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МИНИСТЕРСТВО НА ОБРАЗОВАНИЕТО И НАУКАТА

THE EDGE

Технологичен трансфер и комерсиализация на технологии

Петко Русков, 12 октомври 2023 г.

024

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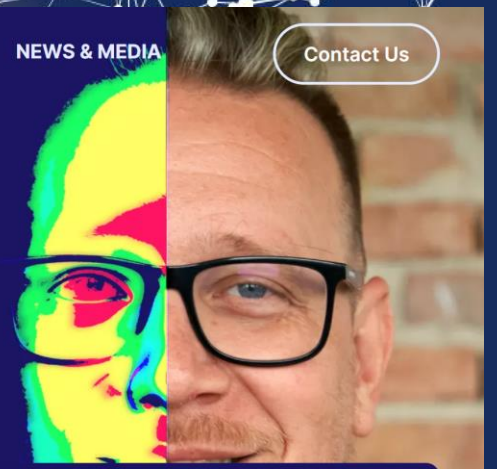

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For Pharma

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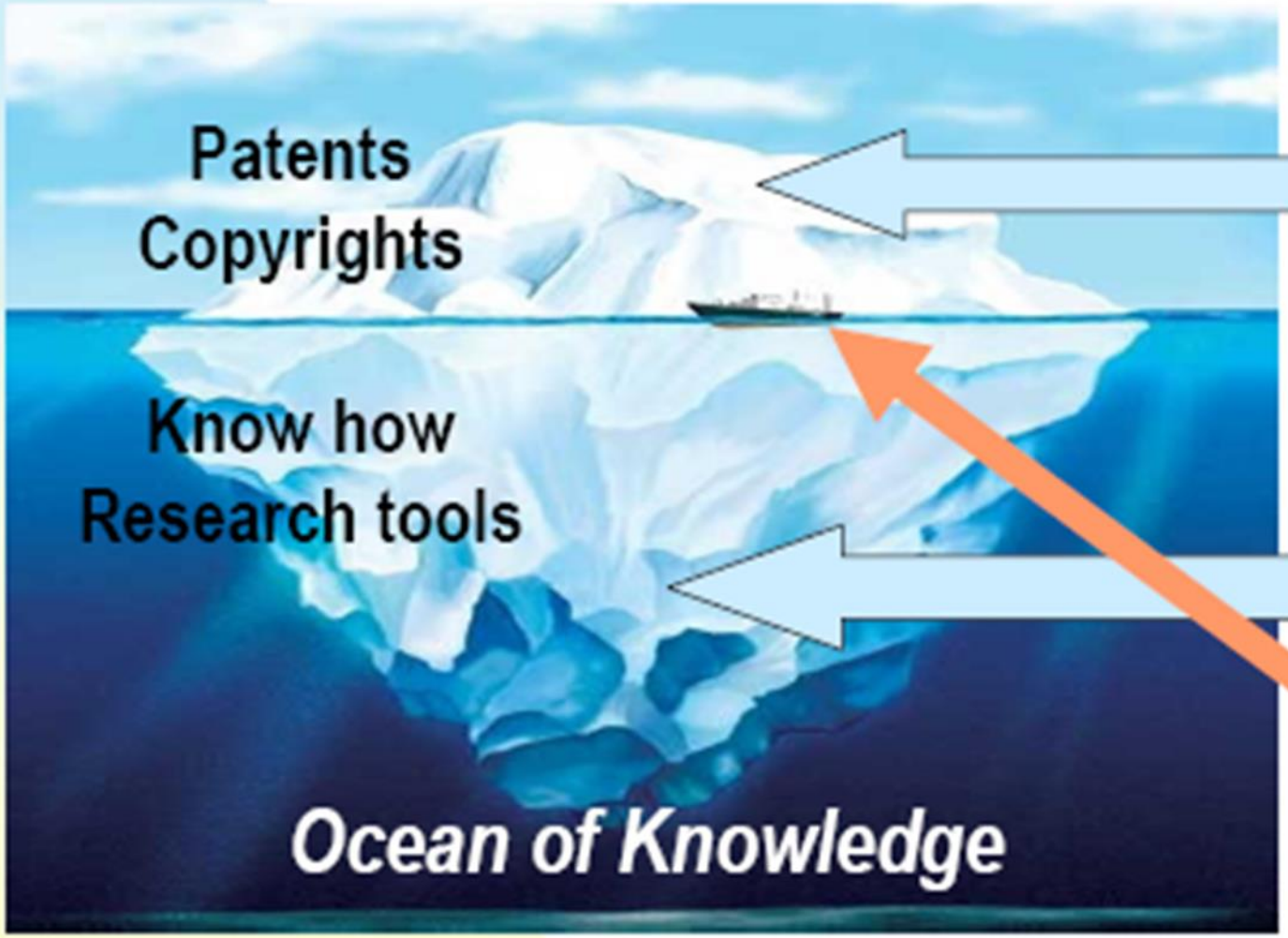
For Patients

Accessible, precise, non-invasive screening and follow up monitoring



Intellectual Property available for licensing

Collaborative Research Opportunities

Spin-outs

THE EDGE

2024

“Информационно общество”

Courtesy of Steve Denning, World Bank

11.10.2023 г.

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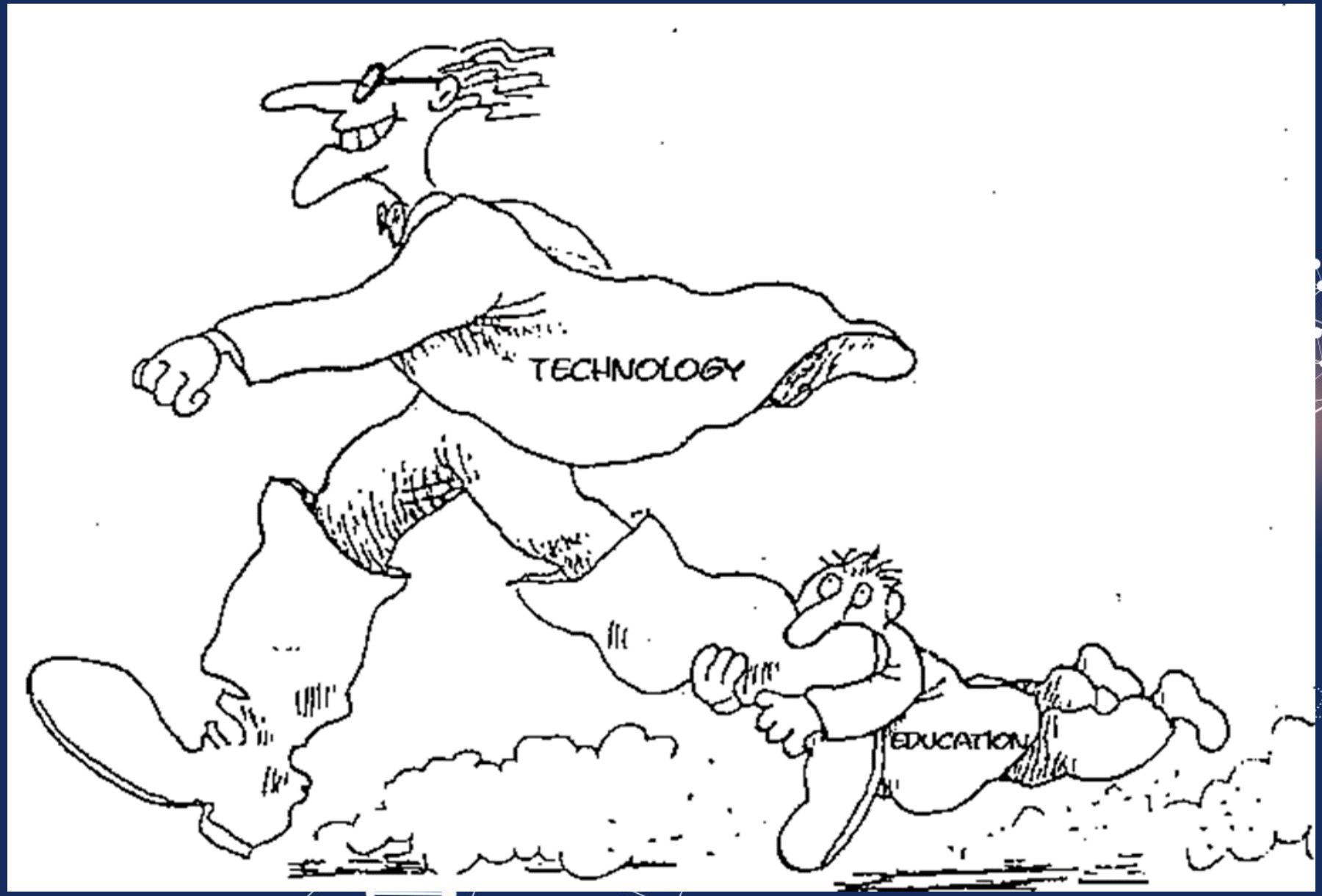
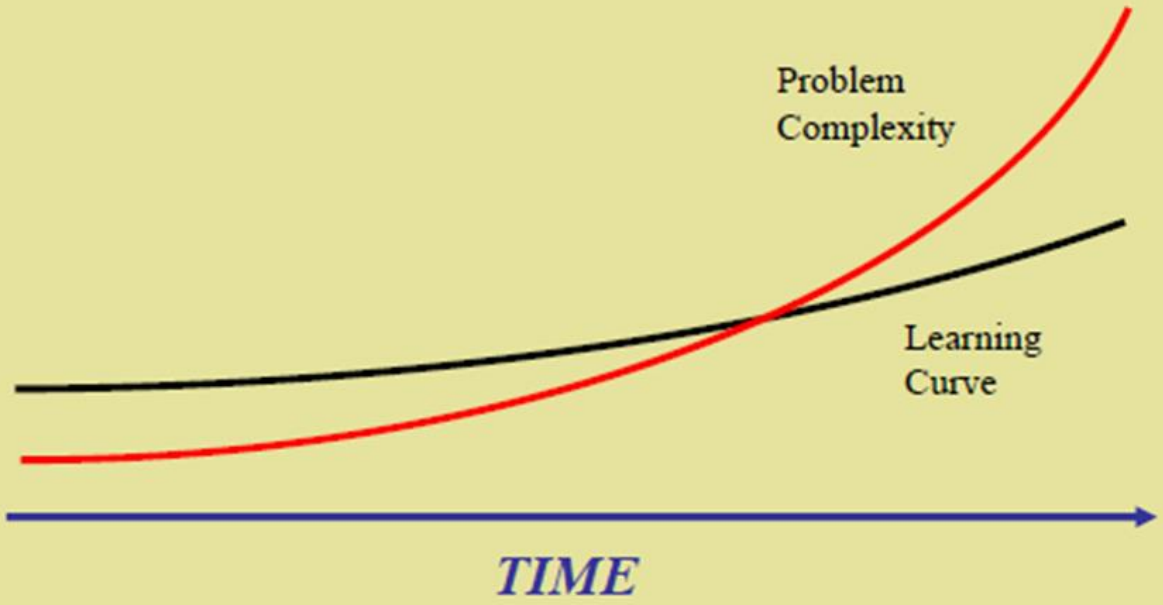
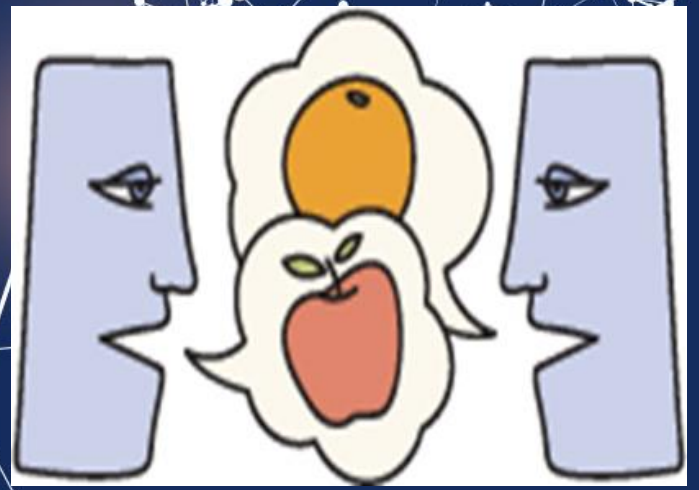


