BMEI - 2022:
IP and patents

November 22, 2022

Dmitry Kulish

Skoltech

BMEI STRUCTURE AND TOPICS

- MONDAY
  - mentoring by request
- TUESDAY
  - lecture of the topic of the week
    - Indication + MOA + POC
    - Patent
    - Formulation + Manuf + QC
    - Reg guidances + Preclin + Clin
    - Value chain + Value delivery
- THUR
  - mentoring by request
- FRIDAY
  - Team presentation
    - **Last course activity day: Wed Dec 16th**

		TUE-FRI 9-12	
week 1	1	Onco/Tobacco game + BMEI course intro	
	4		
week 2	8	ELP	
	11	LECT: Indication + POC experiment + charact	
week 3	15	PRESO: Ind + POC experiment + valid QC	Michail Grubman
	18	LECT: Grubman	Michail Grubman
week 4	22	LECT: PATENT	
	25	PRESO: PATENT three claims	
week 5	29	LECT: Reg + Guidances + Preclin + Clin	
	2	PRESO: Reg + Guidances + Preclin + Clin	Sophia Yartseva
week 6	6	LECT: Formulation + Manuf + QC release	Sophia Yartseva
	9	PRESO: Formulation + Manuf + QC release	
week 7	13	LECT: BMEI career	
	16	FIN PRESOS	Michail Grubman

NEXT DAYS

- Friday Nov 25: IP presentation
  - graded submission in Canvas: Monday Nov 28
- **Monday Nov 28, 11pm:**
  - **Graded submission of the team IP presentation in Canvas**
- Tuesday Nov 29: “REGULATORY” lecture
  - No homework
- Friday Dec 01: “REGULATORY” presentation
  - with Sophia Yartseva

THE PROBLEM STATEMENT

Tue, Nov 15th : the 1st graded assignment presentation

- Slide 1. INDICATION:
  - WHO ICD = World Health Organization International Classification of Disease = МКБ
  - diagnostics & incidence & prevalence
  - current WHO-recommended treatment/alternative
  - impact of your innovation (efficacy, toxicity, convenience, cost)
- Slide 2. PRODUCT/SERVICE + MOA + FF + QC:
  - MOA (Scientific Rationale)
  - Formulation or Technical description
    - Basic simple QC for COM
    - Basic TD/validation for devices/services
- **Slide 3: POC experimental design:**
  - **rationale**
  - **materials and methods**
  - **negative control**
  - **positive control (comparable/benchmark)**
  - **statistics**
- **Slide 4: POC experiment results and discussion**
  - **raw data comprehensively presented**
    - yes, it may be artificially created (FITUMI is not exactly falsification)
  - **discussion**
  - **conclusions**
- Slide 5. TEAM ROLES:
  1. MOA & POC
  2. QC & Patent
  3. Preclin + Reg + Clin
  4. Manuf + QC
- **You submit your slides for grading in Canvas on next day noon after the presentation**

YOUR MOA-POC-QC preso

- **MOA**
  - Show me the science
    - Why you believe that you can help people?
    - What is your novelty that makes you impactful and hence needed?
- **POC**
  - Prove to me that it is real
  - Experiment = prototype
- **QC**
  - Are you sure that this white powder is the same as it was half a year ago?
  - Are you sure that today your device will deliver the same result as yesterday?

PLATFORM TECHNOLOGY TRAP

- EXPERIMENT IS SCIENTIFIC AND EXCITING TO SCIENTISTS (MIDDLE MEN) BUT IRRELEVANT TO END USERS
  - Well, it makes you unloved by end users and enslaved by middle men
    - Though you may make a living out of it

WHAT IF I DEVELOP PLATFORM TECHNOLOGY?

- Platform technology is beautiful
  - Somebody must develop it
  - Good for corporate career
- Platform technology is easy: Science only!
  - No need to understand your value chain
  - No need to build and validate cross-disciplinary solution
- Platform technology is being developed by good certified servants to the value provider
  - The career of servant may be very rewarding, but you must choose it consciously
    - Servants are the richest and wisest and kindest and most respected heroes of John Steinbeck, but they are most often sad and lonely

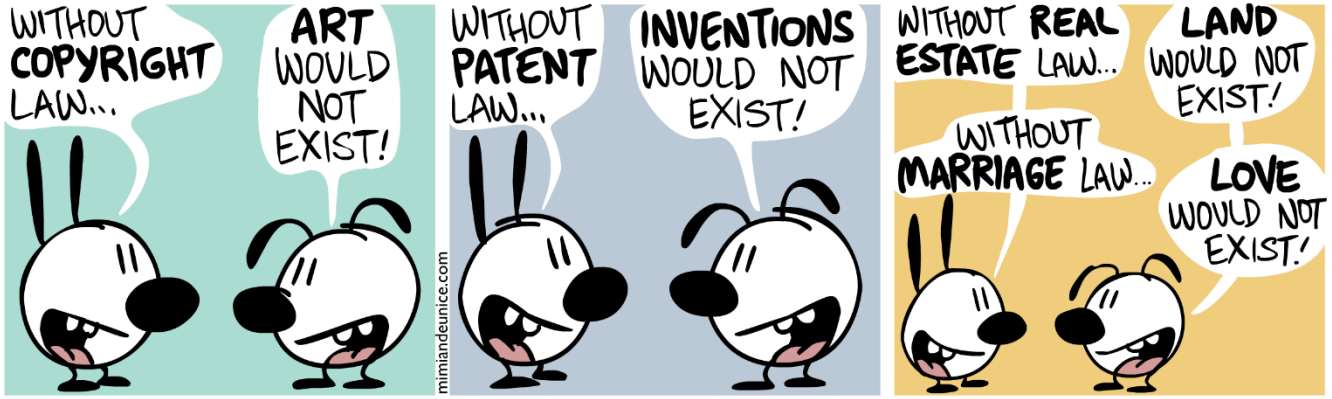
PROJECT	INDICATION	FF + MOA	POC DESIGN	POC RESULTS
HYPER TENSION	Hypertension – what is problem ?	Renin inhibitor by in silico design	**HOW YOU PROVE YOUR VALUE ?**	**WHICH RESULT PROVES YOUR VALUE ?**
HER+ CELL CYCLE CMB	What you improve? Your impact ?	Clarify key message of MOA	Focus on xenograft	Good job
BRCA PLGA	What you improve? Your impact ?	FF not defined	Good job	Good job
GLIO SCAN DIAG	What you improve? Your impact ?	**EXACTLY WHAT YOU DO?**	What is dataset? What is outcome?	**WHAT HAPPENNED ?**
GLIO CAR MPh	What you improve? Your impact ?	More explanation is needed	How you charac-terize MPhs?	more explanation is needed
GULLAINE BARRE	What you improve? Your impact ?	How you manuf + charact modABs?	Good job	Good job
PARK DIAG	good	good	The source of your dataset	good

IP AND PATENTS

WHY WRITING PATENT CLAIMS IS IMPORTANT BEYOND MONEY

- **TECHNICAL DESCRIPTION & UNDERSTANDING OF YOUR INVENTION**
  - What are the key inventive steps and the supporting structure?
    - Patent = TZ. TZ = Prototype. Prototype = Innovation.
- **UNDERSTANDING OF PRIOR ART (USER NEEDS)**
  - What is the closest analogue of my innovation found among patents and papers?
- **PRESENTATION DRILL**
  - Fit your ideas into the actionable structure

IP social role and ethics – not only money



- <u>IP motivates inventor to transfer knowledge to society in exchange for temporary monopoly</u>
  - no IP = low innovation + high secrecy
    - Canada, Argentina, India
  - if you ideologically oppose IP rights, expect all kinds of destruction
    - noble generic pirates won't have clinical data
    - society without patents is and anarchy filled with lies and manipulations

Skoltech

IP positivism

- Only patents allow multiyear team work
  - *Free exchange of patented information*
  - *Free third-party validation*
  - ***If you do not patent, unprofessional commercial vultures will kill the reputation of both you and your invention***
- In modern Biomed if you do not patent, you do not exist
  - Sometimes tricky, especially in genomics
  - You can patent or copyright anything

"Every schematic, each piece of software code, and every drawing, diagram, and prototype has intellectual property rights attached upon creation"

