

CONCEPT OF INTELLECTUAL PROPERTY

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Outline

- **About me**
- **WIPO**
- **IP and Economic Development**
- **Different types of IP (TM, Industrial Design, Copyrights, Trade secret, Patent)**
- **Patent Cooperation Treaty (PCT)**
- **Patent Information Search**



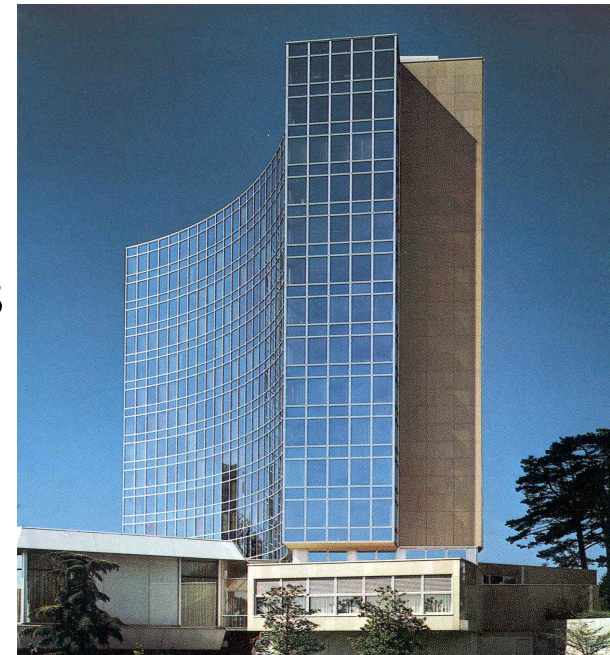
About Me



- 27+ years at World Intellectual Property Organization (WIPO)
- 17 years dealing with Patent Cooperation Treaty (PCT)
- Supervised PCT Japanese operations of processing PCT international patent applications
- Trilateral (EPO, JPO and USPTO) Technical Cooperation Coordinator from WIPO
- PCT IPER technical translation
- 10+ years dealing with Innovation, Technology Transfer and IP Commercialization
- Assisted 300+ universities worldwide in IP and Technology Mgt.
- Assisted in developing 30+ Institutional IP policies/50+ establishment of TTOs
- 150+ IP Mgt. training workshops/seminars/conferences
- Dealt with governments of 185 countries
- IP Consultant/Forming a company “ET Cube International” - IP commercialization/Entrepreneurship consulting and training services
- LLM in Intellectual Property Law/MBA specialized in Management in International Organizations

WIPO

- One of 17 United Nations Specialized Agencies
- Dedicated to developing balanced intellectual property systems that encourage creativity and contribute to the economic/cultural/social development
- Headquarters located in Geneva, Switzerland
- 185 Member States
- Administration of 25 international treaties
- Some 1,500 employees



What is IP?

Creations of the mind:

1. Industrial property

- patents (inventions)
- utility models
- trade secret
- trademarks
- industrial designs
- geographic indications
- new plant varieties

2. Copyrights

IP rights

Protected by National and International Laws

Economic Benefits of IP

Macroeconomic level

- Increase GDP and national competitiveness
- Enhance exports of high value
- Stimulate R&D
- Promote technological advancement
- Reduce brain drain by providing incentives
- Help address national/global human needs
- Develop national brand and cultural identity and reputation
- Attract FDI and local investment
- Job creation

Economic Benefits of IP

Microeconomic level

- Create strong portfolios of IP as a source of competitive advantage
- Enhance products and promote brand value
- Enhance corporate value
- Avoid and defend against litigation
- Provide incentives and recognition of creativity

S&P 500 Companies

Over 80% of market value of S&P500 companies is based on their intangible assets

Intangible assets

(knowledge based assets)

e.g.

- Patents
- Trademarks
- Design
- Brand

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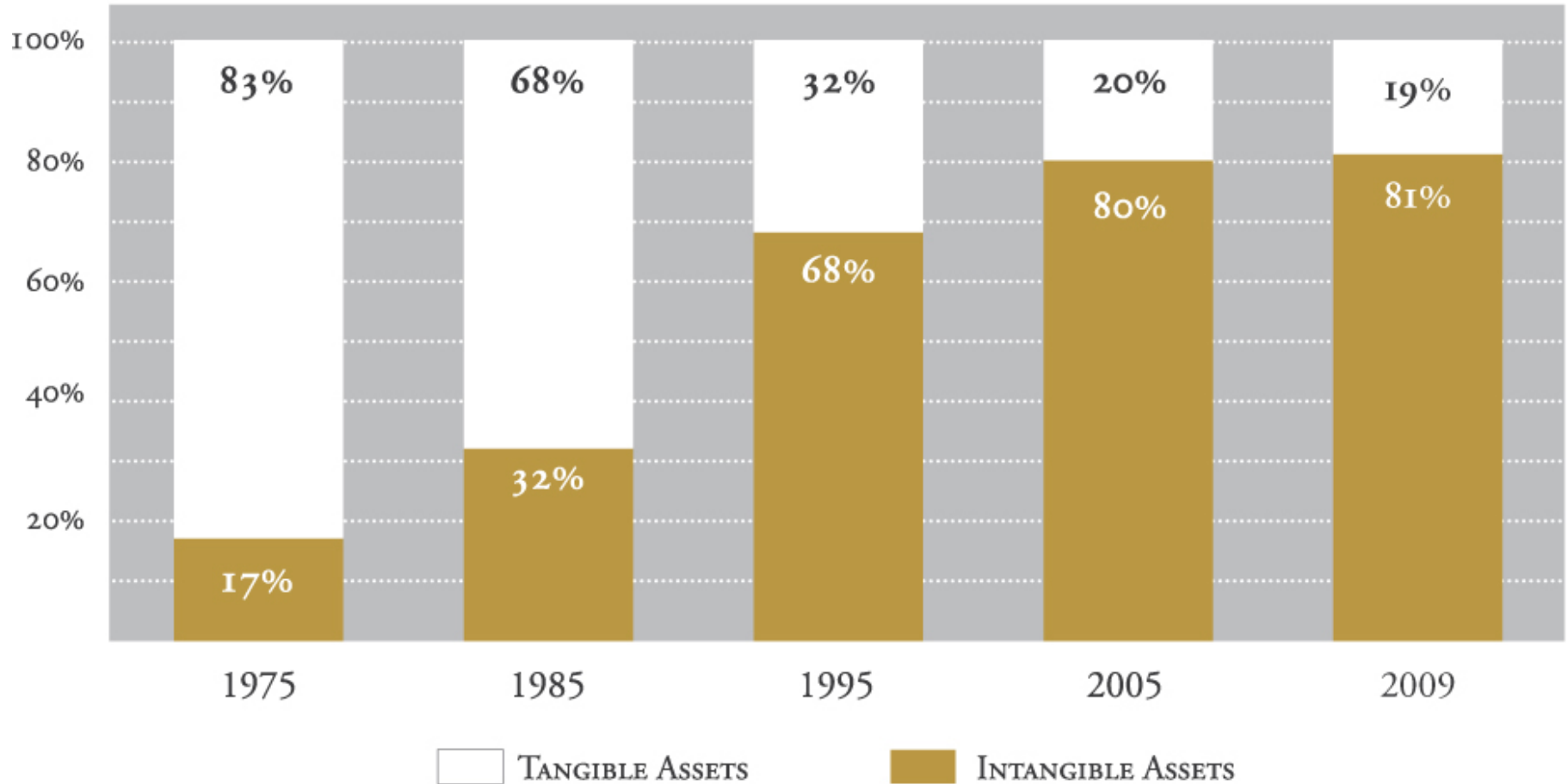
Tangible assets

