

# **TECHNOLOGY TRANSFER AND LICENSING**

## **Nuclear Law Course**

**INTERNATIONAL CENTER OF MOSCOW  
UNIVERSITY LOMONOSOV IN GENEVA**

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# Technology Transfer

- What is technology transfer?
- Different Definitions, Approaches and Models
- Doha Declaration – Article 37.- Trade and Transfer of Technology
- Trade-Related Aspects of Intellectual Property Rights (TRIPS) - Article 66.2  
*“Least-Developed Country Members”*
- *“The technology transfer is the process of applying research results in practical use”*
- *The Massachusetts’s Institute of Technology : “ Technology transfer is the movement of knowledge and discoveries to the general public”*
- *AUTM (The Association of University Technology Managers) – very broad definition of technology transfer as the movement of ideas, tools, and people among institutions of higher learning, the commercial sector and the public.*
- *Transfer of technology refers broadly to a series of processes enabling and facilitating flows of skills, knowledge, ideas, know-how and technology among different stakeholders such as university and research institutions, international organizations, IGOs, NGOs, private sector entities and individuals. Transfer of technology, which is often considered to include the absorption of new technologies, is sometimes also considered to involve the transfer of concrete knowledge for the manufacture of products, the application of a process or for the rendering of a service granting the improvement of domestic as well as the international competitiveness in the economic market.*

# Technology Transfer

- Technology Transfer – almost always contains transfer of “know – how”, thus closely related to Knowledge Transfer
- What can be transferred?
  - **Intellectual property (IP)** refers to creations of the mind: inventions, literary and artistic works, and symbols, names, images, and designs used in commerce.
  - IP is divided into two categories:
    - **Industrial property:**
      - inventions (patents)
      - trademarks
      - industrial designs, and
      - geographic indications of source;
    - **Copyright:** mostly related to software, but also drawings, manuals, scientific works.
  - **Tangible research property:** unpatented biological research materials
  - **Intangible property:** trade secrets, know how.

# Technology Transfer

- How knowledge / technology transfer can be done?
- **Informally**
  - Discussions
  - Seminars
  - Articles
  - Working relations
- **Formally – Contracts**
  - **License Agreements**
  - **Development Collaboration Agreements**
  - **Research Services Agreements**
  - **Sponsored Research Agreements**
  - **Material Transfer Agreement**
  - **Consultancy Agreements**
  - **Confidentiality Agreements**

# I. Intellectual Property (IP) Licensing

- **A license is a consent by the owner (Licensor) to the use of IP by other party (Licensee) in exchange for money or some other value (cross – license).**
- **COMMISSION REGULATION (EC) No 772/2004 – “Technology transfer agreements concern the licensing of technology. Such agreements will usually improve economic efficiency and be pro-competitive as they can reduce duplication of research and development, strengthen the incentive for the initial research and development, spur incremental innovation, facilitate diffusion and generate product market competition”**

# I. Intellectual Property (IP) Licensing

- Legal Framework
  - Contract – gives freedom of regulating relations between contractual parties – but can not be contrary to the Constitution and applicable laws
  - International IP Treaties and Standards (TRIPS)
  - National IP Laws
  - Competition Law
  - Specific Laws – relevant for the particular area of negotiation
    - Health Regulations
    - Environmental Law
    - Nuclear Law, etc.

# I. Intellectual Property (IP) Licensing

- Nuclear Law Definition
- **The body of special legal norms created to regulate the conduct of legal or natural persons engaged in activities related to fissionable materials, ionizing radiation and exposure to natural sources of radiation – IAEA Handbook on Nuclear Law.**
  - Special legal norms
  - Risk–benefit approach
  - Relate to the conduct of individuals and legal persons (commercial, academic, scientific and governmental entities), as well as
  - Use of fissionable material or ionizing radiation, justify special regime.
- License in nuclear context is often understood as permission - license to build power plant and/or license to operate.
- IP licensing agreement has always as a subject matter IP – registered on non registered.