The Professional Entrepreneur

Fast growing firm



Pareto 80/20



Съдържанието днес:

Тема	*Продължителност мин.*
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2. Представяне на програмата и дефиниции	*20*
3. Голямата картина за ТТ и ТК	*60*
4. Институции и източници на информация	*20*
5. Начин на мислене (знания, умения и нагласи)	*5*
Кафе пауза и разговори	*15*
6. Бърз преглед на програмата	*90*
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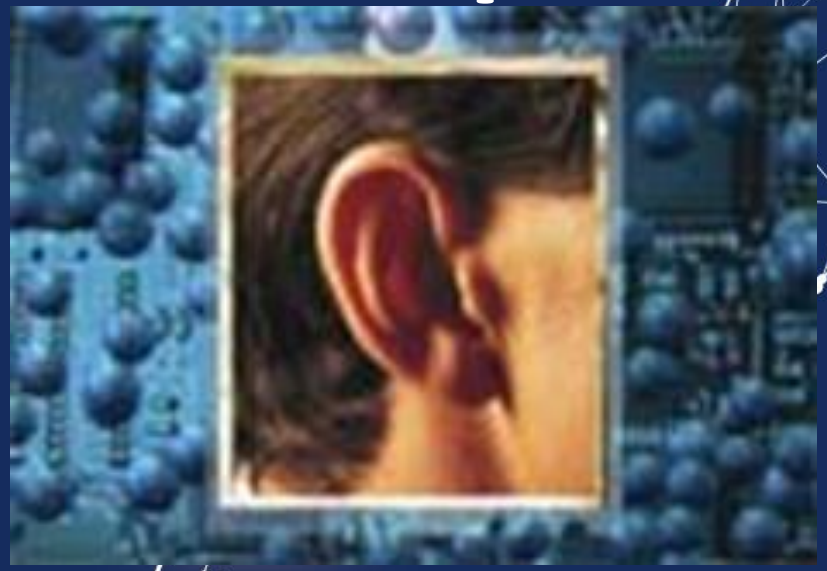
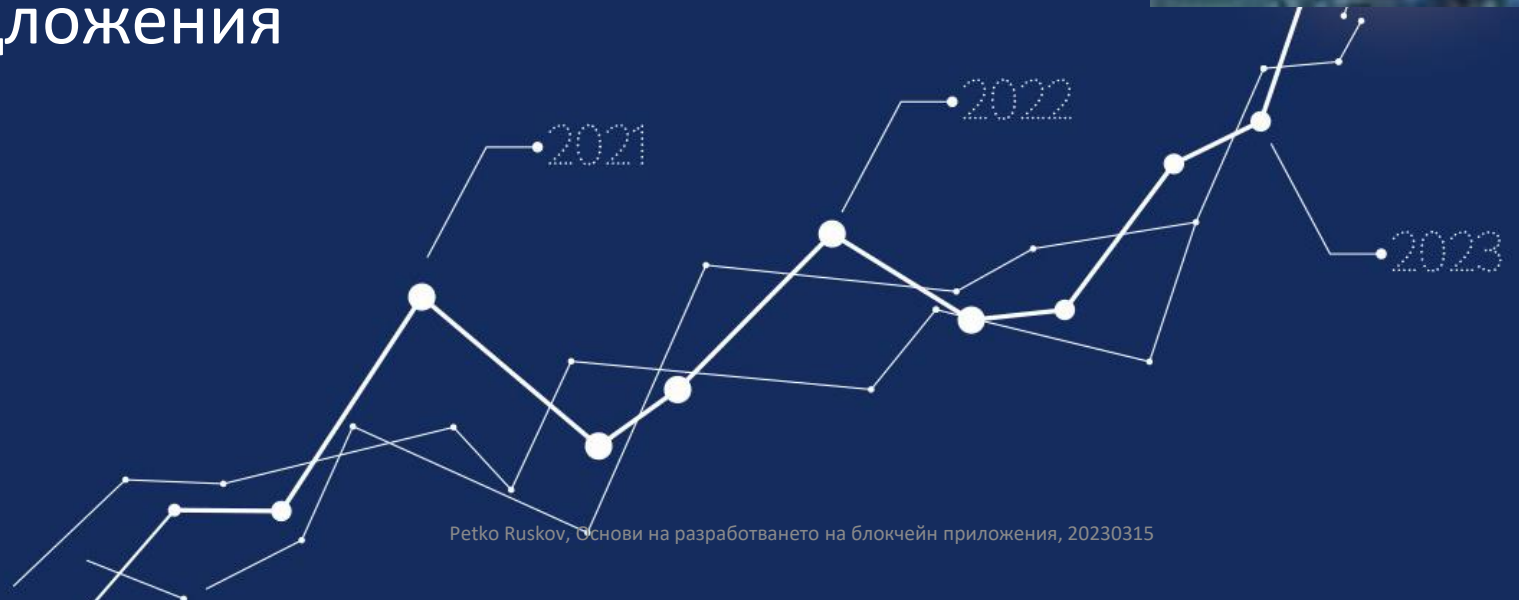
МИНИСТЕРСТВО НА ОБРАЗОВАНИЕТО И НАУКАТА

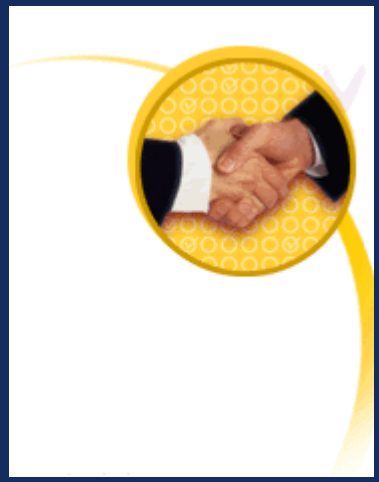
2024

1. Представяне на участниците



- Име
- Образование/позиция
- Опит
- Очаквания от програмата
- ....Предложения





2. Представяне на програмата и дефиниции

Описание·и·цели·на·обучението¤

Целта·на·обучението·е·иновативното·преобразуване·на·приложното,·научно·и·технологично·знание·в·търговски·продукти·и·услуги.·Обучаемите·ще·оценяват·реалните·технологии·и·търговския·им·потенциал·по·отношение·на·лицензиране·и/или·развитие·на·предприятие.·Разглеждат·се·понятия,·свързани·с·технологията·и·комерсиализацията·й.·Въвеждат·се·практики·за·подобряване·и·ускоряване·на·процеса·на·комерсиализация·–·от·решенията,·взети·от·учени·в·научни·лаборатории,·чрез·развитие,·патентоване·и·лицензиране·на·нови·технологии·до·формирането·на·предприемачески·предприятия·(старт-ъпи·и·спин-офи).·Обучението·включва·лекции,·обсъждания·и·практически·занятия,·както·и·привличане·на·експерти,·практикуващи·технологична·комерсиализация.·При·занятията··ще·се·използват·реални·научни·и·научно·приложни·изследвания··за·комерсиализация·в·науки·като·информационни·технологии,·химия,·биотехнологии·и·нанотехнологии.·Основните·цели·са:¶

1.·Разбиране·на·основните·понятия·и·възможности·в·областта·на·трансфер·на·технологии·и·технологичната·комерсиализация.·¶

2.·Разбиране·на·метода·на·оценка·на·технологиите·и·техния·потенциал·за·комерсиализация.·¶

3.·Разбиране·на·етапите,·които·технологията·изминава·от·лабораторията·до·пазара.·¶

4.·Проучване·на·ролята·и·защитата·на·интелектуалната·собственост.¶

Очаквани·резултати¤

Обучението·и·дискусиите·в·курса·„Технологичен·трансфер·и·комерсиализация·на·технологии”·са·насочени·към·овладяване·на·практически·знания,·умения·и·отношение·за·технологичен·трансфер·и·комерсиализация·на·високи·технологии,·а·именно:¶

1.·**Знания**·за·откритие·и·иновация·и·техния·жизнен·цикъл,·основни·понятия·и·възможности·в·областта·на·технологиите,·оценка·на·техния·потенциал·за·комерсиализация.·¶

2.· **Умения**,· придобити· от· дискусиите,· практическото· разработване· и· експерименте· за·етапите,·които·технологията·изминава·от·лабораторията·до·пазара.·¶

3.· **Отношения**· към· откритие· и· иновация,· капитализиране· на· феномена· на· пробивните· и·отворени·иновации,·жизнен·цикъл·и·защита·на·интелектуалната·собственост·и·лицензиране.·¤

	Теми	Хорариум
1.	История и динамика на развитие на технологиите и промените им. Научни изследвания. От теория към практика. Развиващите се пазари. Предимствата на глобализацията.	1 ч.
2	Технологии – стандарти, референтни модели и технологична документация, Body Of Knowledge, Управление на технологиите. Европейски политики.	1 ч.
3.	Процес за технологичен трансфер и комерсиализация на технологии. Обхват и цели. Модели. Сценарии за процес на трансфер на технологии. Въведение и преглед на оценка на технологиите.	4 ч.
4.	Дилемата на иноваторите. Креативност, откритие и иновация. Добавена стойност. Жизнен цикъл. Капитализиране на феномена на пробивните иновации.	1 ч.
5.	Технологични изследвания и разработване на продукти. Нива на готовност на технологията (TRL). Commercialization Readiness Level (CRL). Commercial Readiness Index (CRI). Методика за оценка и инструменти на иновативни проекти. Примери. Класификация. Управление на промените.	2 ч.
6.	Иновации и интелектуална собственост, IP, IPR. Права и защита – Авторско право. The European Patent Office (EPO) и патентно ведомство на Република България.	3 ч.
7	Дълбоки технологии. Разработване на високи технологии в академични институции и в партньорство с голяма компания.	2 ч.
8.	Стратегии за технологичен трансфер и комерсиализация на технологии. Конкурентна стратегия. Световни и национални политики.	3 ч.
9.	Разработване на модел за ефективен трансфер на високи технологии. Оценка на стартиращата компания. Примери.	3 ч.
10.	Финансиране на технологичен трансфер и комерсиализация на технологии и растеж на стартираща фирма. Етапи. Пропаст между наука и бизнес.	2 ч.
11.	Разработване на план за технологичен трансфер и комерсиализация на технологии при химико технологични изследвания.	3 ч.
12.	Разработване на иновативни продукти и услуги в химията. Manufacturing Readiness Level (MRL). Хибридни иновативни продукти и услуги.	2 ч.
13.	Представяне на проект за технологичен трансфер и комерсиализация на технологии. Етапи на развитие и форми на представяне.	2 ч.
14.	Технологичен напредък и глобални пазари. Нови видове възможности, конкуренти и заплахи. Глобализация и предприемаческа екосистема.	1 ч.
	ОБЩО	30 ч.