(physical assets)

e.g.

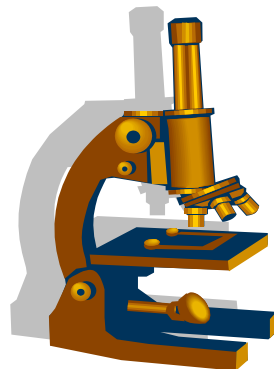
- Real estate
- Equipment
- Cash

COMPONENTS OF S&P 500 MARKET VALUE

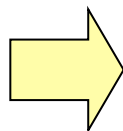


Source: Ocean Tomo

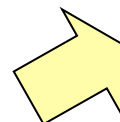
From Laboratory to Market



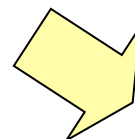
R&D



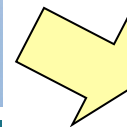
Patent application



Licensing



Start-up/ Spin-off



Commercialization

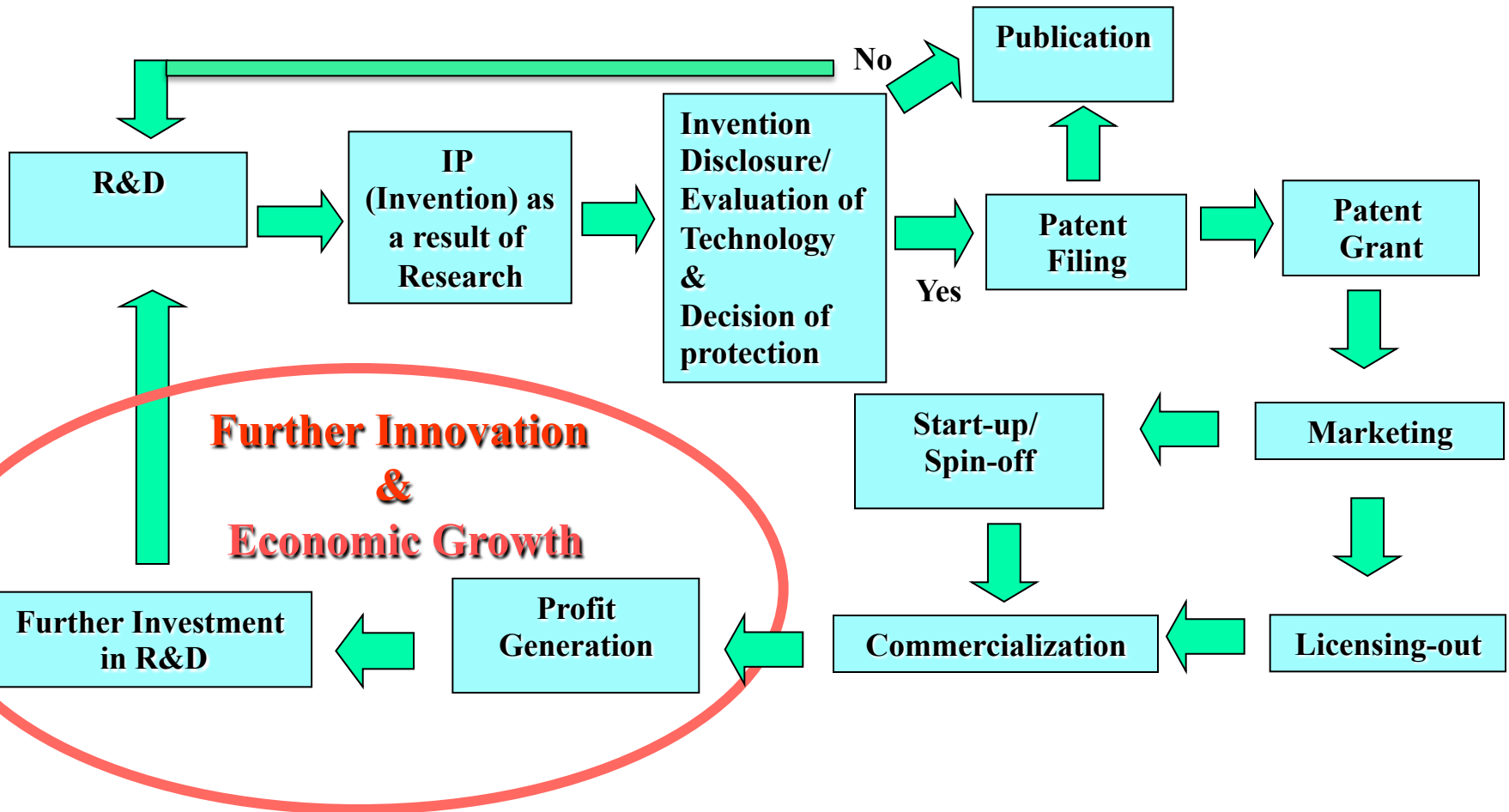
Technology Transfer

CREATION

PROTECTION

EXPLOITATION

Innovation and Economic Growth Cycle



Source: Yumiko Hamano, "Innovation and Economic Growth Cycle"