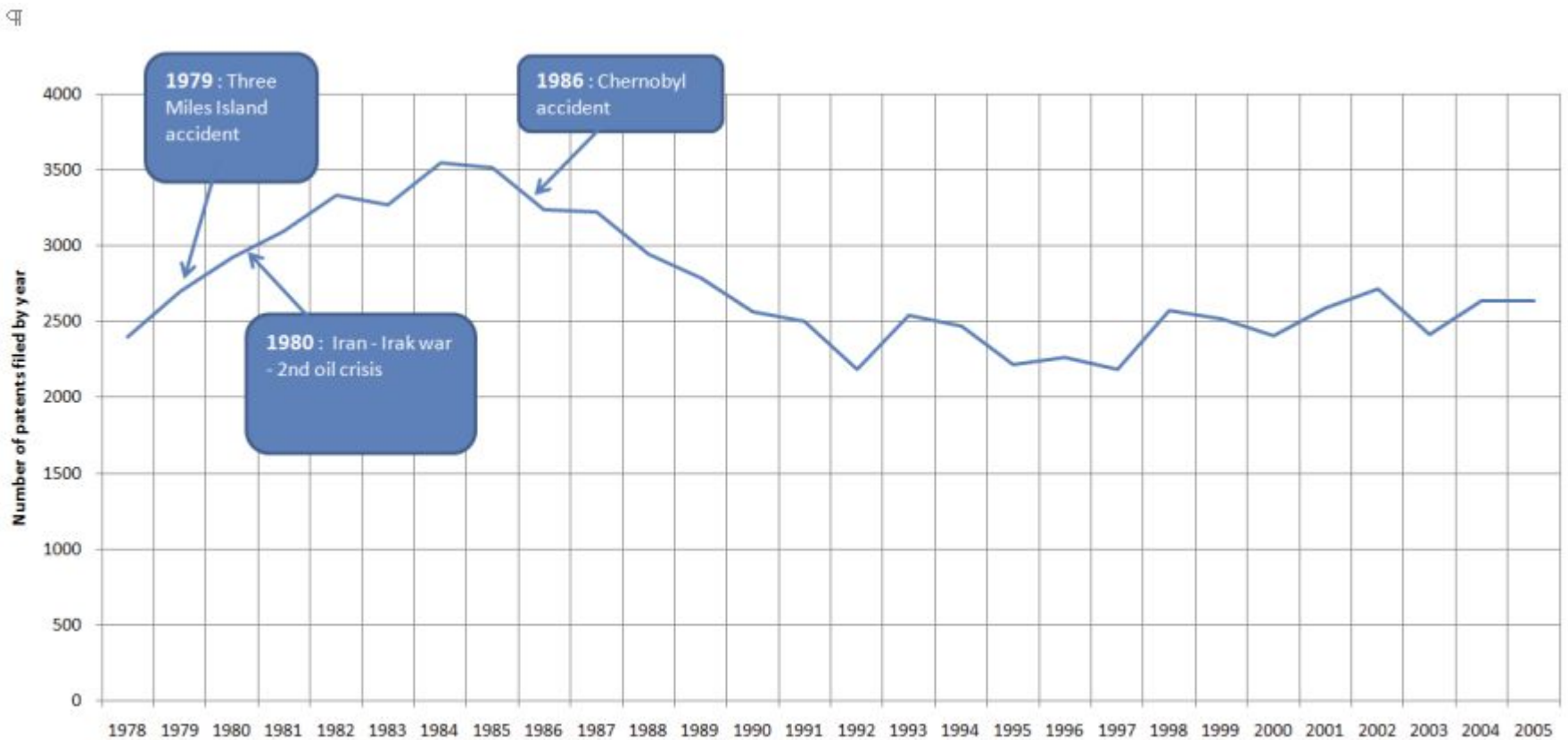
# I. Intellectual Property (IP) Licensing

- Licensing parties in the nuclear industry should be in compliance with:
- Regulations, security and liability surrounding the use of nuclear energy, nuclear waste and its proper disposal.



