SKIM
Strengthening Knowledge Management for Greater Development Effectiveness in the Near East, North Africa, Central Asia and Europe

CIHEAM BARI

ICARDA
Science for resilient livelihoods in dry areas

IFAD
Investing in rural people

Knowledge and Innovation Transfer through Technology Transfer Offices (TTOs):

Enhancement of cooperation & collaboration among academic/research organizations (and private profit/non-profit sector to strengthen socio-economic development efforts.

23 September 2021

CIHEAM Bari

Shiva Loccisano
Head of Technology Transfer, **Politecnico di Torino**
Board Member, **Netval**

About Shiva Loccisano

- 2005 MS Industrial Biotech – Unito
- 2006 Product Specialist - J&J
- 2007 Client Manager GD/GDO – Equilibra (Italian SME)
- 2008 Fellow in KTT – Unito, Polito
- 2011 PhD Business & Management – Unito
- 2012 Head of TT & Industrial Liaison Dept. – Polito
- 2016 Netval board of governors
- 2018 RTTP
- ASTP NAAC, ATTP, LES IUGT
- Speaker and lecturer in international conferences and courses

UNIVERSITÀ DEGLI STUDI DI TORINO
ALMA UNIVERSITAS TAURINENSIS

Johnson & Johnson

equilibra

Politecnico di Torino

Netval

ATTP ALLIANCE OF TECHNOLOGY TRANSFER PROFESSIONALS

ASTPPROTON KNOWLEDGE TRANSFER EUROPE

LES LICENSING EXECUTIVES SOCIETY ITALY

MP POLITECNICO DI MILANO GRADUATE SCHOOL OF BUSINESS

Fondazione CRUI

Ministero dello Sviluppo Economico UIBM

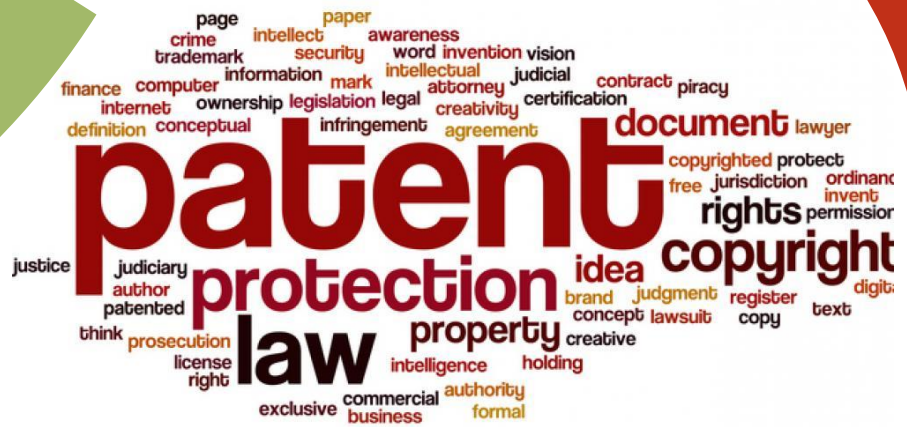
Commissione europea

Our Journey: IP protection, tools and practice

The Role of TT & importance of IP

Types of IP & patents

Practice and procedures



Learning outcomes

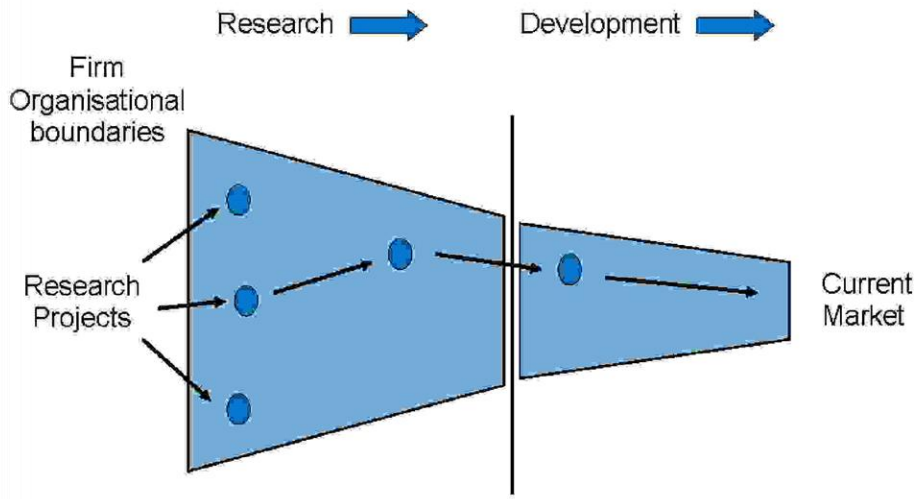
- To explain the importance of IP in the knowledge economy and the main social and economic goals of IP laws
- To understand how technology transfer activities can contribute to sustain the socio-economic development of the society and the role played by IP/IPRs in this regard
- To get a basic knowledge of the different categories of IP rights and explain the function of each set of rights (patents, trade marks, copyright, etc.) and their similarities and differences
- To deep dive into the patent system: rationale, patentability requirements and procedures
- To understand the value of patent information as a source of technical and strategic information

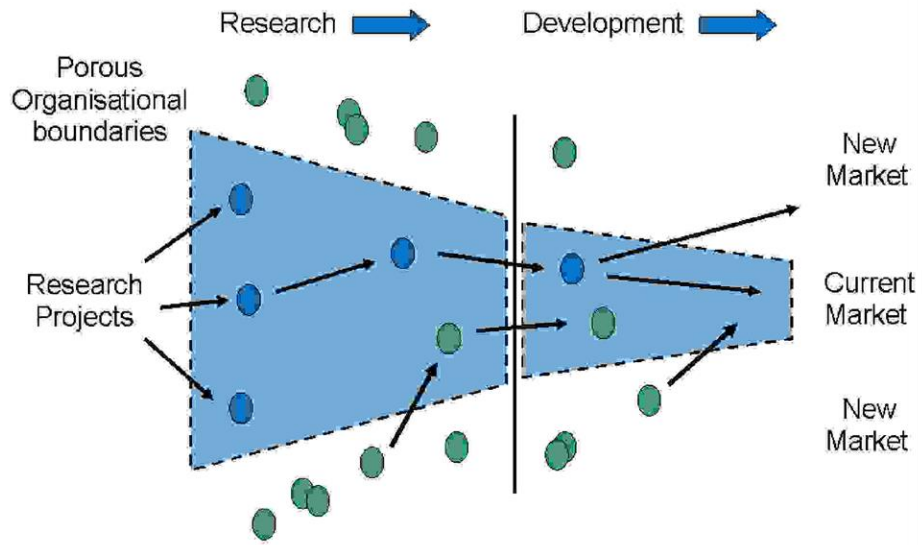
DISCLAIMER

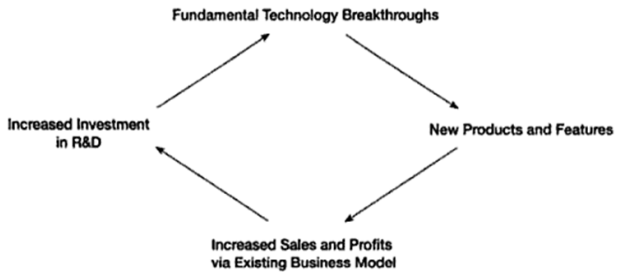
- The present document has freely been assembled from the author who is the only owner, with exclusively educational purpose. It is extensively based on the teaching materials made available from the EPO (European Patent Office), which have subsequently been adapted and edited from the author under its own responsibility.
- The following lecture will deal mainly with the functioning of the International and European IPR protection systems. It is firmly advised that you will review and get knowledge of both your respective National Systems and International bodies and regulations when it will come to the real practice.
- Remember there are professional attorneys and consultants out there to help.

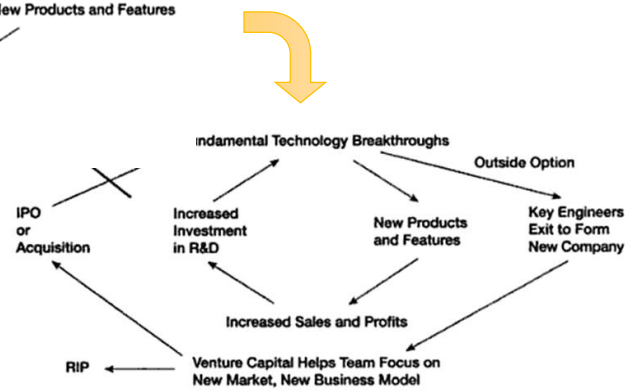
- **TECH TRANSFER & IP: WHY and WHAT**
- GENERAL INTRO ON INTELLECTUAL PROPERTY - IP
- PATENTS
- PATENT PROCEDURES

Open Innovation

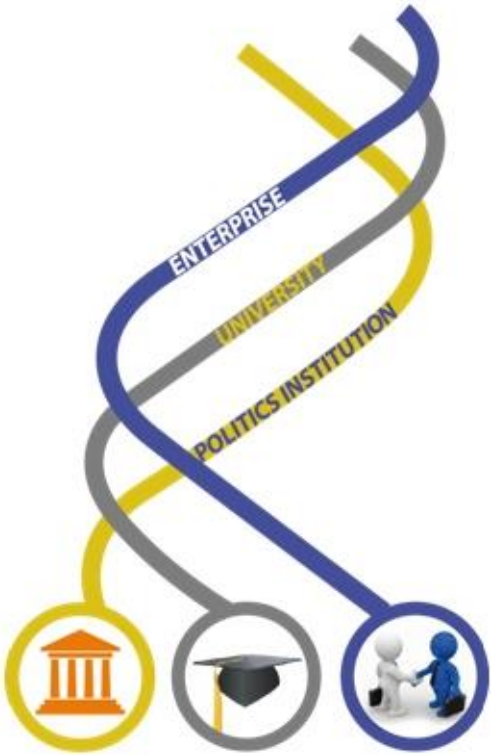


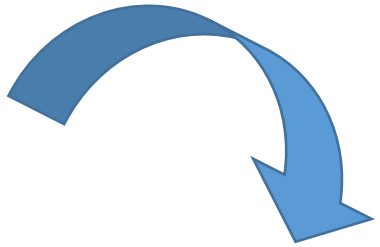






Triple Helix…and more





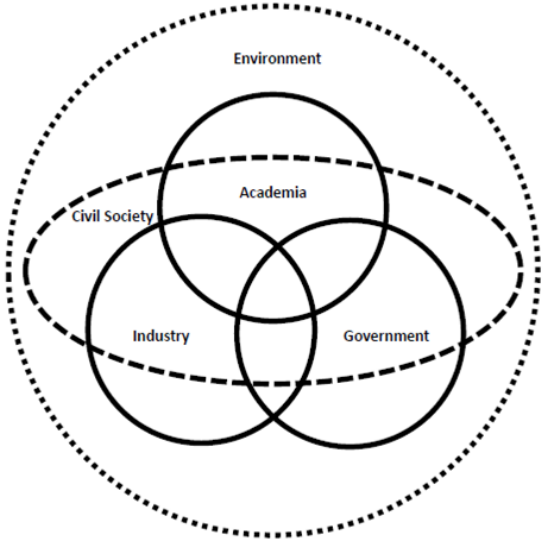
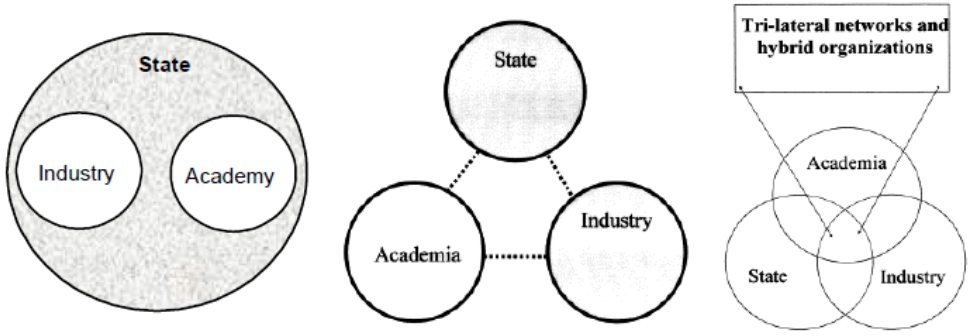
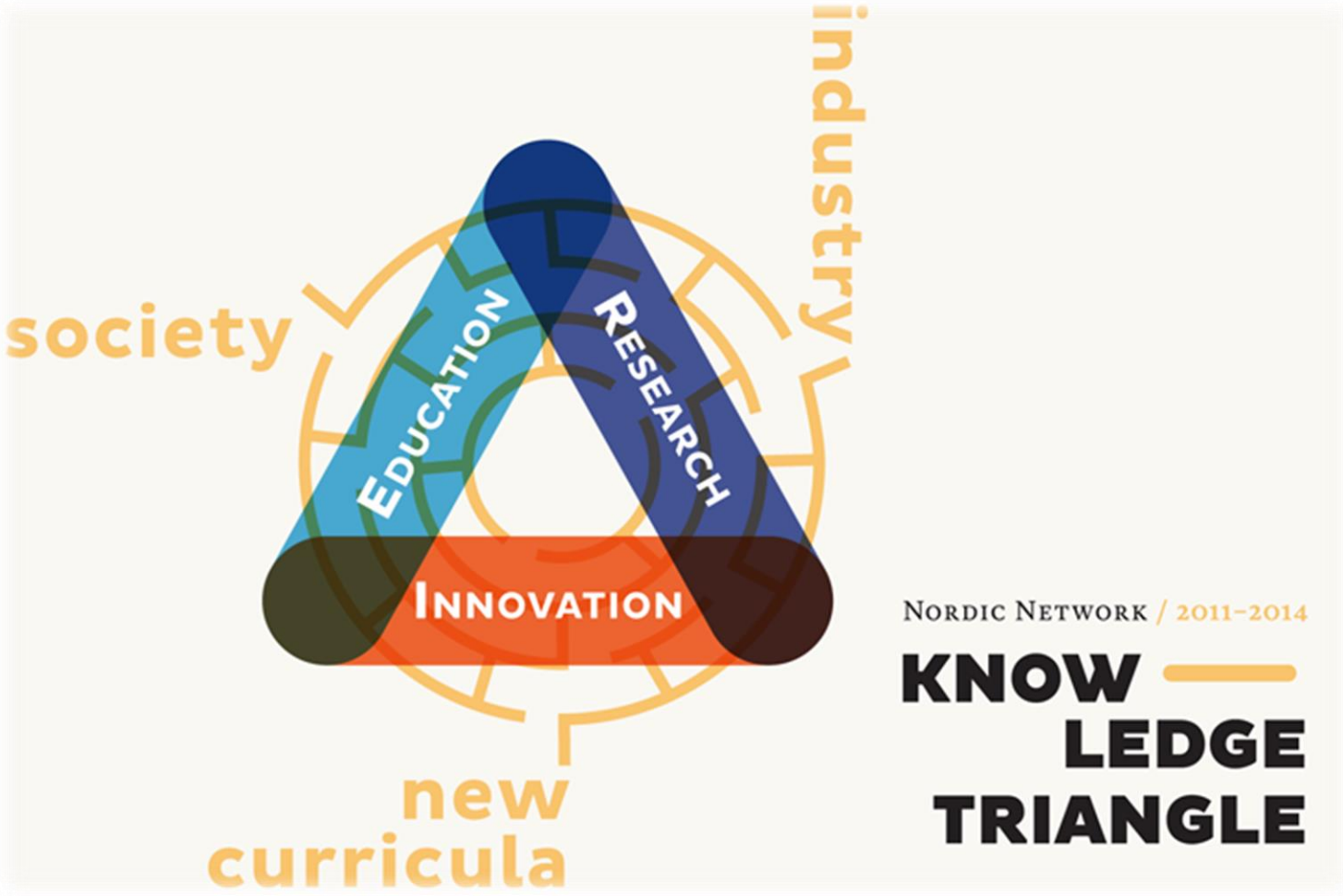


Figure 1: From the Statesman and Laissez-faire the Triple Helix



Source: Adapted of Etzkowitz & Leydesdorff (2000, p. 4).