Business Paradigm Shift - Globalization

- **Internet → Easy access to information**
- **Global market**
- **Limited geographic barriers**
- **More competition**
- **Need to improve efficiency**
- **Need to improve quality**
- **Fast technology cycle**
- **Technology interdependency → Need to collaborate**
- **Intangible assets**
- **Knowledge based economy**



Trademarks



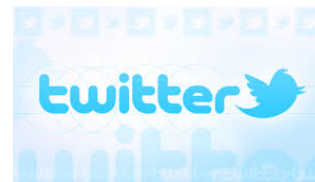
- Type of Intellectual Property in the form of a word, name, symbol, or device used to identify goods
- Indicates the origin of the goods
- Provides public assurance
- Distinguishes the goods from those of others
- Used to prevent others from using a similar mark that would likely confuse consumers
- Cannot prevent others from making, using, or selling same type of goods
- Only protects the mark (e.g., a name) that identifies the good or services and not the goods themselves



UNITED NATIONS



TOYOTA



Industrial Designs

- Protection for ornamental features associated with articles used in commerce
- Limited uniformity world-wide in requirements and scope of protection available
- Design patents in some countries
- Protection of industrial design and patent protection not mutually exclusive in some countries



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Copyrights (1)

Copyrights

- Protection provided to the creators of “original works of authorship”
- Literary, dramatic, photographic, musical, artistic, and other works, both published and unpublished
- Protects expression of ideas rather than idea itself
- Right arises automatically at creation

Copyrights (2)

Copyrights

- Protection in a tangible form
- Gives owner exclusive right to
 - Copy
 - Reproduce
 - Prepare derivative works
 - Distribute copies of work
 - Perform work publicly
 - Display work publicly

Copyrights (3)

Important IP right for protecting computer software and algorithms

- When patenting is not available, then copyright often becomes the strongest form of protection that can be obtained in the information technology field
- A given piece of software might not rise to a sufficient degree of novelty for patent protection
- In many jurisdictions computer software is not patentable “per se”

Trade Secrets (1)

Trade Secrets

- Any information with independent economic value not in public domain
- Any information belonging to an entity that is neither readily known nor readily ascertainable outside the entity

Trade Secrets (2)

Examples of Trade secrets:

- Formulas, patterns, processes, methods, compilations, customer lists, etc.
- Secret formula for making Coca Cola[®]

(Coca Cola company holds formula as trade secret)

Trade Secrets (3)

Advantage

- No time limit for protection
- No patent filing costs

Disadvantage

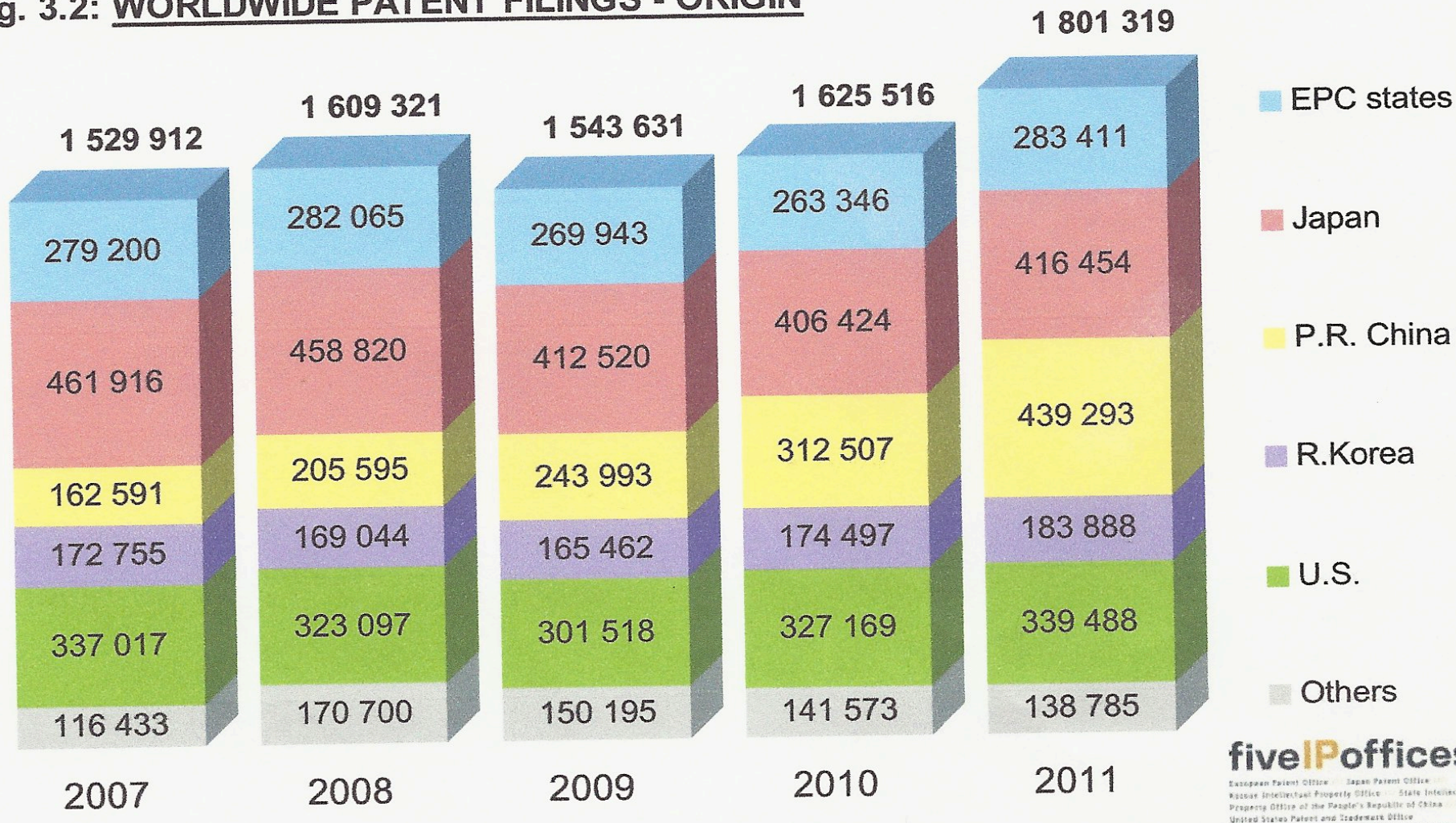
- Protection only as long as secret is kept as secret

Patent

- A right granted by a state to an inventor, to exclude others from making, using, selling or importing in the territory without the inventor's consent
- Granted to an invention of process, method, device, machine, compound, composition, and improvements thereof
- In exchange for a disclosure of specification of the invention
- Limited period, 20 years in many countries
- Territorial

Worldwide Patent Filing

Fig. 3.2: WORLDWIDE PATENT FILINGS - ORIGIN



Patent

Legal Requirements of Patent

- 1) Novelty
- 2) Inventive Step
- 3) Industrial Applicability





Patent

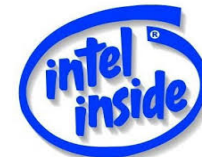


- **Publication vs. Patents**
- **Grace period v. Absolute novelty**
- **Provisional patent application**
- **Inventor/Applicant**

Why are Patents important?