# Innovation Trends in Nuclear Power Generation

Source: François Lévêque, Ecole des mines de Paris



# I. Intellectual Property (IP) Licensing

## USPTO Regulation

- **706.03(b) Barred by Atomic Energy Act [R-2] - 700 Examination of Applications**
- **706.03(b) Barred by Atomic Energy Act [R-2]**
- A limitation on what can be patented is imposed by the Atomic Energy Act of 1954. Section 151(a) (42 U.S.C. 2181(a))>< thereof reads in part as follows:
- No patent shall hereafter be granted for any invention or discovery which is useful solely in the utilization of special nuclear material or atomic energy in an atomic weapon.

# I. Intellectual Property (IP) Licensing

- IP licensing only occurs when one of the parties **owns** valuable intangible assets know as **Intellectual Property (IP)**.
- IP ownership gives a legal right to the owner of IP to exclude or prevent others from using that IP for commercial purposes.
- Intellectual Property (registered or non registered) is the **subject matter** of the licensing agreement.
- Different kinds of IP Licenses
  - Pure IP License
  - Product or Technology License
  - Standard License

# I. IP Licensing

- Technology Licensing often occurs as a consequence or in the context of other relationships (research or business) in which other agreements are very important. In that case licensing agreement is interrelated to these other agreements.
  - Joint Venture Agreement
  - Merger of Businesses
  - Research Collaboration Agreement
  - Sponsored Research Agreement
  - Material Transfer Agreement
  - Research Service Agreement ( IP ownership of the developed research results may be assigned in advance)

# I. IP Licensing and Technology Transfer

## Licensing Agreements

- Most frequently used mean for technology transfer, in particular in university-industry relations,
- Advantage - gives variety of options for business relations with different partners by using the same portfolio of IP,
- “Win – win “ solutions,
- Possibility for licensing partners to share the risk through royalty rates;
- Potentially provides significant return on investment and incentives for creativity and innovation;
- Very important business tool for new “collaborative innovation” or “open innovation”.

- II. Key Terms of a Licensing Agreement



**The key terms of a licensing agreement - are the vital elements in the structure of the licensing agreement.**

# Key Terms

## The Four Clusters

- I. Subject Matter: What is licensed?
- II. Scope: What can you do with it?
- III. Financial: What value is it?
- IV. Upgrades and maintenance: What will happen with it in the future?



# Key Terms and Business Objectives

- Key Terms are Inter - Related with Business Objectives of the Negotiating Parties.
- What do you want to achieve with the licensing agreement will influence your options related to key terms!
- What is essential for you?

# Key Terms and Business Objectives

## What is the **business reason** for the license?



What must you gain in order for this agreement to be **worthwhile**?

- What is the **best result** that can be obtained?
- What outcome do you want to **avoid**?
- From a business perspective, is the best result a license to IP rights only (“**pure IP license**”) or a broader set of related agreements (“**business partnership**”)?
- In what specific ways will this license **make money** for your business?