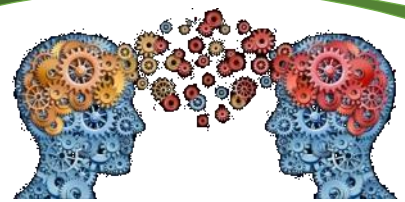
Knowledge triangle



… all of them stem from a rather trivial concept

University

Business



Research & Technical Innovation

New products, processes and services

- lack of economic resources
- deep vertical sectoral knowledge
- wide multidisciplinary problems
- ease of information sharing and networking
- global competition
- …

Education and training

Competitiveness and profits

Innovation is the impact of knowledge

While a new idea is a thought about something new or unique, and making that idea real is an invention, innovation is an invention that has a socioeconomic effect.

Innovation changes the way people live.
(Wiebe Bijker)

Why Technology Trasnfer?

IMPACT on SOCIETY:

Lots of life improving products come from academic recearch:

Results research

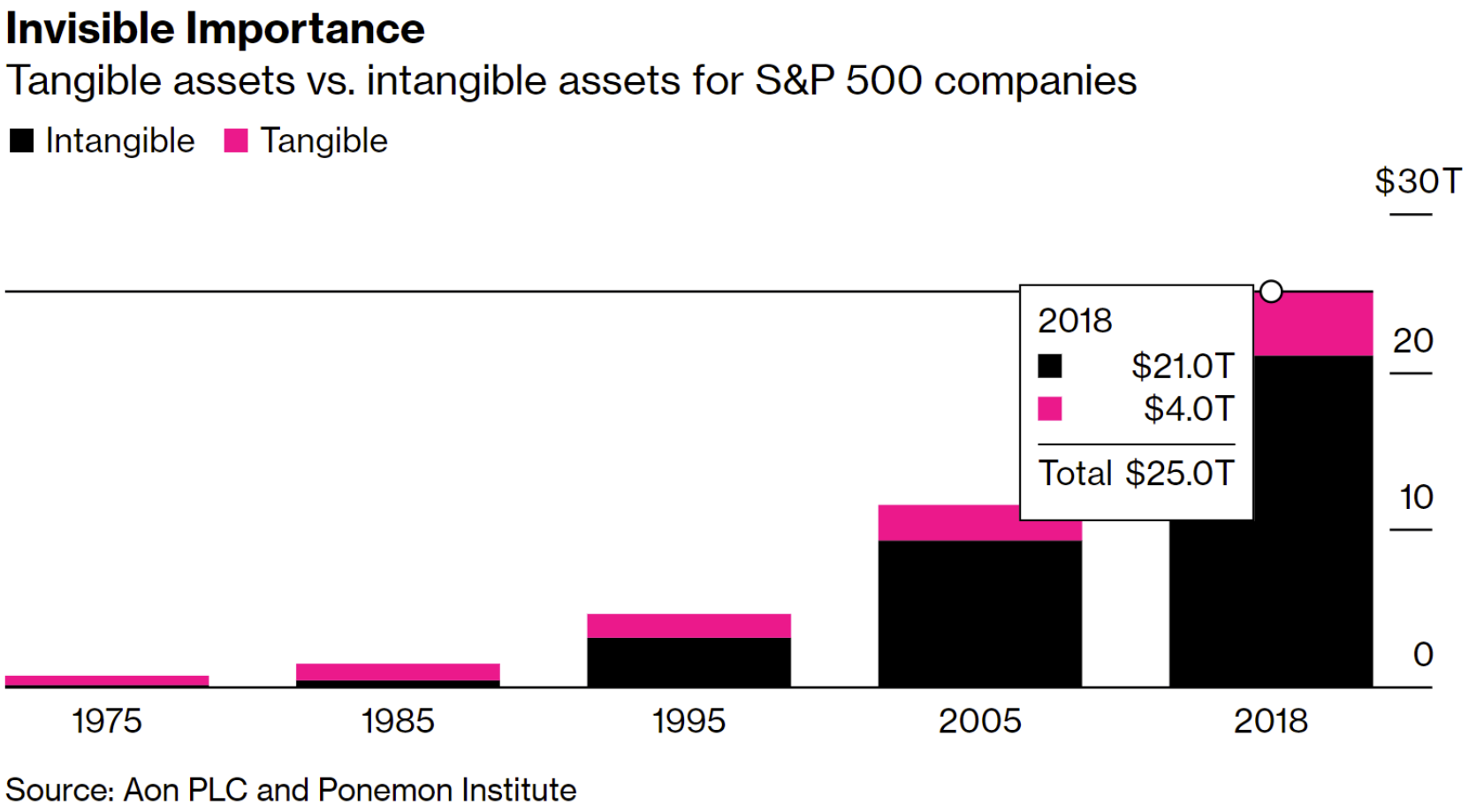
⇩

NEW Products/services

⇩

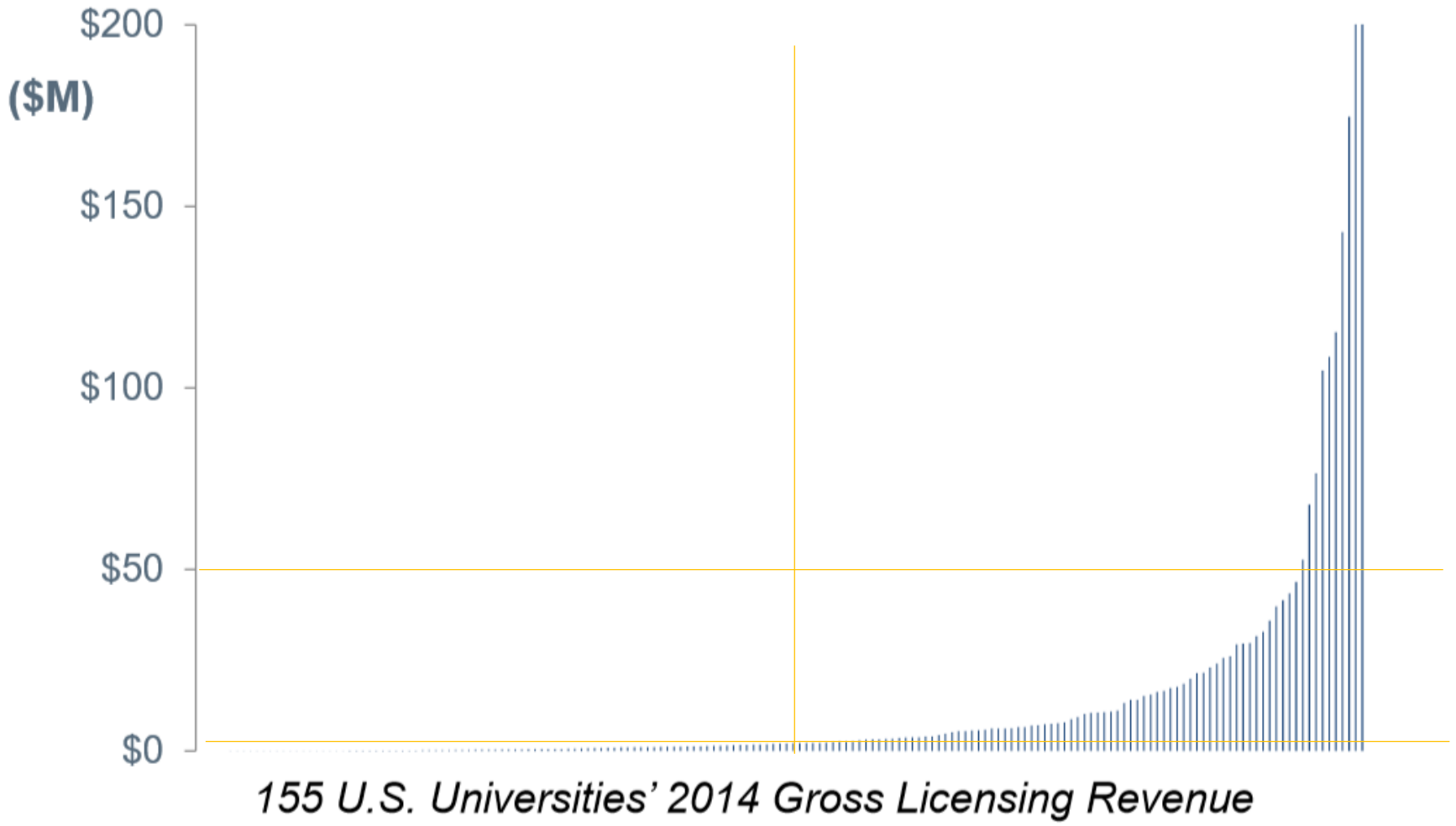
Impact on society

Value is «intangible»



https://www.bloomberg.com/news/articles/2020-10-21/epic-s-p-500-rally-is-powered-by-assets-you-can-t-see-or-touch

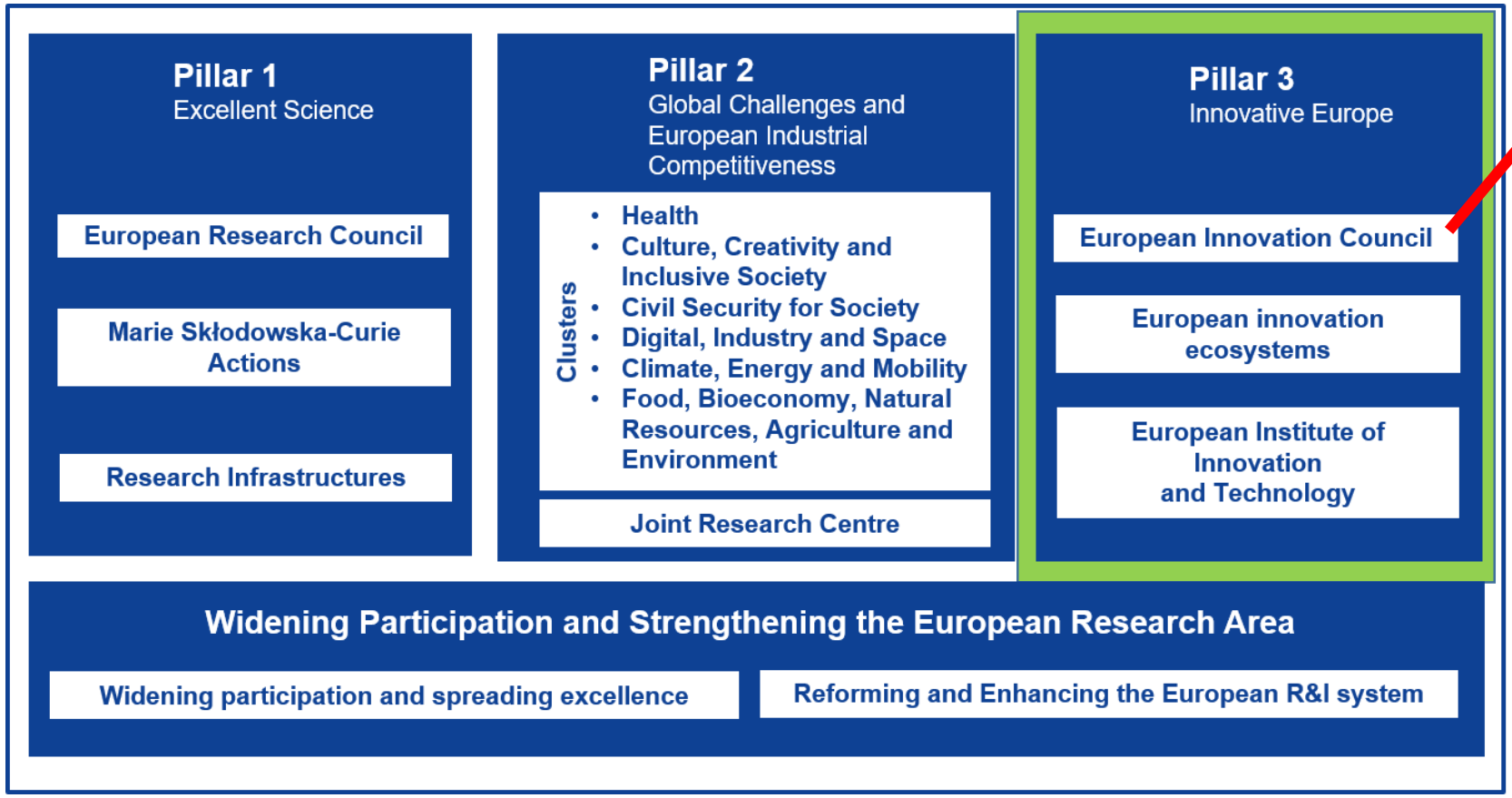
Is that all about money?

