

Patentes: um bem comum para inovar

Luc Quoniam, David Reymond

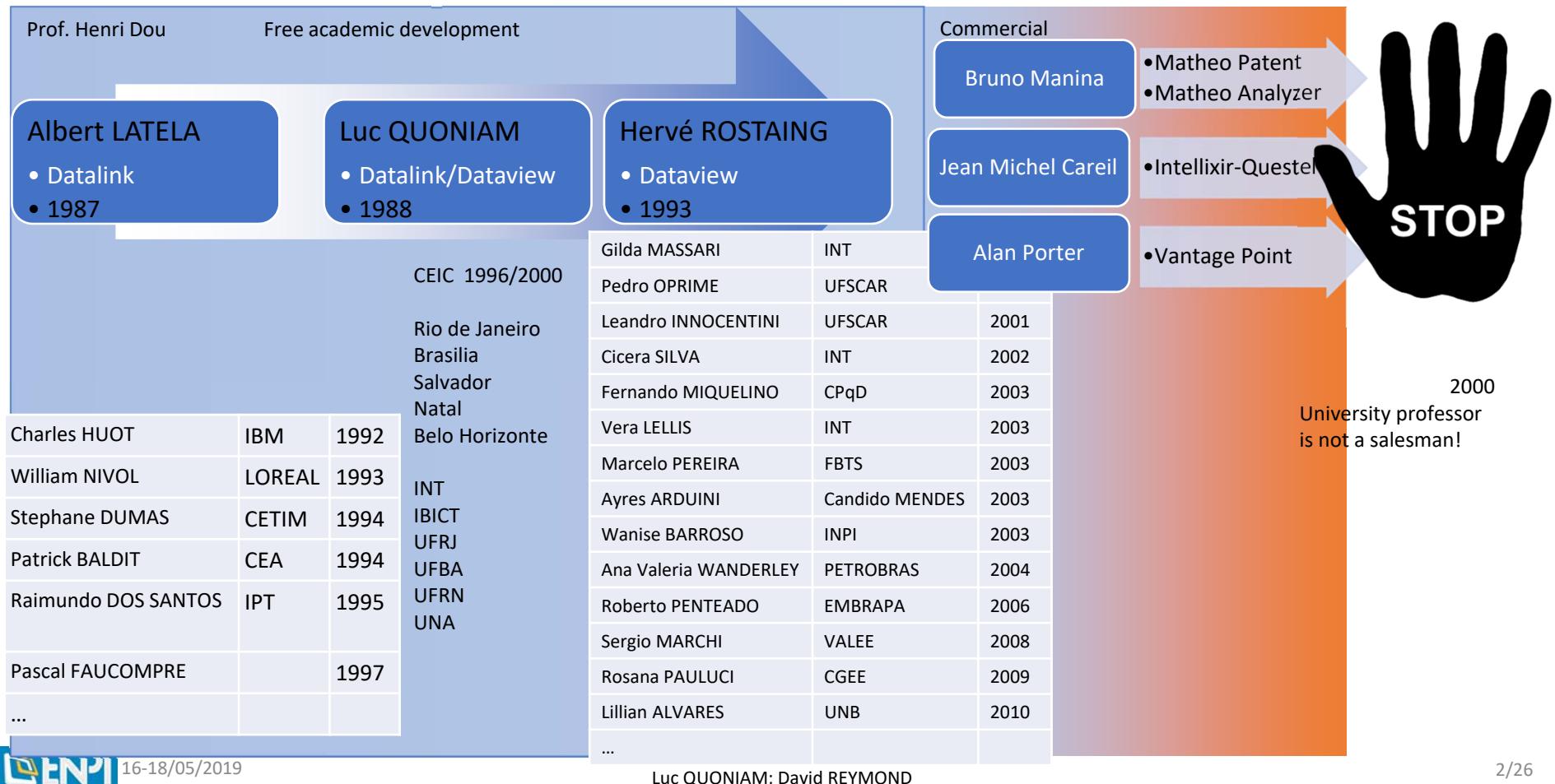


V ENCONTRO NACIONAL DE PROPRIEDADE INTELECTUAL
16 a 18 de maio de 2019
Florianópolis - SC



UNIVERSITÉ
DE TOULON

Time line



Patents are useful to society, business, individuals!



1. Pervaded every aspect of human life:
 - electric lighting (patents held by Edison and Swan)
 - plastic (patents held by Baekeland)
 - ballpoint pens (patents held by Biro)
 - microprocessors (patents held by Intel)
2. Patents provide incentives to and protection for individuals
 - offering them recognition for their creativity and the possibility of material reward for their inventions
 - the [obligatory publication of patents](#) and patent applications facilitates the mutually-beneficial spread of new knowledge and accelerates innovation activities by, for example, [avoiding the necessity to “re-invent the wheel”](#).
3. Once knowledge is publicly available, it can be used simultaneously by an unlimited number of persons
 - Dilemma for the commercialization of technical knowledge
 - In the absence of protection of such knowledge, “free-riders” could easily use technical knowledge embedded in inventions without any [recognition of the creativity of the inventor or contribution to the investments made by the inventor](#)
 - As a consequence, inventors would naturally be discouraged to bring new inventions to the market, and tend to keep their commercially valuable inventions secret
 - A patent system intends to correct such under-provision of innovative activities by providing innovators with limited exclusive rights, thereby giving the innovators the possibility to receive appropriate returns on their innovative activities
4. the public disclosure of the technical knowledge in the patent, and the exclusive right granted by the patent, provide incentives for competitors to search for alternative solutions and to “invent around” the first invention

These incentives and the dissemination of knowledge about new inventions encourage further innovation, which assures that the quality of human life and the well-being of society is continuously enhanced

Some key conditions to obtain patent protection!



1. The invention must show an element of novelty

Some new characteristic not known in the existing knowledge in its technical field ("prior art")

2. The invention must involve an "inventive step" or "non-obvious",

Not be obviously deduced by a person having ordinary skill in the relevant technical field

3. The invention must be capable of industrial application

Capable of being used for an industrial or business purpose beyond a mere theoretical phenomenon, or be useful

4. Its subject matter must be accepted as "patentable" under law

In many countries, scientific theories, aesthetic creations, mathematical methods, plant or animal varieties, discoveries of natural substances, commercial methods, methods for medical treatment (as opposed to medical products) or computer programs are generally not patentable

5. Invention must be disclosed in a manner sufficiently clear and complete to enable it to be replicated by a person with an ordinary level of skill in the relevant technical field

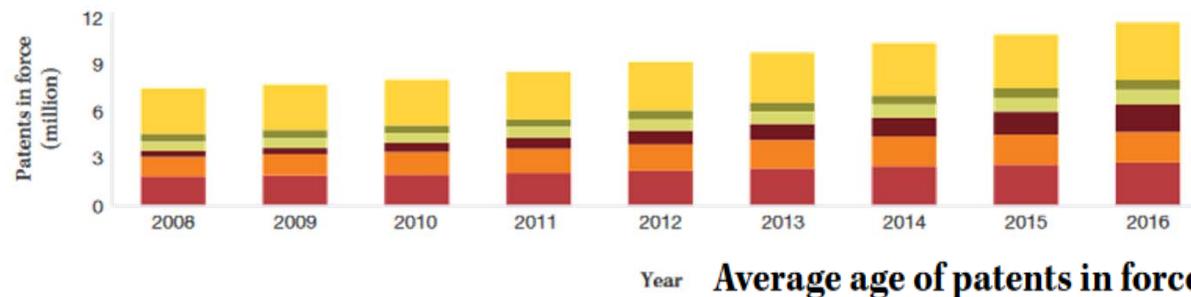
Espacenet

- Free access to over 110 million patent documents
- Published patent applications from over 90 patent-granting authorities
- Open Patent Services (OPS): web service for the EPO's data via XML interface



Patents in force?