Patents:

- Provide **incentives** to individuals by offering **recognition** for their **creativity** and **material reward** for their marketable inventions
- Encourage **innovation**
- **Stimulate** fair and healthy competition in the **market**
- Contribute to **economic development**
- Foster **technological advancement** which assures that the quality of human life is continuously enhanced.



How are inventions invented?

- Through Identifying a need or problem
- Through finding a creative way to solve a specific technical problem
- Improving existing technologies

How are inventions invented?

- Through applying a better understanding of nature:

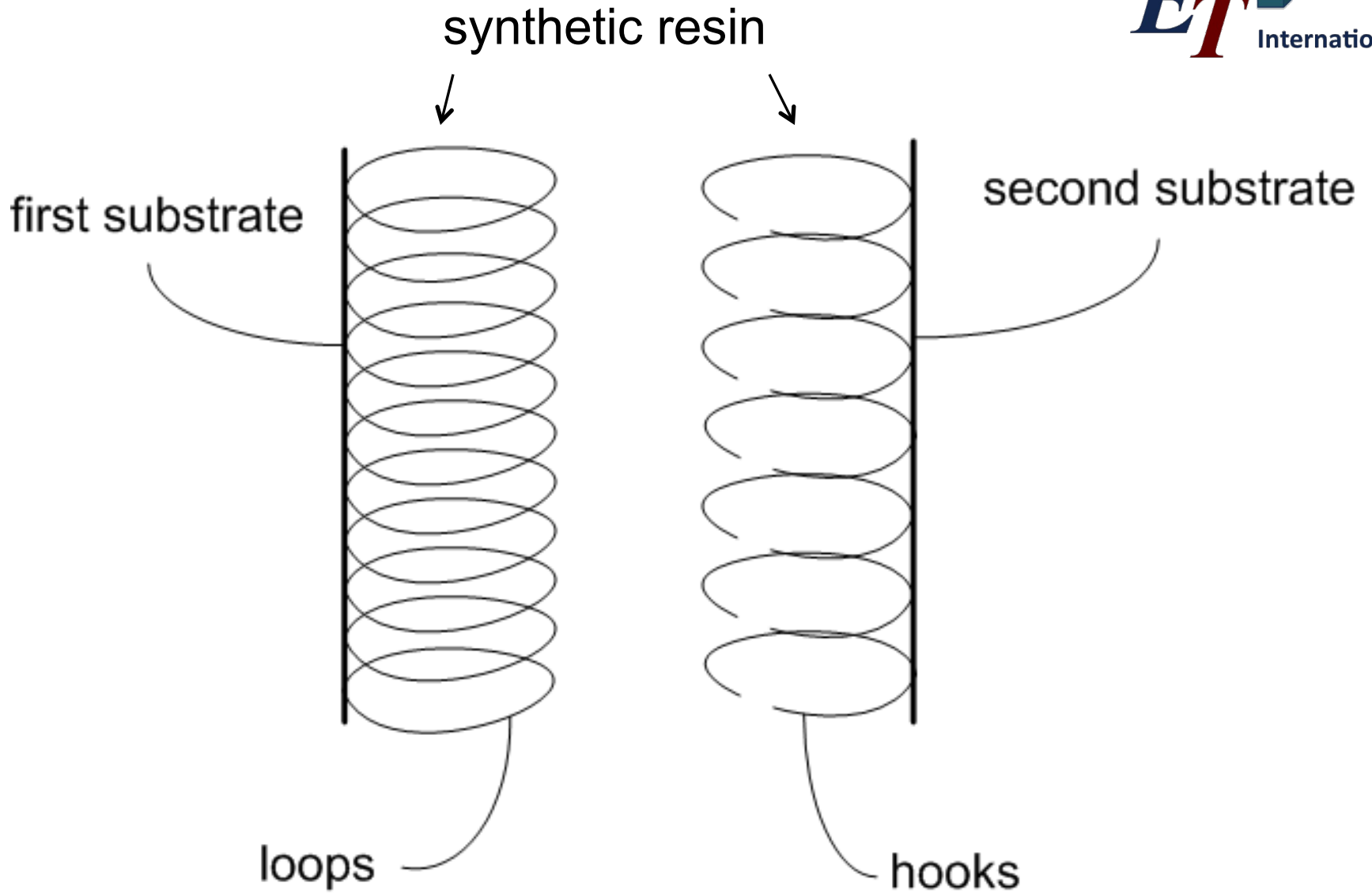
<VELCRO> invented by George de Maestral

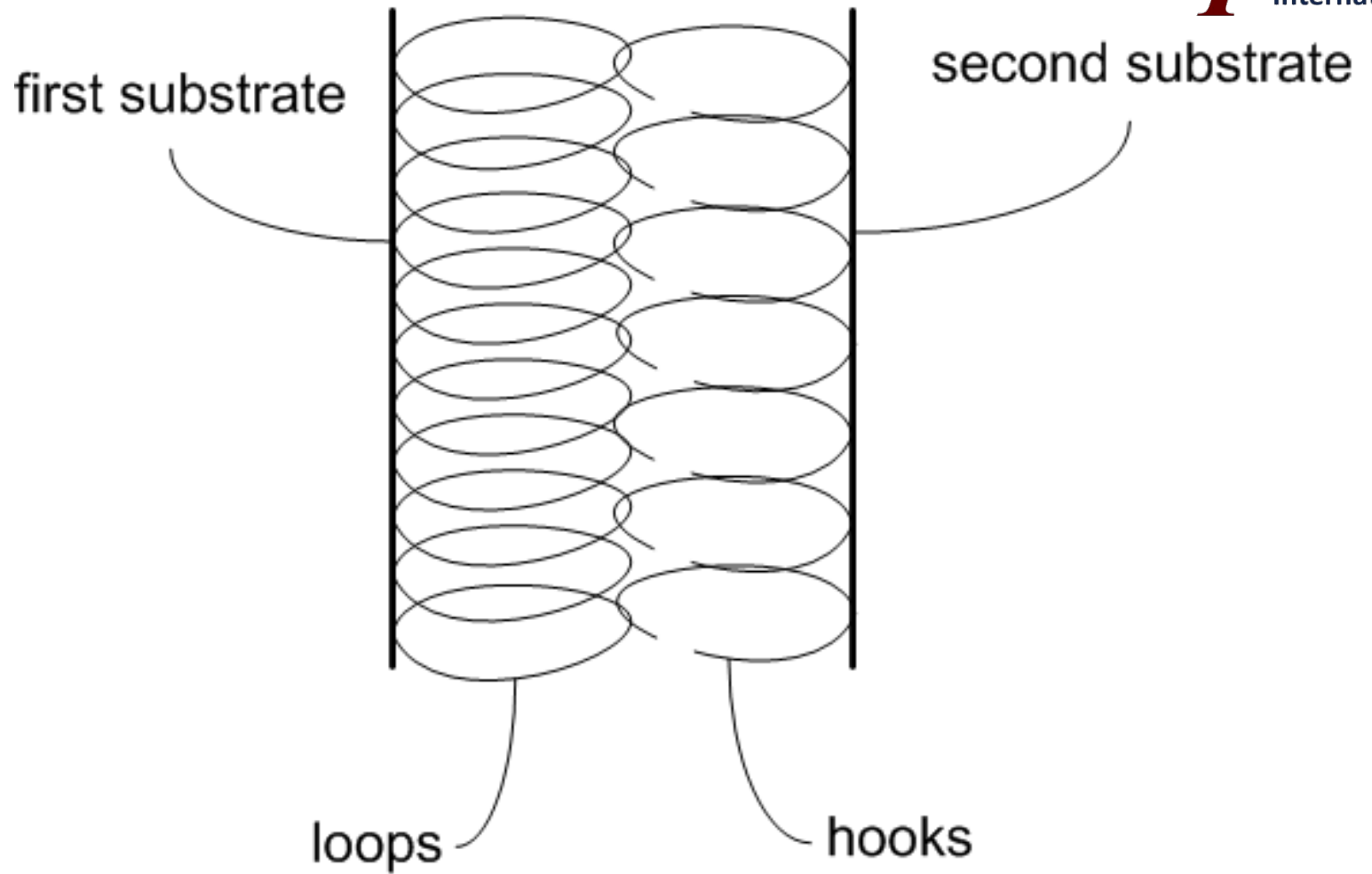


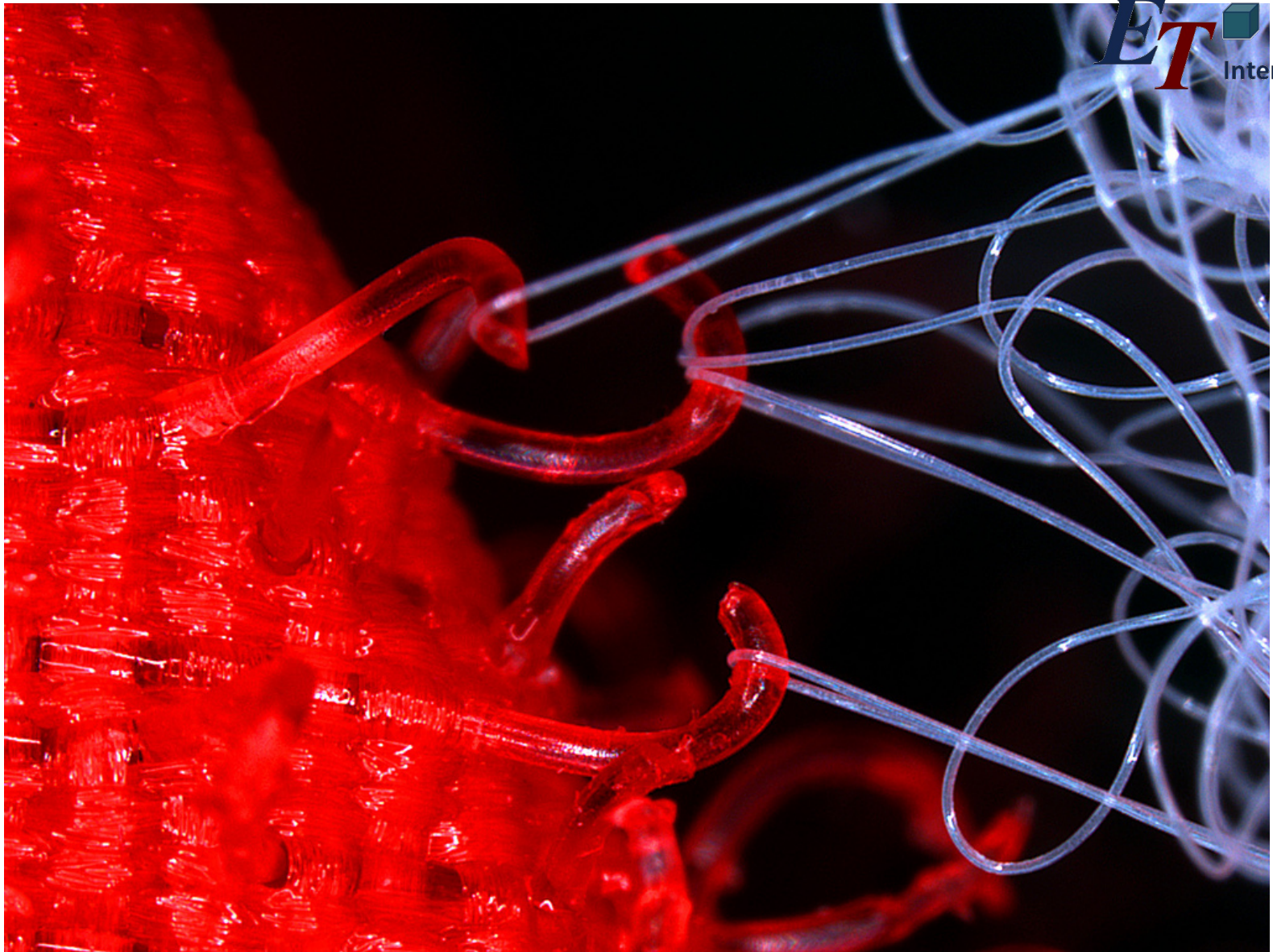
Velcro

prior art: Blackjack



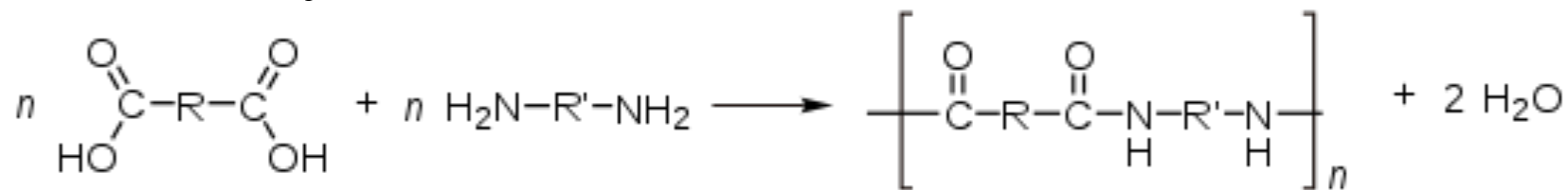