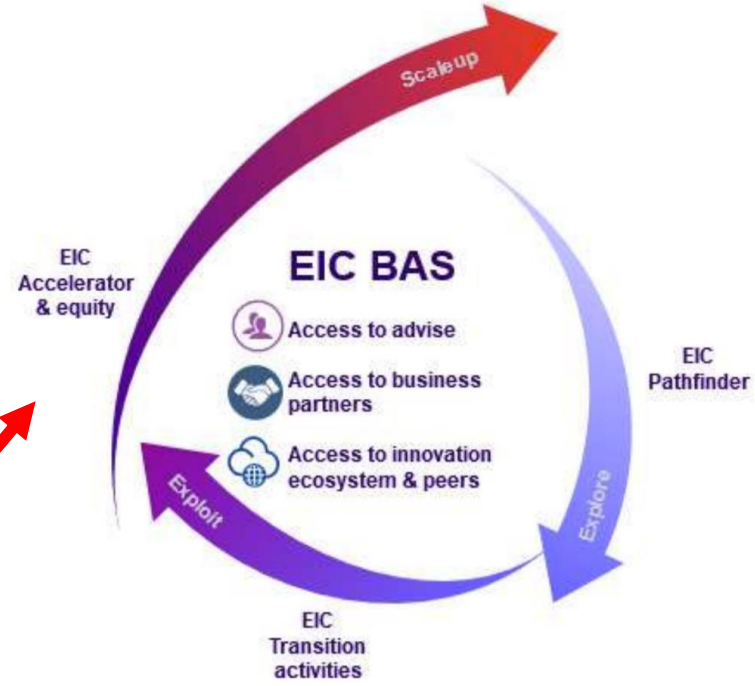


155 U.S. Universities' 2014 Gross Licensing Revenue

TT in the funding programs

- Horizon Europe





EIC work programme in brief

Table 1. Summary of main calls in 2021[8]

			Open calls (Section II)		Challenge driven calls (Section III)		
	Who can apply	What for	Call deadline(s)	Indicative Budget (EUR million)	Challenges	Call deadline(s)	Indicative Budget(EUR million)
EIC Pathfinder	Consortia of at least three different independent legal entities (e.g. research organisations, universities, SMEs, industry) established in at least 3 different eligible countries. Single applicants or small consortia (two partners) may be able to apply for Pathfinder Challenges according to the call specifications.	Grants of up to EUR 3 million (open) or EUR 4 million (challenge driven) (or more if properly justified) to achieve the proof of principle and validate the scientific basis of breakthrough technology (TRL 1-4)	19 May 2021	168.00	1. Awareness inside 2. Tools to measure & stimulate activity in brain tissue 3. Emerging Technologies in Cell & Gene Therapy 4. Novel routes to green hydrogen production 5. Engineered living materials	27 October 2021	132.00
EIC Transition	Single applicants (SMEs, spin-offs, start-ups, research organisations, universities) or small consortia (two to 5 partners). Applications must build on results from eligible Pathfinder, FET or ERC Proof of Concept projects	Grants of up to EUR 2.5 million (or more if properly justified) to validate and demonstrate technology in application-relevant environment (TRL 4 to 5/6) and develop market readiness	22 September 2021	59.60	1. Medical devices 2. Energy harvesting and storage technologies	22 September 2021	40.50
EIC Accelerator	Single Start-ups and SMEs (including spin-outs), individuals (intending to launch a start-up/ SME) and in exceptional cases small mid-caps (fewer than 500 employees)	Blended finance: up to EUR 2.5 million grant component for technology development and validation (TRL 5/6 to 8); EUR 0.5 - 15 million investment component for scaling up and other activities.Grant only/grant first under certain conditions. Investment component only for small mid-caps or as follow up to grant only (i.e. for SMEs, including start-ups)	Any time (short applications) Full applications by 9 June 2021 and 6 October 2021	592.50	1. Strategic Health and Digital Technologies 2. Green Deal innovations for the economic recovery	Any time (short applications) Full applications by 9 June 2021 and 6 October 2021	495.10

Il TT within your own Univ. and for your career

- **CRITERI BIBLIOMETRICI DI ATENEO (CBA) (e.g. from Polito)**
- **Strategic plan (of the University and Departments)**
- **Research quality evaluation (VQR)**
- **Selections to become a Professor**

20 Mansfield News-Journal Thursday, April 18, 1963

You'll Be Able To Carry Phone In Pocket In Future

Some day, Mansfielders will carry their telephones in their pockets.

Don't expect it to be available tomorrow, though.

Frederick Huntsman, telephone company commercial manager, says, "This telephone is far in the future — commercially."

★

Right now, it's a laboratory development and it's workable, allowing the carrier to make and answer calls wherever he may be.

Other telephones of the future includes a kitchen loud speaking telephone, and a visual image telephone.

The kitchen instrument can be used as a regular telephone, a loudspeaking phone if the housewife happens to be busy preparing a meal, or as an intercom station for the home.

The visual image telephone allows the parties to converse by way of a microphone and loud speaker while a miniature television camera transmits the image. The "TV phone" also will have a writer signature transmission system and a conversation tape recorder.

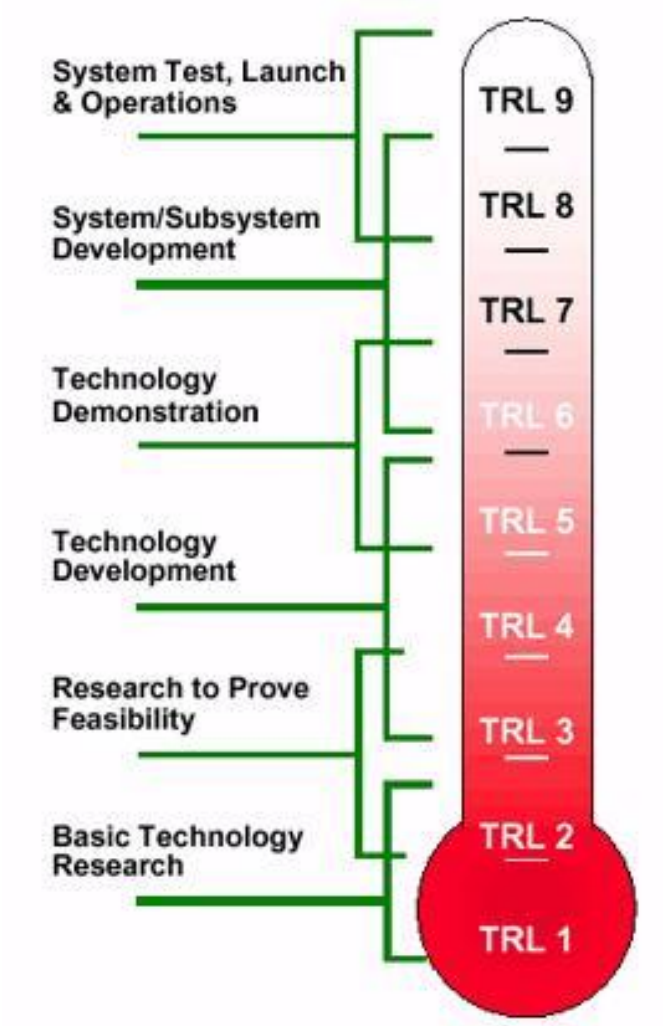
The new phones are being displayed at the Home and Flower Show at the Coliseum.

HOW ABOUT THIS? — Mrs. Jean Conrad, commercial representative of Mansfield Telephone Co. holds up the pocket - sized, wireless telephone which Mansfielders will some day carry with them. The phone is still in the development stage and "far in the future."

TECHNOLOGY TRANSFER

Why is it so «damn hard»?

We need to introduce the **‘Technology Readiness Level (TRL)’**



Horizon 2020 TRL definitions:

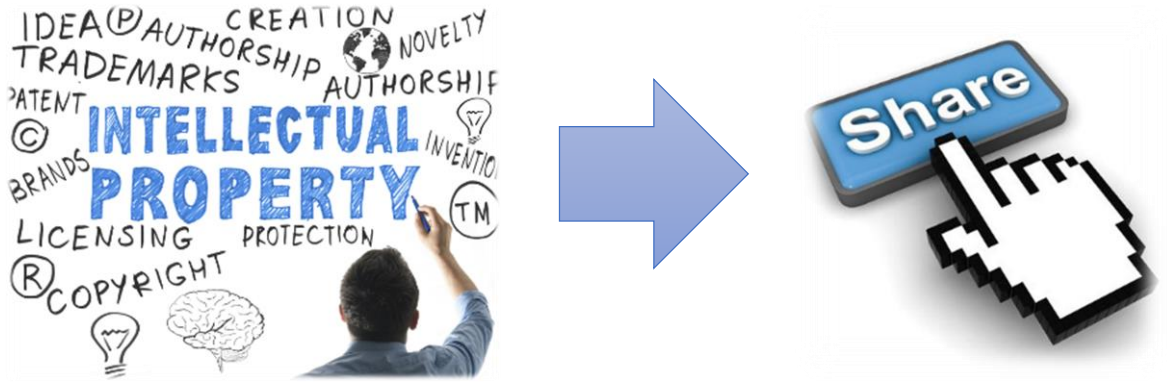
- TRL 9 – actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies; or in space)
- TRL 8 – system complete and qualified
- TRL 7 – system prototype demonstration in operational environment
- TRL 6 – technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- TRL 5 – technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- TRL 4 – technology validated in lab
- TRL 3 – experimental proof of concept
- TRL 2 – technology concept formulated
- TRL 1 – basic principles observed

…because it’s hard to cross the «Death valley»

And we can accomplish it only in collaboration with the industrial world

Align and preserve interests is crucial

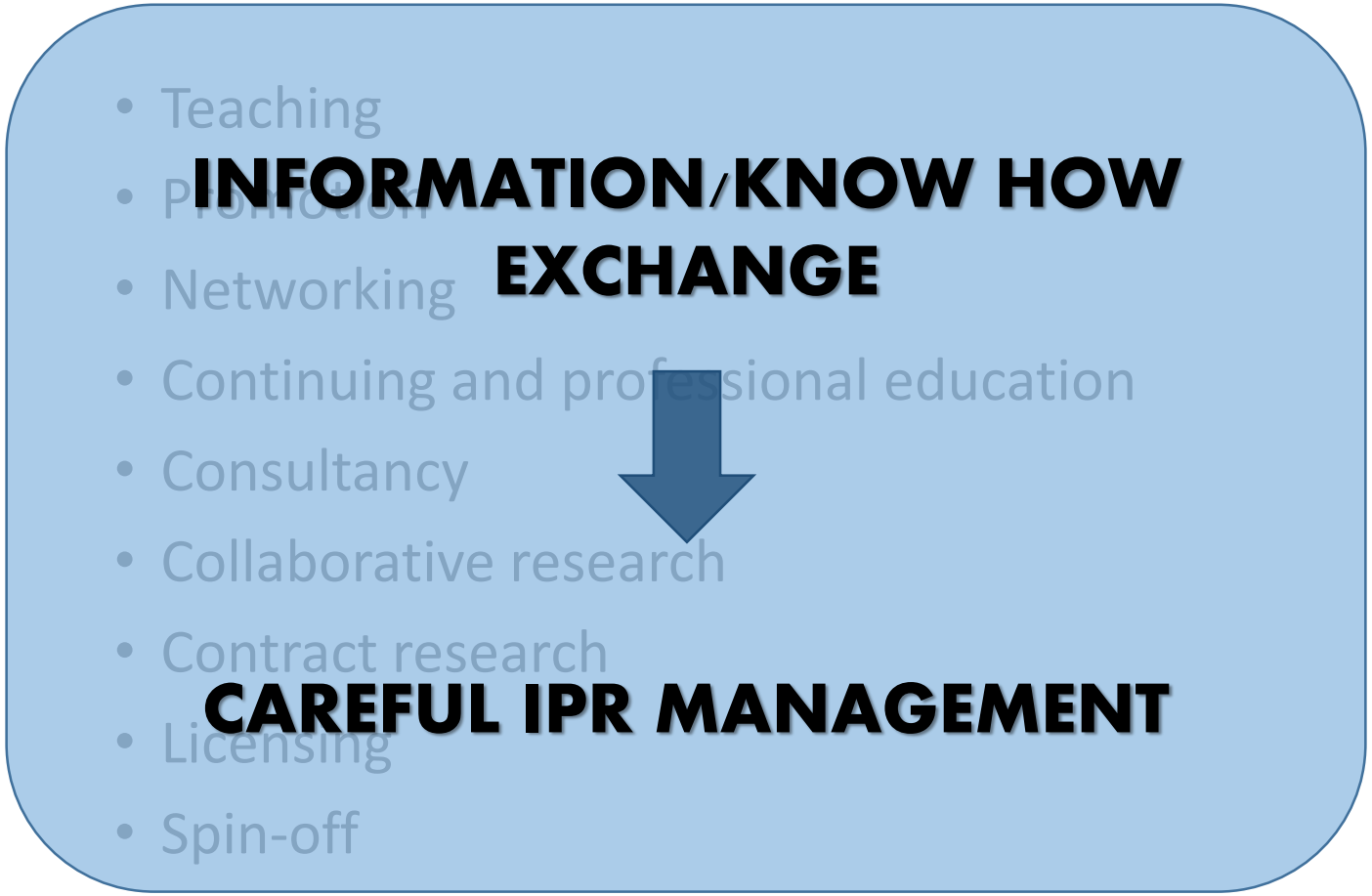
- In the contemporary extremely complex & highly interconnected world, «**Research networks**» are the *loci* where "**fast paced innovation**" is made possible.



- Properly **managing and protecting know-how** and results of the collaborations becomes a **fundamental tool** to "make intangible resources tangible" and enable their circulation while **preserving each different stakeholder interests.**

Innovation, Technology Transfer and IPRs

In their broader meaning Knowledge and Technology Transfer might be interpreted as a set of activities **intended to disseminate scientific research results to mauture them into innovations** and, in accordance with various innovation stakeholders (univ, funders and the broader business community), main KTT machanisms involve:



- TECH TRANSFER & IP: WHY and WHAT
- **GENERAL INTRO ON INTELLECTUAL PROPERTY - IP**
- PATENTS
- PATENT PROCEDURES

The Electric motors company

Your company produces and sells electric cars.
Recently the “University of Sanfransokio” published an article describing **an innovative electric motor which is a real breakthrough in its sector with improved performance of over 10 times.**
They advertised that they intendedly did not file any patent on it because of internal ethical and policy reasons.

Your engineers immediately drafted a project proposal to industrialize the new technology and **bring it to the market within the next 12 months**, with an **initial investment in development** and testing (it is not ready for production yet) of **5 millions** which will be recovered - according to their estimates - in a 6 years time, from now.