The most painful philosophy of your invention confidentiality

- **You must not give out your invention**
  - **It is your achievement. It is your mission. It is your self-realization.**
  - If you disclose without protection, it will be stolen
    - Small artists steal, big artists copy
    - I will be the first to copy if you do not protect legally.
- **You must not bury your invention**
  - It destroys values chain. It hurts society. It hurts you
  - If you play games of concealing crucial parts of your invention, it will hurt you
- **Where is the golden middle ground?**
  - **Nobody knows ☹**
    - File the patent right before the meeting with the real investor
      - You will not be supported without patent

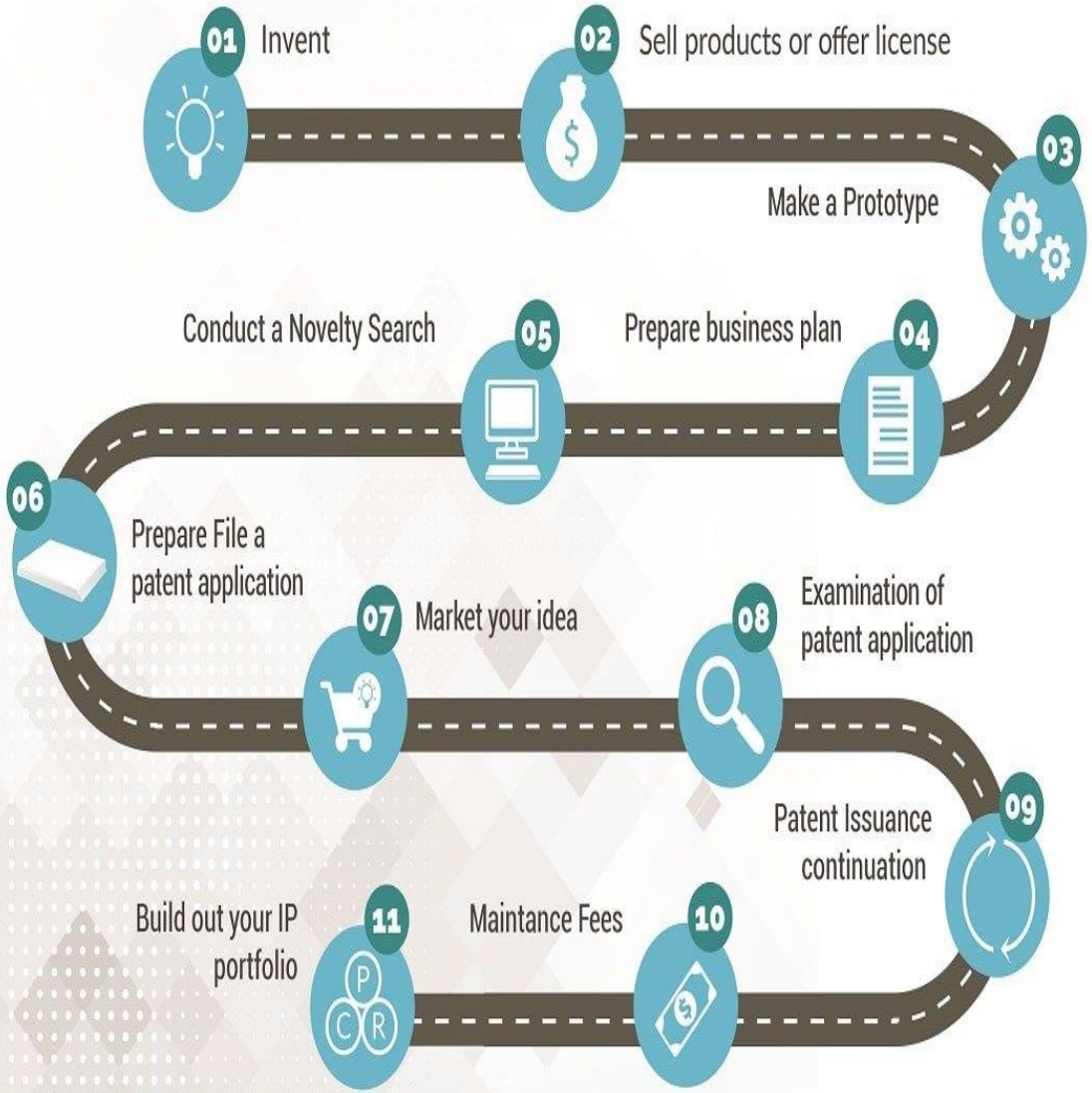
Skoltech

PATENT

- **PATENT = CONTRACT BETWEEN AN INVENTOR AND A STATE**
  - Inventor
    - enjoys monetary rewards of commercial monopoly for 20 years
    - enjoys peace of mind in disclosing the invention
    - is not afraid of sloppy copycats riding on the innovator fame
  - State:
    - enforces social employment of the invention after the patent expiry
    - financially motivates inventors to innovate
    - avoid cut-throat competition and waste/duplication of the resources
- **PATENT PROCESS & STAKEHOLDERS**
  - Inventor
  - Patent owner
  - Patent lawyer
  - Patent office
  - Patent database

- **SERIOUS PATENT PROCESS TAKES APPROXIMATELY 15 YEARS SINCE THE INVENTION TO THE MARKET DEPLETION**

THE PATENT PROCESS



Have an idea → Do patent search → Build prototype

Keep your idea secret until you file your patent or you could lose patent rights!

File provisional patent → Test market and find investors → Sell product or sell/license patent

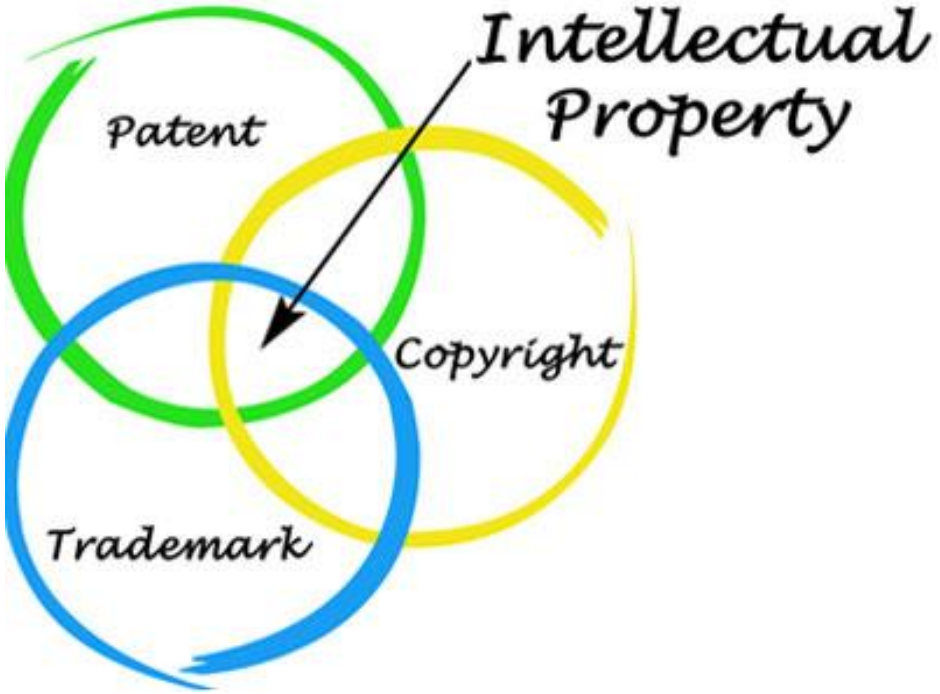
Must file non-provisional patent within 12 months of submitting the provisional patent.

File Non-Provisional Patent → Prosecute Non-Provisional Patent → Receive Issued Patent with Patent Number

Patent will expire 20 years after you filed it.