# Chapter III: Cluster 1

## The Subject Matter

# Subject Matter: What is Licensed?

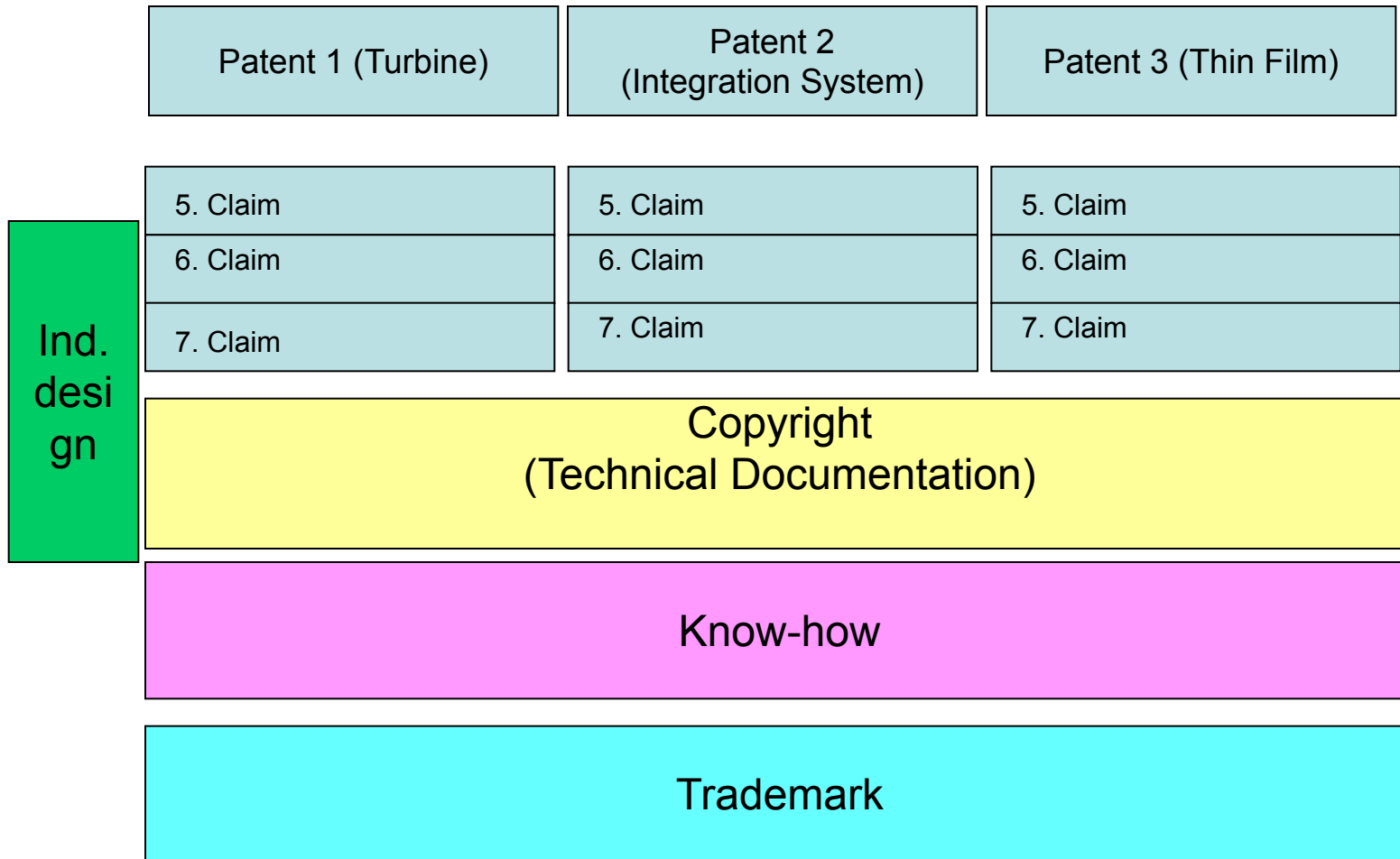
- It can be registered IP:
  - Patent – formula for medical treatment;
  - Copyright – software;
  - Trademark – “coca – cola”, franchising – “McDonalds”
  - Industrial design – car design;
- Important subject matter of a technology transfer agreement is trade secret and know - how – non registered IP.

# Subject Matter of the Imaginative “Smart Turbine” Licensing Agreement

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desi  
gn

Patent 1 (Turbine)	Patent 2 (Integration System)	Patent 3 (Thin Film)
1. Claim	1. Claim	1. Claim
2. Claim	2. Claim	2. Claim
3. Claim	3. Claim	3. Claim
4. Claim	4. Claim	4. Claim
5. Claim	5. Claim	5. Claim
6. Claim	6. Claim	6. Claim
7. Claim	7. Claim	7. Claim
Copyright (Software, Schematics, Documentation)		
Trade Secrets Know-how		
Trademark		

## II. What the Licensor Want to License OUT



# I. What the Licensee Wants to License IN

Patent 2 (Integration System)
1. Claim
2. Claim
3. Claim
4. Claim
5. Claim
6. Claim
7. Claim

Patent 3 (Thin Film)
1. Claim
2. Claim
3. Claim
4. Claim
5. Claim
6. Claim
7. Claim

Copyright  
(Software, Schematics, Documentation)