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С какво ще си тръгна след дискусията?

Рамка на занятията

Теория

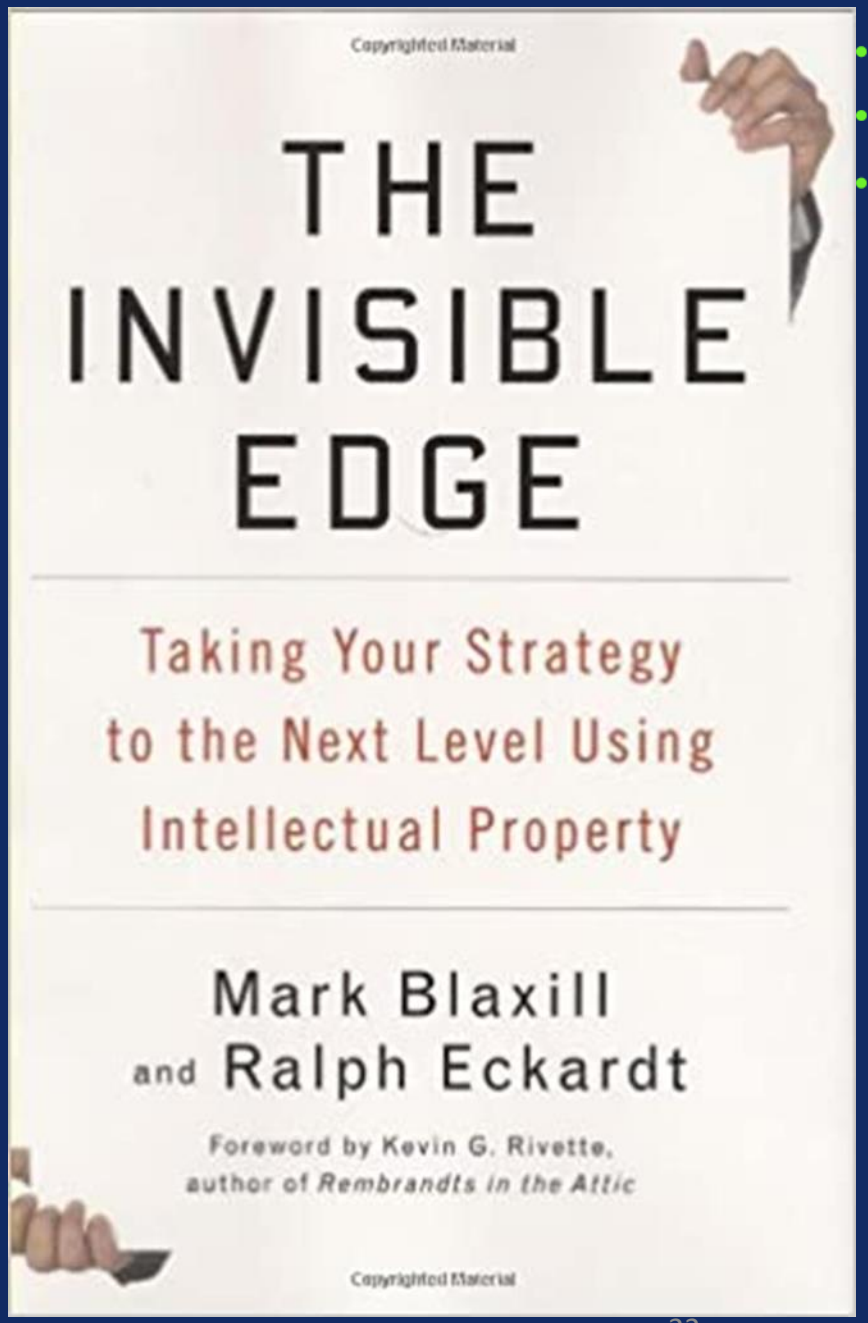
- Тема 1
- Тема 2
- …
- Въпроси и отговори

Практика

- Дискусия
- Упражнения
  - *Работа в екипи*
  - *use cases*
- Рефлексия

The Invisible Edge: *Taking Your Strategy to the Next Level Using Intellectual Property, 2009*

by ***Mark Blaxill, Ralph Eckardt***



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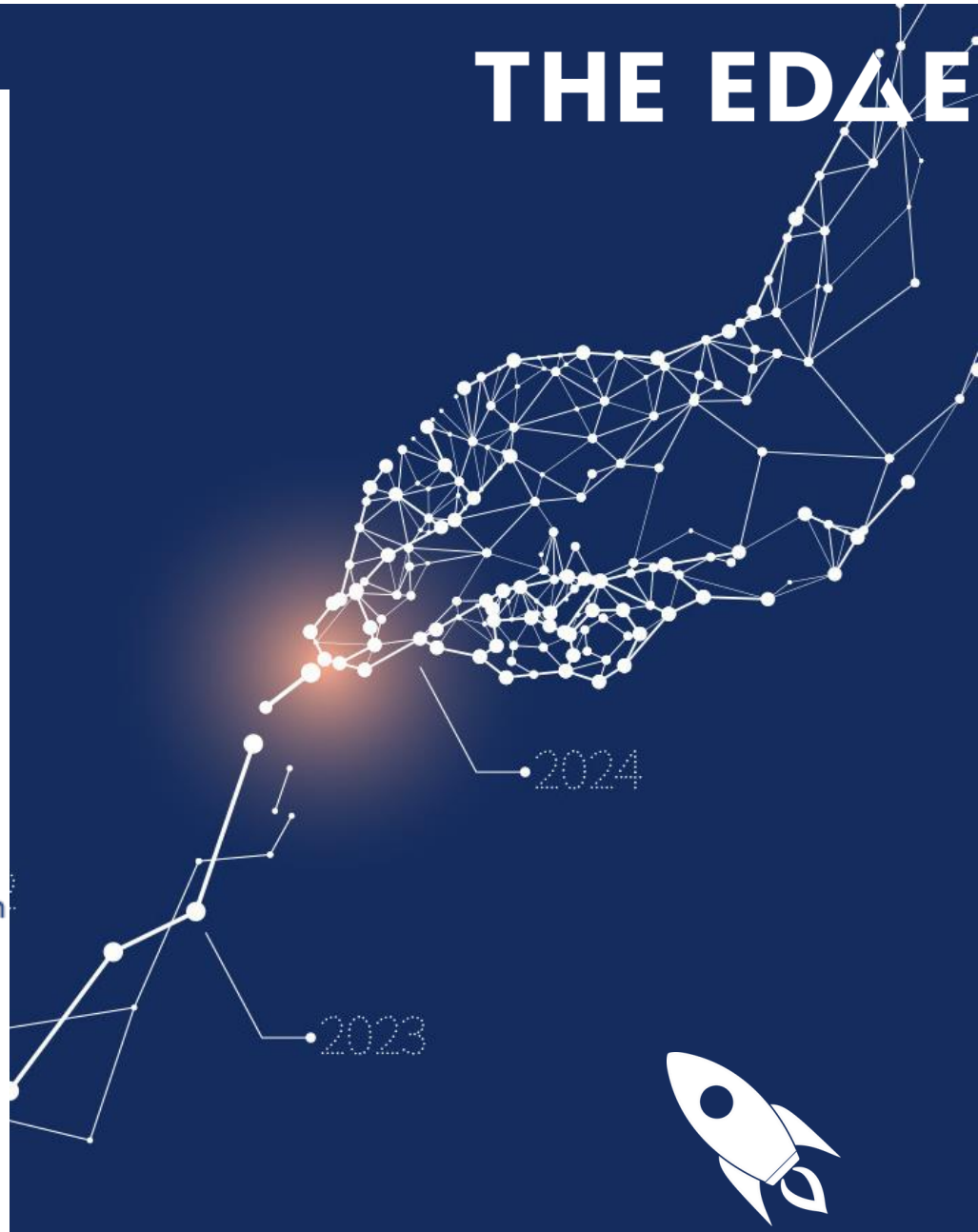

