by being passed through a mixture of sorbing components or other fillers. Each product portion poured out of the bottle into a drinking vessel is subjected to processing in the period of time prior to consumption immediately by the actual consumer. The processing is carried out by passing the liquid product from the vessel at optimum speed through sorbents, including activated carbon fibres. When mineral taste and (or) other additives are used, a new product different from the product located in the bottle can be produced. The device with a filler for sealing a bottle and processing a liquid product located in said bottle comprises a cap (1), which is connected by a



Available fields

Different documents of the same "patent family"

Results

	A	B	C	D	E	F
1	 Europäisches Patentamt European Patent Office Office européen des brevets					
2	Approximately 0 results found in the EP database. dishwasher in the title whirlpool as the applicant					
3	Displaying publications 1 - 15 as of 2013-03-13.					
4	Title	Publication number	Publication date	Inventor(s)	Applicant(s)	International cla
5	Dishwasher with utensil rack and slides therefor	EP1854395 (A1)	2007-11-14	DAVIS MARK A FEDDEMA MARK S MACK ROBBY C STEVENS DAVID A WESTLAKE LORRAINE	WHIRLPOOL CO []	A47L15/50
6	Dishwasher having valved third-level sprayer	EP1676520 (A2)	2006-07-05	LANDSIEDEL JAY C VANDERROEST CHAD T	WHIRLPOOL CO []	A47L15/16 A47L15/23 A47L15/42
7	Dishwasher having rotating zone wash sprayer	EP1676521 (A2)	2006-07-05	HUNG CHI CHEN DAVID LANDSIEDEL JAY C RAPPETTE ANTONY VANDERROEST CHAD T	WHIRLPOOL CO []	A47L15/23 A47L15/42 A47L15/16
	Dishwasher with upper and lower spray arms	EP1042982 (A1)	2000-10-11	RAUBER LUDWIN	WHIRLPOOL CO []	A47L15/23 A47L15/42 F16K1/22 A47L15/23 A47L15/42 F16K1/22

Questions (2)?

Summary

- Patents are not just a legal tool, but a way to create value for the company (and even more so for start-ups)
- They can be used to:
 - strengthen R&D activities, for better and faster innovation;
 - gain competitive insight and foresight
 - spot threats & opportunities;
 - widen market and business horizons;
 - increase the financial lever.
- Value is not in just one patent but in the full map. Threats and opportunities often come from unexpected directions.
- However, constructing accurate maps is not trivial, due to nature of patent data. Various strategies and tools can be used to select the right focus for the analysis.

Thank you!

You can write to: riccardo.apreda@errequadrosrl.com

PART 6 – EXERCISE

Exercise 1

Create a query around your technology / product.

- State focus: find potential threats or position in the scenario
- Define what your product / technology *really* does
- Express it as a series of simultaneous concepts
- Find as many synonyms as possible
- Reduce the potential noise using semantic or metadata,
- Trials and iterations (google patents)

Exercise 2

If the focus is to identify potential threats.

- Think at what those threats could really be (risks during the commercialization, competitors with similar or alternative solutions); estimate their likelihood.
- Elaborate a strategy to find the “needle in the haystack”
- Verify your initial estimate.
- Then, try to think at possible counter-measures.

Exercise 2

If the focus is to position your idea in the competitive scenario

- Try to define the scenario you expect (number of players, technical variants, geographical focus...).
- Execute your query and have an estimate of data.
- Create graphics that highlight sensible information.
- Verify your initial estimate.
- Think at how to use such information at your advantage.