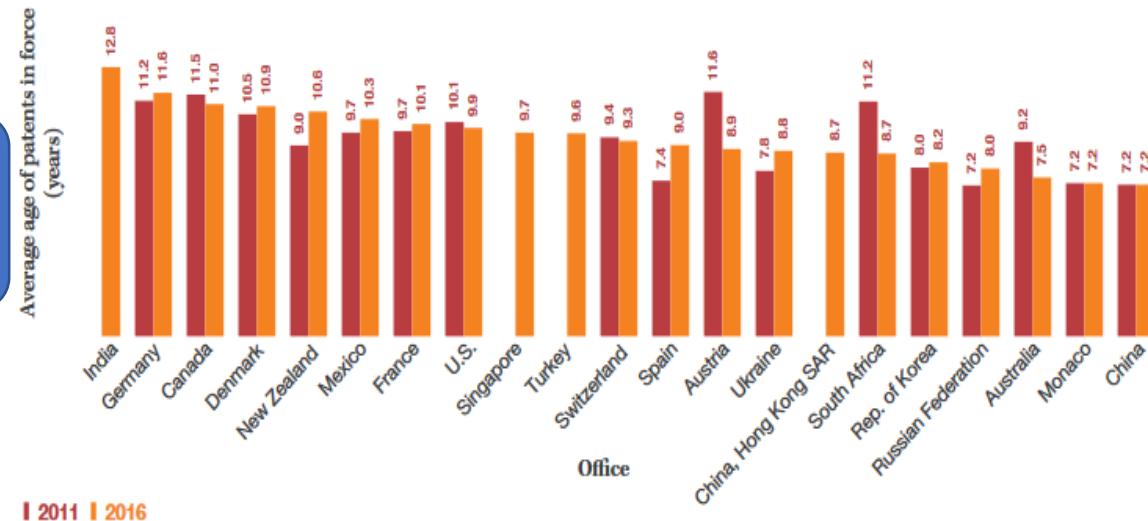
Trend in patents in force worldwide



Average age of patents in force at selected offices

■ U.S. ■ JAPAN ■ CHINA ■ REP. OF KOREA ■ GERMANY ■ OTHERS

In force, yes!
In their respective country!



And the others?

Knowledge publicly available,
usable simultaneously by an unlimited number of persons



Knowledge is a common!
First step for creativity, invention, innovation!
Use it! For frugal innovation!

From innovation to innovative conception, KDD

Inventiveness		Innovation: effective introduction of an invention in the marketplace!				
level I	Degree	Percentage solutions	Necessary knowledge	Nbr of tests/ Information volume	Example	Method
I	Apparent solution	32 %	of a person	10	Thermal insulation of an object	« achismo », brainstorming, creativity, Copy-Paste
II	Minor improvement	45 %	of the concerned company	100	Creation of a derivative	
III	Major improvement	18 %	of the concerned industry	1 000	Introduction of a new steel	Innovative-conception Structural KDD
IV	New project	4 %	of all combined Industries	100 000	Use of a new conception process	
V	Discovery	< 1 %	of the whole civilization	1 000 000		KDD Weak-signals serendipity

16-18/05/2019

Jean Dominique Pierret
Galderma 2006
Thinking out of the box

TRIZ Genrich Altshuller (1926-1998)

- "theory of the resolution of invention-related tasks"
- "a problem-solving, analysis and forecasting tool derived from the study of patterns of invention in the global patent literature"



- 1969, Altshuller had reviewed about **40,000 patent abstracts** in order to find out in what way the innovation had taken place
 - 40 principles of invention. The concepts of physical contradictions, SuField analysis (structural substance-field analysis), standard solutions, several laws of technical systems evolution
- 1971 Altshuller established the first TRIZ teaching facility, called the Azerbaijan Public Institute for Inventive Creation
- 1995 the Altshuller Institute for TRIZ Studies was established in Boston, USA.

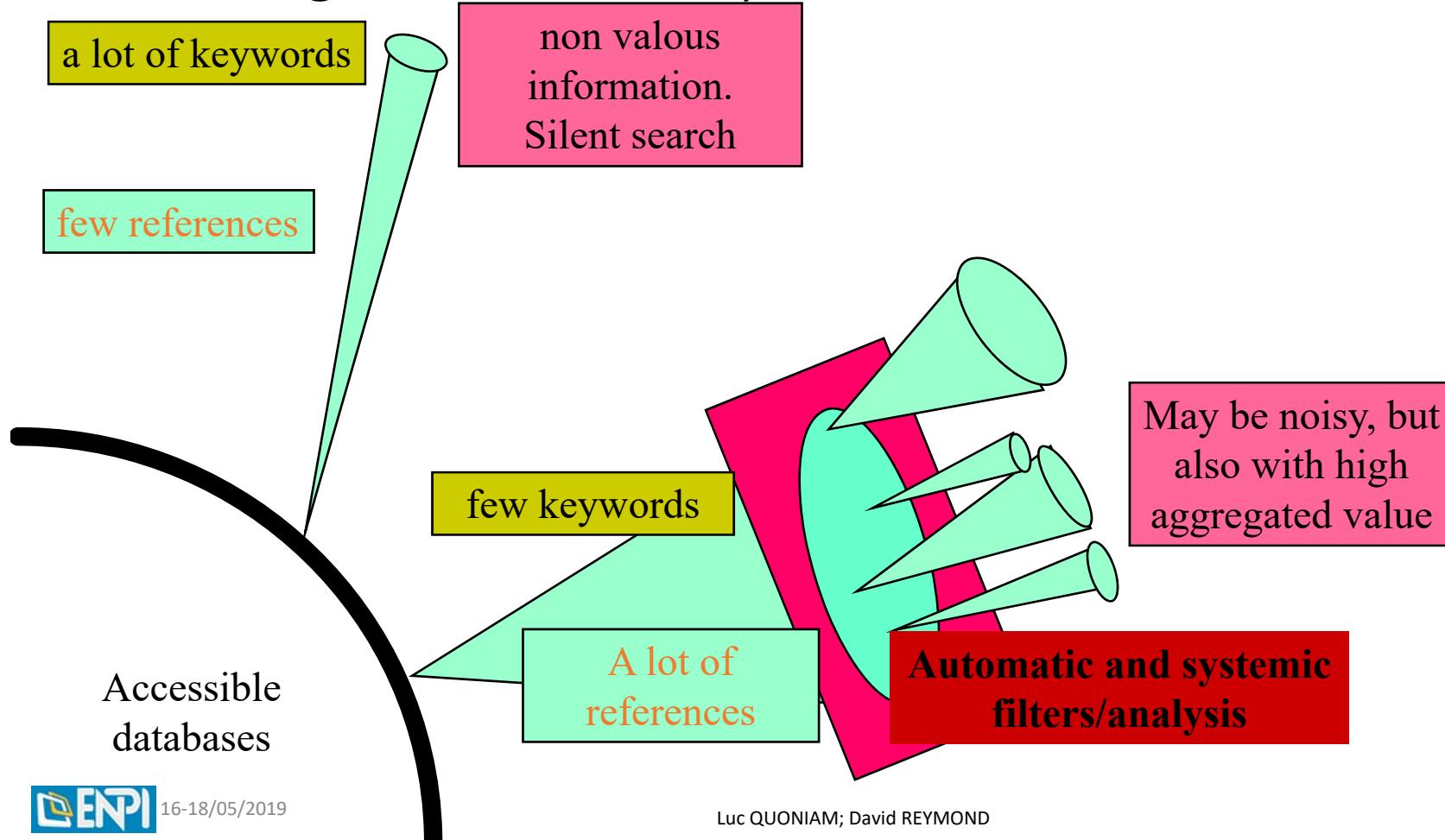
Use of TRIZ methods in industry

TRIZ gives to many companies a competitive advantage, reluctant to publicize their adoption of the method.