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Petko Ruskov **Owner**

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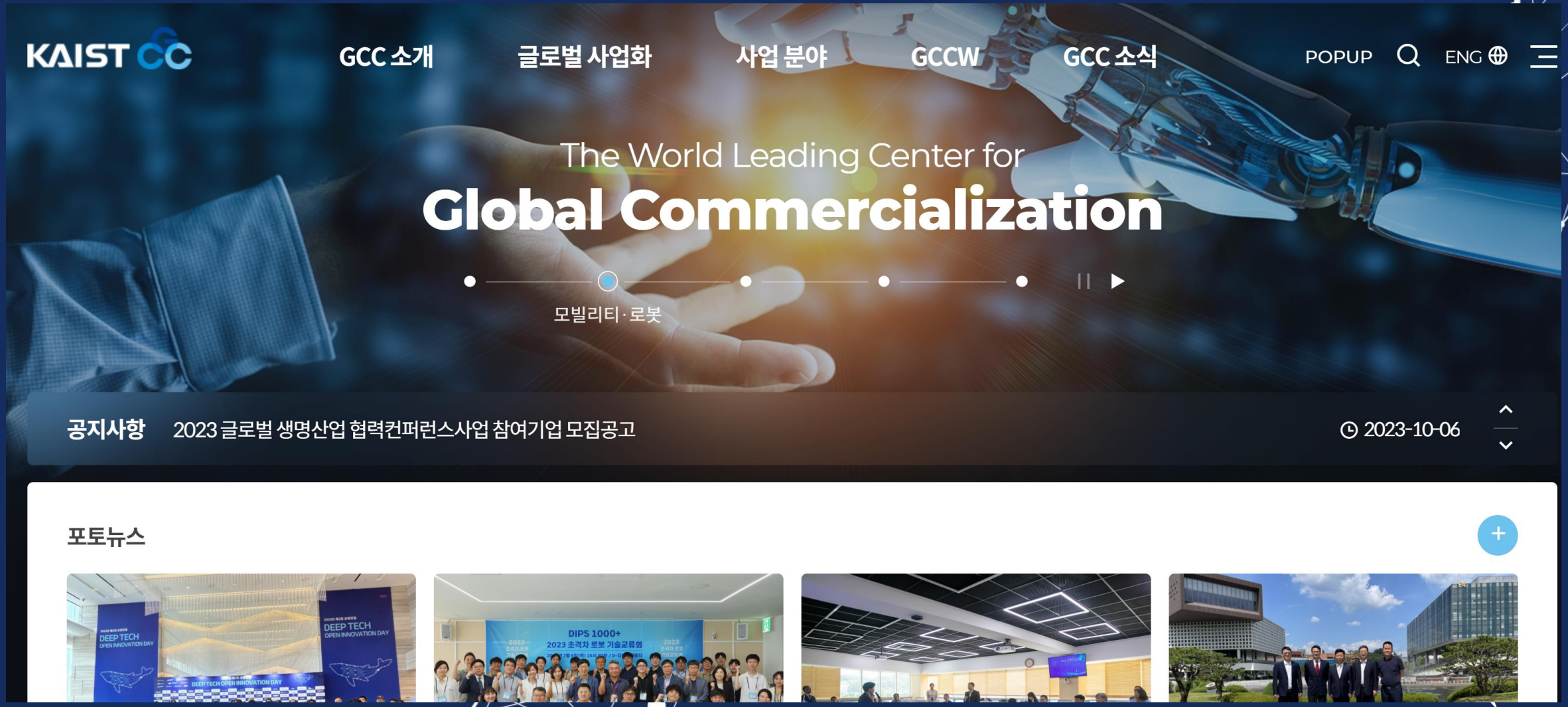

https://gcc.kaist.ac.kr/

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GCCW Global Commercialization Conference and Workshop

국내외 정부기관, 연구기관, 산업체 및 협회, 각분야의 글로벌 전문가가 한 데 모여 글로벌 협력체계를 구축하는 비즈니스 창출 기회의 장

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- 프로그램
- 참가등록
- 공지사항

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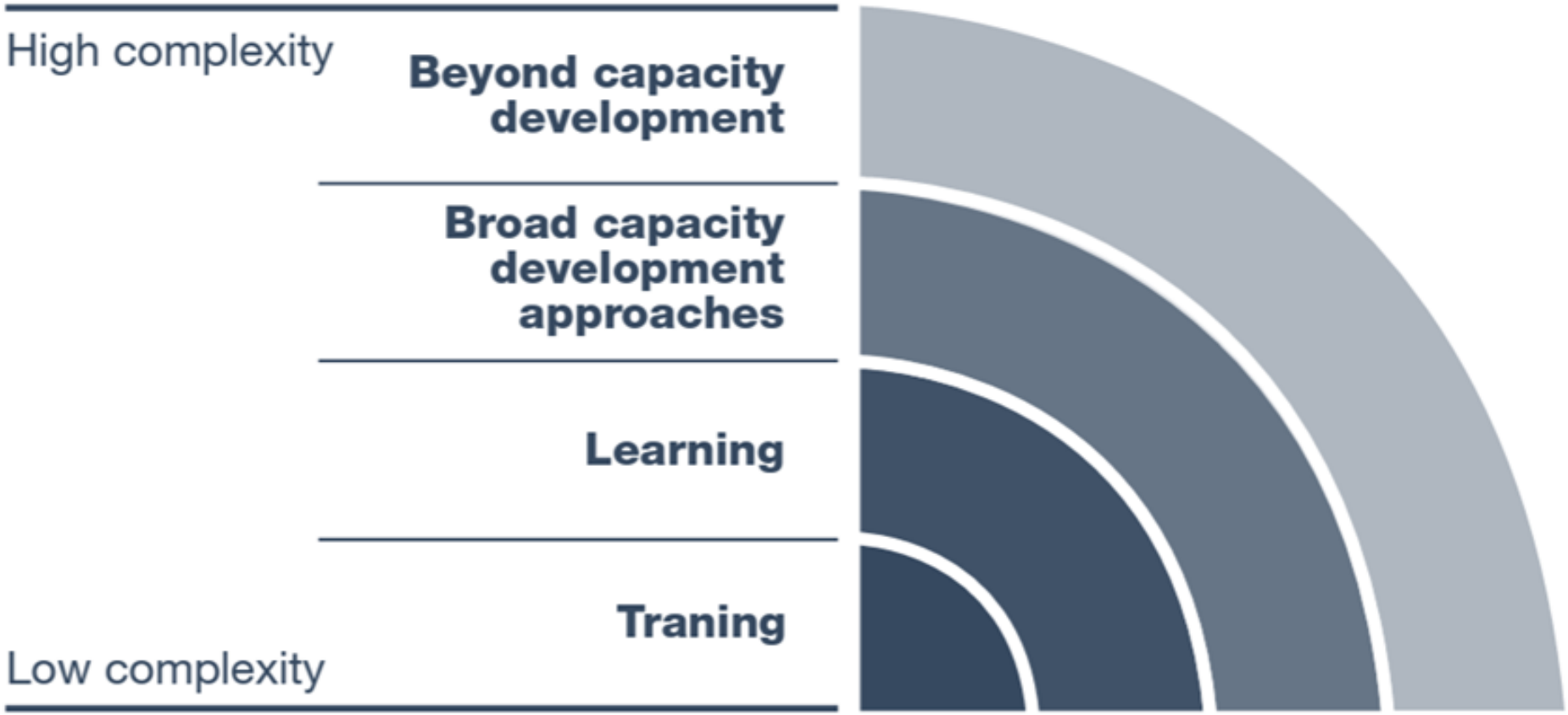
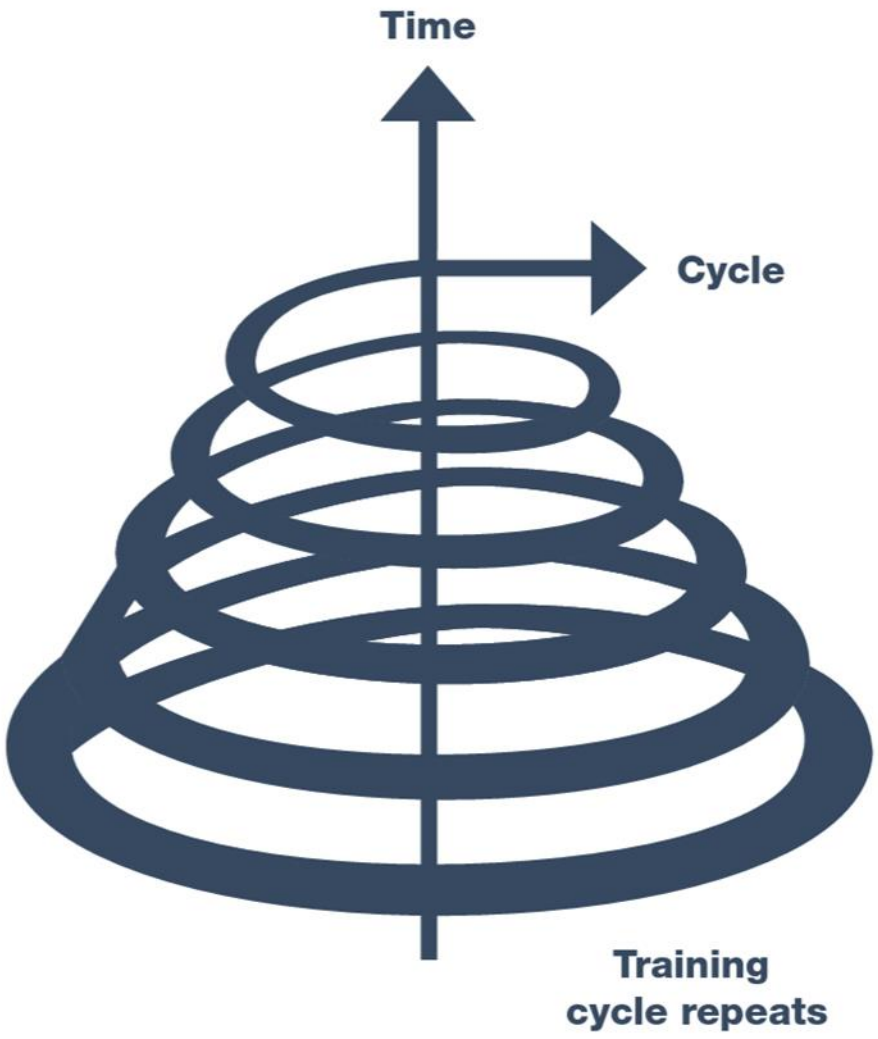
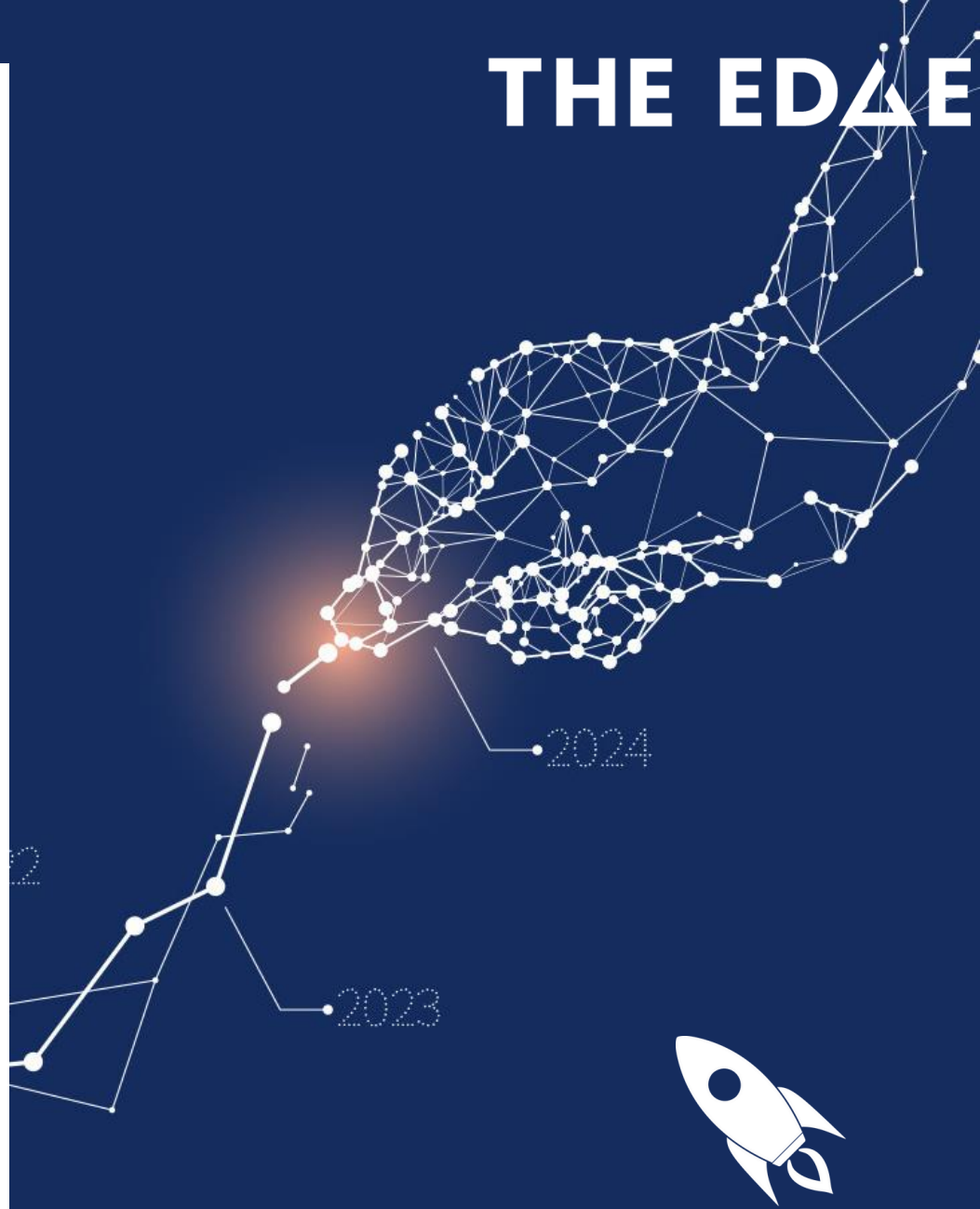
Figure 2: Situating training in the capacity development context