Trade Secrets  
Know-how

# The Subject Matter

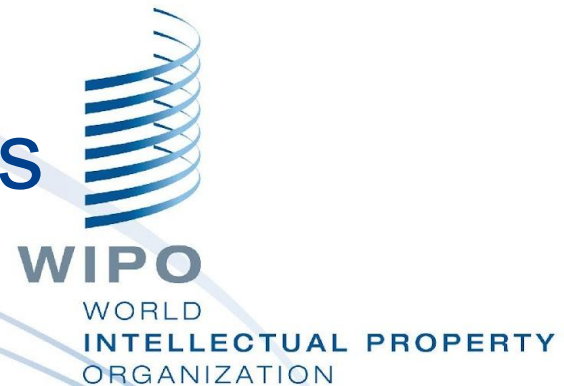
## What are You Licensing? Define and Include Relevant Documentation

- Patent No. \_\_\_\_\_
- The trademark \_\_\_\_\_
- A protocol
- All rights necessarily infringed by the X Standard
- The X technology

- Formula (to be completed....?)
- The Product
- The Licensed Material
- Documentation
- Schematics
- As set forth in Appendix A...

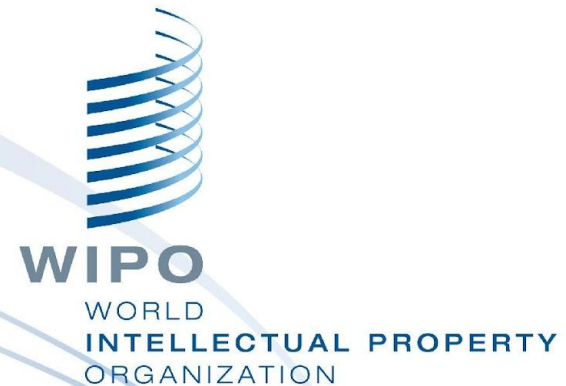


# Common Problems



- Who owns the IP?
- Unfinished development
- Patents not issued
- Multiple parties
- Pending claims
- MOUs or Letters of Intent
- Best efforts, good faith

# How Can You Clarify the Subject Matter?

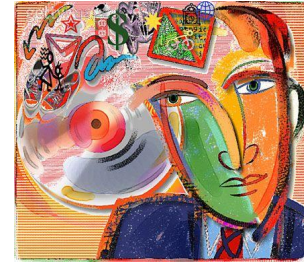


- Confidentiality agreements
- Prototype agreements
- Feasibility studies
- Interim agreements (addressing cost)
- Consultations with lawyers, experts
- Study of documentation, databases
- Study competing products

# Chapter III: Cluster 2

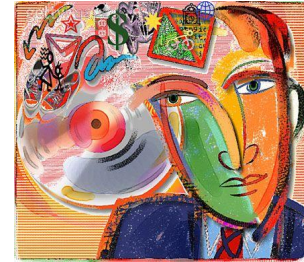
## The Scope of the Rights

# Scope of Rights



- What and how broad rights your business model require?
- Make, have made, use, sell, import, transfer, make improvements?
- Copy, display, modify, make derivative works, distribute, transfer?
- Conduct research and product development?

# Scope of Rights



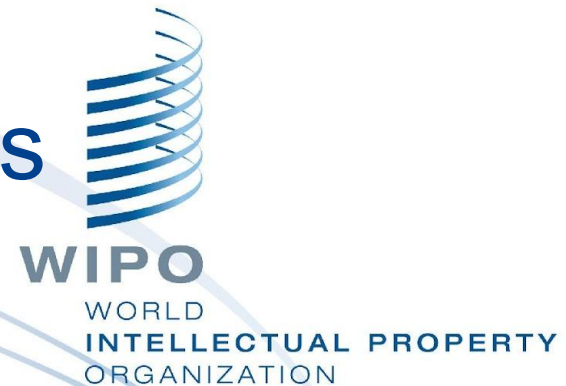
- Very important element in a licensing agreement, as it gives both parties various options to negotiate and to adjust to their own business interest – “win-win”.
- Options mainly relates to:
  - Exclusivity of the rights
  - Field of use of IP and technology
  - Territory
  - Timelines
  - Sublicensing