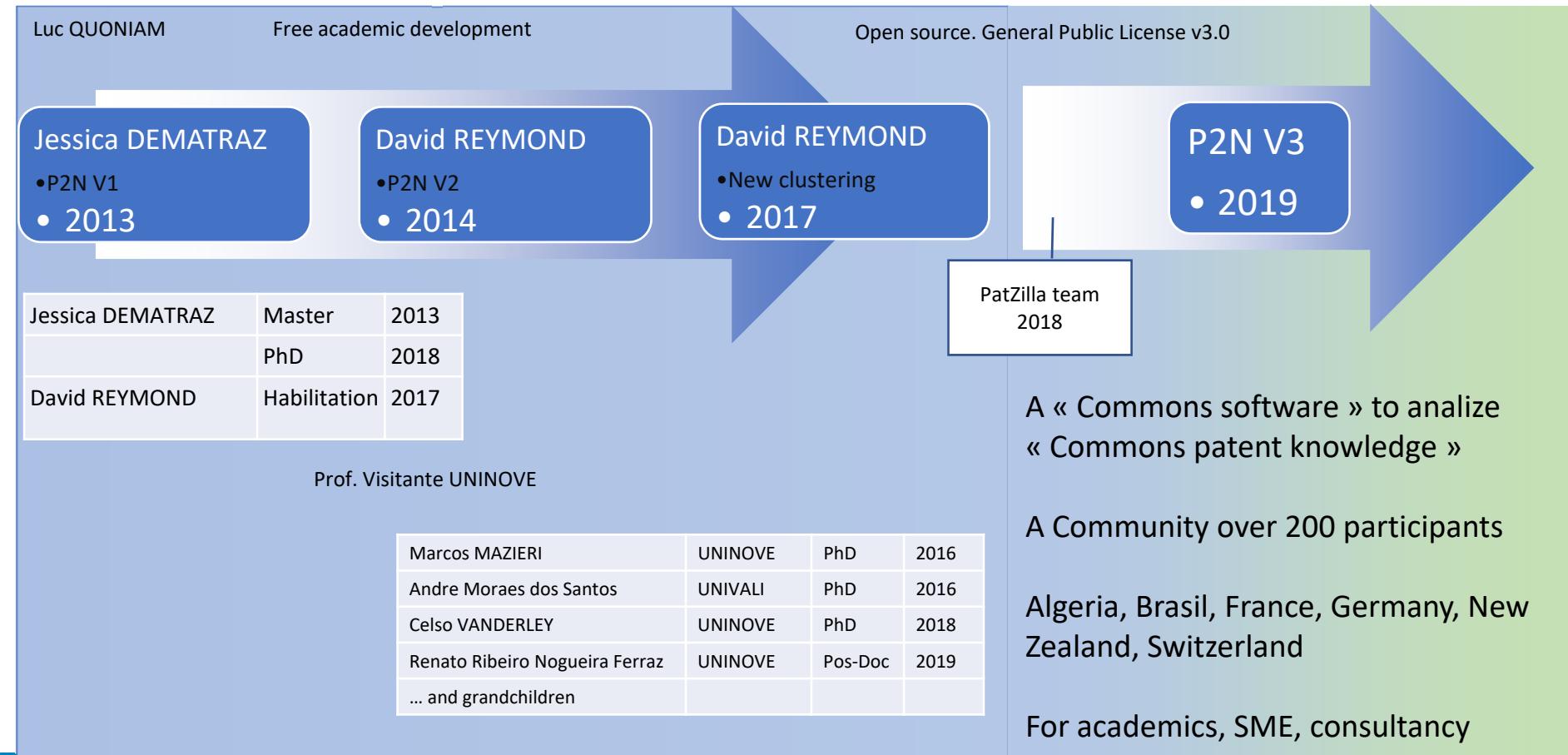
- Samsung is the most famous success story, and has invested heavily in embedding TRIZ use throughout the company, right up to and including the CEO; "In 2003 TRIZ led to 50 new patents for Samsung and in 2004 one project alone, a DVD pick-up innovation, saved Samsung over \$100 million. TRIZ is now an obligatory skill set if you want to advance within Samsung".
- Rolls-Royce, BAE Systems and GE are all documented users of TRIZ
- Mars has documented how applying TRIZ led to a new patent for chocolate packaging
- Leafield Engineering, Smart Stabilizer Systems and Buro Happold to solve problems and generate new patents
- Rolls-Royce, Ford, and Daimler-Chrysler, Johnson & Johnson, aeronautics companies Boeing, NASA, technology companies Hewlett Packard, Motorola, General Electric, Xerox, IBM, LG, Samsung, Intel, Procter and Gamble, Expedia and Kodak have used TRIZ methods in some projects.
- Numerous German industrial companies in the recent decade has followed the principles of the Advanced Innovation Design Approach, which recommends application of the selected TRIZ for the identification of customer needs, comprehensive problem definition and ideation, new concept development and optimization.

Even if the box is larger, still in the box!
Why not using 110 millions patents?

Collecting in another way!



Time line

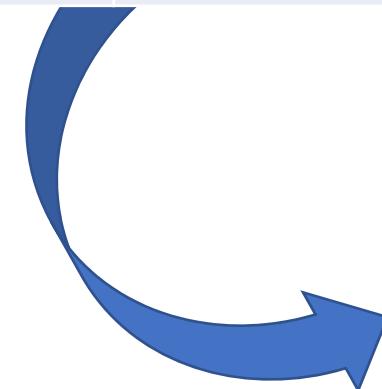


Guide line

- Open source. General Public License v3.0 -> free
- Scalable (pay mode OPS) simple mode -> expert mode -> new analysis
- English language (worldwide), post graduate level
- Platform independent : IOS, Windows, Linux
- 2.0 : everybody can participate using collaborative platforms
use, teach, demonstration but also publications, documentation,
programming
- Simple mode : offline all “html” with Firefox browser, « autonomous »
i.e. internet independent, an instantaneous website
- Expert mode : use Open source and General Public License v3.0 solutions
for sophisticated analysis

Software 2.0: the best knowledge of a large community

Core		
Collect	API OPS	Espacenet: over 110 000 000 patents
Treatment	Python 2 -> 3	
Network position	Graphviz	
Data Analysis	R statistical package	
Outputs: basic with Firefox browser or download to use with:		
	Interaction controls with HTML tables	Datatables https://www.datatables.net/
	Bibliographic	Zotero https://www.zotero.org/
	Geographic maps	D3.js https://d3js.org/
	Pivot table	PivotTable https://pivottable.js.org/
	Networks: all relations in the patent set	Gephi https://gephi.org/
	IPC Mind Map	Freeplane https://www.freeplane.org/
	Images	Pillow https://pillow.readthedocs.io/
	Abstract multi language content analysis	Carrot2 https://project.carrot2.org/
	IPC, Titles, Abstract EN content analysis	Iramuteq http://iramuteq.org/
		Clustering David REYMOND Habilitation