It seems interesting…but it is becoming a very competitive sector and market shares are subject to deep fluctuations.
You also know that at least one of **your competitors has already started working** on the same project with some months advantage.

As a CEO, what would you do?

Why an IP system?

Innovators

make significant investments in developing new products

Competitors

benefit from their efforts

Can offer similar or identical products at a cheaper price

Get a free ride on the back of the innovator's creativity and inventiveness

Heavy pressure

may drive the innovator out of business

IP system

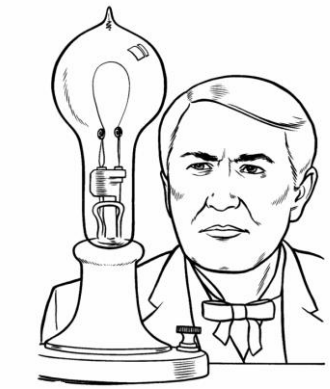
Rights over the use of inventions, designs, brands, literary and artistic works

The roots of the IP systems

In the ancient Greek city of Sybaris (destroyed in 510 BC), leaders decreed:

*"If a cook invents **a delicious new dish**, no other cook is to be permitted to prepare that dish for one year.*

*During this time, only the inventor shall reap the commercial profits from his dish. This will **motivate others** to work hard and compete in such inventions."*



What are Intellectual Property and IP Rights (IPR)?

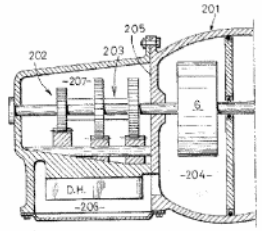
Intellectual Property (IP) refers to creations of the mind and the laws assure protections of these creations conferring them some rights (IPR)

In general terms: IPRs confer an **exclusive right**

In particular: IPRs confer the owner the right to prevent others to “use something” without his/her permission

Some IPRs needs to be registered/filed (like patents) but others (like copyright), might not need so, also depending on the specific concerned law system

The different types of IP (I)

Legal right	What for?	How?	
Patents	New inventions	Application and examination	
Copyright	Original creative or artistic forms	Exists automatically	
Trade marks	Distinctive identification of products or services	Use and/or registration	Google
Registered designs	External appearance	Registration	

The different types of IP (II)

Legal right	What for?	How?
Data bases	Collection of “items” arranged in a systematic or methodical way	Exists automatically
Trade secrets	Valuable information not known to the public	Reasonable efforts to keep secret
Plant variety	New plant varieties	Application

…and more: semiconductor topographies, geographical indications

How many IPRs in an iPhone?

Trade marks:

- Made by “Apple"
- Product “6S"
- Software: “iOs", “Applestore“

Patents:

- Data-processing methods
- Semiconductor circuits
- Chemical compounds
- Touchscreen

Copyrights:

- Software code
- Instruction manual
- Ringtone

Trade Secrets:

- ????

Design:

- Overall phone shape
- Retina screen shape
- Arrangement of icons
- Capacitive Touchscreen


(3)
(2) प्रत. v. t. & i.
rough copy;
n. किल्ता. copyright n.
coquetry n.
corner
cornerstone n.
corollary
corona
coronation
coroner
coronet
coporal
corporate
corporation

COPYRIGHT

What is copyright?

- Copyright protects any production of the human mind, such as literary and artistic works.
  - This production **must be an expression and not a mere idea**.
  - The expression **must be original**.

- Copyright creates a special legal relationship between authors (the physical person who created the work, but with exceptions => US) and their work.

- It confers legal protection for a limited period of time.
  - Article 7 of the Berne Convention and Article 12 of the TRIPS Agreement state that copyright lasts at least 50 years after the death of the author. In the EU a harmonised term of protection of 70 years after the author's death was implemented by Directive 2006/116/ EC of 12 December 2006 on the term of protection of copyright and certain related rights.

Note: Copyright protection is not subject to any formality requirements, such as registration, even if some countries (e.g. the US) provide for the possibility of copyright registration.

Scope of protection

- **Economic rights**

  - relate to the economic exploitation of the work

  - are freely transferable or licensable

    - the right to reproduce the work and to communicate it to the public.
    - the right of adaptation and translation, the resale right and the right of distribution.

- **Moral rights**

  - relate to a moral interest of the author

  - are always retained by the author

    - the right (not) to be recognized as the author of a work (right of authorship).
    - the right of integrity. In other words, the author has the right to object to any changes made to the work that could jeopardize his honor and reputation.
    - the right of divulgation of the work. In other words, the author has the right to decide when his work can be made public.

- **Infringement and remedies**
  - Copyright infringement occurs when a person exercises a right conferred on the author or right holder without having obtained their consent. A violation of the right to reproduce occurs where a substantial part of the preexisting work is used without the authorisation of the author or right holder. The "substantial part" has to be assessed both quantitatively and qualitatively, but always in relation to the original part of the work.


YouTube
Broadcast Yourself™
amazon.com
adidas
Nikon
Google
facebook
Unilever
SAMSUNG
Coca-Cola
MasterCard
YAHOO!

TRADE MARKS

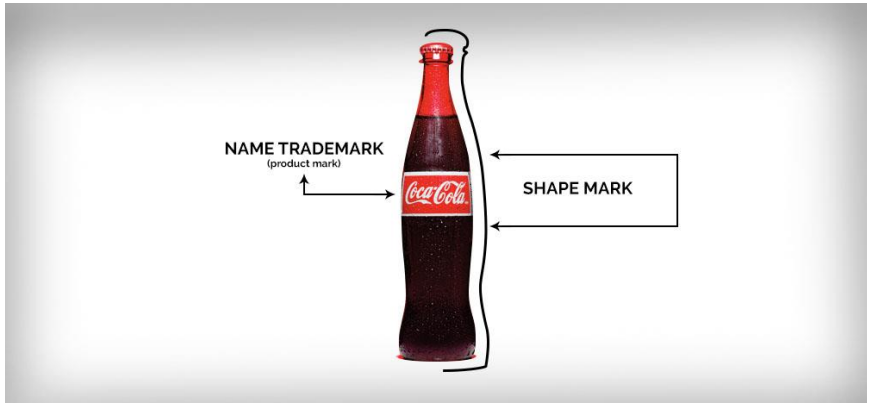
What is a trade mark?

- A trade mark is any sign, capable of being **represented graphically**, which **distinguishes** the **goods and services** of one undertaking (company or organisation) from those of another

- Many different types: word, figurative, colour, shape

- Absolute grounds for refusal
  - Distinctiveness

- Relative grounds for refusal
  - When peaceful co-existence of marks is impossible



Routes for registration

- National => UIBM (Italian Patent and trademark Office)
- International => WIPO (World Intellectual Property Organization)

The Madrid System is a convenient and cost-effective solution for registering and managing trademarks worldwide. File a single application and pay one set of fees to apply for protection in up to 124 countries. Modify, renew or expand your global trademark portfolio through one centralized system.

- EU => EUIPO (EU Intellectual Property Office)
  - European Union Trade Mark

Scope of protection

- Exclusive right, but
  - principle of **speciality**
  - principle of **territoriality**
- Potentially perpetual (renewal every ten years)
- Risk of loss of protection if:
  - not used after five years
  - found to be invalid
- Allowed uses

DESIGNS

«Se gli altri paesi hanno avuto una teoria del design, l'Italia ha avuto una filosofia del design, forse persino un'ideologia»

Umberto Eco,1986

What is a design?

- A design is the **outward** **appearance** of the whole or parts of a **product** resulting from its features.
  - A product is any industrial or handicraft item.

- **Requirements for protection**
  - **Novelty**
    - no identical design has been made available to the public earlier, i.e. before a certain date.
  - **Individual character**
    - the design must give a different overall impression to any other design disclosed earlier.

An industrial design is the **ornamental or aesthetic aspect** of an article. It may consist of three dimensional features, such as the shape of an article, or two dimensional features, such as patterns, lines or color.

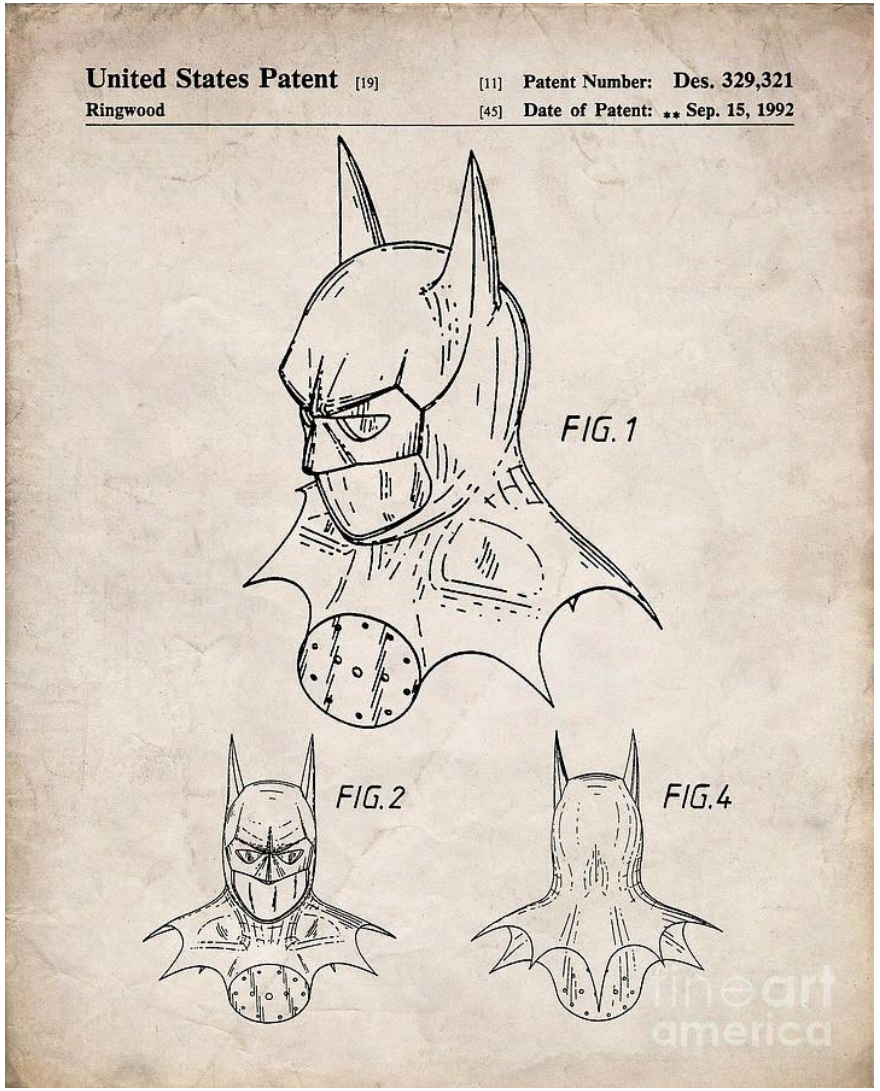
- Some exclusions => if they run counter to public order and morality

Registered and unregistered design rights

- National with UIBM
- International with WIPO
  - The Hague System for the International Registration of Industrial Designs provides a practical business solution for registering up to 100 designs in over 65 territories through filing one single international application.
- EU with EUIPO
  - registered Community design
  - unregistered Community design
    - obtained through disclosure to the public and use. There is no need for any type of registration. Unregistered designs can be useful for those types of products and designs that have an exceptionally short lifespan for which the registration process might take too long compared with the length of time for which the design is valuable.

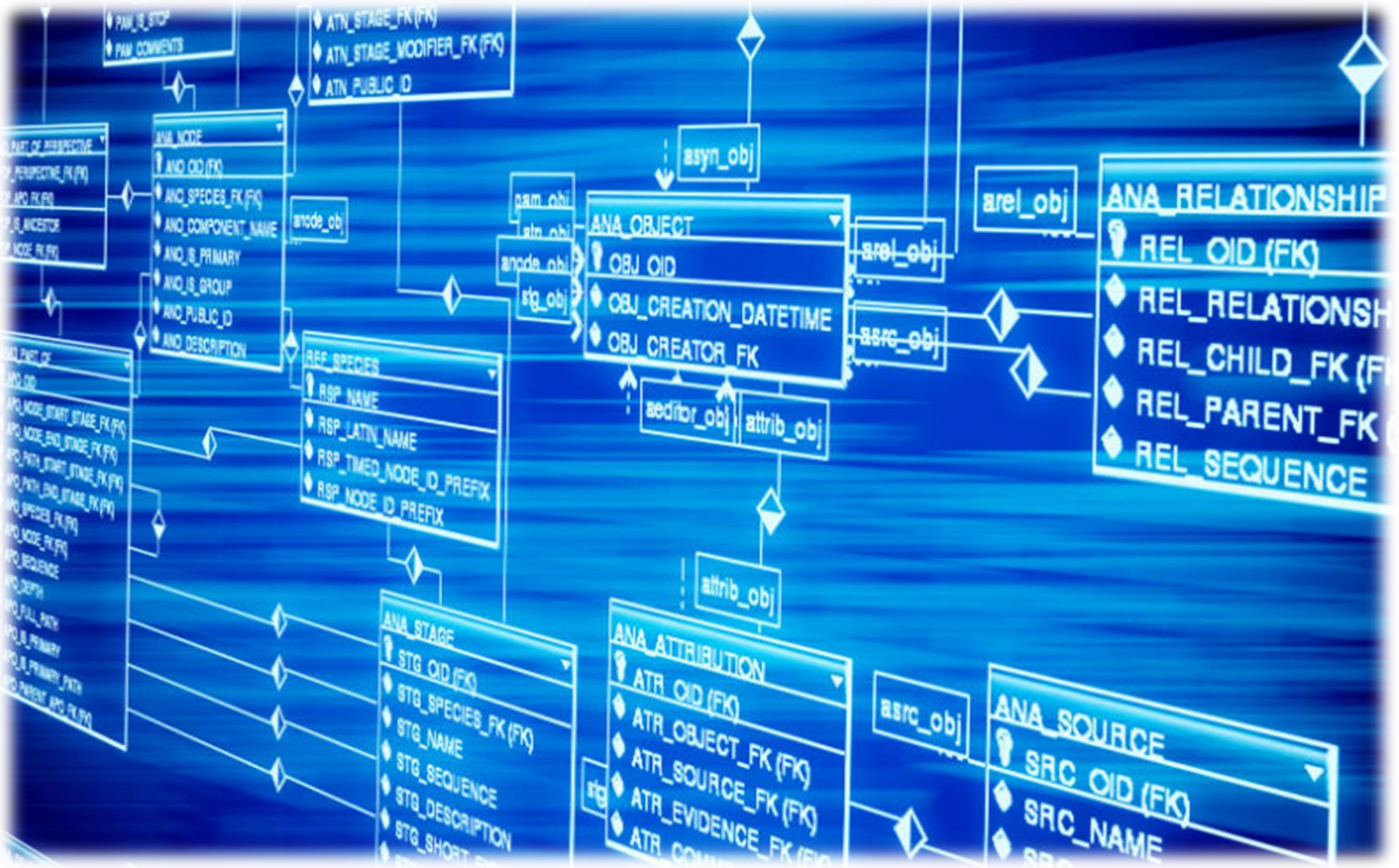
Scope of protection

- Exclusive right to use and prevent others from “using”
  - making, offering, putting on the market, importing, exporting or using any product in which the design is incorporated or to which it is applied.
- Principle of territoriality
- Duration
  - registered design rights: maximum 25 years (by means of 5 years renewals)
  - unregistered design rights: 3 years



Unregistered design rights only offer protection against copying.