IP IS NOT ONLY PATENTS

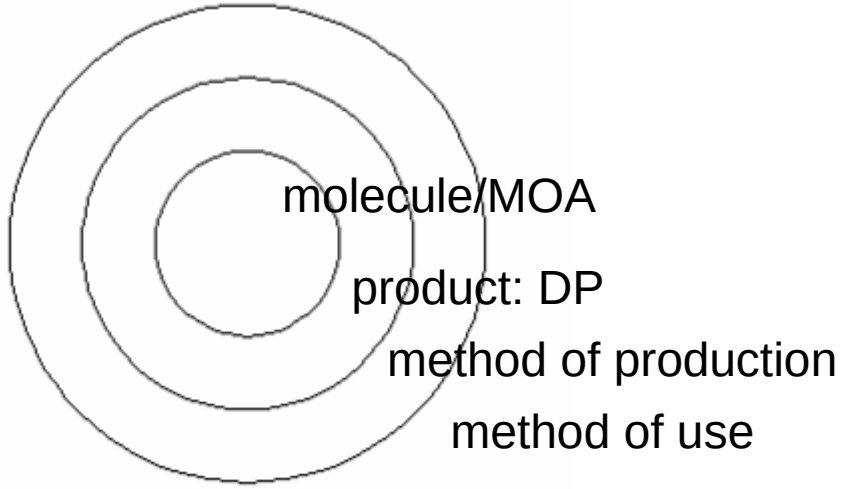
- **Types of IP**
  - *Patent: time limited, readily enforced*
  - Copyright: text and code
  - TM: driver of commerce
  - Commercial secret: cumbersome and James Bondish
    - Everything can be stolen or reverse-engineered



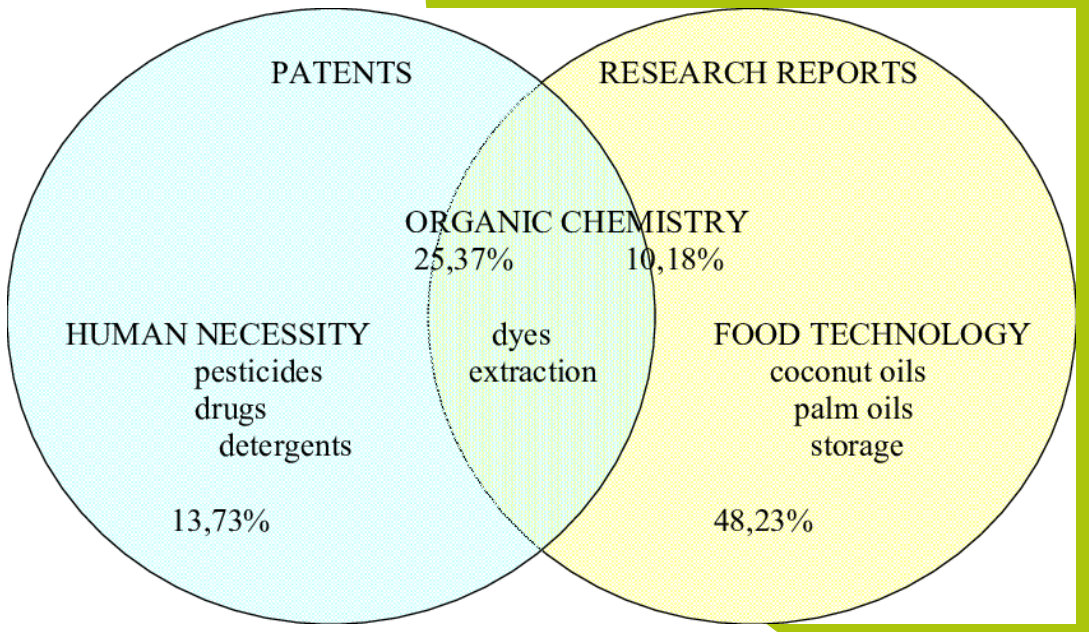
- **Hidden Biomed IP with major value**
  - Clinical data exclusivity: 6-8 years
  - Manufacturing Dossier: 2-3 years

IP strategy

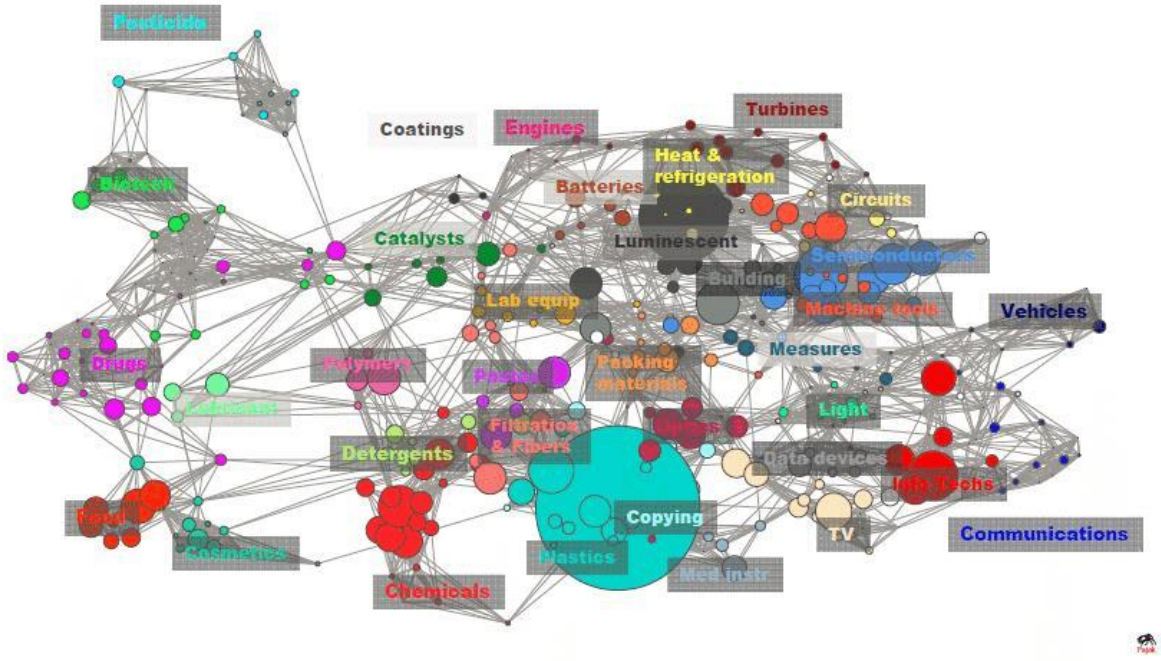
- **Commercial secret of the core technology**
  - Just do not tell anybody
    - Gotta be paranoid that is not easy for some
  - Your secret can (and will) be stolen, reverse engineered and patented
  - Cumbersome formalities on confidentialy
- **Multi-level Patenting is the key to the industrial success**
  - Discovery tracking: priority, inventors
  - Patenting scope circles
- **Trademarking your brand**
  - Intel inside strategy for Inventor
  - Protection from generics



THOU MUST READ PATENTS



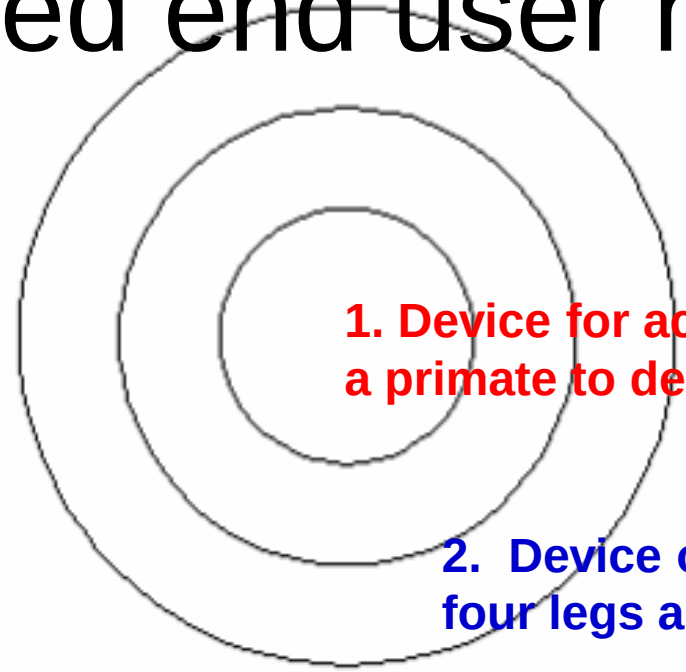
- Scientist:
  - Unique source of commercial information not overlapping with scientific publications
- Innovator:
  - exciting display of achievements
  - turbulent fair of end user needs



Reading the patent

- **Claims**
  - Read them first
  - They are the only tool of legal protection
    - Multilevel claims are the sign of professionalism
      - 1. Device for sitting distinguished by hard surface
      - 2. Device of p1 distinguished by three legs
      - 3. Device of p2 made of wood
- **Examples/Embodiments**
  - Read them second: important sci/tech info
- **Narrative**
  - Read it last for entertainment and education