https://www.wipo.int/edocs/pubdocs/en/wipo-pub-rn2022-3-en-technology-transfer-training-needs-assessment.pdf

Figure 12: The training cycle is iterative





http://sci-gems.math.bas.bg/jspui/bitstream/10525/2503/1/ERIS2016-book-p02.pdf

Концепции и измерители на иновациите и комерсиализацията

Категории	Концепции	Измерители
Вход (инвестиции)	• Човеко-години • Оборудване-години	• Разходи
Изход (продукти)	• Идеи, открития • Изобретения • Човешки капитал	• Публикации, награди • Патенти, споразумения • Дипломи, сертификати
Резултат	• Предимство в знанията • Нови продукти • Подобряване на производителността • Нарастване на приходите	• Публикации, цитирания, експертиза • Патенти, цитирания, иновации, продажби • Метрики за подобряване на производителността • Възвръщане на инвестициите

http://sci-gems.math.bas.bg/jspui/bitstream/10525/2503/1/ERIS2016-book-p02.pdf

Дефиниция: Интелектуална собственост (ИС)

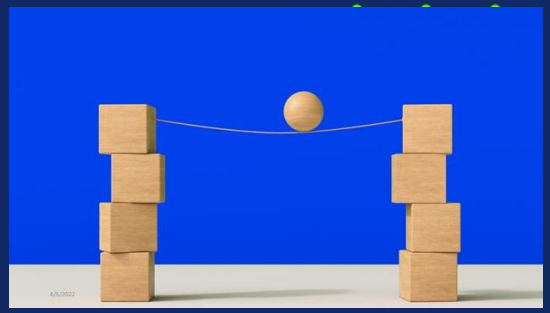
- Интелектуална собственост е сравнително ново понятие и тя определя изключителните права на творенията на човешкия ум и човешкия интелект.
- Интелектуалната собственост се дели на 2 големи области:

1. ***Индустриалната собственост*** се отнася основно към патентите за изобретения, полезните модели, търговските марки, географските означения , промишления дизайн, новите сортове растения и породи животни, топология на интегралните схеми, приложими в индустрията.
2. ***Художествената собственост*** включва собствеността върху произведенията на литературата, науката и изкуствата, аудио-визуални произведения, произведения в областта на архитектурата, фотографията, компютърните програми и авторски изпълнения.

- **Интелектуална собственост** (ИС) се отнася до творения на човешкия ум (добавена стойност), върху които определени по закон собственици получават правна защита.
- Правата на интелектуална собственост (ПИС) са защитите, предоставени на създателите на ИС, които включват търговски марки, авторско право, патенти, права върху промишлен дизайн, а в някои юрисдикции и търговски тайни. Художествени произведения, включително музика и литература, както и открития, изобретения, думи, фрази, символи и дизайни могат да бъдат защитени като интелектуална собственост.

https://bg.wikipedia.org/wiki/%D0%98%D0%BD%D1%82%D0%B5%D0%BB%D0%B5%D0%BA%D1%82%D1%83%D0%B0%D0%BB%D0%BD%D0%B0_%D1%81%D0%BE%D0%B1%D1%81%D1%82%D0%B2%D0%B5%D0%BD%D0%BE%D1%81%D1%82

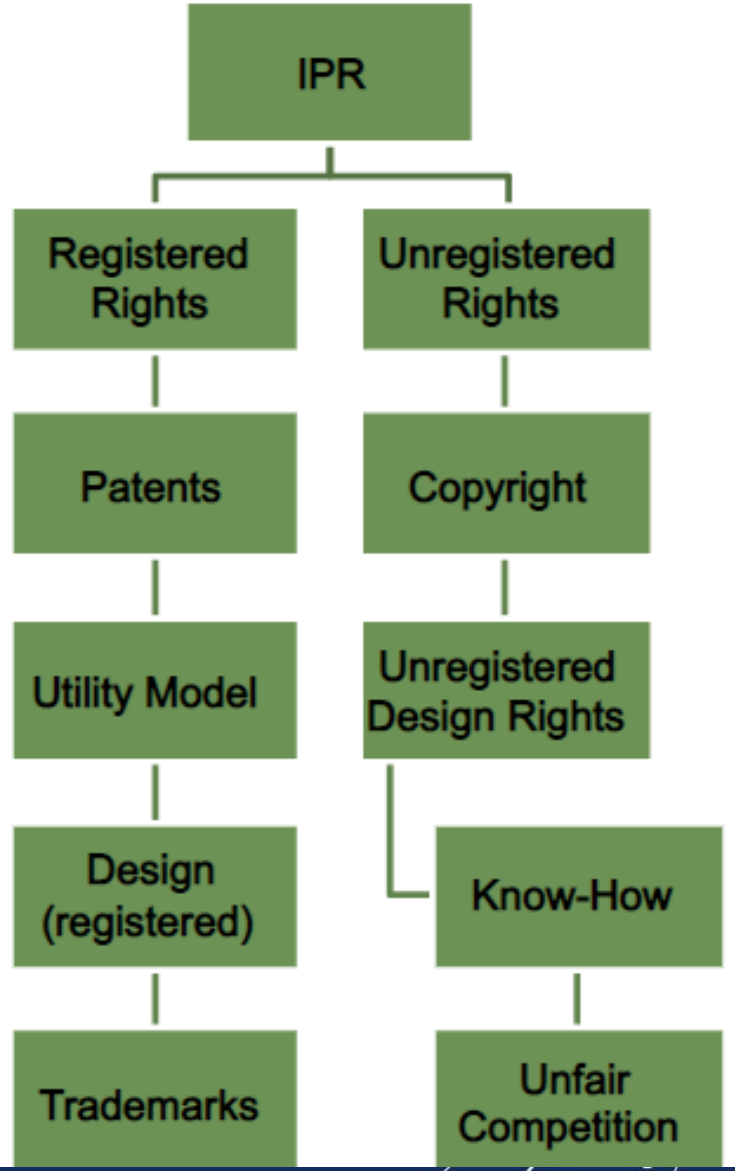
Централният въпрос на интелектуалната собственост (ИС)