Tables

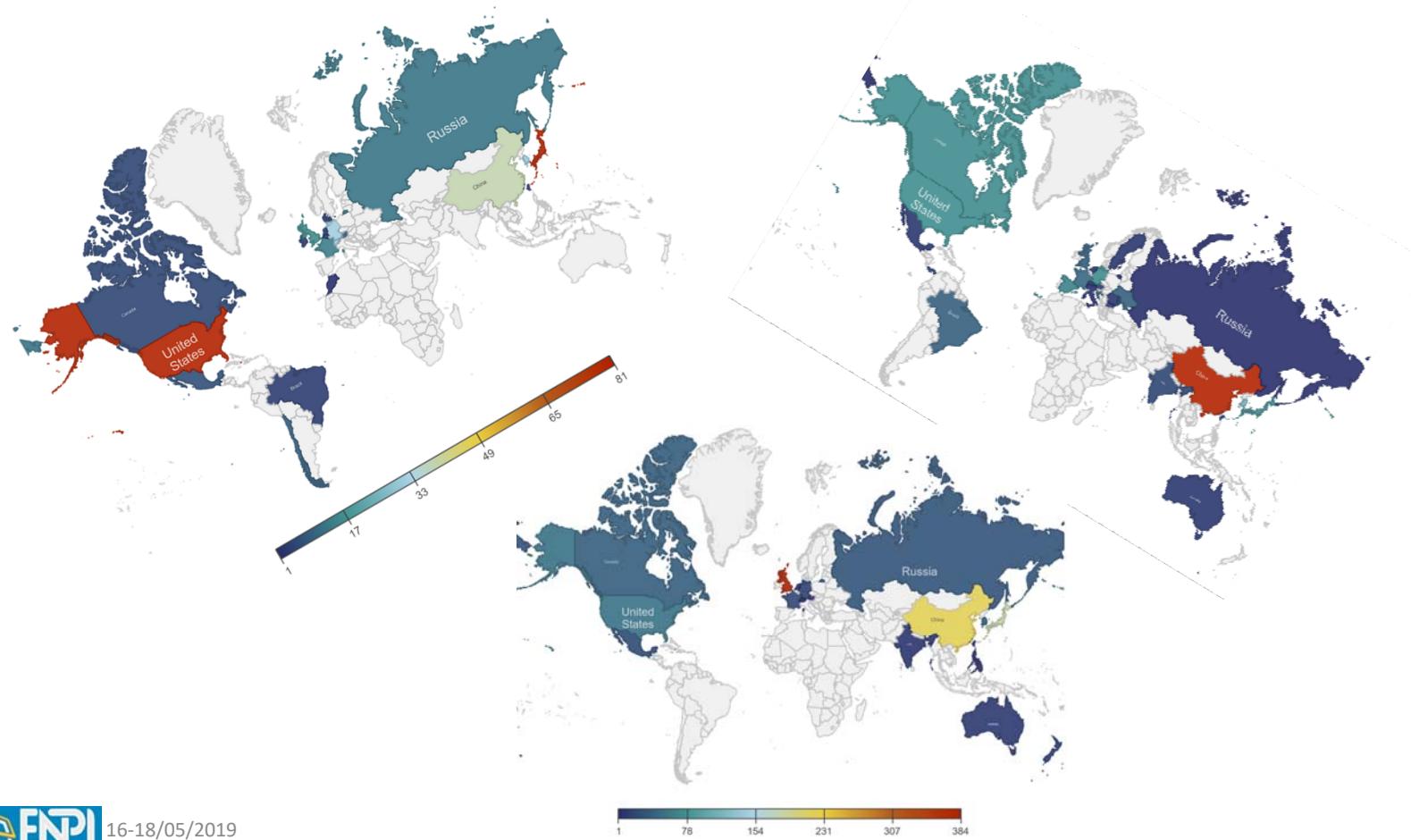
Country	Title	Inventor	From	Applicant	From	IPCRI11	IPCR7	CPC	Prior-Date	Pub year	Label	Kind	Ref	CitP	CitO	Cited	Citations Equiv.	Prio	
S	Search	Searc	S	Searc	S	Sear	Sear	Search	Sea	Se	Sea	S	S	Sea	Sea	Sea	S	Search	S
AU	System and apparatus for financial education, entrepreneurship education and life management	Moumneh Kamal	Moumneh Kamal			G07F17/10, A45C1/12, G09B5/00, G09B19/18, G09B19/18	G07F17, A45C1, G09B5, G09B19	2013-07-152016	2014-06-23	AU2014291289	0						0	US2017039891, 0 US2015017611, SG11201510672Q, JP2016535865, WO2015008121, EP3022718, CA2917137, AU2014291759	
AU	Youpaparazzi social photographic & video online auction & homepage	Newman Benjamin Martin, Lyons Darryn Paul	Youpaparazzi Pty Ltd			G06Q30/08	G06Q30		2015-03-032015	AU2015100284	0					0	AU2015100254 0		
AU	Matching angel investors with entrepreneurs	Milam Joe	Angel Legacy L L C			G06Q30/02	G06Q30	G06Q30/02, G06Q40/06	2001-03-232002 2002-03-21	AU2002250224	0					0	US2002138385, 0 WO2077755, AU2002250224		
AU	Entrepreneurial game	Rodrigues Michael Victor	Rodrigues M V			A63F1/04	A63F1		1980-01-021980	AU5430380A	0					0	AU5430380 0		
BE	Machine with which colour photograph images and texts can be printed by means of heating and pressing onto various materials via transfers	Empty		Brandt Tino De, Arnould Yvon	BE	, B44C1/16	B41F16, B44C1	B44C1/16, B41F16/00	1995-03-171996	BE1009214A6	0					WO2007114715	BE1009214 0		
CA	Systeme et appareil pour l'education financiere, l'enseignement de l'entrepreneuriat et la preparation a la vie	Moumneh Kamal	AE	Moumneh Kamal	AE	G07F17/10, A45C1/12, G09B5/00, G09B19/18, G09B19/18	G07F17, A45C1, G09B5, G09B19	2013-07-152015	2014-06-23	CA2917137A1	0					0	US2017039891, 0 US2015017611, SG11201510672Q, JP2016535865, WO2015008121, EP3022718, CA2917137, AU2014291759		