# Scope: Exclusive rights?



- A necessary risk (for Licensor)?
- What arguments can Licensee make for obtaining exclusivity of the rights?
- What arguments can Licensor make against?
- Possible means of protection against a lazy, dishonest, or ineffective licensee:
  - Minimum Royalties
  - Time Limitation of Exclusivity
  - Inefficiency as a Trigger for Contract Termination

# Common Problems in Cluster 2



- Scope too broad
- Scope too vague
- Scope too restricted (e.g. no right to sell)
- Exclusivity granted without protections
- Unclear how sublicenses are administered
- Grant backs that prevent the licensee from creating advantage

# Chapter III: Cluster 3

## Financial Terms in Licensing Agreements



# Cluster 3: Financial Terms in License Agreements

- Value: Total value of the licensed IP in context of the other key terms; and
- Form of payment: How the payments will be made.

# What is IP Valuation?

- Benefit
- Risk

Valuation: The process of identifying and measuring financial benefit and risk from an asset.

The value of IP depends on the context !!

# When is IP Valuation Used?

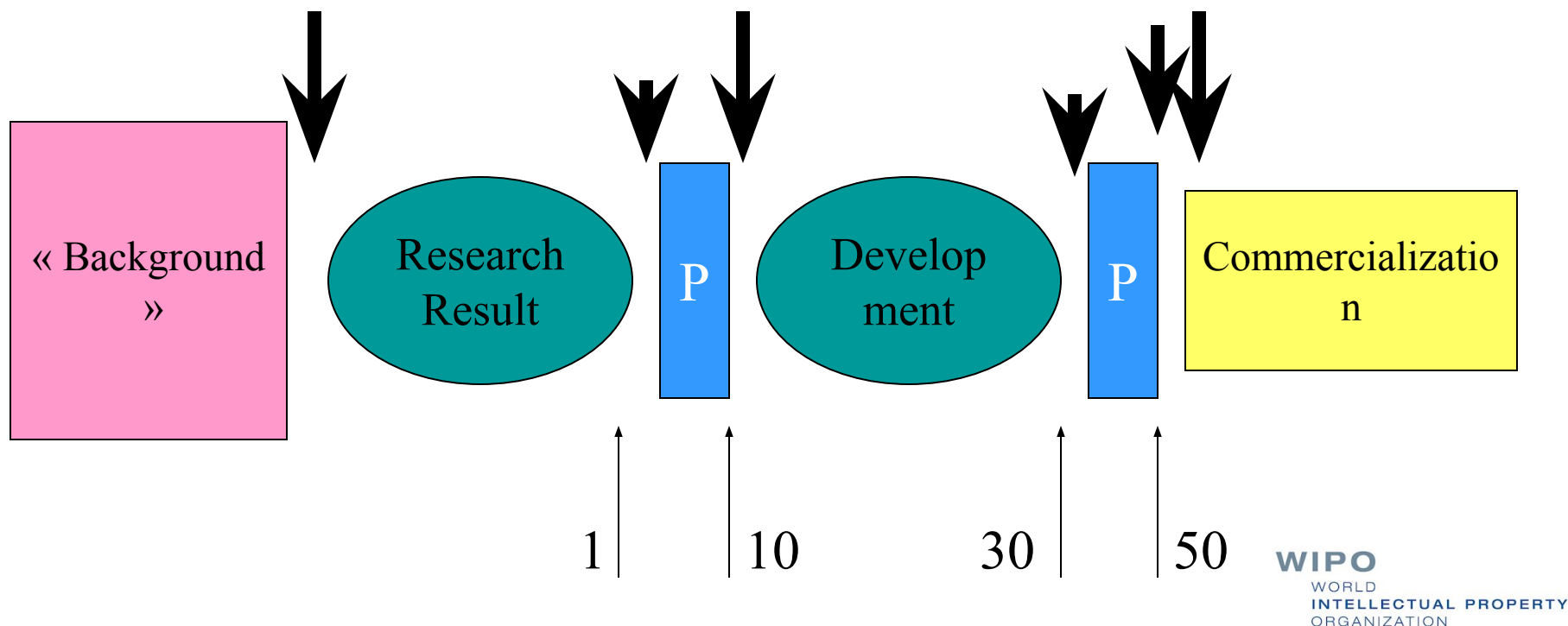
- I. Litigation – Lost Profit
- II. Strategies and Transactions – Benefit and Risk
  - Merger and Acquisition
  - IP Audit
  - Funding
  - Financial Reporting
  - Investment Transactions
  - IP Commercialization/Licensing