There is no protection against independent works or creations that may be identical or similar to the unregistered design.


ATN_STAGE_FK (FK)
ATN_STAGE_MODIFIER_FK (FK)
ATN_PUBLIC_ID
ANO_OID (FK)
ANO_SPECIES_FK (FK)
ANO_COMPONENT_NAME
ANO_IS_PRIMARY
ANO_IS_GROUP
ANO_PUBLIC_ID
ANO_DESCRIPTION
REF_SPECIES
RSP_NAME
RSP_LATIN_NAME
RSP_TIMED_NODE_ID_PREFIX
RSP_NODE_ID_PREFIX
ANA_STAGE
STG_OID (FK)
STG_SPECIES_FK (FK)
STG_NAME
STG_SEQUENCE
STG_DESCRIPTION
asyn_obj
ANA_OBJECT
OBJ_OID
OBJ_CREATION_DATETIME
OBJ_CREATOR_FK
aattribr_obj
attrib_obj
arel_obj
ANA_RELATIONSHIP
REL_OID (FK)
REL_RELATIONSH
REL_CHILD_FK (F
REL_PARENT_FK
REL_SEQUENCE
asrc_obj
attrib_obj
ANA_ATTRIBUTION
ATR_OID (FK)
ATR_OBJECT_FK (FK)
ATR_SOURCE_FK (FK)
ATR_EVIDENCE_FK (FK)
asrc_obj
ANA_SOURCE
SRC_OID (FK)
SRC_NAME

DATABASES

What is a database?

- A database is a collection of independent works, data or other materials arranged in a systematic or methodical way and individually accessible by electronic or other means.

Scope of protection

- Directive 96/9/EC on the legal protection of databases

- Copyright protection
  - Structure
  - Originality
  - Authorship
  - Limited protection

- *Sui generis* protection
  - Contents
  - Investment
  - Maker

- Computer programs used in making or operating databases are excluded from protection

Rights and limitations

- Copyright
  - Restricted acts
  - Exceptions
- *Sui generis* right
  - Gives rights to the maker of a database who can show that **there has been a substantial qualitative and/or quantitative investment** in either obtaining, verifying or presenting the contents of the database
  - 15 years
  - Prevent:
    - Extraction
    - Re-utilisation

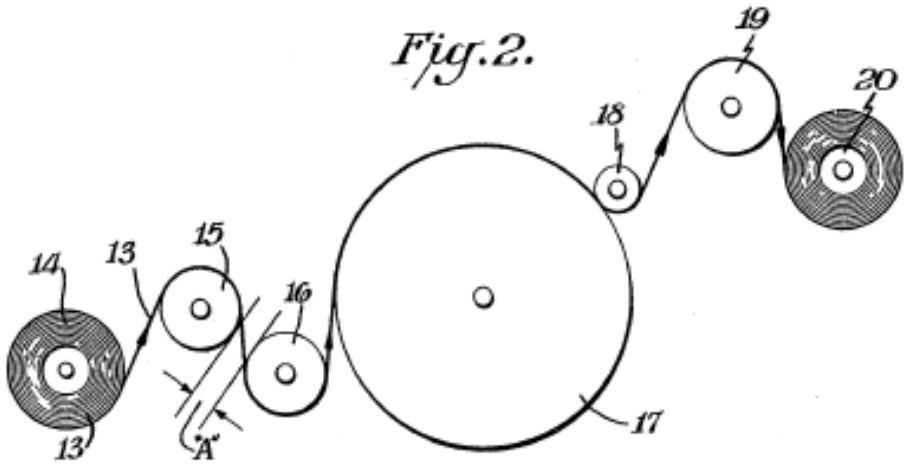
TRADE SECRETS

What are trade secrets?

- Information that
  - is not generally known or easily discovered
  - has a business, commercial or economic value (actual or potential) because the information is not generally known
  - is subject to reasonable efforts to maintain secrecy
    - e.g. sales methods, distribution methods, consumer profiles, advertising strategies, lists of suppliers and clients, and manufacturing processes.
- Unlimited life, provided the information does not become public knowledge.

Trade secret protection can last longer than patent protection. However, once the information has been revealed (**either accidentally or deliberately**) then its value will be worthless.

Scope of protection



Products/processes where reverse engineering is difficult

Images from www.coca-cola.com

Means of protection

Practical

- Limited access to information
- "Need to know"
- Encryption of data
- Monitored entry to installations

Contractual

- Restrictive covenants in employment contracts
- Non-disclosure agreements

IP in the real world

A practical exercise to help you decide what IP to use and when

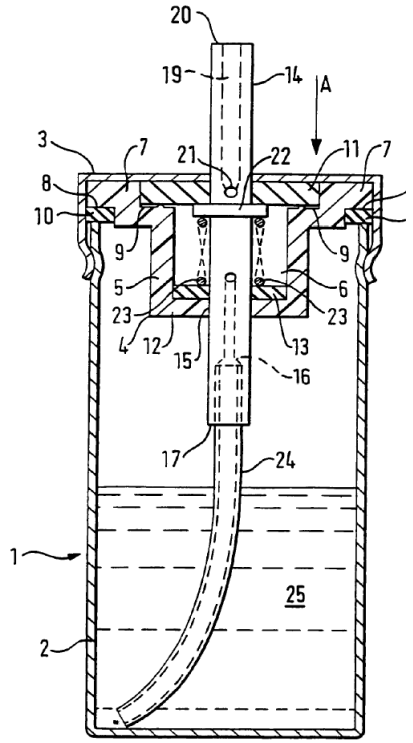
An anti-allergy sprayer and spray

It’s a new medicinal product which has been developed by a university research team. The product is very effective in treating certain allergies. The team has also designed a nebuliser with a special nozzle design for nasal application that permits more effective delivery, and an improved pumping system which delivers a fixed, precise dose of the product.

In collaboration with an engineering company from the university's technology park, they have also developed an attractive design for the sprayer can.

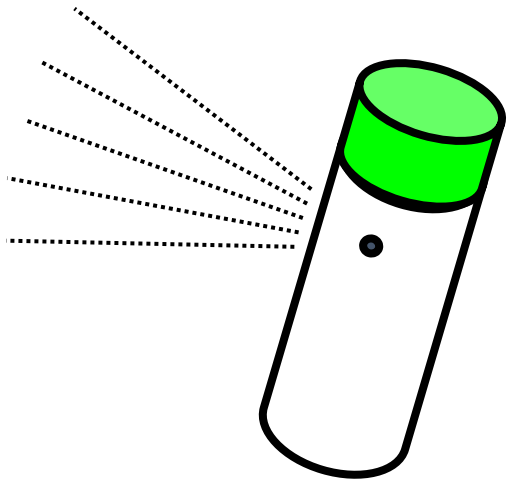
Together with an advertising agency they have come up with a brand name, NEBU-ALLERG, an attractive logo and a slogan which reads "Press green for go!" The agency also plans to design a website and other material to support the promotional campaign.

NEBU-ALLERG



Which elements can be protected?

- Medicinal product
- Nozzle
- Pumping system
- Sprayer can



- Brand name:
  - "NEBU-ALLERG"
- Logo

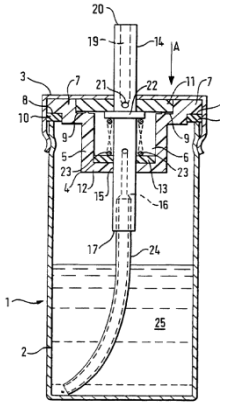
- Slogan:
  "Press green for go!"
- Domain name
- Advertising material

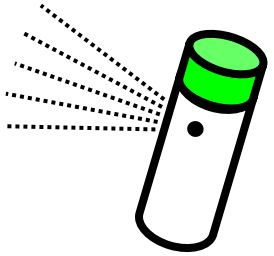
Patents and designs (I)

Medicinal product

Patents for

- the active ingredient?
  (the "chemical X")
- the method of making X?
  Better as a trade secret?
- the formulation?
  (combination of X with other ingredients)
- ~~the method of use?~~
  ~~(i.e. treatment of allergies using X)~~





Patents and designs (II)

Nozzle

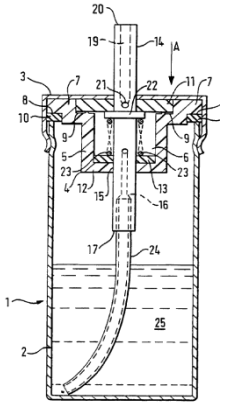
- patent
- utility model

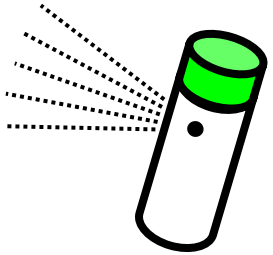
Pumping system

- patent
- utility model

Sprayer can

- designs: registered and unregistered
- trade mark





But who owns all this IP?

Trade marks, copyright and domain names

- **Brand name:** NEBU-ALLERG **trade mark ®**
- **Logo:** **trade mark ®**
- **Slogan:** "Press green for go!" **trade mark ®**
- **Advertising material:** **copyright ©**

- **Domain names:**
  - www.nebu-allerg.com
  - www.thegreenbutton.com

Who owns all this IP?

Un «patto sociale» sta alla base del sistema brevettuale

Reveal invention (disclosure)

Get exclusivity (patent)

…in this way other people will take advantage from the innovation and continue to build upon existed knowledge to foster societal growth!

Re-inventing the wheel - literally

- 15-25% of all R&D efforts are wasted each year on inventions that have already been invented.
- Don't start your R&D until you have done a search!

(12) UK Patent Application (19) GB (11) 2 365 393 (13) A

(43) Date of A Publication 20.02.2002

20.02.2002

(21) Application No 0019361.5

(22) Date of Filing 07.08.2000

(71) Applicant(s)
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United Kingdom

(51) INT CL[7]
B64C 25/40

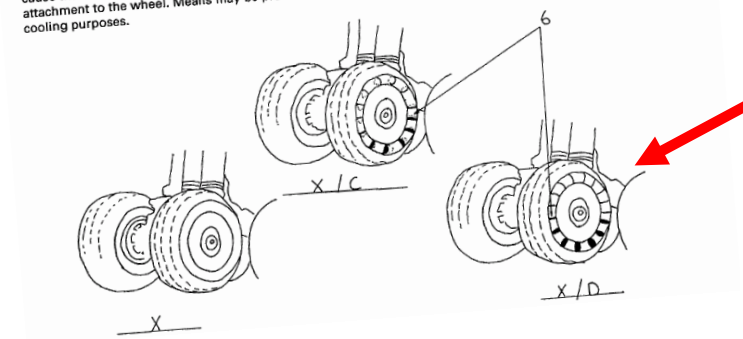
(52) UK CL (Edition T)
B7G G8H

(56) Documents Cited
GB 2334925 A
GB 2193932 A
GB 1407358 A
US 4040582 A
GB 2242401 A
GB 2080217 A
GB 0516738 A
US 3233849 A

(58) Field of Search
UK CL (Edition R) B7G
INT CL[7] B64C 25/40

(54) Abstract Title
Rotating aircraft wheels prior to landing

(57) An aircraft tyre or wheel is provided with pockets or ridges 6, which catch the airflow past the wheel and cause the wheel to rotate. The pockets/ridges may be formed in the tyre or an additional member for attachment to the wheel. Means may be provided for diverting air from a pocket into the wheel assembly for cooling purposes.

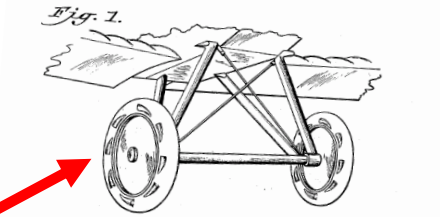


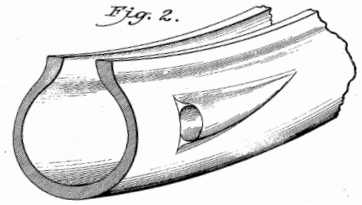
US-A-1833019 - 24.11.1931

Nov. 24, 1931. J. A. FAUCHER ET AL 1,833,019

AIRPLANE TIRE

Filed Nov. 1, 1929

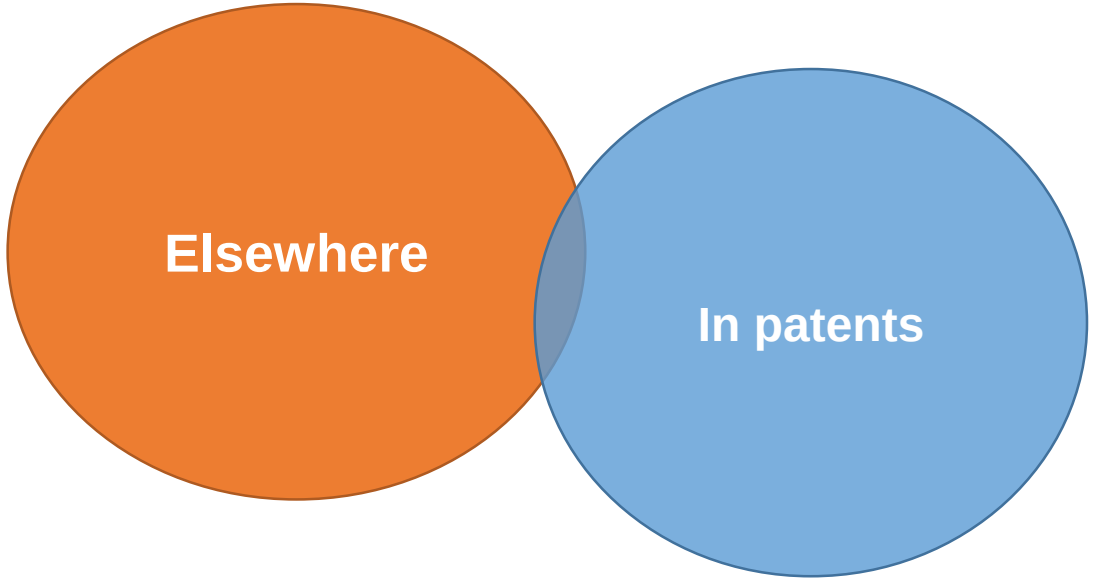




Solutions found in patent documents

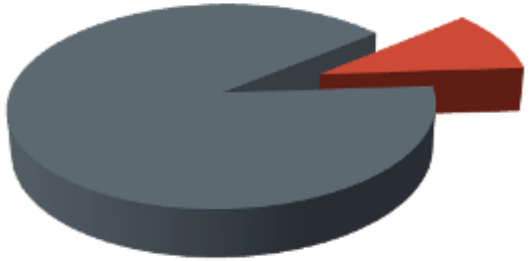
Where do competitors publish their R&D?