The fortress of the patent claims towards layered sharpened end user needs



1. Device for accomodating lower back of a primate to decrease the spine strain

2. Device of p1 distinguished by four legs and hard surface

3. Device of p1 made of wood

4. Device of p1 employed for for sitting *H. Sapience*

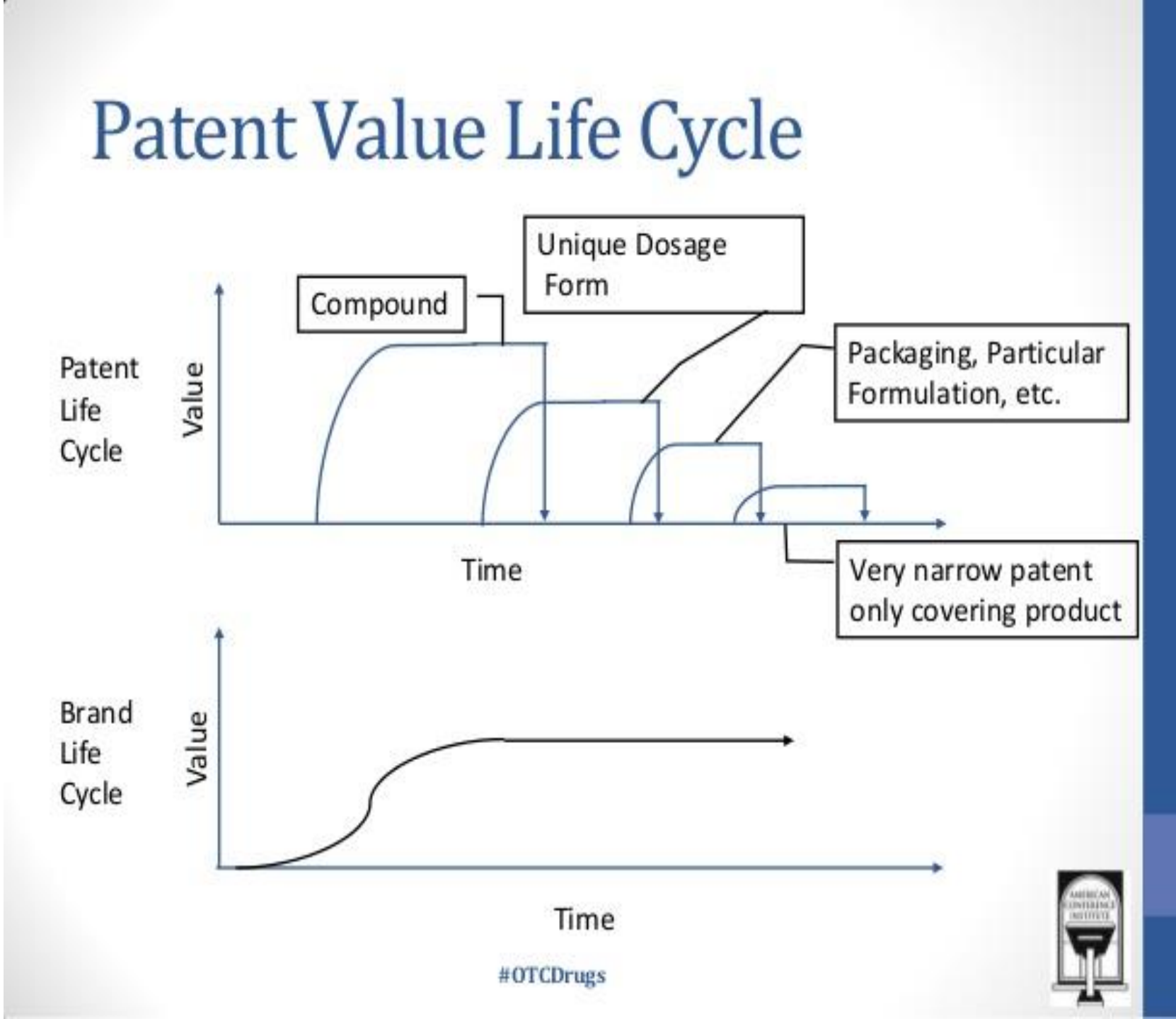
- **Each claim of each patent is independently regulated and enforced**

Core claims must be supported by science

- CORE CLAIM is supported by embodiment experiement:
  - COM claim = general principle: MOA experiment
  - DP/composition or TechDescr claim: POC experiment
  - Method of treatment / delivery claim: clinical study report
  - Method of production claim: manufacturing reports
    - **Be very professional and scientific here**
- AUXILLARY CLAIM should be wildly imaginative but feasible
  - Yes, you may use space rocket to disperse clouds and impress children

- **PATENTS ARE MANIPULATED TO PROTECT YOUR INVANTIONS**

- Is that the evil behavior?



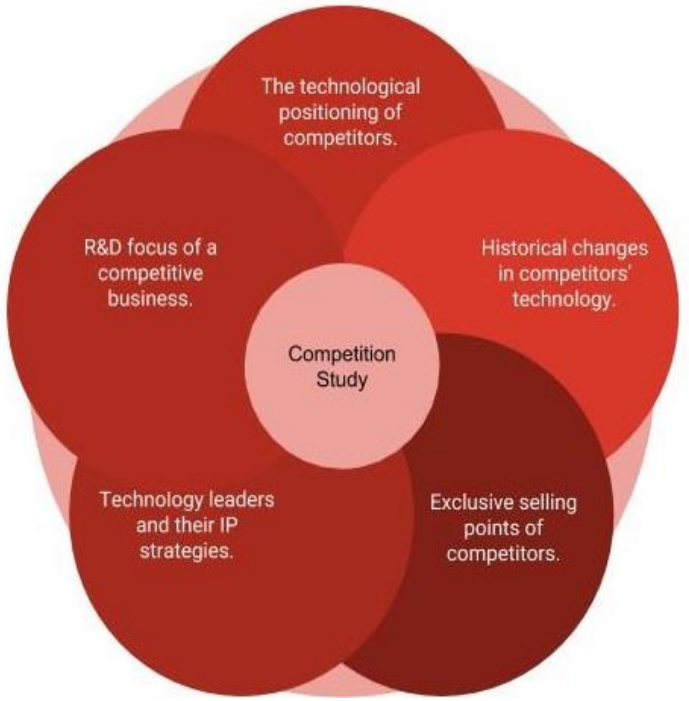
GENERICS

- 100% legal after patent expiration
  - Learn details later
- Acutely Needed by Society
  - 90% of WHO standards are generics
    - 50% of social waste on pharma is in generics
  - Generics bashing is marketing bullshit
- Commercially Tricky
  - Gotta play the cutthroat game without monopoly
- Protected by professionalism
  - Technology excellence
  - Marketing exellence
    - End User Need understanding

WRITING THE PATENT

Before writing the patent

- Not only science
  - Technology landscape
  - Corporate landscape
  - Filing analysis
  - Geography analysis
  - Licensing analysis
  - Sales analysis
  - Litigation analysis
    - **Do you mean I MUST do this all and have no choice?**
    - **You always may go to sales and marketing**



Writing the patent starts with the Common Art & Novelty

- Only scientist can understand common art
  - Patent attorneys know what it is but do not know the subject
  - **Understanding common art is your key industrical value !**
- Three steps
  - Hire patent attorney to exhaustively search the dbase
    - Or better learn to do it yourself
  - Find your favorite patents and learn them by heart
  - Build on them
- Freedom-To-Operate
  - Very vague but very important
  - Different from novelty
  - Requires your deep expertise

Writing the patent – Drafting the claims

- Only scientist can draft Claims
  - Patent attorneys are only good on polishing
  - **Drafting patent claims is your key industrical application and value !**
- **Claims = the comprehensive set of technical features of your invention**
  - Compose carefully
    - Difficult to write clearly, concisely and comprehensively
    - **If you miss something, competition and patent trolls will jump on**
  - Break into the groups/circles
  - Clear description of inventive steps and unexpected features
  - Comprehensive list of embodiments

Writing the patent – Examples and Narrative

- It is not the scientific paper: it is legal protection instrument !
- Examples/Embodiments
  - explain your experiment carefully
  - provide figures and pictures
- Narrative
  - as broad and shiny as possible
    - be a poet
  - painstakingly list all possible embodiments
- Patent vs paper
  - less speculation on nature
  - more speculation on use

Patentability requirements

2. Utility (Industrial applicability): Utility of a patent describes that the invention is **capable of industrial use at least for one purpose**.