Patent bibliographic database

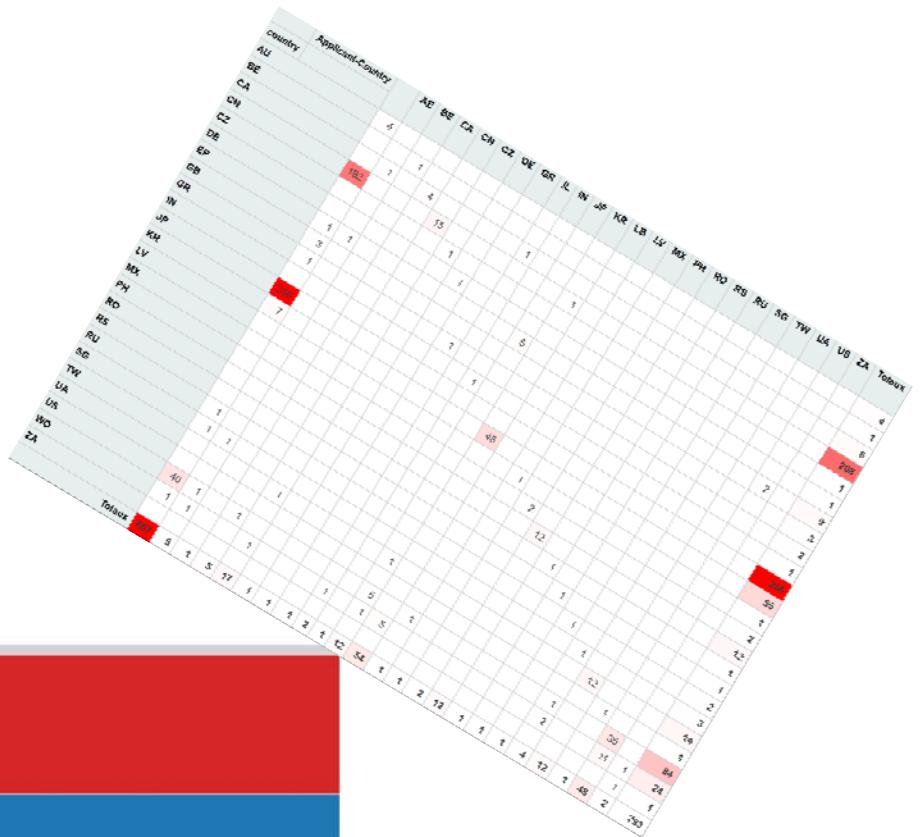
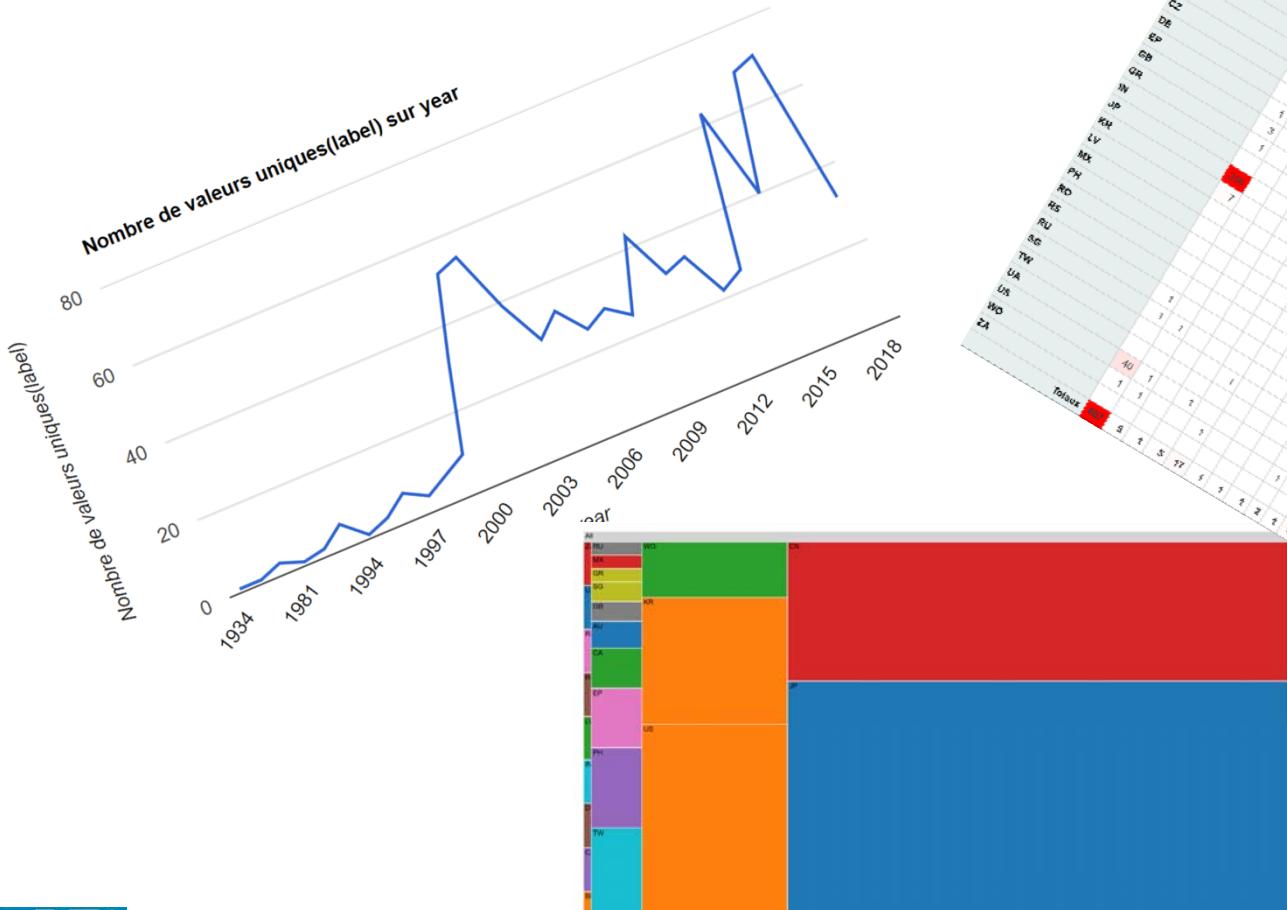
The screenshot shows a Zotero library window titled "creativity". The menu bar includes "Fichier", "Édition", "Outils", and "Aide". The toolbar features icons for adding items, deleting, and searching. A search bar is present above the main list. The left sidebar shows a folder structure with "creativity" selected. The main pane displays a list of patent entries with columns for "Titre" (Title) and "Créateur" (Creator). The titles are listed in French and English, and the creators are listed with their names.

Titre	Créateur
A rubber clay for handicraft	You
A rubber clay for handicraft	You
A rubber clay for handicraft	You
A storybook for education	You
A tire sensing system of kinetic parameters	Lin
Accomplishment method for translating patent technological achievement into inve...	Zhenjiang et Mingxia
Acer x freemanii branch-forcing and cuttage seedling method	Zhao et al.
Acupuncture point combination and acupuncturing method thereof	Wan
Acylated soy protein biodegradable plastic and preparation thereof	Fusheng et al.
Adjustable bamboo stick grinding device	Jiang
Advertisement creativity processing method and advertisement creativity processin...	Li et al.
Advertisement promotion style generation method and device	Zhang
Advertisement release method and apparatus	Lei
Advertising culture propaganda method	Zhu
Agencement pour ensemble structural utilis dans la fabrication de meubles modulai...	Fraga et Firmino
Agricultural drying plate capable of increasing usable area	Liao et al.
Air blast building block unit	Lin
Air swinging ring entertainment device	Pan et al.
Air-combustion full premixing device of metal fiber low-nitrogen combustion device	Xiao
Aliment, et notamment boisson, destin la consommation humaine	Zipoli
All-electronic ecosystems for design and collaboration	Steingrimsson
Allylamine polyoxyethylene and its preparation method	Guocai et Shunfang
Alternating current charging post for electric automobile	Yang et al.
Aluminium alloy frying pan liquid die-forging die and technique for producing alum...	Fugui et Lasheng
Aluminum material coating film-forming method	Hirano et al.
An assembling set for developing creativity	Park
Anesthetic mask with waste gas treatment function	Cao et al.