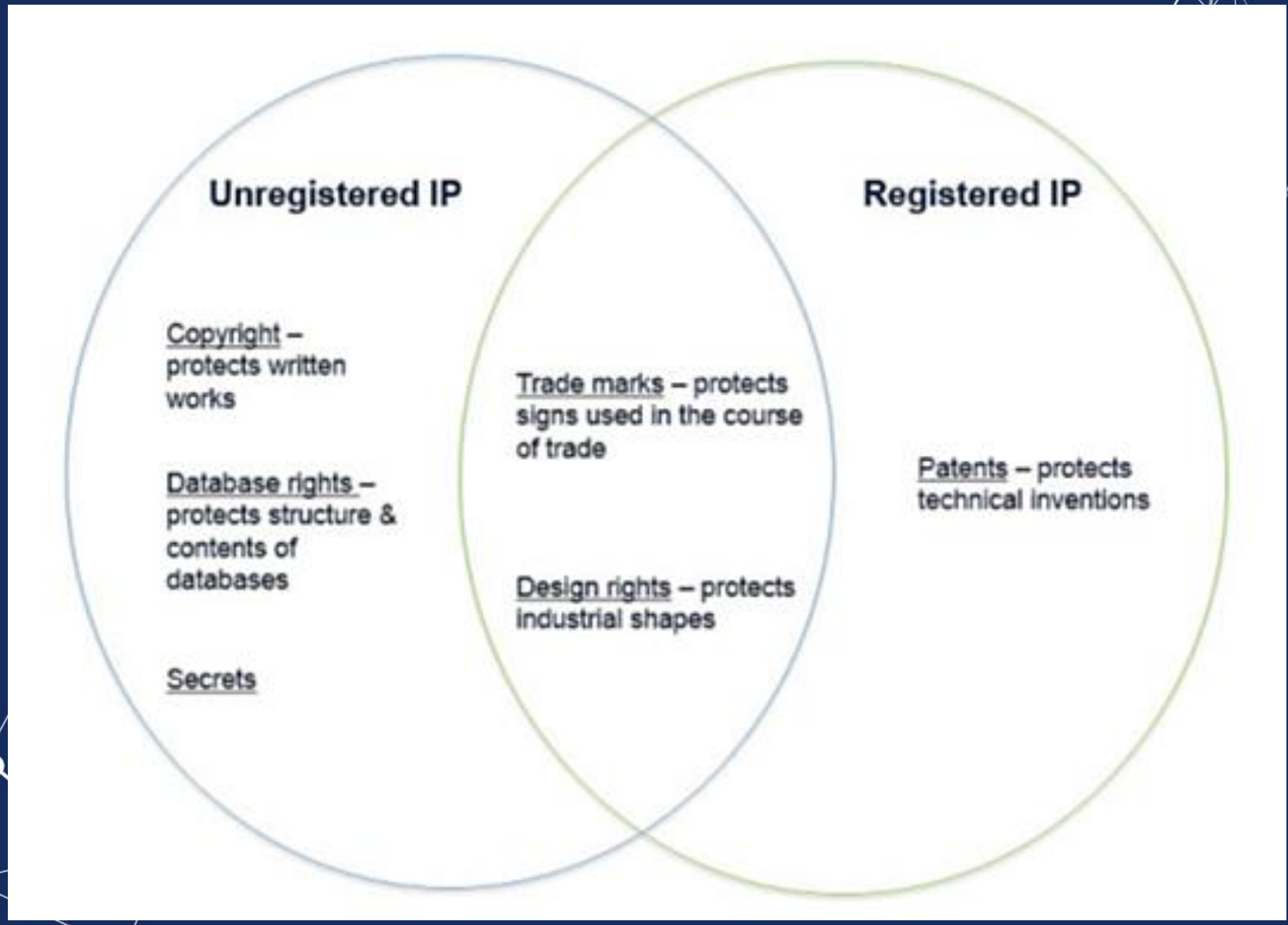


- е балансът между:
  - обществено достояние и частно право на откривателите
  - отворена и затворена стратегия за ИС (защита или не на интелектуалната собственост)
- Пандемията засили наболелите хуманитарни проблеми на световната общественост от здраве към технократичните въпроси на оптималната иновационна политика.
- Какъв е правилният баланс между насърчаването на иновациите чрез защита на ИС и разпространението на резултатите от тях евтино за света? Този въпрос беше особено предизвикателство в контекста, когато оставянето на значителна част от неваксинираните хора в света са заплаха за всички, дори за ваксинираните, поради възможността от мутация на вируса.

Правото на интелектуална собственост

Правото на интелектуална собственост (IPR) е набор от частни законови права, които позволяват на физически лица и компаниите да контролират нематериални творения и марки - от лога до романи и музика, от STEM изобретенияия до лекарствени формули, като определя правата, изключенията и ограниченията, които позволяват да се възстановяват инвестициите от научните изследвания и иновациите.


IPR
Registered Rights
Unregistered Rights
Patents
Copyright
Utility Model
Unregistered Design Rights
Design (registered)
Know-How
Trademarks
Unfair Competition


Unregistered IP
Registered IP
Copyright – protects written works
Database rights – protects structure & contents of databases
Secrets
Trade marks – protects signs used in the course of trade
Design rights – protects industrial shapes
Patents – protects technical inventions

Примери

- Един продукт – много права за ИС
- The European Institute of Innovation & Technology (EIT)
- IP Helpdesk
- Проект «Чисти технологии и кръгова икономика»

Един продукт – много права за ИС

Trade marks
- NOKIA
- Product "208"
- Start-up tone

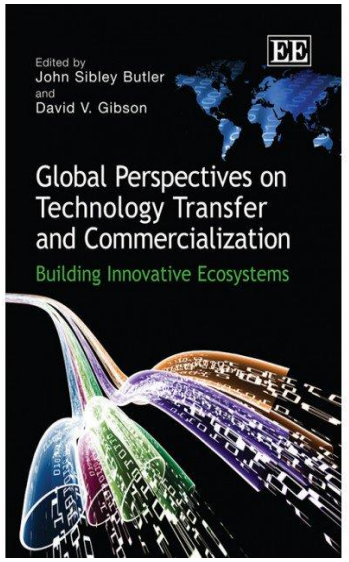
Copyright
- Software
- User manuals
- Ringtones
- Start-up tone
- Images

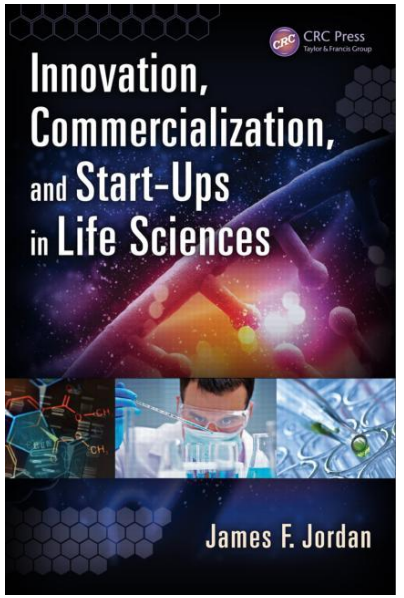
Patents and utility models
- Data-processing methods
- Operating system
- Operation of user interface

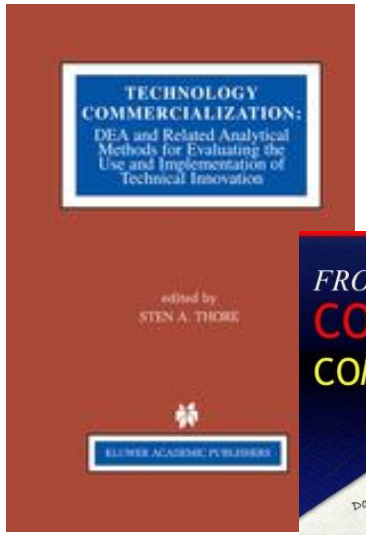
Designs
- Form of overall phone
- Arrangement and shape of buttons
- Position and shape of screen

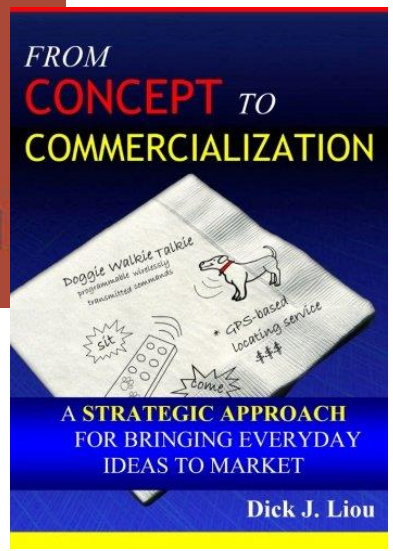
Trade secrets
- Some technical know-how kept "in-house" and not published

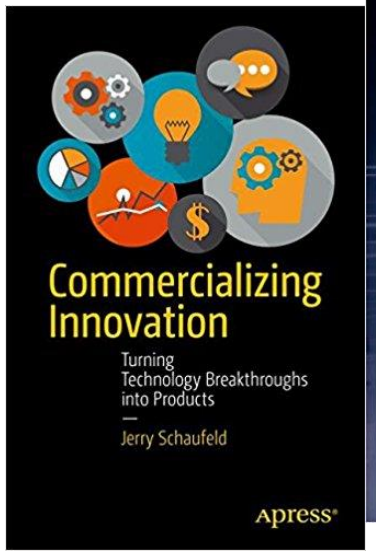
Patent IPR Licensing-Technology Commercialisation – Innovation Marketing : Guide Book for Researchers, Innovators
September 2017
Edition: 1 edition (2017)Publisher: Notion Press
Editor: Indian Innovators Association ISBN: ISBN-10: 1947851438,ISBN-13: 978-1947851436