3. Novelty: Novelty of patent application suggests that invention should be **new** and is **not a part of prior art**.

4.Non-obviousness (Inventive Step): Invention should be sufficiently inventive in order to be patented. Invention should have **technical advance**; and/or **economic significance**.

5. Specification: The patent specification drafting includes a written description of the invention and claims. Patent specification must describe the **best mode of the process or the invention**.

Novelty + Non-obviousness + Utility

- Definition of Non-obviousness is tricky
  - India, Argentina, Canada are much stricter then US and Russia to develop copycat industry
- Novelty by embodiment = Novelty
  - This particular invention never existed before
- Novelty by concept = Non-obviousness
  - This invention is totally unexpected
- Your embodiment must be useful
  - But the usage is not limited
  - Using hammer for killing bugs will infringe on the patent of hammer for hitting nails

Patent inventors and owners

- Inventor: Whoever provided creative input
  - Documented: Lab journal + witness
  - Unsolicited: No job description
  - Unbound: Job contract, Equipment use contracts
- Must be all listed
  - **If omitted or wrongfully included, litigation ensued**
- Inventor is different from owner and do not share profits
  - In US may be fully stripped of commercial profit
    - though Nakamura BlueLED case shows otherwise
  - In Russia and Europe is entitled to 2% of something
    - Exactly what is something?
  - Common practice is for startup to own the patent and be sold with it
    - Currently most Universities (incl Skoltech) want to own the patents

Lifecycle of a Patent

Is the idea worth patenting?

Is the idea patentable in light of the prior art?

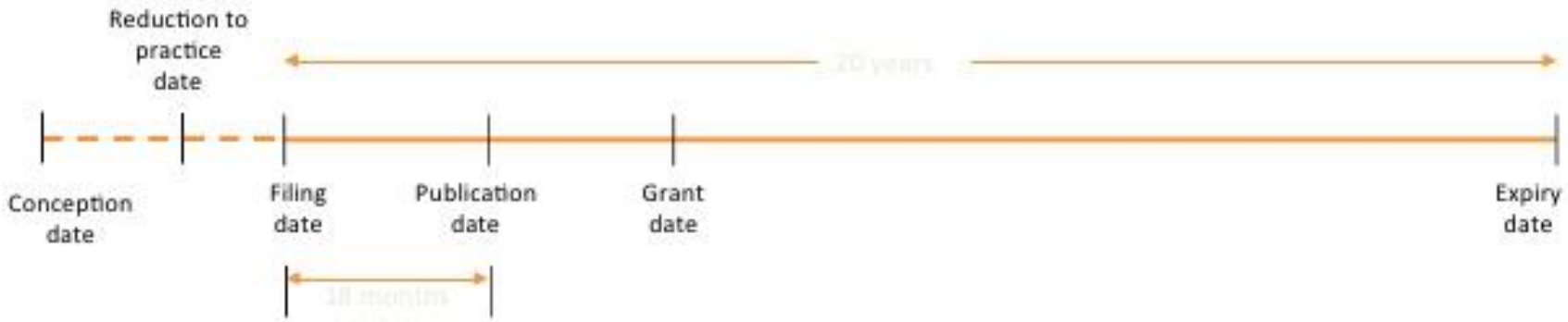
Does the patent application describe all the embodiments of the invention?

Idea Conception → Patentability Assessment (optional) → Drafting and Filing Patent Application → Publication of Patent Application → Office Action → Grant or Rejection → Maintenance