Synthetic Resin That Forms Hooks and Loops

- Long chain synthetic polymeric amide with recurring amide groups as an integral part of the main polymer chain
- Formed by reacting equal parts of a diamine and a dicarboxylic acid:



where R = 4C and R' = 6C alkanes.

Post-it[®]
Brand

Notes

3M



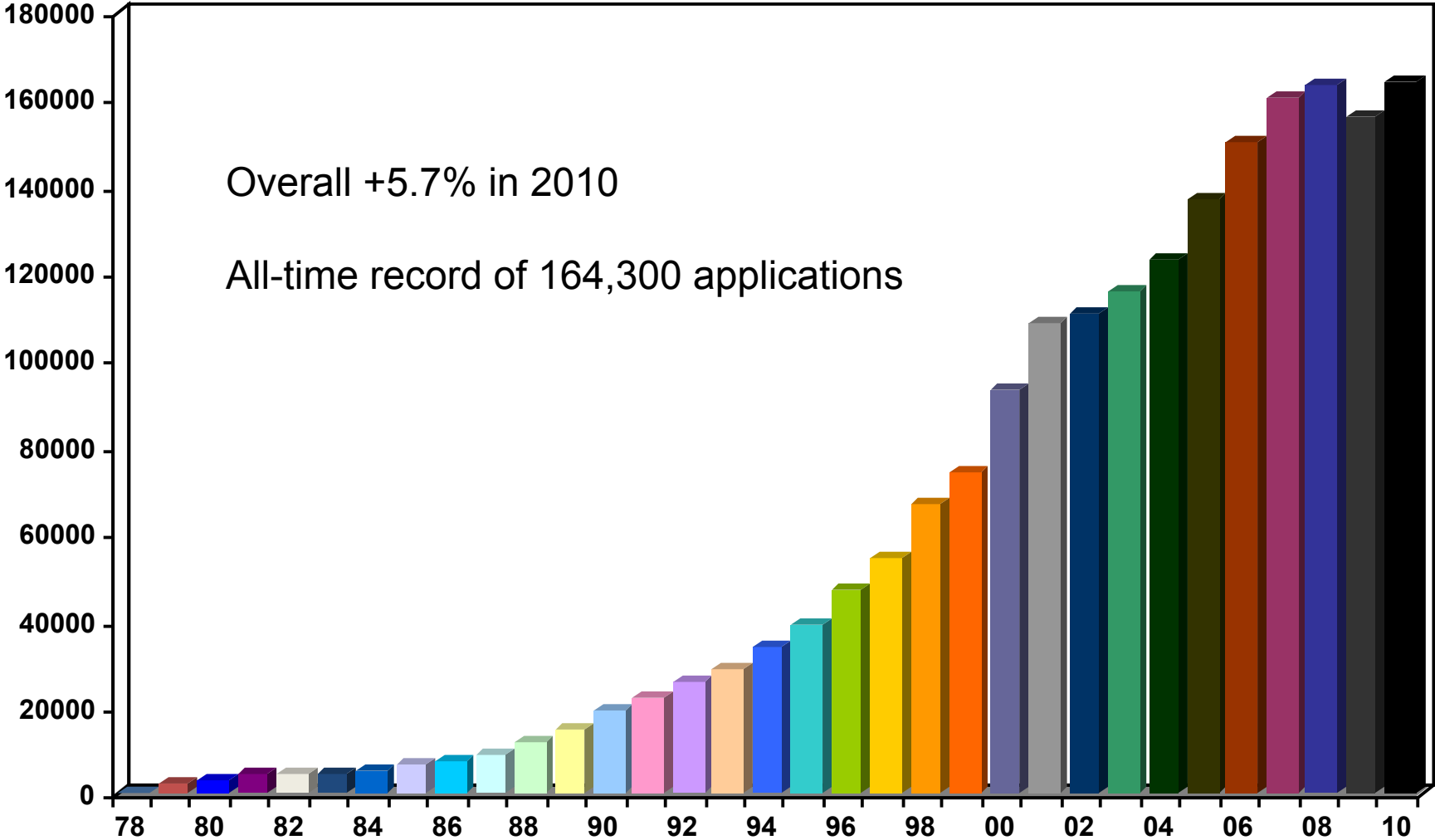
Source: Google

« Necessity is the mother of invention »

Patent Cooperation Treaty (PCT)?