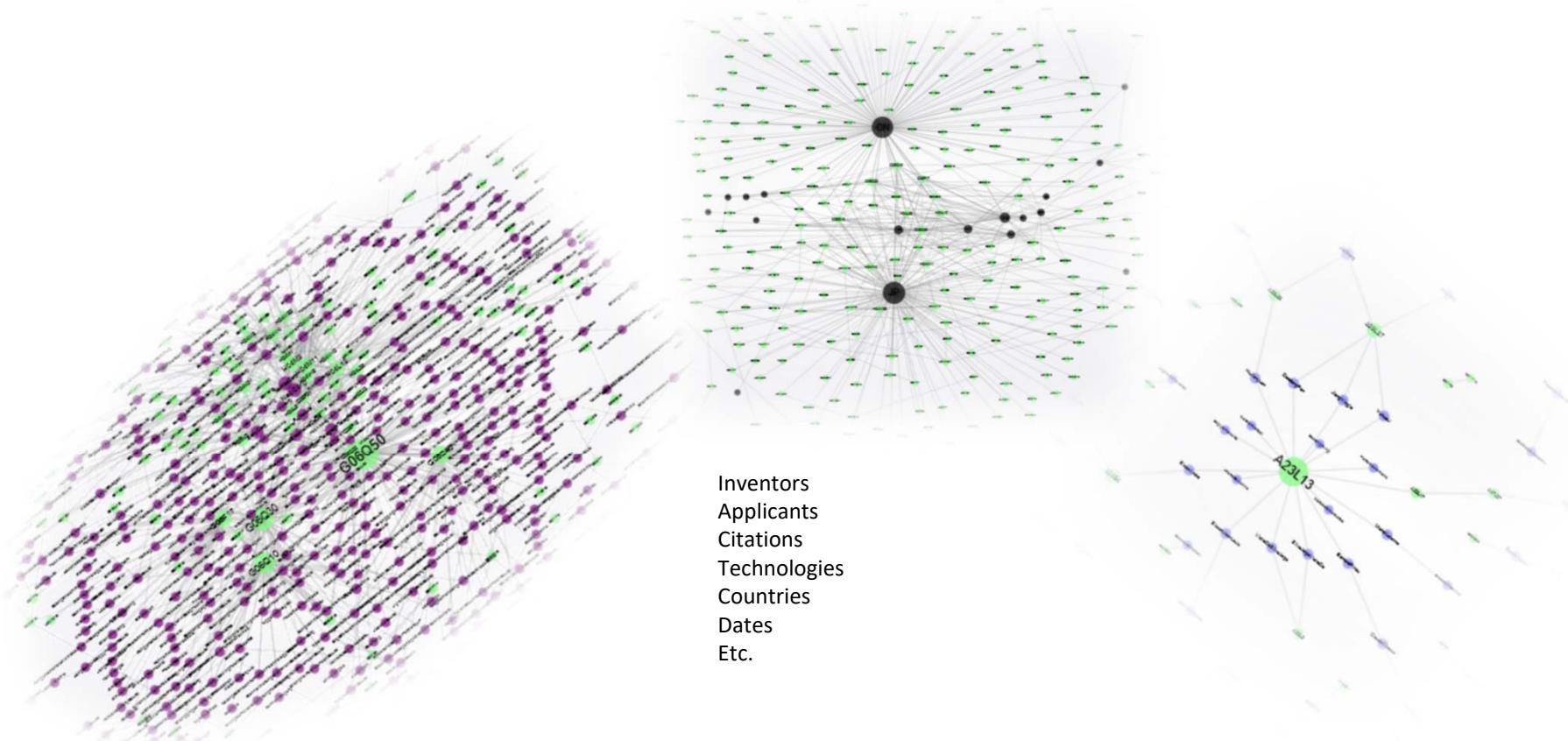
Maps: deposit, inventors, applicants



Counts, pivot tables, graphs

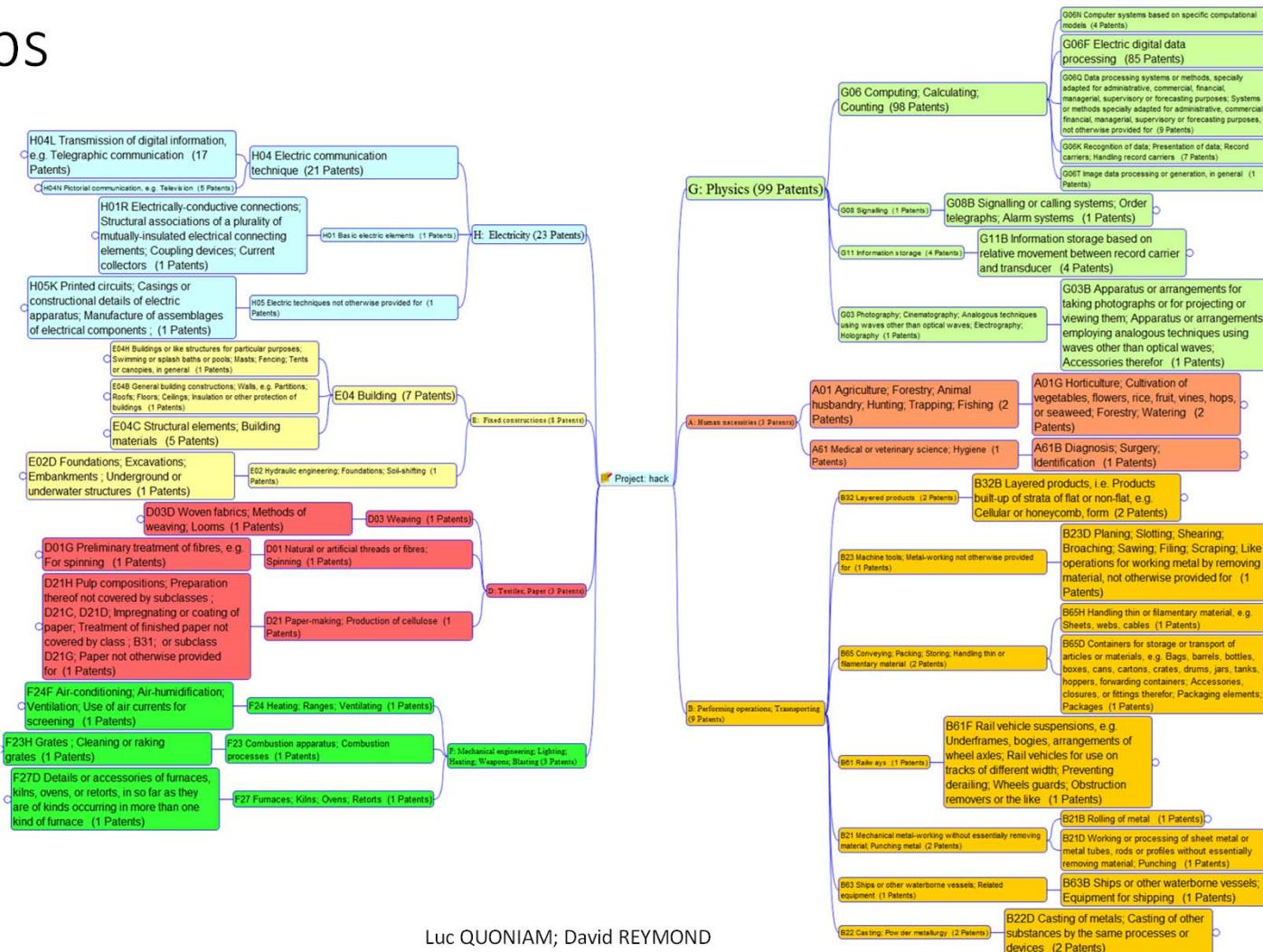


Relations and networks

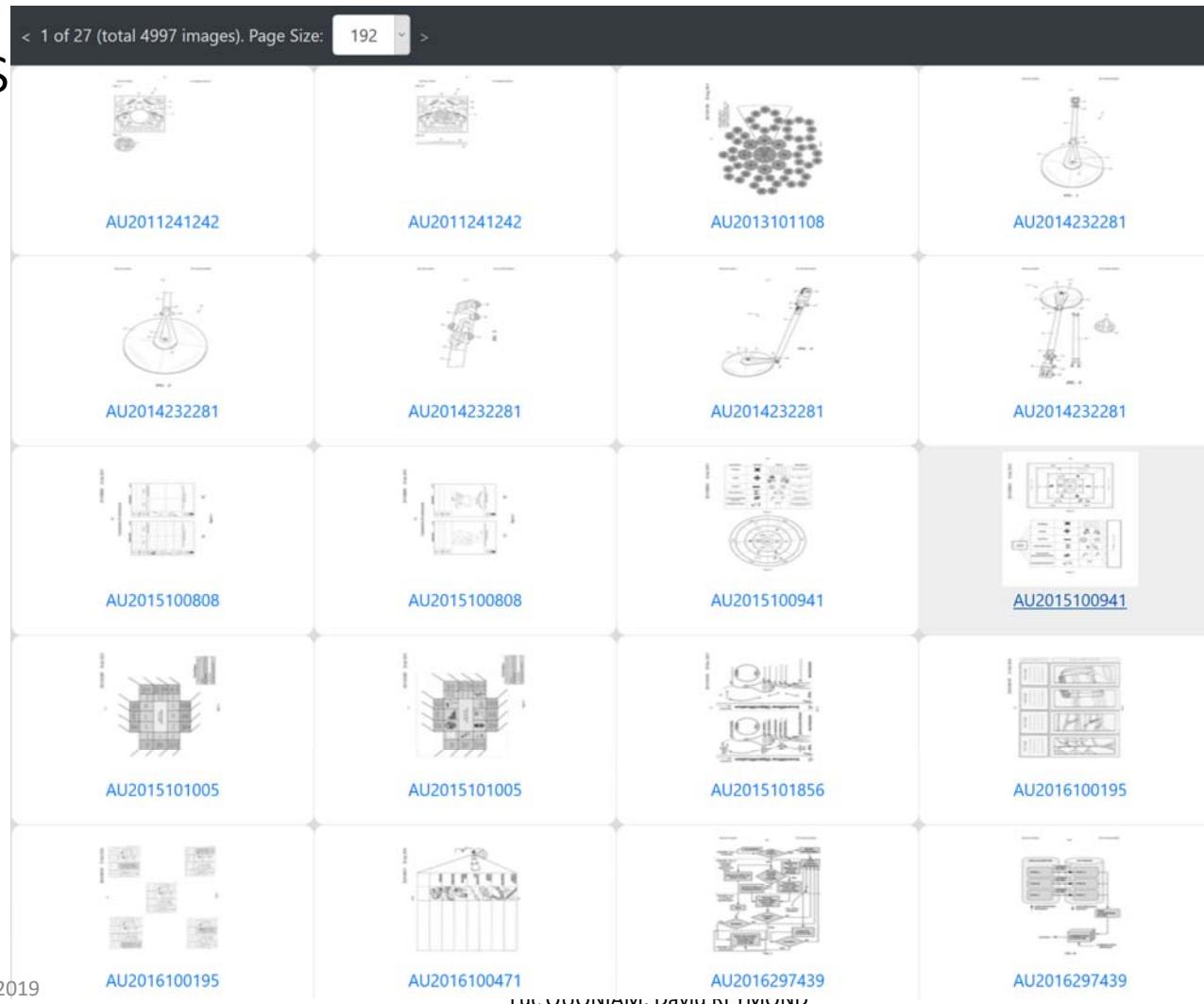


Inventors
Applicants
Citations
Technologies
Countries
Dates
Etc.