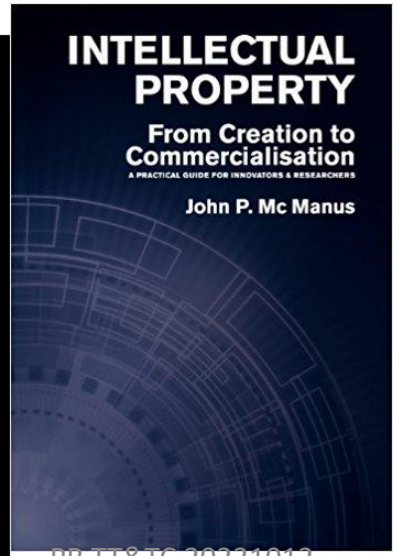


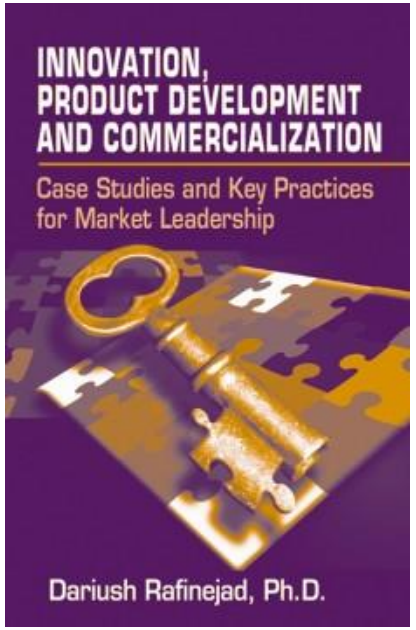


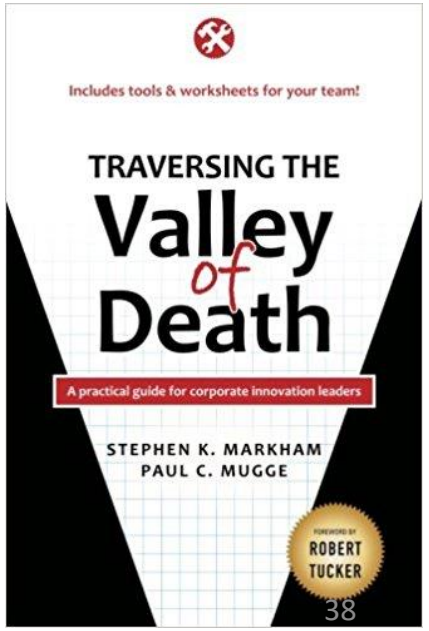


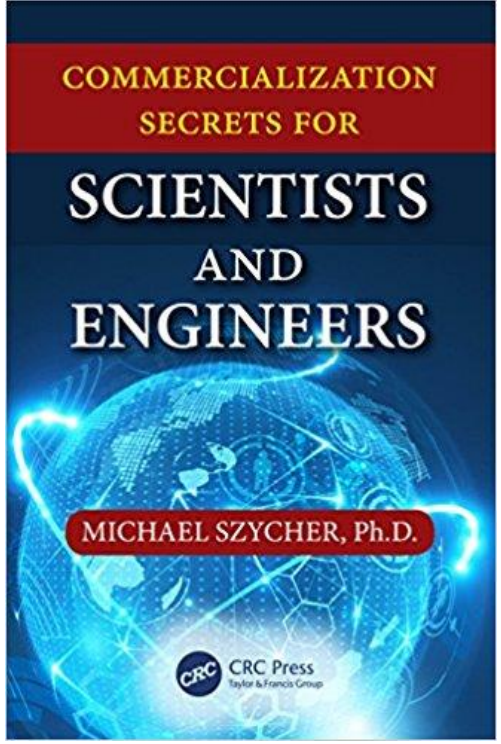


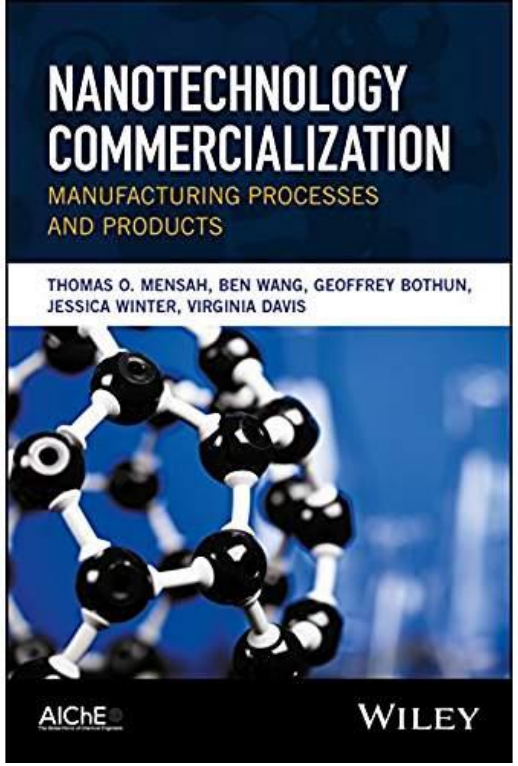




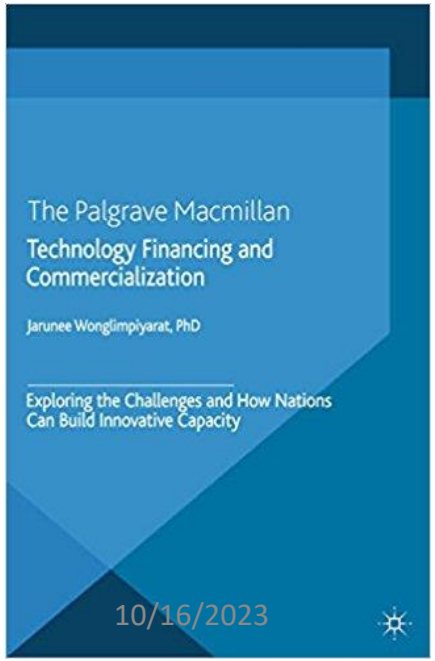


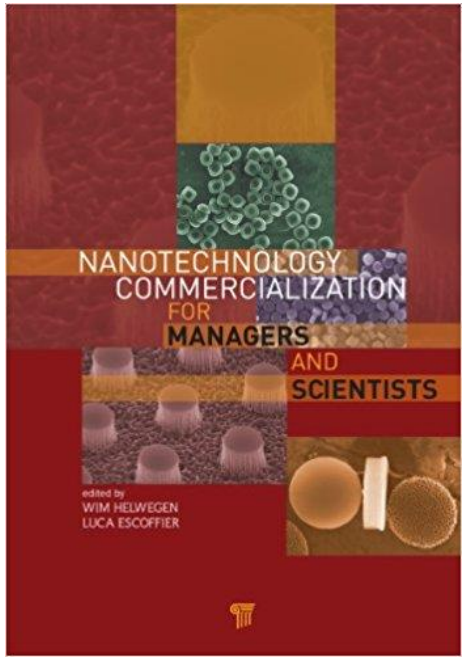


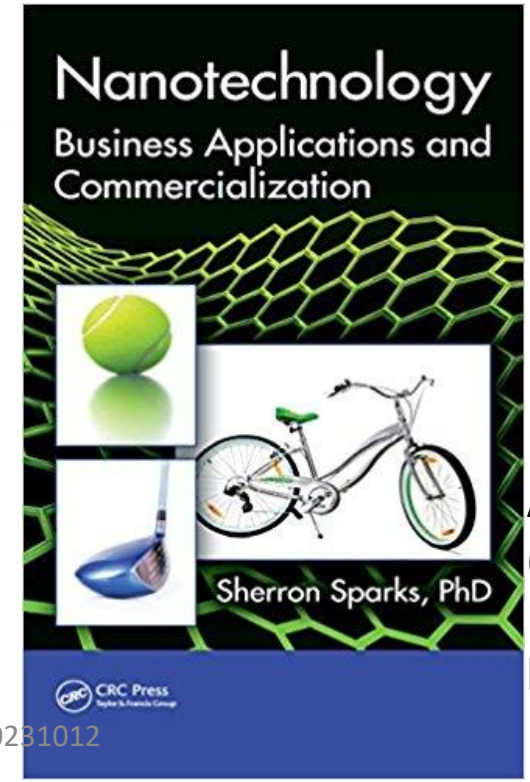




Nanotechnology Commercialization: Manufacturing Processes and Products
Oct 20, 2017 | Kindle eBook
by Thomas O. Mensah and Ben Wang







Nanotechnology: Business Applications and Commercialization (Nano and Energy)Dec 21, 2017 | Kindle eBook
by Sherron Sparks

THE EDGE

2022

2023

2024

TABLE ES 1	RANK	INSTITUTION	INDEXED SCORE
TOP 25 UNIVERSITY TECHNOLOGY TRANSFER AND COMMERCIALIZATION INDEX	1	University of Utah	100
	2	Columbia University	97.83
	3	University of Florida	97.66
	4	Brigham Young University	97.58
	5	Stanford University	95.6
	6	University of Pennsylvania	95.39
	7	University of Washington	95.11
	8	Massachusetts Institute of Technology	94.33
	9	California Institute of Technology	94.11
	10	Carnegie Mellon University	93.54
	11	New York University	93.41
	12	Purdue University	93.02
	13	University of Texas System	92.88
	14	University of Minnesota	92.75
	15	University of California, Los Angeles*	92.13
	16	University of Michigan	91.58
	17	Cornell University	89.49
	18	University of Illinois Chicago Urbana	89.37
	19	University of South Florida	88.93
	20	University of California, San Diego*	88.55

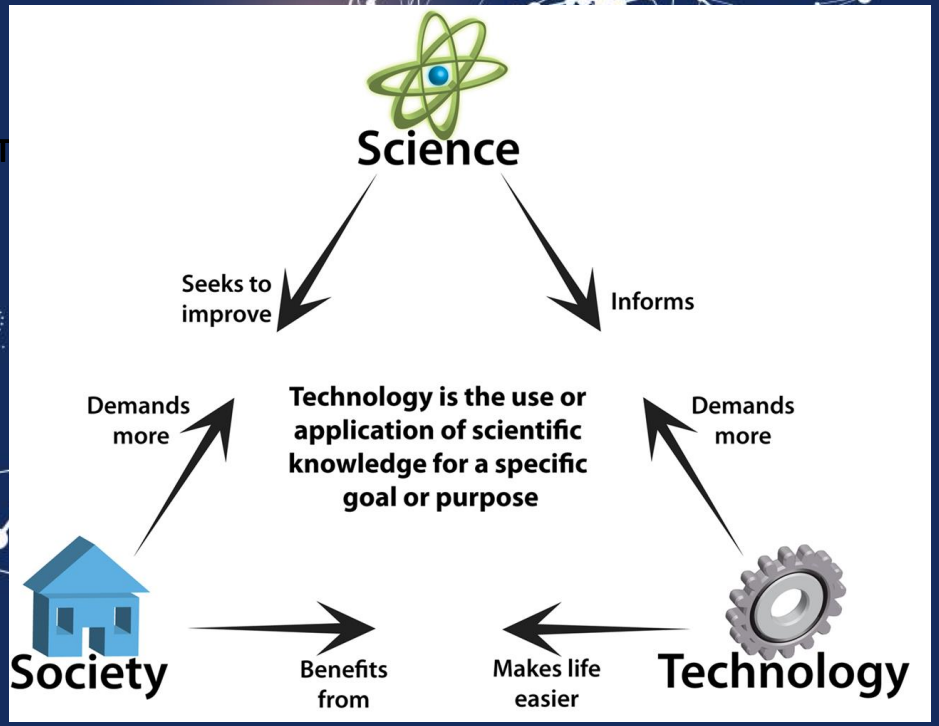

"Eye See Things Differently"©


I can't
do it

Финансирано от Европейския съюз
NextGenerationEU
BiOrgaMCT
Биоактивни органични и неорганични авангардни материали и чисти технологии
МИНИСТЕРСТВО НА ОБРАЗОВАНИЕТО И НАУКАТА