# When is IP Valuation Used in the Context of Licensing Negotiation?

- Sell or License?
- What is the Right Price?
- Royalty Rate?
  - In context of other key terms
    - Subject of the license
    - Scope of the rights granted
    - Exclusive – Non Exclusive
    - Territory
    - Time
    - Other financial arrangements

# Value of the Same IP is Variable

The value of the same IP imbedded in the research results will change in the process of IP commercialization depending on the context – maturity of the technology, investment, identified partners, business model for commercialization...



# The Three Classic Methods

- Income
  - value over time discounted for
    - risk
    - time value of money
- Market Comparables
- Cost to Recreate

# The Income Method

- Projection of the future net income (“net cash flow”) that the IP asset can be expected to generate over a certain period of time (usually the economic lifetime of the asset), taking into account the time, value of the money and the risk that the income will not be realized.
- Different approaches – “Discounted Cash Flow” - determination of the Net Present Value of the IP asset.

# How DCF Calculation Works

$$PV = \sum_{t=1}^n \frac{CF(t)}{(1+r)^t}$$



# Market Method

- Advantage-simple, if there are appropriate data
- Difficulties
  - IP market is not developed
  - Difficult to find pertinent data (contracts are confidential usually)
  - Sectarian databases might have useful information-variations and complexity of each case have to be taken into consideration
  - Geographical and market differences
  - Other terms in contract have to be taken into account

# Cost Method

- Replacement (creation) cost of R&D plus the cost of IP protection;
- Advantages: useful to estimate a competitor's invent-around costs and understand licensor's perspective;
- Disadvantages
  - lost time
  - difficult to determine
  - cost of creation is not always representative of the value of the protected technology.

# Formes of Payment

- Royalties
- Lump sum
- Initial fee or licensing fee
- Installment payments
- Combinations

# What is a Royalty?

- A form of payment in which Licensee pays value to Licensor over a negotiated period of time, in return for Licensor's consent to use IP.
- Royalties are based on volume (per unit) or a percentage revenues of products using the IP.

# Why Royalties are Used

- A way of distributing payment of value to Licensor so as to:
  - Permit sharing of benefit,
  - Share risk that the technology will not succeed (because of technology defect or market failure),
  - Avoid immediate high cost to Licensee,
  - Ensure mutual motivation to make technology succeed.

# Royalty Variations

- Minimum Royalties - Important for licensor in exclusive licenses as security in case of failure of licensee to exploit the technology
- Capped Royalties
- Ramping (Increasing) Royalties
- Declining Royalties
- Premium for high performance (bonus)
- Advances against royalties (where licensor needs up front cash to fund operations)

# Comparable Royalties

Royalty Rates for In-Licensing by Industry							
Industry	0-2%	2-5%	5-10%	10-15%	15-20%	20-25%	>25%
Aerospace	50.0%	50.0%					
Automotive	52.5%	45.0%	2.5%				
Chemical	16.5%	58.1%	24.3%	0.8%	0.4%		
Computer	62.5%	31.3%	6.2%				
Electronics		50.0%	25.0%	25.0%			
Energy	33.3%	66.7%					
Food/Consumer		100%					
General Mfg.	45.0%	28.6%	12.1%	14.3%			
Government/University	25.0%	25.0%	50.0%				
Health Care	3.3%	51.7%	45.0%				
Pharmaceuticals	23.6%	32.1%	29.3%	12.5%	1.1%	0.7%	0.7%
Telecommunications	40.0%	37.4%	23.6%				

Dan McGavock, IPC Group, Chicago, Illinois (based on survey)

# Chapter III: Cluster 4

## Development of the Technology



# Future Developments

- Improvements by Licensor and Licensee
- Joint Improvements
- New products
- New patents
- Service and support
- TECHNOLOGY IS ALWAYS CHANGING! BUT CONTRACTS are fixed in time.