Approximately 80% of the information which can be found in patents is not available anywhere else in comparable detail.



90% in public domain

10% protected



You can find many great solutions for free!

Reasons

- Applications rejected/withdrawn or patent invalidated
- Payment of renewal fees discontinued
- Patents have lapsed

…non importa quanto brillante e geniale sia stata la vostra “pensata”…

…ci sarà sempre qualcuno geniale e creativo almeno quanto voi!!

Patents and inventions

What is an invention?

"An original solution to a technical problem"

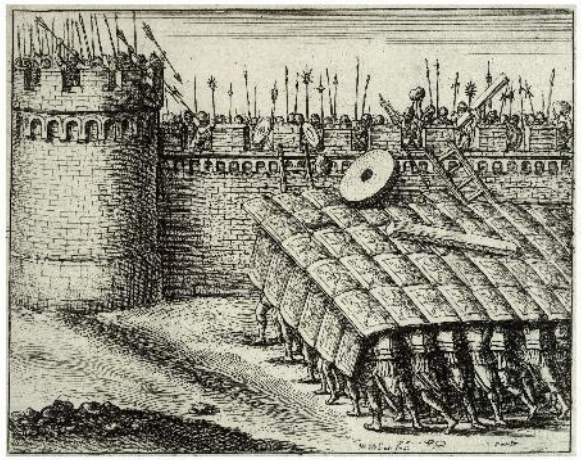
STATE OF THE ART ⇨ **TECHNICAL PROBLEM** ⇨ **ORIGINAL SOLUTION**

For an invention to be patented, it must usually be

- ✓ **new** to the world (i.e. not available to the public anywhere in the world)
- ✓ **inventive** (i.e. not an "obvious" solution), and
- ✓ susceptible of industrial application

Rights conferred by patents

- Right to **prevent others from making, using, offering for sale, selling or importing** infringing products in the country where the patent was granted
  - **Exception:** non-commercial purposes (private use, academic research)
- **Right to assign, sell or license these rights**
- For a limited time (up to 20 years).



What is a patent

- Does a patent give you the right to exploit an invention?
- A patent is a negative right.

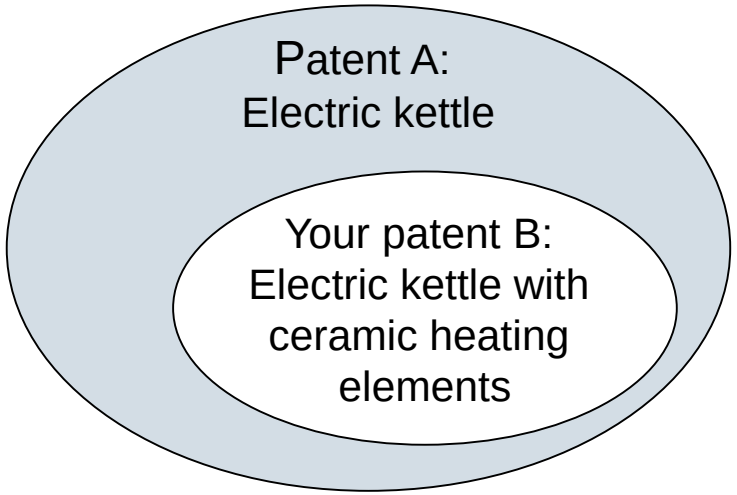
  It gives you the right to prevent others from exploiting the invention.

  It is not an enabling right.
- Patents owned by others may

  overlap or encompass your own patent.

  -> Seek a licence before commercialising

For example:



Patentability requirements

- **Novelty** → Is it new?
- **Inventive step** → Is it original/inventive?
- **Industrial application** → Is it apt to be produced at the industrial level?

When is an invention "new"?

Keep your invention confidential until you have filed your application!

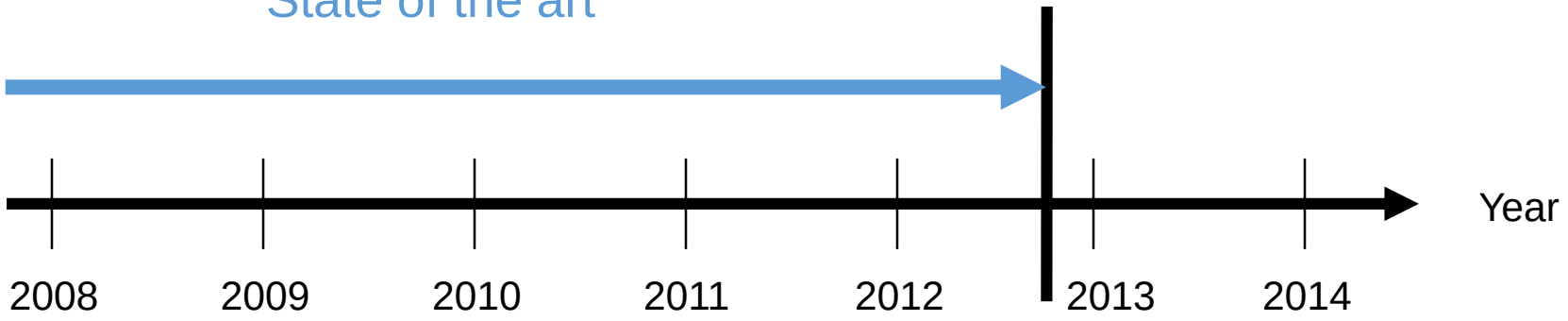
- When it is not part of the state of the art
- State of the art =

everything made available to the public before the date of filing

Patent application

State of the art

Date of filing



In the Italian Law

- Una invenzione è NUOVA se non compresa nello stato della tecnica (Art 46 CPI) che comprende TUTTO ciò che è stato reso accessibile al pubblico nel territorio dello stato o all'estero (NOVITA' ASSOLUTA) prima della data di deposito mediante una descrizione scritta o orale, una utilizzazione o qualsiasi altro mezzo.

Do’s and don’ts for safeguarding novelty

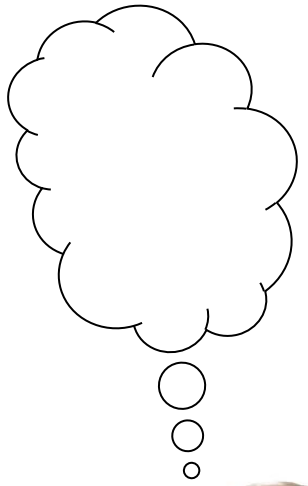
Don’ts

- Do not publish any articles, press releases, conference presentations/ posters/ proceedings, lectures or blog posts, etc. before you file
- Do not sell any products incorporating the invention before you file

Do’s

- Sign a non-disclosure agreement (NDA)
- Seek professional advice at an early stage
- File before anyone else does!

When is an invention "inventive"?



- When it is not obvious to the person skilled in the art in view of the state of the art

- The person skilled in the art
  - is a skilled practitioner in the relevant technical field
  - has access to the entire state of the art
  - is aware of general technical knowledge
  - is capable of routine work

He knows EVERYTHING, but has ZERO imagination!

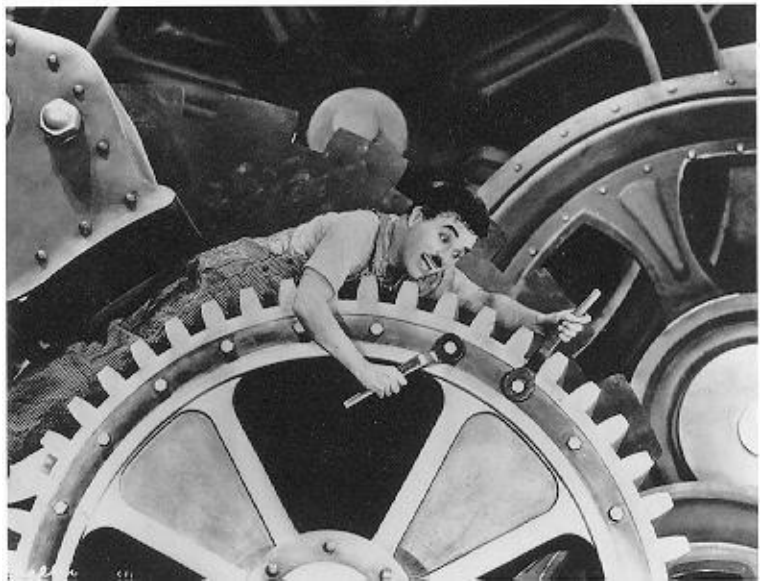
The skilled person is a legal fiction. The concept of the skilled person means a practitioner with general technical knowledge in the in the relevant technical field. He or she is assumed to have access to the entire state of the art and to be capable of performing routine work and experimentation, but to be devoid of inventive skills.

In the Italian Law

- Un'invenzione è considerata come implicante attività inventiva, se per una **persona esperta del ramo**, (Art 48 CPI) essa non risulta **IN MODO EVIDENTE** dallo stato della tecnica.

Patentability requirements: Industrial application

- An invention shall be considered as susceptible of industrial application if it can be made or used in any kind of industry, including agriculture.



Exclusions

- **The following shall <u>not be considered inventions</u>:**

  (a) **discoveries, principles and scientific theories, and mathematical methods;**

  (b) **materials already existing** in nature;

  (c) **literary and artistic works or any other aesthetic creation**;

  (d) **plans, rules and methods for the pursuit of intellectual activities**, the **playing of games**, or **economic and business activities**, and also **computer programs or software, where they do not form part of an industrially applicable invention**; and

  (e) **methods of presenting information**.

Exclusions

- **Art. 126. The following shall be expressly excluded from patentability:**

  (a) inventions, the prevention of the commercial exploitation of which is necessary to **protect order public or morality**, including to **protect human**, **animal or plant life** or **health** or to **avoid serious prejudice to the environment or ecosystem**;

  (b) diagn**ostic, therapeutic and surgical methods** for the treatment of humans or animals; and

  (c) **plants and animal breeds**, and also essentially biological processes for the production of plants or animals.

  For the purposes of subparagraph a), the following shall be considered contrary to morality and shall therefore not be patentable:

  (a) processes for cloning human beings;

  (b) the human body and its genetic identity;

  (c) the use of human embryos for industrial or commercial purposes; and

  (d) processes for modifying the genetic identity of animals that cause them suffering without any substantial medical benefit being obtained for human beings or animals.

Can’t really Software be patented?


US006285999B1

(12) **United States Patent**
Page

(10) **Patent No.: US 6,285,999 B1**
(45) **Date of Patent: Sep. 4, 2001**

(54) **METHOD FOR NODE RANKING IN A LINKED DATABASE**

(75) Inventor: **Lawrence Page**, Stanford, CA (US)

(73) Assignee: **The Board of Trustees of the Leland Stanford Junior University**, Stanford, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/004,827**

(22) Filed: **Jan. 9, 1998**

Related U.S. Application Data

(60) Provisional application No. 60/035,205, filed on Jan. 10, 1997.

(51) **Int. Cl.**[7] **G06F 17/30**

(52) **U.S. Cl.** **707/5**; 707/7; 707/501

(58) **Field of Search** 707/100, 5, 7, 707/513, 1–3, 10, 104, 501; 345/440; 382/226, 229, 230, 231

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(List continued on next page.)

Primary Examiner—Thomas Black
Assistant Examiner—Uyen Le
(74) *Attorney, Agent, or Firm*—Harrity & Snyder L.L.P.

(57) **ABSTRACT**

A method assigns importance ranks to nodes in a linked database, such as any database of documents containing citations, the world wide web or any other hypermedia database. The rank assigned to a document is calculated from the ranks of documents citing it. In addition, the rank of a document is calculated from a constant representing the probability that a browser through the database will randomly jump to the document. The method is particularly useful in enhancing the performance of search engine results for hypermedia databases, such as the world wide web, whose documents have a large variation in quality.