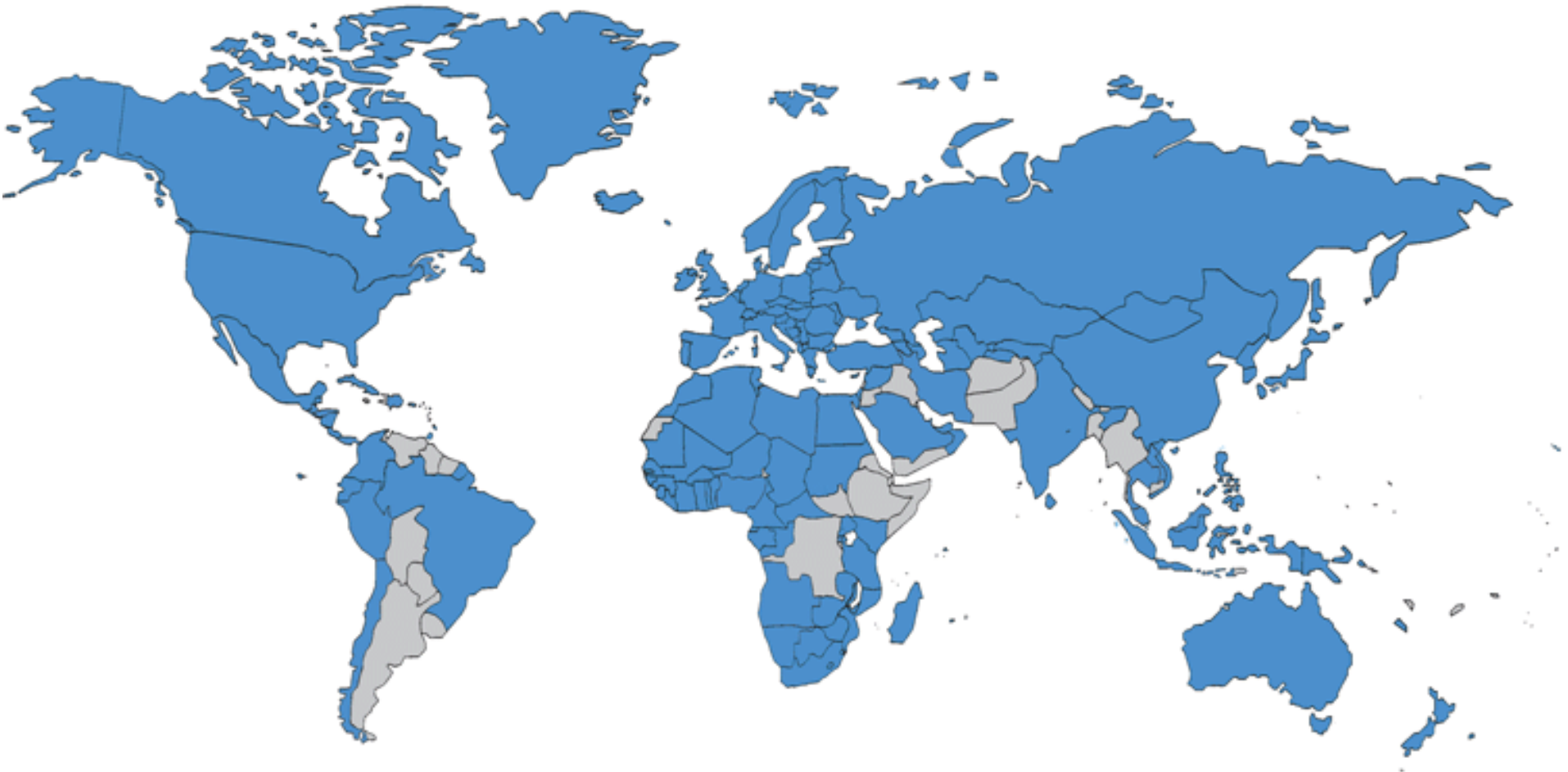
- An international treaty administered by WIPO
- 148 PCT member states of Paris Convention countries
- Makes it possible to seek patent protection by filing a single “international” patent application instead of filing several separate national or regional applications.

PCT Statistics



Patent Filing Contracting States

148 as of November 2013



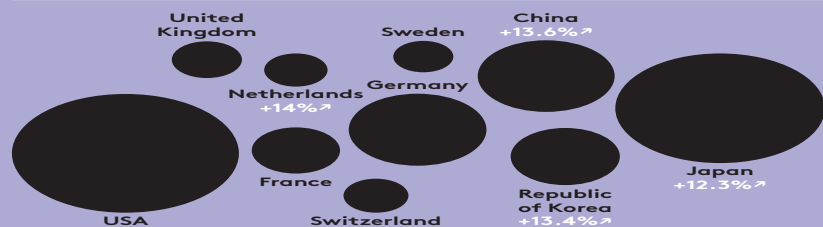
PCT International Patent Filing

- A national or resident of one or of the PCT Contracting States
- Either with your national patent office or directly with WIPO
- Either on paper or electronically
- In any language accepted by the receiving office
- The Request Form in 10 languages of the international publication: Chinese, English, French, German, Japanese, Russian, Spanish, Arabic and Korean.

WHO FILED THE MOST PCT PATENT APPLICATIONS IN 2012?