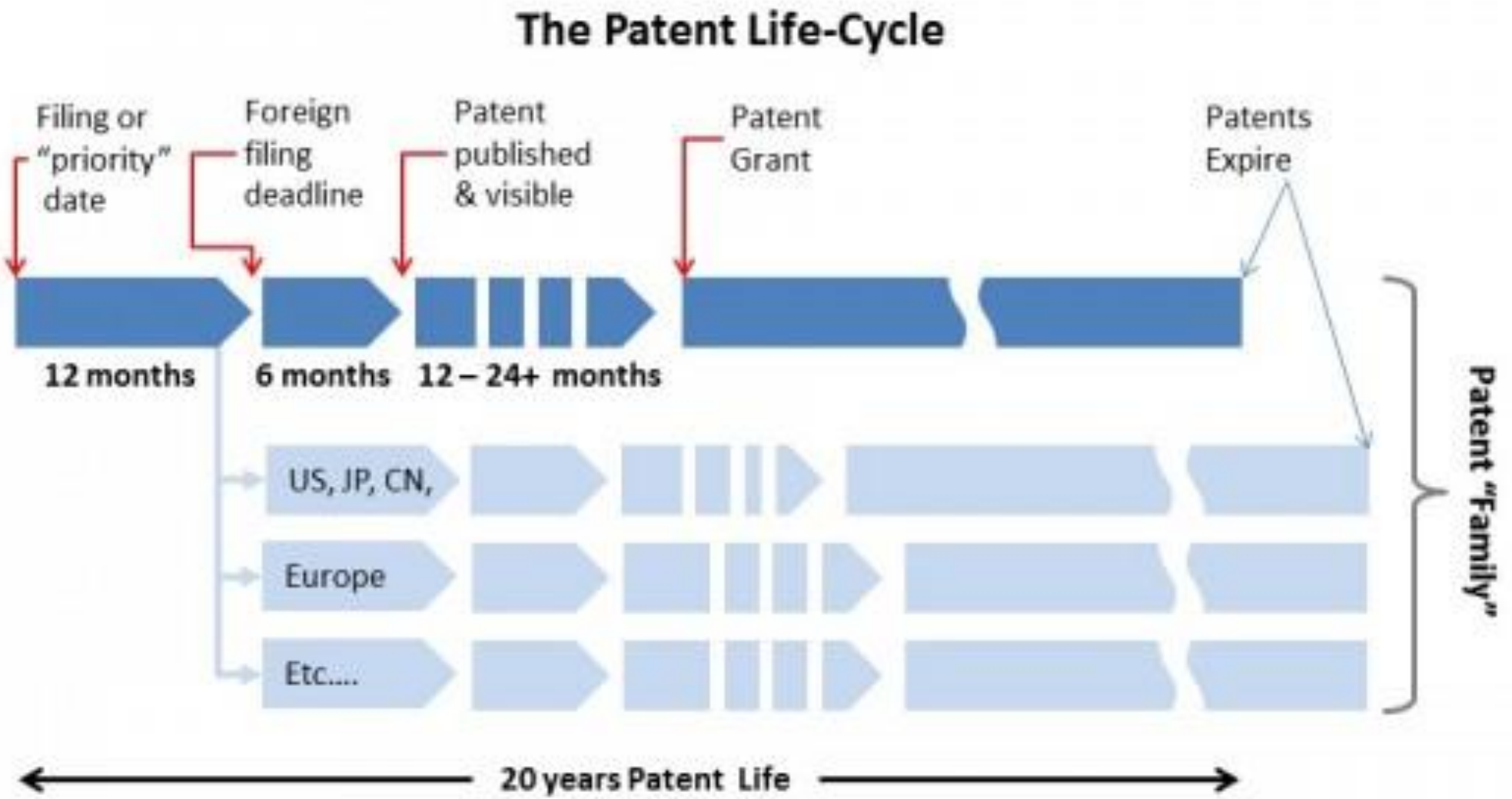






Skoltech

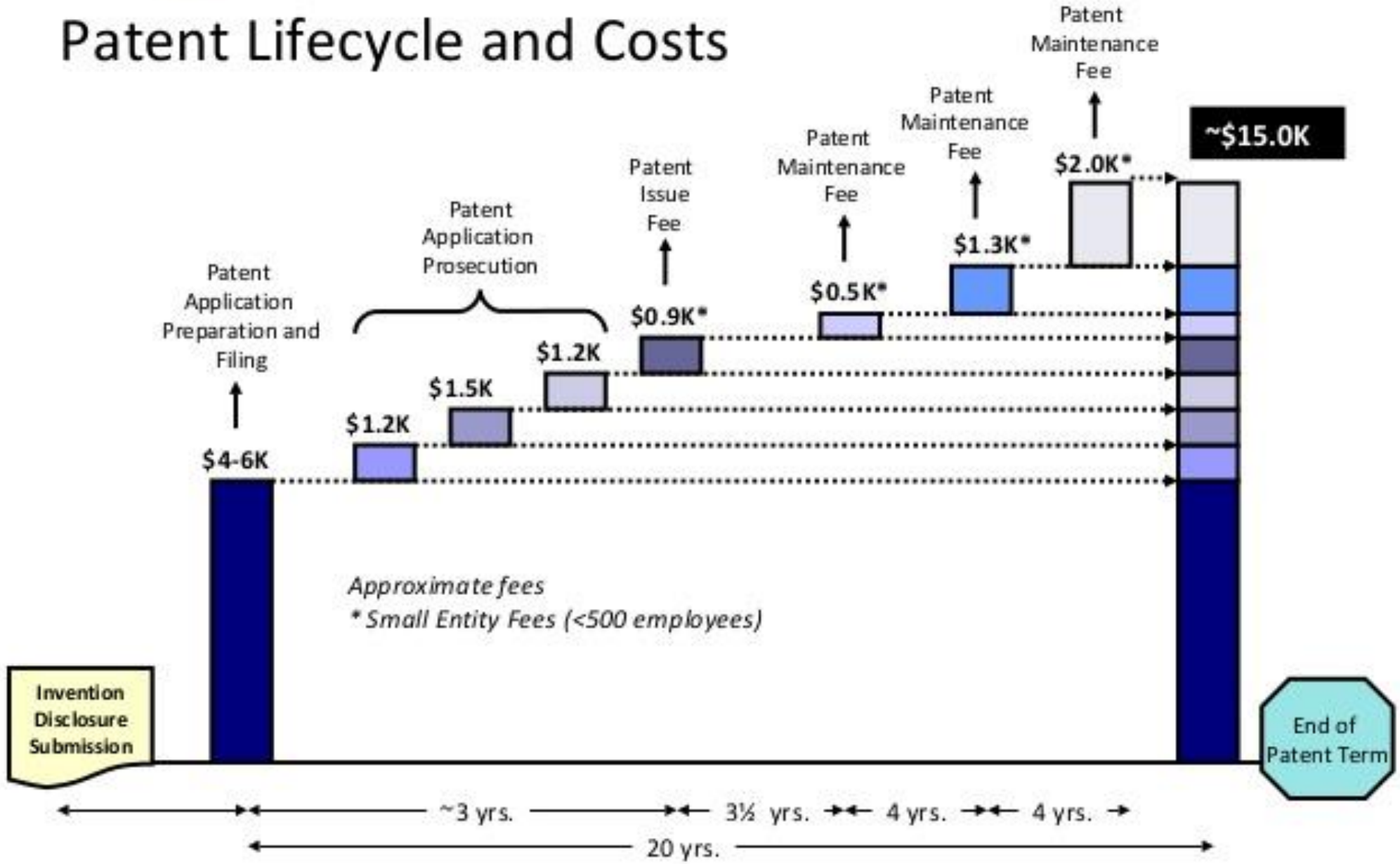
March



Skoltech

CLEMENTS | BERNARD
INTELLECTUAL PROPERTY

Patent Lifecycle and Costs



Innovator must own the Patent workflow

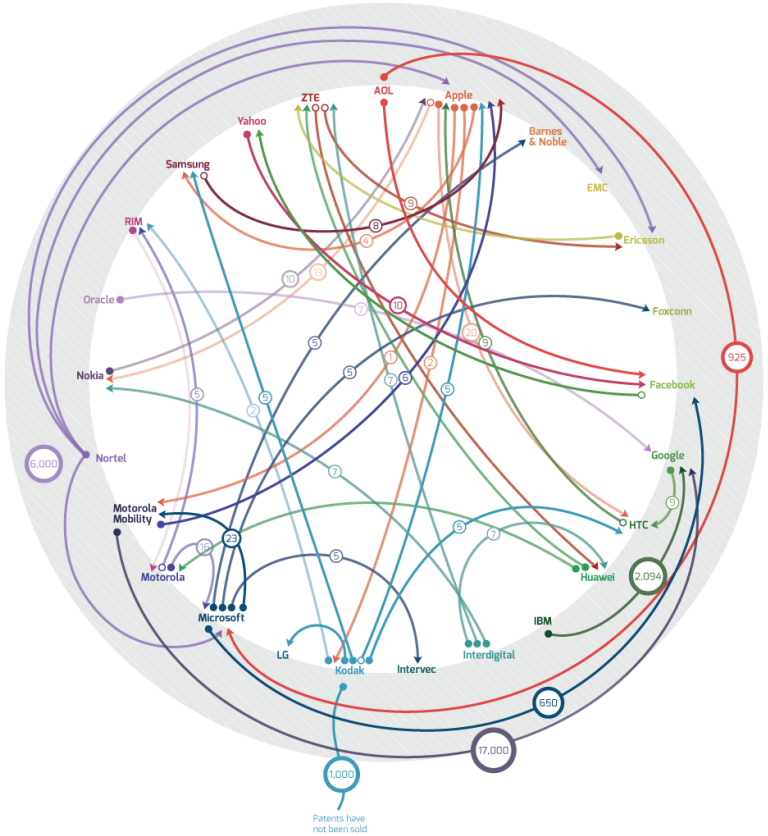
- **Y0: File first application (root application)**
  - Delay as late as possible, but not later
  - File in the country where experiments were performed
  - 1-2 year to disclosure
- **Y1: File PCT**
  - There is no such thing as international patent
  - 1 year to disclosure
  - Much stricter expertise then in Russia
- **Y3: land local patents**
  - Quite expensive
- **Y5-10-10: pay for keeping local patents**
- **Protect patent from litigation**
  - Wrongful issuing on novelty
  - Inventor omission

FREEDOM TO OPERATE (FTO)

- FTO vs novelty
  - **Novelty is the patent granting criteria**
  - **FTO is litigation criteria**
- If you have good product you will be sued anyway
  - And it will be your fault
  - Hence FTO is kinda vague
- In court you will need to witness
  - Only you can do it so FTO is still crucial
- Does it make sense to infringe knowingly?
  - No, but everybody does
  - Be ready

Your patent will be attacked
Protecting your patents is YOUR job

- Lawyers will only help to understand what is going on
- Ownership claims
  - Document every step
  - Track every experiment
  - Do NDAs with every living soul!
- Novelty claims
  - Study your public domain
- Authorship claims
  - Inventor omission
  - Improper inclusion



Skoltech

If you want to get fired on spot

- Do not make IP disclosure of your invention to your TTO
- Publish your results in public domain without consulting to your TTO
- Infringe without consulting to your corporate lawyer
- Make lousy lab journal
- Sign agreements with the 3rd parties without consulting your corporate lawyer
- Violate NDAs