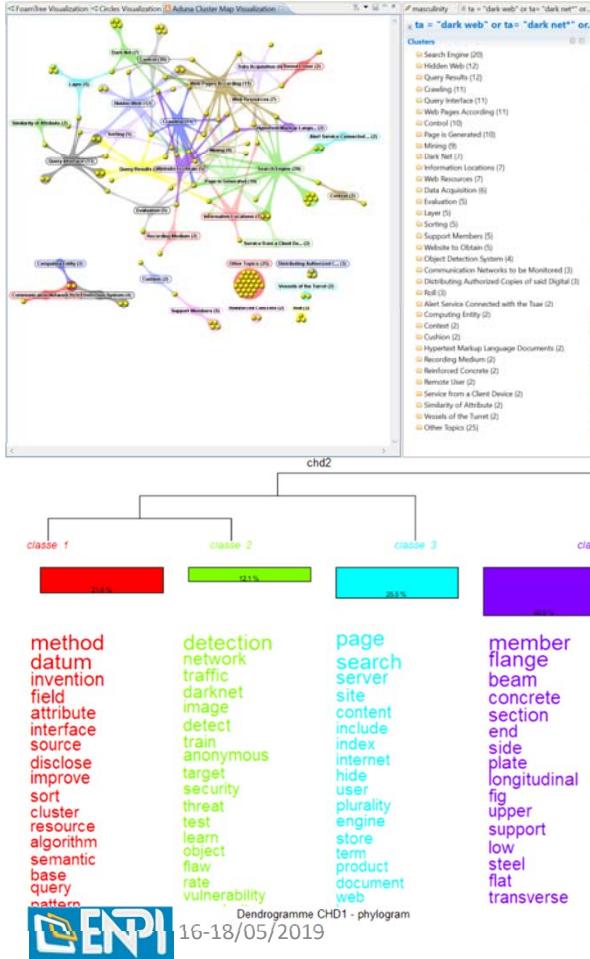
Mindmaps



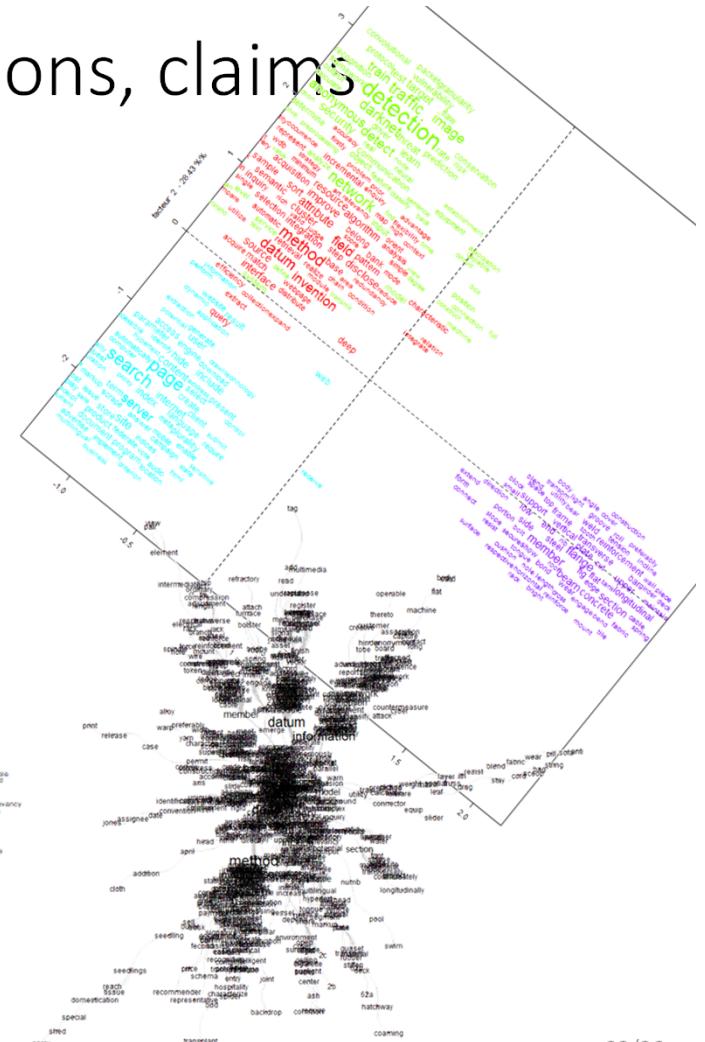
Images



Content analysis: abstracts, descriptions, claims



Luc QUONAM, David REYMOND



David's clustering: IPC+ abstract + description+ claims

Combine with IPC (mostly) terms in Goffman zone



- utility model,animal husbandry,cultivation vegetables,plant growth,section fishing,fruit vegetables,banana skins,trapping hunting,method comprises,culture ;
- similar toilet,based thereon,organic macromolecular,cocoa products,characterised composition,toilet preparations,cosmetics similar,metallurgy compositions
- foodstuff manufacture,coffee preparations,milk powder,preparations thereof,substitutes tea,preparation infusion,cheese substitutes
- e.g cooking,preservation foods,qualities physical,foodstuffs general,preparation treatment,nutritive qualities,treatment foods,beverages covered,non-alcoholi
- class mixtures,fertilizer prepared,chemical fertilizer,manure parts,parts potassium,fertilizer invention,materials specifically,fertilizer preparation,specifically
- transporting physical,waste water,physical chemical,sewage sludge,chemical processes,treatment water,apparatus general,relevant apparatus,sludge nature,m
- traditional herbal,drugs disorders,thereof e.g.preparations undetermined,plants derivatives,medicines magnoliophyta,liliopsida monocotyledons,lichens fung
- beer biochemistry,wine preparation,spirits beer,enzymology microbiology.mutation genetic,genetic engineering,microbiology vinegar,wine spirits,compositi
- meal parts,feed prepared,adapted animals,thereof feeding-stuffs,parts corn,methods specially,feeding-stuffs specially,feed invention,feed additive,flour parts,

Choose kmeans++ classes from their most common terms

- method grape,parts celery leaf,parts celery parts blueberry,parts celery parts yellow,parts celery parts banana,parts celery parts garlic
- pore volume special,pore volume,pore structure porous,pore passage structure rich,pore volume 0.17-0.74cm³/g,pore volume adjustable
- phase,pharmacodynamic,pharmacological,pharmaceutically acceptable carrier,pharmacological effect beneficial health,pharyngolaryngitis
- polyphenol content impurities mango,polyphenol content impurities,polyphenol content,polyphenol compounded application blood,polyphenol extracting,pc
- powder 0.3kg bamboo shoot,powder 0.3kg,powder 0.4kg,powder 0.3kg water chestnut,powder 0.3kg water,'banana'
- photosynthetic,photosynthesis rice water,photosynthesis respiration,photosynthetic bacteria water s2,photosynthetic bacteria parts,photosynthetic bacteria
- plurality moistening,plurality nutritive minerals,plurality minutes hot water,plurality minutes,plurality medicines synergistically interact,plurality moistening
- pollen parts polygala,pollen parts chinese magnolia,vine,pollen pini calcined,pollen parts loofah,pollen parts loofah vine,pollen pini parts sunflower
- peel extract manufature medicament,peel extract orally,peel extract orally administered,peel extract natural moisturizing,peel extract obtained extracting,"ba

Luc QUONIAM; David REYMOND

23/26

Nowaday

- Version 3 available
- Google.com : ± 3000 pages
- Google scholar : 62 publications, 188 citations
- Tauched in any brazilian regions, Algeria, France
- Coming soon
 - TRIZ integration
 - Inventor has an academic connection?

and a lot of ideas to be experimented and implemented...