# Future Developments: Grant Backs by Licensee

- EC Competition Law - lists a number of restrictions which do not benefit from the safe harbour (not automatically exempted), and require individual assessment on the basis of the TT Guidelines as to whether they merit exemption because their pro-competitive effects outweigh their restrictive effects.
  - Exklusive grant-back obligations (either through a licence or assignment) in respect of a licensee's own 'severable' improvements to (or his own new applications of) the licensed technology (a severable improvement means 'an improvement that can be exploited without infringing the licensed technology');
  - In case of non-competitors: restrictions on the licensee's ability to exploit his own technology or on the parties' ability to carry out R&D.
- Platform strategy often involves grant backs: e.g. Linux /Open Source.

# Future Developments: Grant Backs by Licensee

- Grant Backs: Contractual „grant backs“ are frequently used by licensor requesting the potential licensee to agree to „grant back“ to the licensor rights to the improvement patents developed by the licensee, that related to the original patent as partial consideration of license rights.
- Exclusive grant backs often challenged by competition law.
- Grant backs can also be negotiated as mutual obligation – cross licensing of the improvements. More balanced solution.

# Licensing Negotiation

In technology licensing, the most important indicators of success are bargaining leverage and preparation

# How to Prepare?

- Define the team
- Define business objectives
- Assess bargaining power
- Fix time frame
- Gather documents

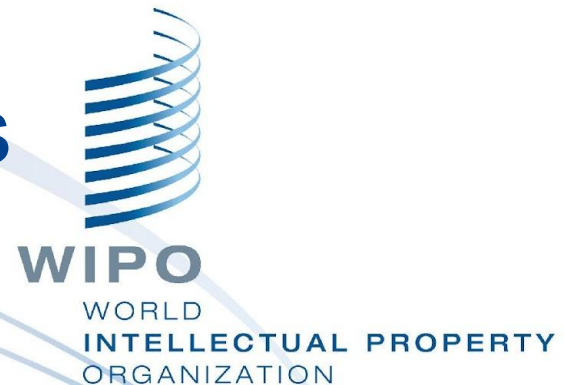
- Write the Term Sheet
- Chose negotiating strategy
- Select any preliminary agreements
- Evaluate the other party
- Meet with the Team

# The Advantage Continuum

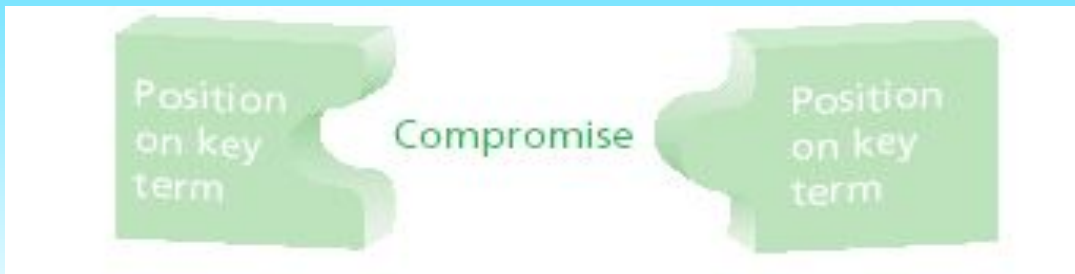
- The negotiator has the difficult task of constantly assessing the way the key terms affect the business objectives of the license
- The goal of the negotiator is to stay as much as possible on the right side of this continuum with respect to each key term



# Fall-back Positions and Compromise



- You may decide to accept a compromise with respect to a certain key term, that is, take a position that is not advantageous (a negative number in the above continuum), but that is acceptable in the context of positions taken on other key terms
- The objective is to reach “Win-Win” solution!!







**Thank you !**

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