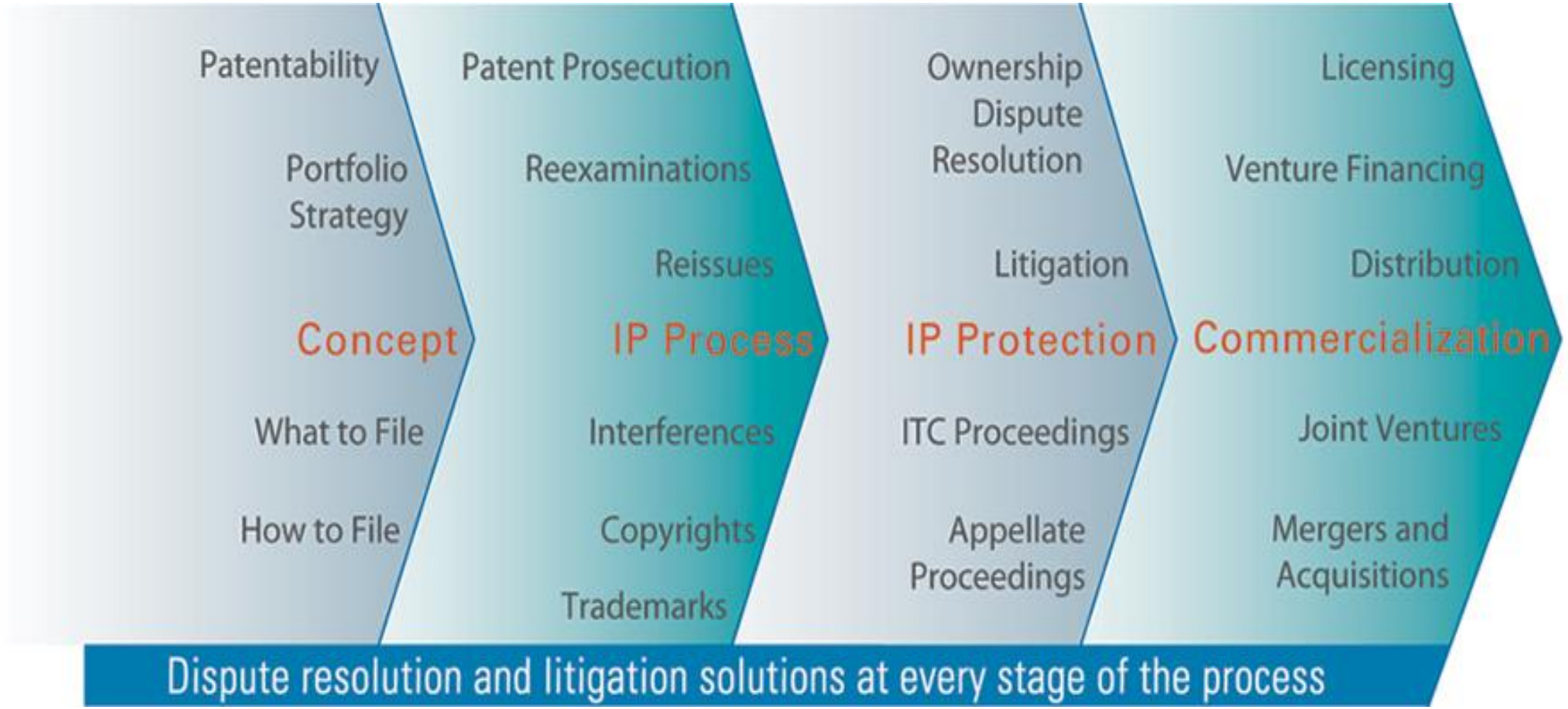
Skoltech

Patent valuation and other money matters

- Patent delivers cash flow
  - Patent value is the fair share of this cash flow
  - Fairness comes only from violent negotiations
    - 90% may be as fair as 10%
    - Legally inventor should expect 2% of smthing
- Extend patent
  - Evergreening
    - Patents of combinations
    - Patents on formulations
  - Incremental innovation
  - Delay of filing
  - Clinical data protection
  - Manufacturing protection

Strategic Aspect		Strategic Question	IPRs Options	Examples
Definition of competitive strategy		How do IPRs help companies gain and sustain competitive advantage?	Create IPR-based technological incumbency	Novo Nordisk (insulin)
			Create brand name	U.K. industrial product manufacturers*
			Create IPR-protected installed base/ de facto standard	Motorola (GSM standard)
			Sustain competitive advantage through IPR combination	LeoPharma (psoriasis drugs — complementary patents) Bayer (aspirin — complementary patent and trademark)
External context	Industry structure	How do IPRs affect the structure of an industry?	Use IPRs to amass market share in technologically discrete industries	Dyestuff industry in the 19th century
			Use IPRs as bargaining chips in technologically complex industries	U.S. semiconductor industry
	Horizontal competition	Which options do IPRs offer in the competition with other industry players?	Use IPRs to differentiate vertically	Numerous luxury brands Patents protecting radical innovations
			Use IPRs to differentiate horizontally	Kellogg (cereals — trademarks) Nokia (mobile phone interfaces — trademark, patent and design combinations)
		How do IPRs relate to incumbency advantage and entry barriers?	Create advantages through cumulative patenting	Canadian biotech industry
			Create advantages by combining brands and patents	Geox (footwear)
			Create "learning economies" by identifying and binding elite scientists	German chemical, electronic and engineering corporations
			Support product-space packing with trademarks and patents	Henkel KGaA (detergents)
	Vertical competition	How can IPRs help companies gain vertical power along the value chain?	Use IPRs to increase power in a different segment of the value chain	Nokia (loudspeakers)
Internal context		Which organizational design is necessary to accommodate an IP strategy?	Create IP functions at the corporate and the business-unit level	Toshiba

Big Picture


Patentability
Portfolio Strategy
Concept
What to File
How to File
Patent Prosecution
Reexaminations
Reissues
IP Process
Interferences
Copyrights
Trademarks
Ownership Dispute Resolution
Litigation
IP Protection
ITC Proceedings
Appellate Proceedings
Licensing
Venture Financing
Distribution
Commercialization
Joint Ventures
Mergers and Acquisitions
Dispute resolution and litigation solutions at every stage of the process

SUMMARY

- It is your job to care about patent protection of your invention
  - Professional help is only needed for filing and litigation
- Patent every principal discovery
  - Build patent families at the different levels/circles
- Remember about patent calendar
  - Plan
  - budget
- Patent game is tricky and exhausting
  - But if you do not play it, you sell yourself short and destroy your ecosystem

Three elements of the claim *reflect the statement that patent is technical description (TZ)*

Preamble and transitional phrase	A writing instrument for making a mark on a writing surface, the writing instrument comprising:
Element A	an elongate protective sheath with a central cavity extending along a length of the elongate protective sheath;
Element B	a solid material disposed within the central cavity so that a person can grip the protective sheath and guide a tip of the solid material extending out of a first distal end of the elongate protective sheath to make the mark on the writing surface; and
Element C	an eraser disposed adjacent to a second distal portion of the elongate protective sheath opposite the first distal end.

Preamble + Transition + Limitation

1. A headgear apparatus comprising:

a headband member having **a** frontal portion;

a visor member removably secured to **said** frontal portion of **said** headband; and

an eye shield member removably secured to **said** frontal portion of **said** headband.

2. A headgear apparatus as in claim 1, wherein **said** eye shield member is adjustable with respect to **said** headband member.

3. A headgear apparatus as in claim 1, wherein **said** visor member and **said** eye shield member are secured to **said** frontal portion of **said** headband member by **a** set of rivets.

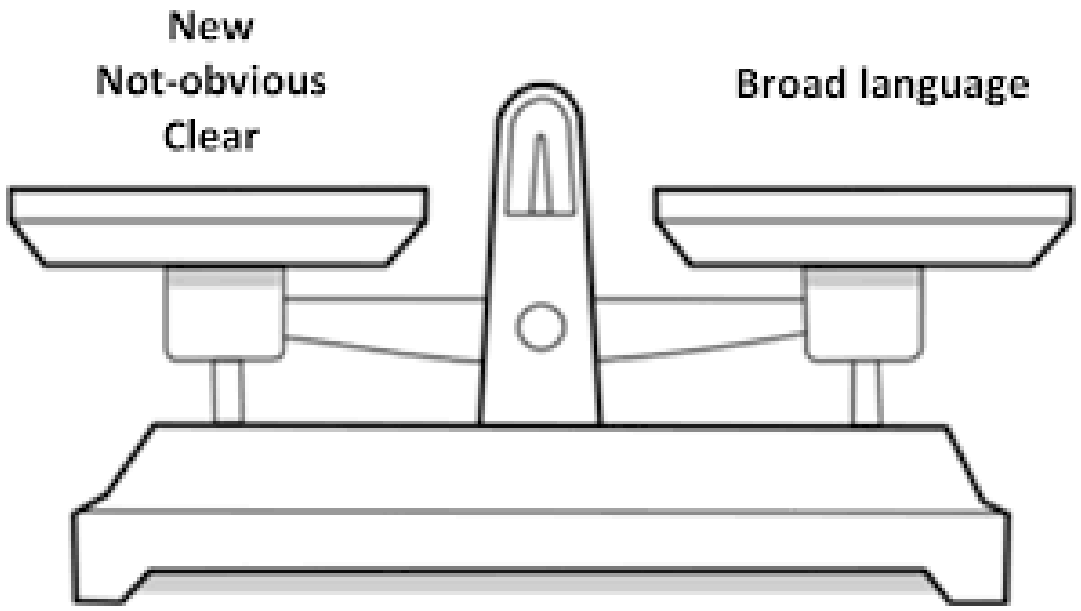
4. A headgear apparatus as in claim 1, further comprising **a** visor cover for placement over **said** visor member.