<https://github.com/Patent2net/P2N-v3>

<http://patent2netv2.vlab4u.info/>

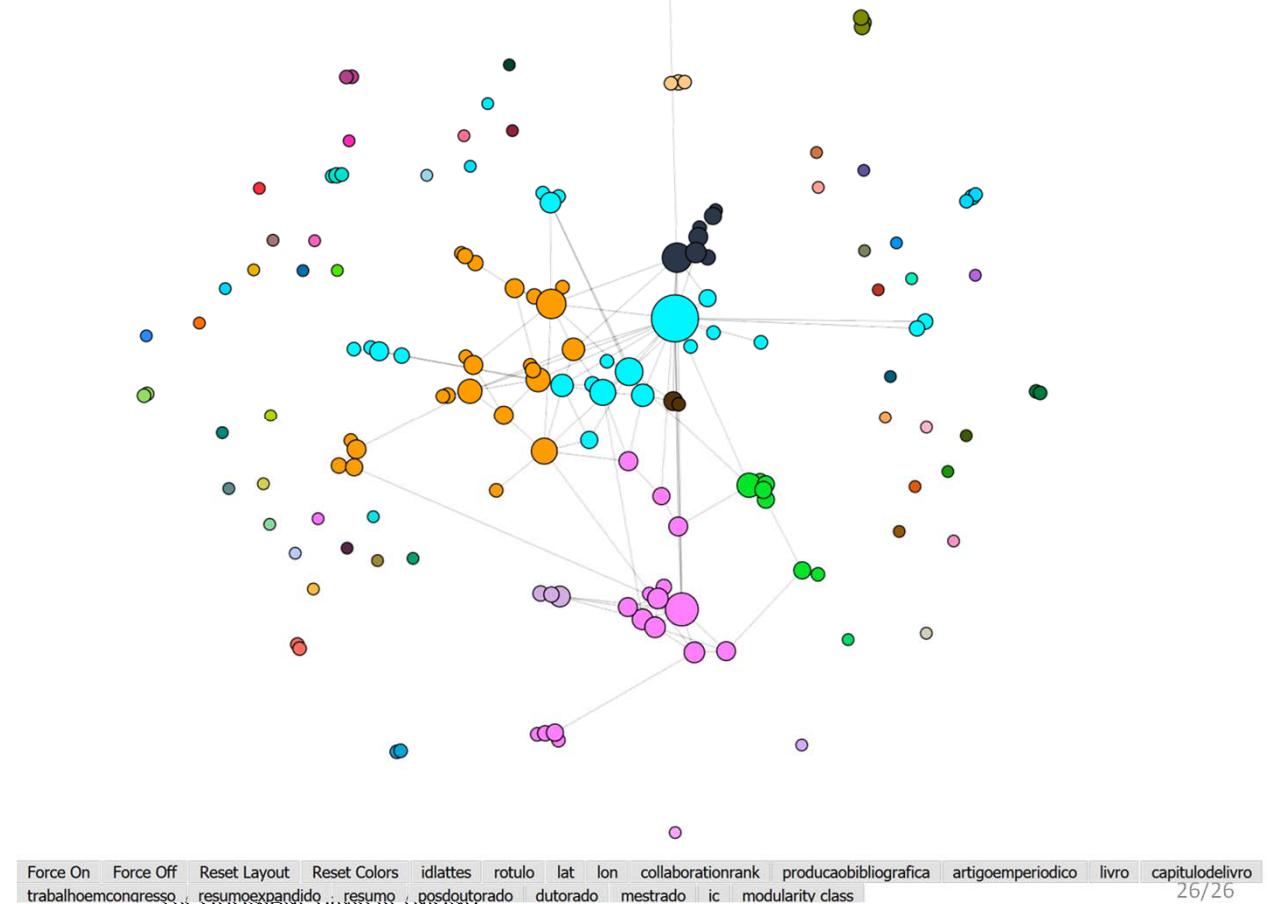
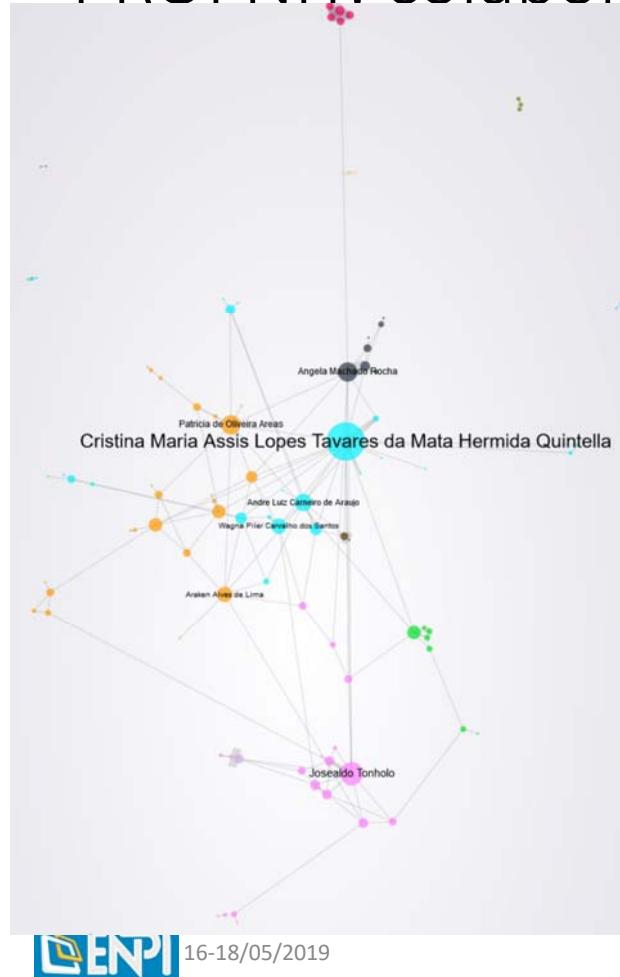
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Preparação para plataforma Sucupira: [2017](#), [2018](#), [2019](#), [2020](#), Período 2017-2020
[ScriptSucupira](#)©, [ScriptLattes](#)©

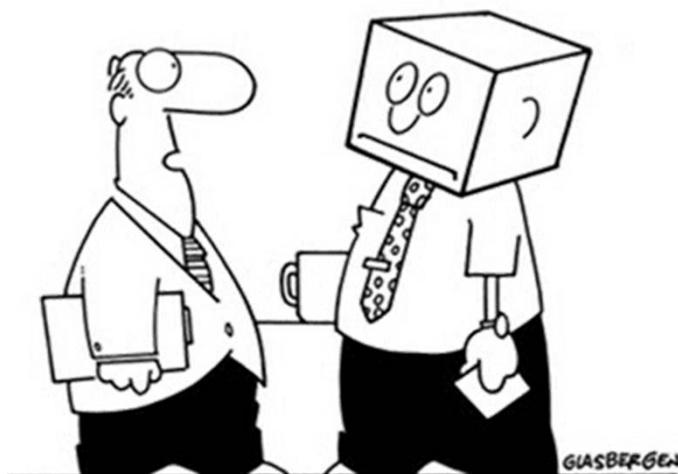
<http://lattes-sucupira.vlab4u.info/UFMS/ProfNIT.html>

PROFNIT: colaboração entre docentes e produção



Thank you! Questions?

<http://patent2net.vlab4u.info/>



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**"Thinking outside of the box is difficult
for some people. Keep trying."**



16-18/05/2019

Luc QUONIAM; David REYMOND