29 Claims, 3 Drawing Sheets

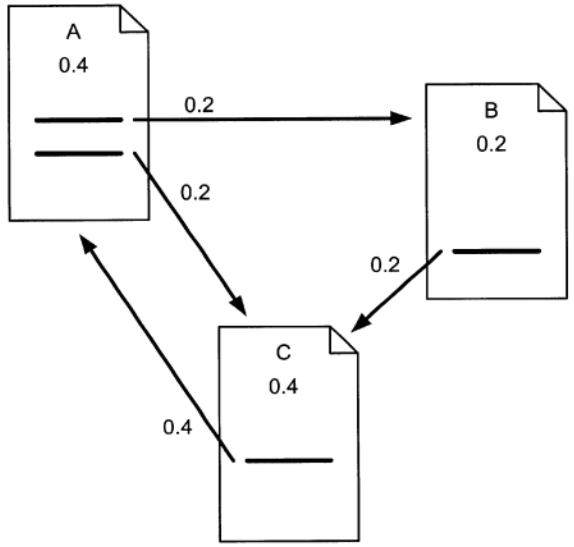

FIG. 2

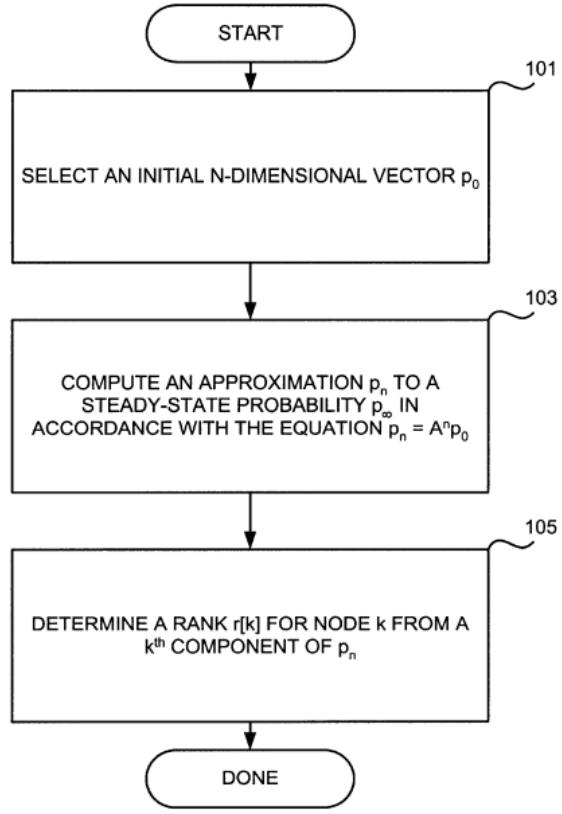

FIG. 3

Claims of the patent

1. A computer implemented method of scoring a plurality of linked documents, comprising: obtaining a plurality of documents, at least some of the documents being linked documents, at least some of the documents being linking documents, and at least some of the documents being both linked documents and linking documents, each of the linked documents being pointed to by a link in one or more of the linking documents; assigning a score to each of the linked documents based on scores of the one or more linking documents and processing the linked documents according to their scores.
8. A computer implemented method of determining a score for a plurality of linked documents, comprising: obtaining a plurality of linked documents; selecting one of the linked documents; assigning a score to the selected document that is dependent on scores of documents that link to the selected document; and processing the linked documents according to their scores.
9. A computer implemented method of ranking a plurality of linked documents, comprising: obtaining a plurality of documents, at least some of the documents being linked documents and at least some of the documents being linking documents, at least some of the linking documents also being linked documents, each of the linked documents being pointed to by a link in one or more of the linking documents; generating an initial estimate of a rank for each of the linked documents; updating the estimate of the rank for each of the linked documents using ranks for the one or more linking documents; and processing the linked documents according to their updated ranks.
10. A computer implemented method of ranking a plurality of linked documents, comprising: automatically performing a random traversal of a plurality of linked documents, the random traversal including selecting a random link to traverse in a current linked document; for each linked document that is traversed, assigning a rank to the linked document that is dependent on the number of times the linked document has been traversed; and processing the plurality of linked documents according to their rank.
18…

19…

Breakin

Headnote:

1. A computer-implemented simulation of a technical system or process that is claimed as such can, for the purpose of assessing inventive step, solve a technical problem by producing a technical effect going beyond the simulation's implementation on a computer.

2. For that assessment it is not a sufficient condition that the simulation is based, in whole or in part, on technical principles underlying the simulated system or process.

3. The answers to the first and second questions are no different if the computer-implemented simulation is claimed as part of a design process, in particular for verifying a design.

L'EPO S
MODEI

TIVA PER I

La Camera alla
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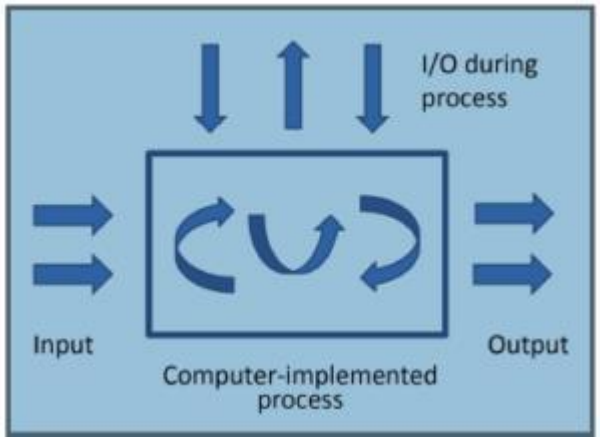
La sentenza è consultabile al seguente link.



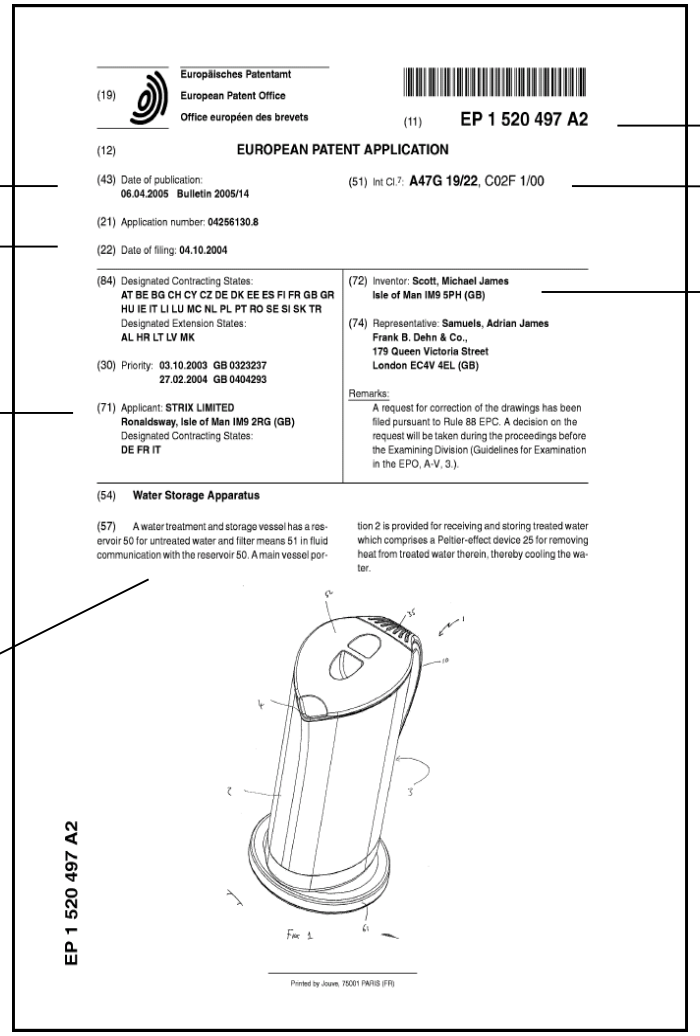
What do patent documents look like?

Date of publication

Date of filing

Applicant

Abstract



Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 520 497 A2

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
06.04.2005 Bulletin 2005/14

(51) Int Cl.7: A47G 19/22, C02F 1/00

(21) Application number: 04256130.8

(22) Date of filing: 04.10.2004

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR
Designated Extension States:
AL HR LT LV MK

(30) Priority: 03.10.2003 GB 0323237
27.02.2004 GB 0404293

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Designated Contracting States:
DE FR IT

(72) Inventor: Scott, Michael James
Isle of Man IM9 5PH (GB)

(74) Representative: Samuels, Adrian James
Frank B. Dehn & Co.,
179 Queen Victoria Street
London EC4V 4EL (GB)

Remarks:
A request for correction of the drawings has been filed pursuant to Rule 88 EPC. A decision on the request will be taken during the proceedings before the Examining Division (Guidelines for Examination in the EPO, A-V, 3.).

(54) Water Storage Apparatus

(57) A water treatment and storage vessel has a reservoir 50 for untreated water and filter means 51 in fluid communication with the reservoir 50. A main vessel portion 2 is provided for receiving and storing treated water which comprises a Peltier-effect device 25 for removing heat from treated water therein, thereby cooling the water.

EP 1 520 497 A2

Printed by Jouve, 75001 PARIS (FR)

Application number

Technical class

Inventor

Description

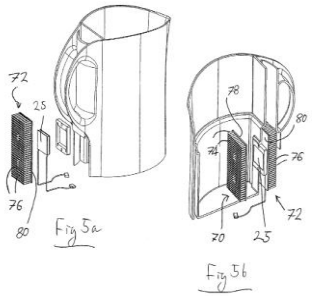
Claims

1. A portable water treatment and storage vessel comprising:

a reservoir for untreated water;
filter means in fluid communication with said reservoir; and
a main vessel portion for receiving and storing treated water;

wherein said main vessel portion comprises electro-thermal cooling means for removing heat from the treated water therein, thereby cooling the water.

Claim(s)



Drawing(s)

What does the description contain?

- Prior art
  - *teapot with one spout*
- Drawback of prior art
  - *time-consuming*
- Problem to be solved
  - *reduce filling time for multiple cups*
- Solution
  - *provide a second spout*
- Advantage of the invention
  - *filling time is reduced*

Fig.1.

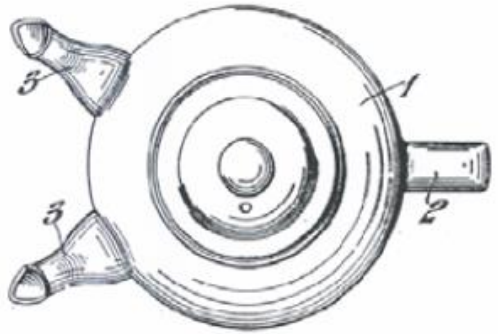


Fig.2.

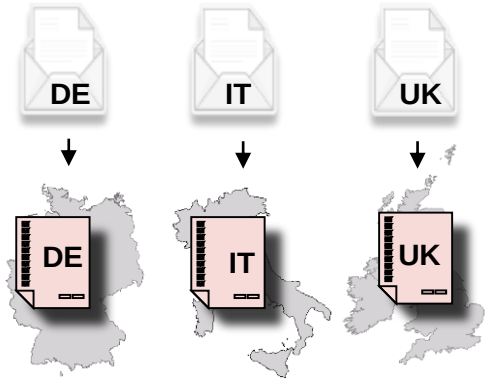
- TECH TRANSFER & IP: WHY and WHAT
- GENERAL INTRO ON INTELLECTUAL PROPERTY - IP
- PATENTS
- **PATENT PROCEDURES**

Geographical scope and harmonization of patent systems

- **Patents are valid on a territorial basis**

  (Italian patents protect the inventions only in Italy)

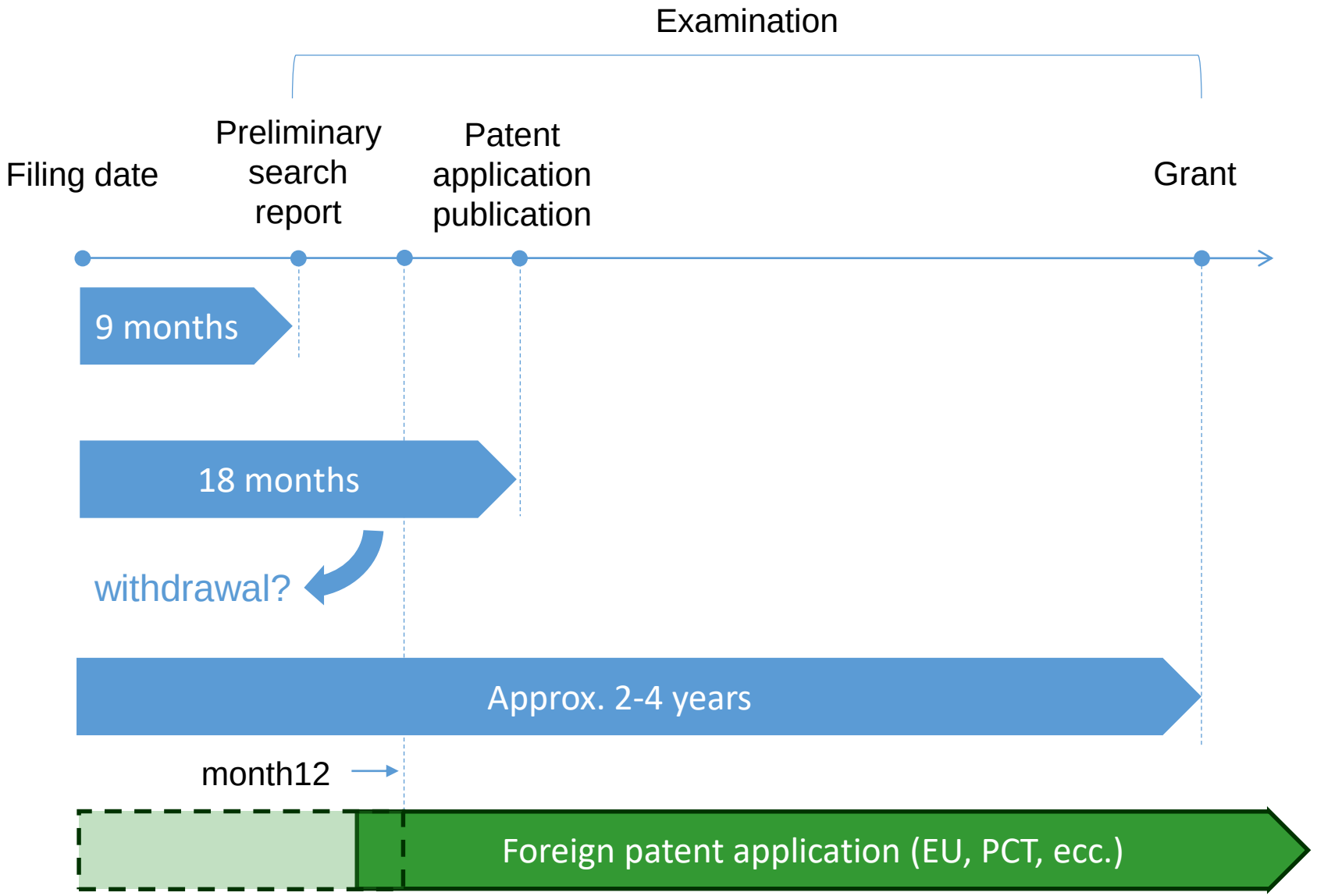
- **To seek wide protection one need to file multiple patent applications covering the same invention in each country of interest**