5. A headgear apparatus as in claim 2, wherein **said** headband member is formed from neoprene fabric.

6. A headgear apparatus as in claim 3, wherein **a** continuous bead of sealant material is placed on **said** headband member.

It is tough not only to explain what you are doing, but also UNDERSTAND what you are doing !

Claim conundrum: broad but narrow



A method of operating at least one programmable electronic data processing machine comprising the programmed steps of:

(a) receiving inputted tax preparer data, tax return data and loan application data;

(b) creating electronic tax return data files from said tax return data;

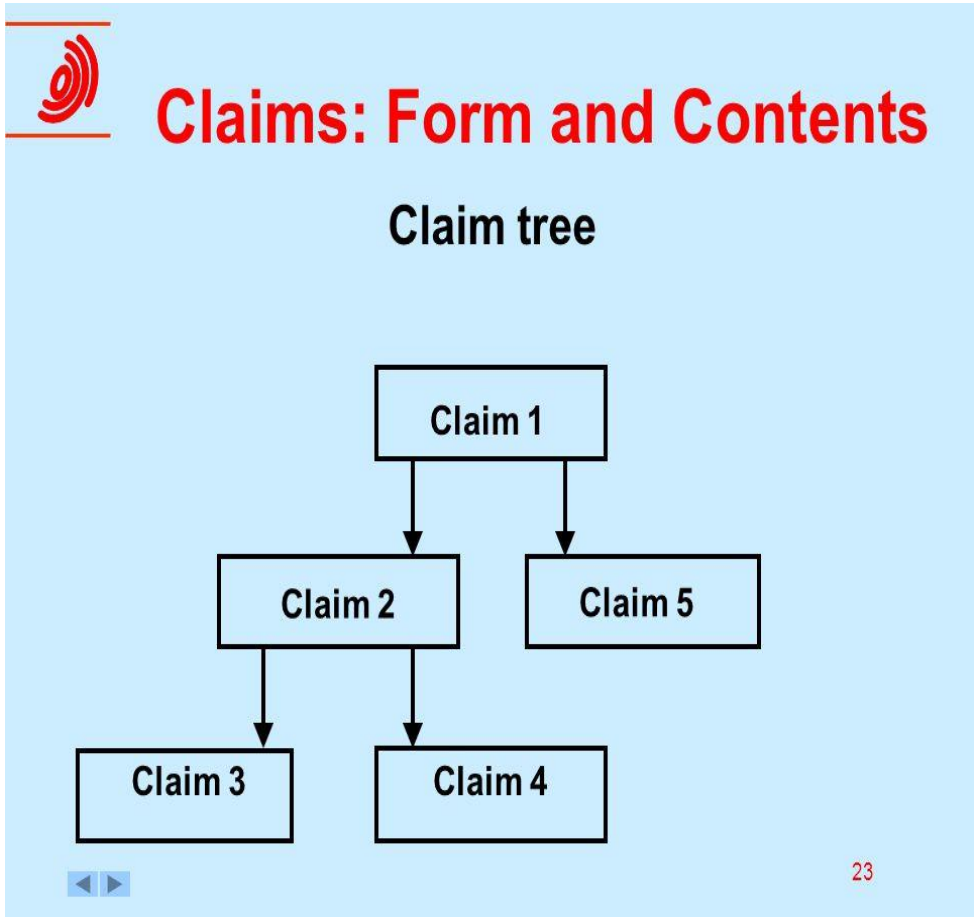
(c) creating deposit/loan account files related to said tax return data and said loan application data at an unauthorized financial institution;

(d) transmitting said electronic tax return data files to at least one tax collecting authority;

(e) processing said tax return data files and said deposit/loan account files and authorizing payment by said authorized financial institution from said deposit/loan account files of a tax refund loan amount based on said tax return data prior to completion of tax return processing and refund payment by said tax collecting authority; and

(f) authorizing receipt by said authorized financial institution of tax refund electronic fund transfers, based on said tax return data, from said tax collecting authority.

Claim trees



Claim No.		Ind.	Dep.
1.	Independent	1	
2.	Dependent on claim 1		1
3.	Dependent on claim 2		1
4.	Dependent on claim 2 or 3		2
5.	Dependent on claim 4		2
6.	Dependent on claim 5		2
7.	Dependent on claim 4, 5 or 6		(1)
8.	Dependent on claim 7		(1)
9.	Independent	1	
10.	Dependent on claim 1 or 9		2
11.	Dependent on claims 1 and 9		(1)
	Total	2	13

Core claims are supported by science

- CORE CLAIM is supported by embodiment experiment:
  - COM claim: POC experiment
  - DP/composition claim: preclinical experiment
  - Method of treatment / delivery claim: clinical study report
  - Method of production claim: manufacturing reports
    - **Be very professional and scientific here**
- AUXILLARY (DEPENDENT) CLAIM should be wildly imaginative but feasible
  - Yes, you may use space rocket to disperse clouds and impress children

Pharma Claim tree

1. A binding agent that specifically binds urokinase-type plasminogen activator receptor (uPAR) wherein said agent competes with an integrin for binding to uPAR.

2. The binding agent of claim 1, wherein said integrin is a β1 integrin.

3. The binding agent of claim 2, wherein said integrin is α5β1 or α3β1 integrin.

4. The binding agent of claim 1, wherein said agent competes for binding to uPAR with an antibody from clone 3C6.

5. The binding agent of claim 1, wherein said agent comprises:

a) a V_HCDR1 comprising an amino acid sequence of a 3C6 V_HCDR1 as set forth in FIG. 1;

b) a V_HCDR2 comprising an amino acid sequence of a 3C6 V_HCDR2 as set forth in FIG. 1; and

c) a V_HCDR3 comprising an amino acid sequence of a 3C6 V_HCDR3 as set forth in FIG. 1.

COM = Composition of Matter

- **FOR PHARMA**
  - Chemical structure of the active molecule + characterization similar to QC
- **FOR MEDICAL DEVICE**
  - Technical description of the device structure and function
    - Device (Software) that performs the (utility function)…., which device (software) comprised by (device components)…

Med Device claim tree

1. A headgear apparatus comprising:

a headband member having **a** frontal portion;

a visor member removably secured to **said** frontal portion of **said** headband; and

an eye shield member removably secured to **said** frontal portion of **said** headband.

2. A headgear apparatus as in claim 1, wherein **said** eye shield member is adjustable with respect to **said** headband member.

3. A headgear apparatus as in claim 1, wherein **said** visor member and **said** eye shield member are secured to **said** frontal portion of **said** headband member by **a** set of rivets.

4. A headgear apparatus as in claim 1, further comprising **a** visor cover for placement over **said** visor member.

5. A headgear apparatus as in claim 2, wherein **said** headband member is formed from neoprene fabric.

6. A headgear apparatus as in claim 3, wherein **a** continuous bead of sealant material is placed on **said** headband member.

HOMEWORK

- **NOVELTY**
  - Cite and analyze the 3 closest patents
    - Usually 3 different aspects (standard of treatment, way of delivery, usage)
- **NON OBVIOUSNESS**
  - Unexpected result of your POC
    - Usually, best result in the panel of candidates
- **UTILITY**
  - Very precise definition of your most acute end user group
- **SCOPES OF UTILITY**
  - 1) Device/molecule (**COM**) with characterization
  - 2) Method of manufacturing/development (**MANUF**)
  - 3) method of use to treat/prevent the WHO ICD diseases (**UTILITY**)
- **THREE CLAIMS**
  - Based on supporting embodiments (POC experiments)

PRESENTATION #2

- **SLIDE 1: Indication**
- **SLIDE 2: Product/service + MOA + BENEFIT**
- **SLIDE 3: POC experiment design and results**
- **SLIDE 4: NOVELTY**
  - Cite and analyze the 3 closest patents
    - Usually 3 different aspects (**COM, MANUF, UTILITY**)
- **SLIDE 5: NON OBVIOUSNESS**
  - Unexpected result of your POC
    - Usually, best result in the panel of candidates (**FITUMI**)
- **SLIDE 6: UTILITY**
  - Precise definition of your most acute end user group and their benefit
- **SLIDE 7: THREE PATENT CLAIMS**
  - Write according to the description from this presentation
  - Must related to the supporting embodiment (POC experiment)

thx.

Skoltech