194,400 +6.6%
Number of applications Growth in 2012

TOP 10 COUNTRIES

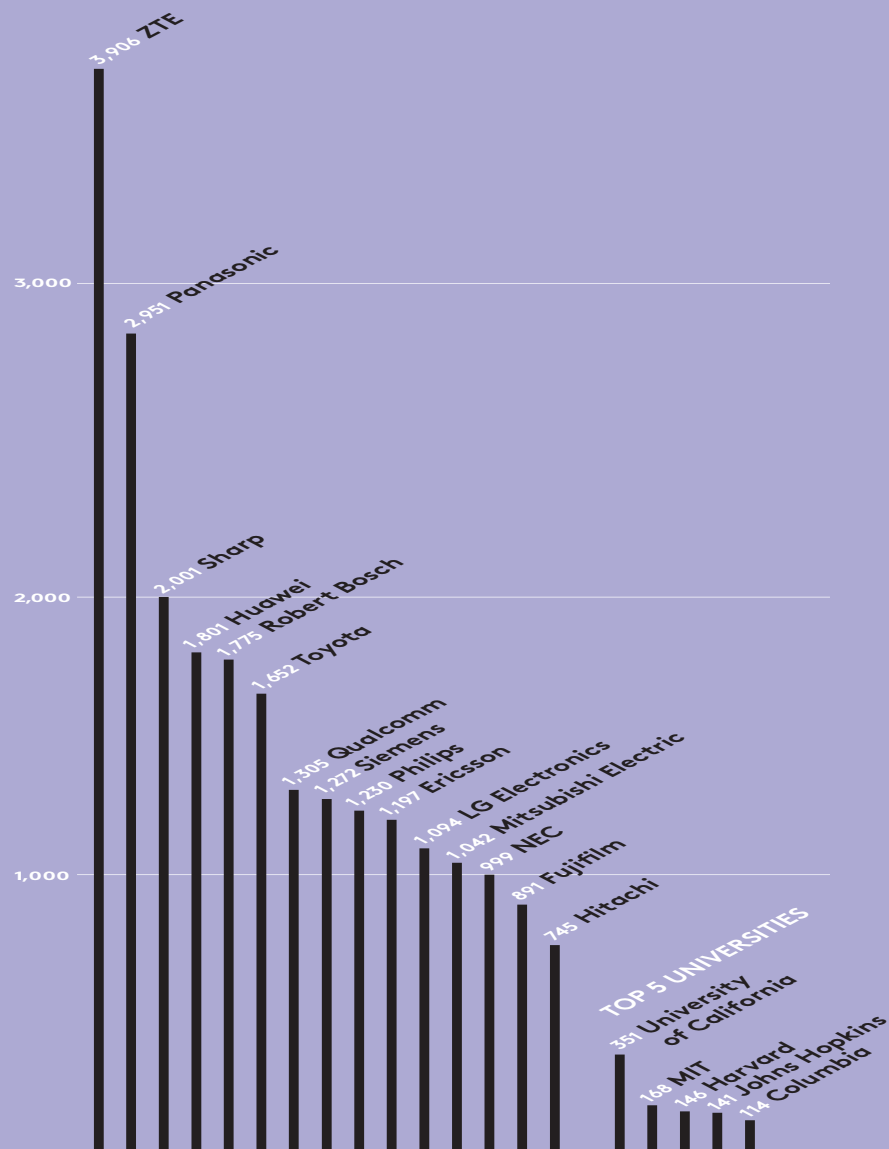


1 USA	51,207	6 France	7,739
2 Japan	43,660	7 United Kingdom	4,895
3 Germany	18,855	8 Switzerland	4,194
4 China	18,627	9 Netherlands	3,992
5 Rep. of Korea	11,848	10 Sweden	3,585

TOP 5 TECHNOLOGIES

1 Electrical machinery	13,293
2 Digital communication	12,616
3 Computer technology	12,391
4 Medical technology	11,348
5 Pharmaceuticals	7,792

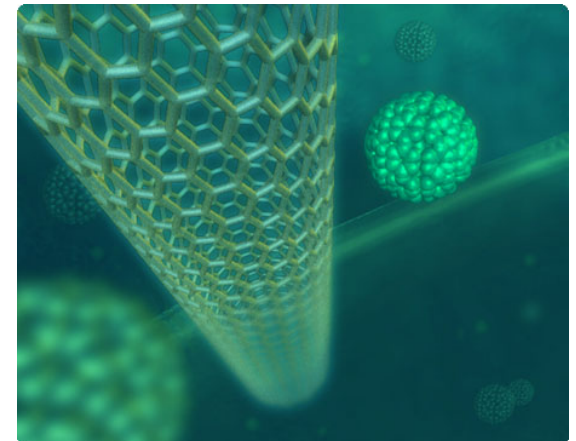
Chinese telecommunication company ZTE was the largest filer in 2012.



IP Ownership

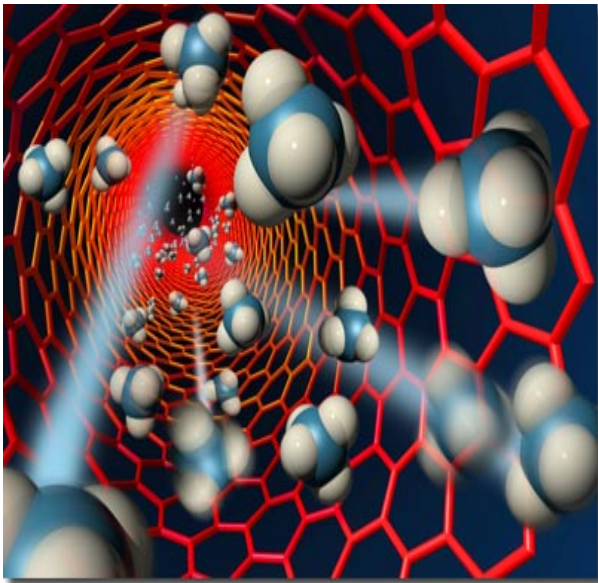
Who owns IP generated by publicly funded research?

- **Generally national law defines who owns IP (inventions) arising from work conducted for an employer**
- **In some cases, national laws specifically address ownership of inventions arising from publicly sponsored research**
- **Sometimes IP ownership covered in different laws**



IP Ownership (2)

- **Government**
- **University**
(e.g., Germany, Austria, Japan, China, South Korea, UK, France, US, Denmark)
- **Creator/ Faculty**
(e.g., Finland, Norway, Sweden)







Baby Mop





**Thank you for
your attention**

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Patent Information Search

Characteristics of Prior Art Information

- Information includes all published scientific and technical information including patent application documents
- Rich in information on cutting-edge technologies
- Concrete description and specific technological information
- Presentation and data elements based on WIPO standards (uniformed structure)
- Can be freely used to support research
- Problem solving approach

Patent Information Search



Characteristics of Prior Art Information

- Industry oriented information
- Identifies competition in early stage
- Information on legal status of patent applications
- Essential tool for successful IP protection, licensing and marketing, commercialization
- 80+ million documents made available free of charge on Internet

Fields of Search

	Search Fields
Number	Priority, Application, Publication, Patent grant Nos.
Date	Dates of Priority, Application, Publication, Grant, etc.
Name	Applicant, Inventor, Agent, Examiner
Country	Priority Application country, Application Country, Designated States, etc.
Patent Classification	IPC, ECLA, FI, F-Term, UPC
Keywords	Title, Abstract, Claims, Description
Reference	Cited documents, Patent Family

Major Source of Prior Art Information

- EPO Publication
 - e.g., Esp@cenet (70 million documents from 60 countries)
- JPO Publication
 - e.g., JPO IPDL, F-Term
- USPTO Publication
 - e.g., USPTO IPDL, Cassis
- WIPO PCT Publication
 - e.g., PatentScope, IPC
- Google

Information on IP

WIPO web site:

www.wipo.int

WIPO University Initiative web site:

www.wipo.int/uipc/en

PCT Applicant Guide

<http://www.wipo.int/pct/en/appguide/>

PCT Newsletter

www.wipo.int/en/newsletter/index.jsp

PCT Gazette

www.wipo.int/pct/fr/gazette/

PCT on WIPO webpage

www.wipo.int/pct/en

Useful Links – Patent Search



<http://www.wipo.int/patentscope/en/>

<http://ep.espacenet.com/>

<http://www.piug.org/vendors.php>

<http://www.wipo.int/classifications/ipc>