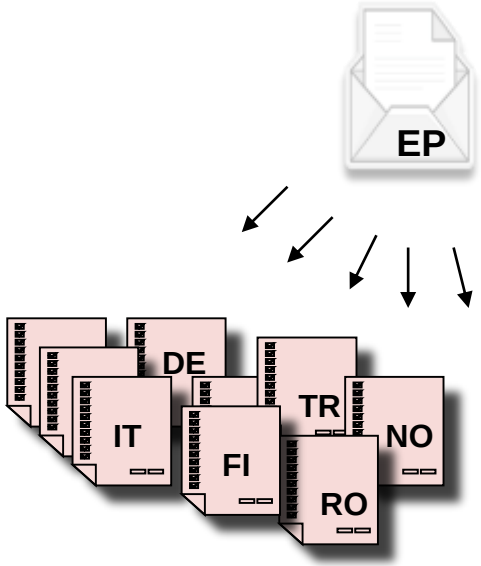
- **Paris convention and other international agreements solve this issue, offering various advantages**
  - Less filing expenses
  - More time to take decisions and define proper strategies

Proper deadlines and procedures must be respected

The grant procedure from a national perspective (Italy)

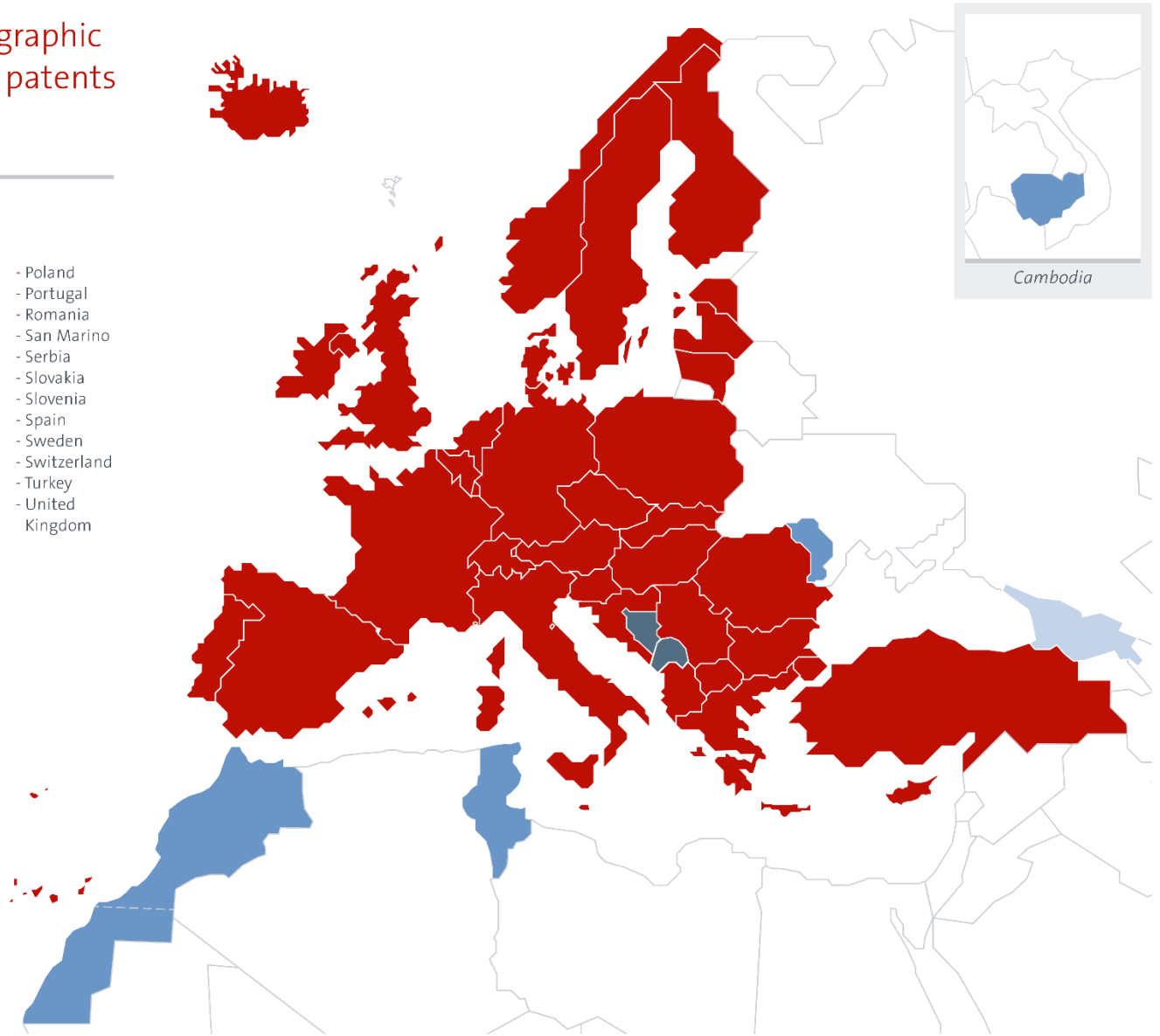


- **Authority – EPO** (European Patent Office)
- **One application filed at one office for up to 45 states** (2019)
- **Patent is issued centrally subject to examination**
- **Results in a bundle of national patents** (the issued patent needs to be registered in each of the country of interest)



The European Patent (2/2)

Map showing the geographic coverage of European patents as of 1 November 2019



Member states (38)

- Albania
- Austria
- Belgium
- Bulgaria
- Croatia
- Cyprus
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Hungary
- Iceland
- Ireland
- Italy
- Latvia
- Liechtenstein
- Lithuania
- Luxembourg
- Malta
- Monaco
- Netherlands
- North Macedonia
- Norway
- Poland
- Portugal
- Romania
- San Marino
- Serbia
- Slovakia
- Slovenia
- Spain
- Sweden
- Switzerland
- Turkey
- United Kingdom

Extension states (2)

- Bosnia and Herzegovina
- Montenegro

Validation states (4)
Agreement in force

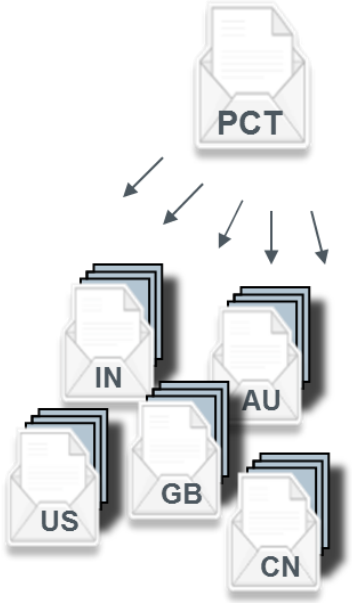
- Cambodia
- Republic of Moldova
- Morocco
- Tunisia

Future validation states (1)
Agreement signed but not in force yet

- Georgia

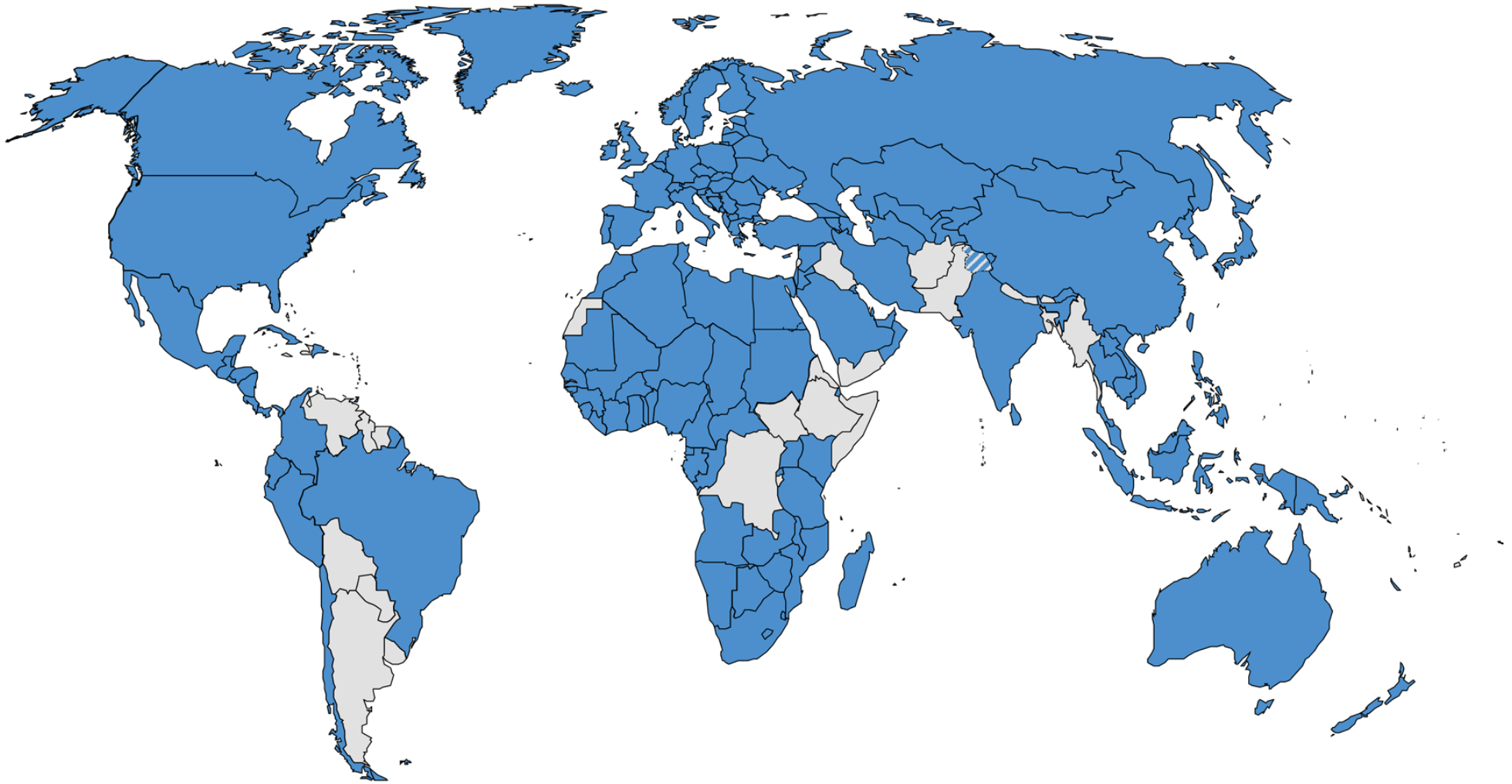
The PCT application (Patent Cooperation Treaty) (1/2)

- **Authority – WIPO** (World Intellectual Property Organization)
- **Centralized procedure valid in 153 countries** (2021)
- **Preliminary search report is provided and, upon applicant request, a complete examination provides opinion on patentability** (optional)
- **Does not lead to any grant, but allow to postpone decision by applicant on which countries to proceed after 30-31 months** (instead of 12)
- **After entering into the National phase the application will be subject to standard national tracks**

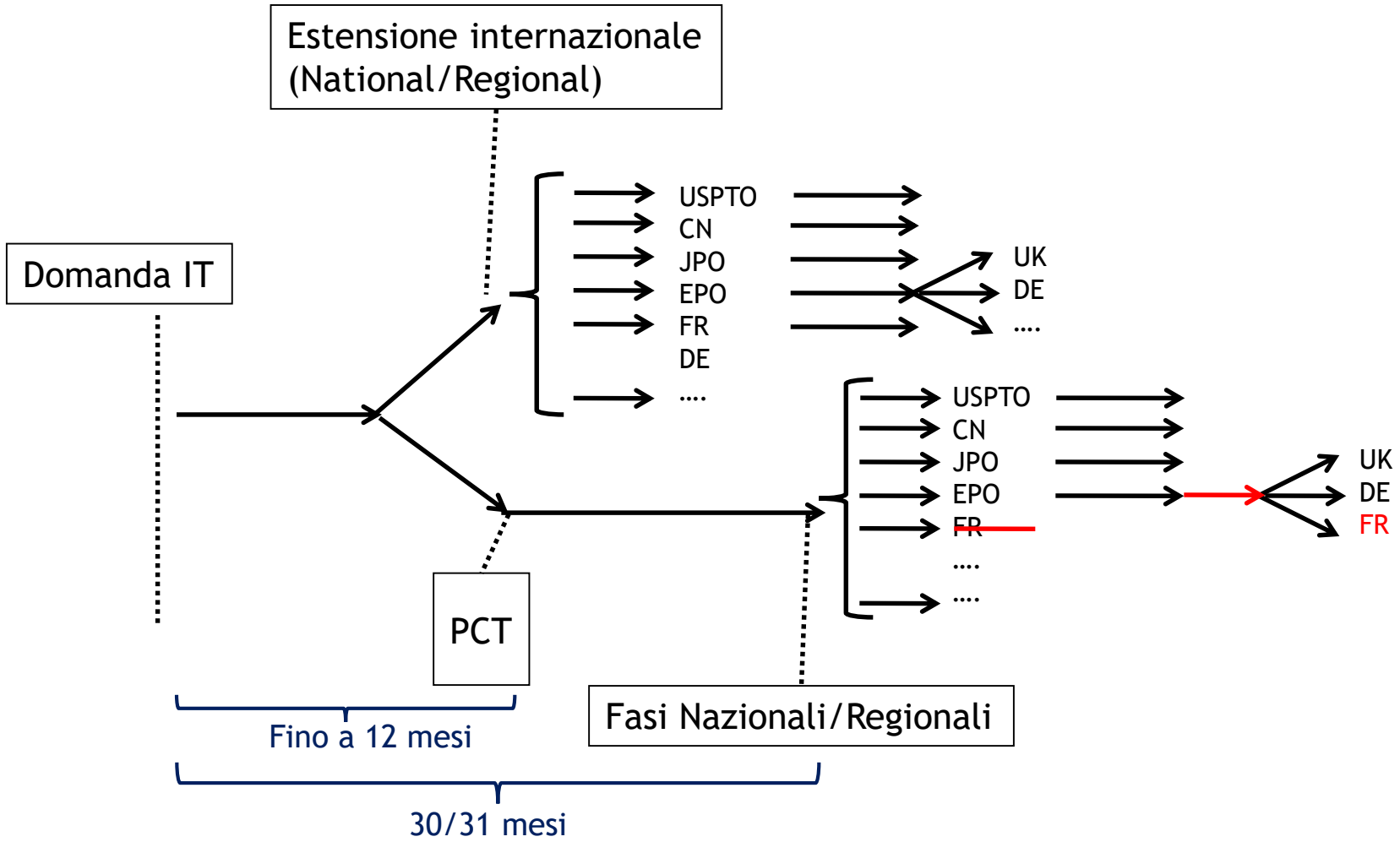


The PCT application (Patent Cooperation Treaty) (2/2)

153 Countries belonging to PCT



Come estendere un brevetto: i percorsi possibili



Thanks for your attention!

Q&A

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