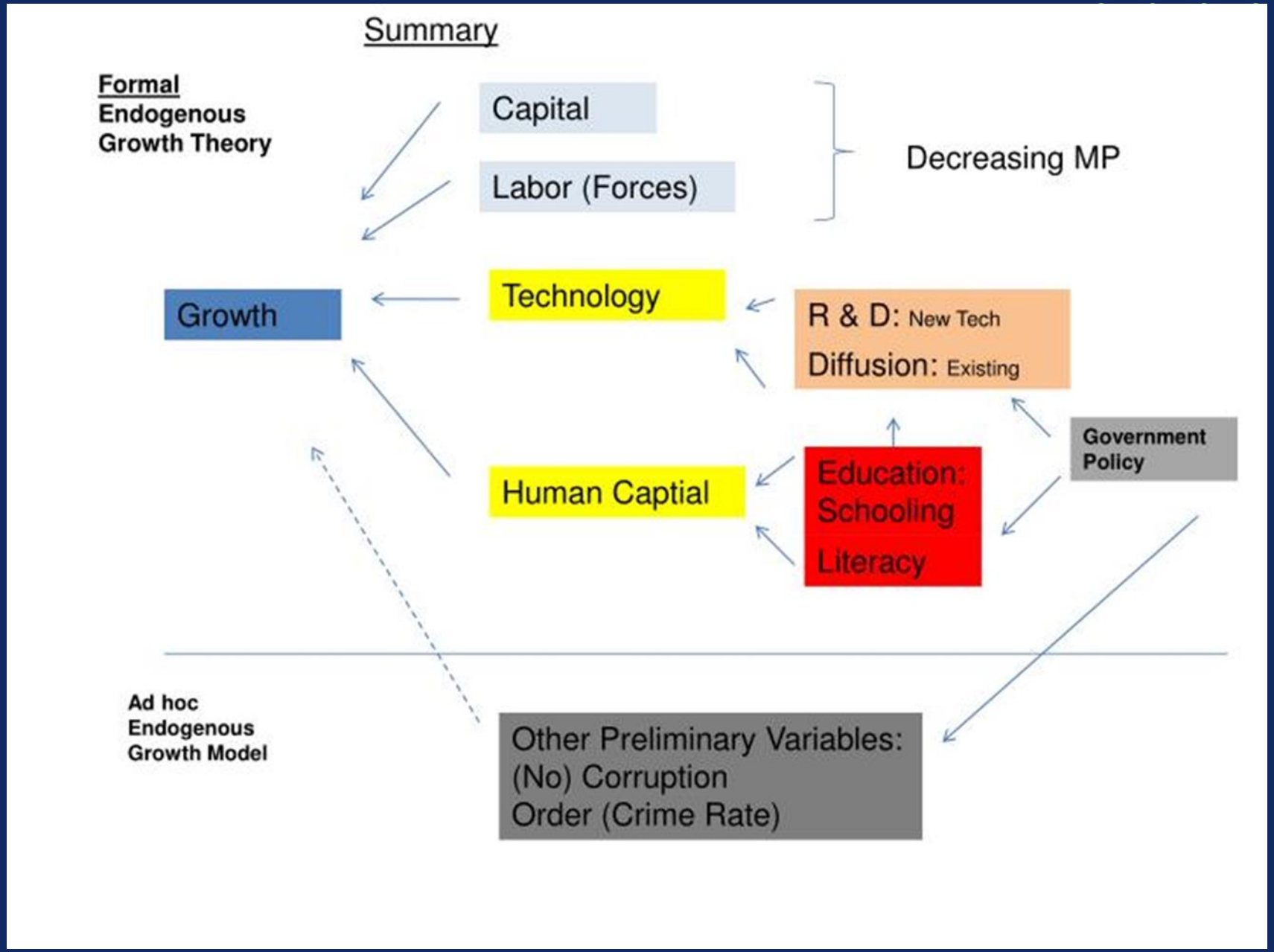
3. Голямата картина за ТТ и ТК

Бърз преглед на програмат

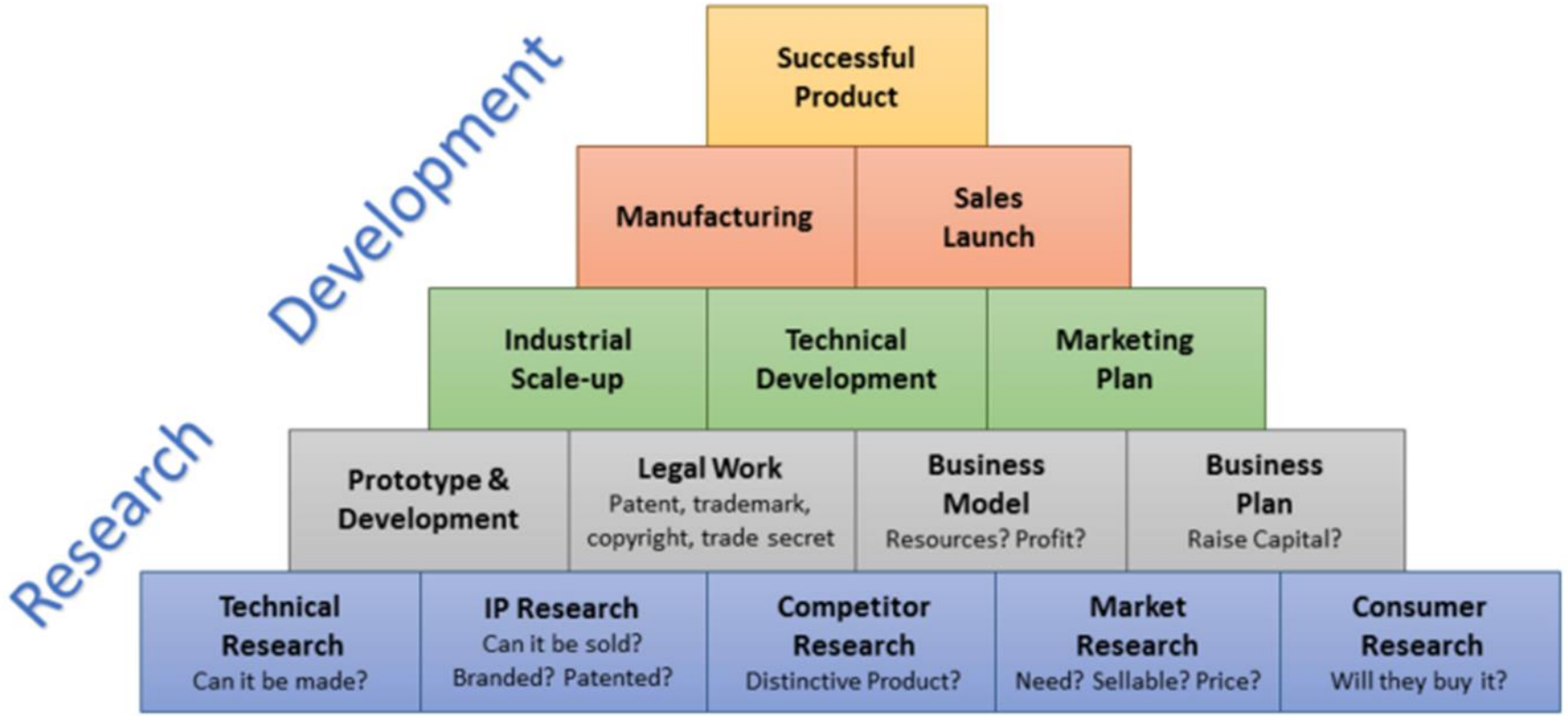


PAUL M. ROMER, 2018—NOBELPRIZE.ORG

technology rights/IPR

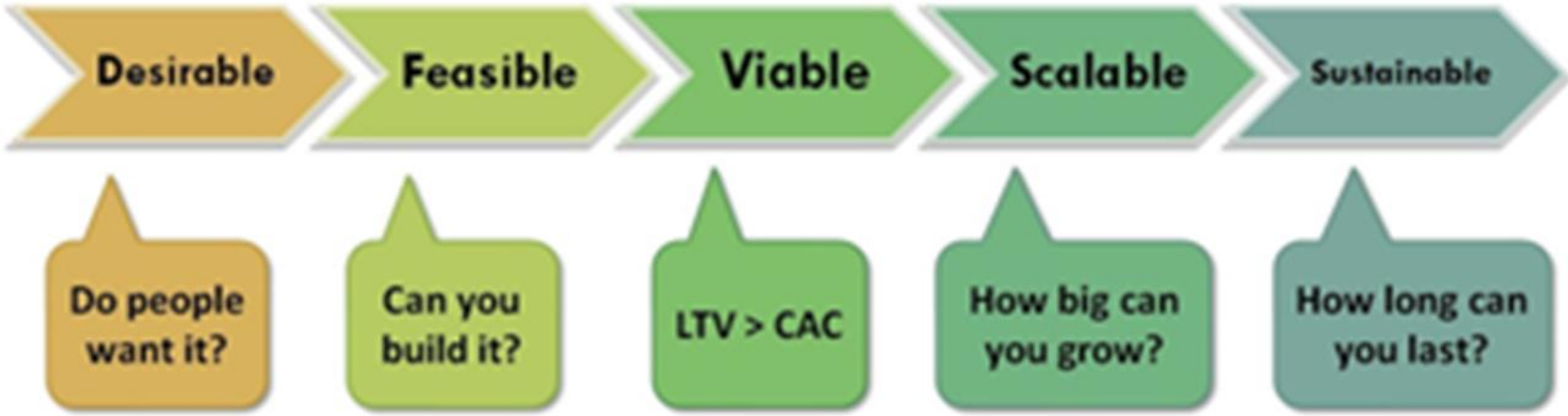


Success = R & D



Key Question: Can you make money from this product?

https://www.openaccessgovernment.org/health-innovation-ecosystem/75678/



2024

Customer Lifetime Value to Customer Acquisition Ratio (CLV:CAC)

An ideal LTV:CAC ratio should be 3:1.The value of a customer should be three times more than the cost of acquiring them. If the ratio is close i.e.1:1, you are spending too much. If it's 5:1, you are spending too little.

18.12.2017 г. Petko Ruskov

Цикъл на на иновации и комерсиализация

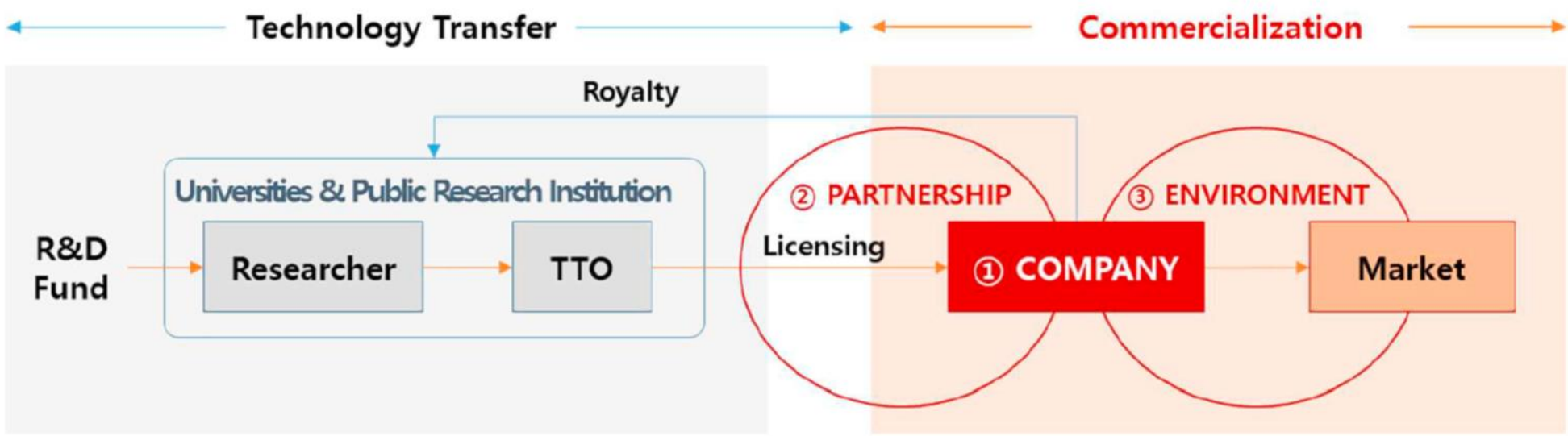
- Цикълът на иновации и комерсиализация на иновациите включва две фази, създаване и съхранение на стойност
- Създаване на стойност - науката преобразува финансовия ресурс в знания.
- Технологичната комерсиализация преобразува знанията във финансов ресурс.

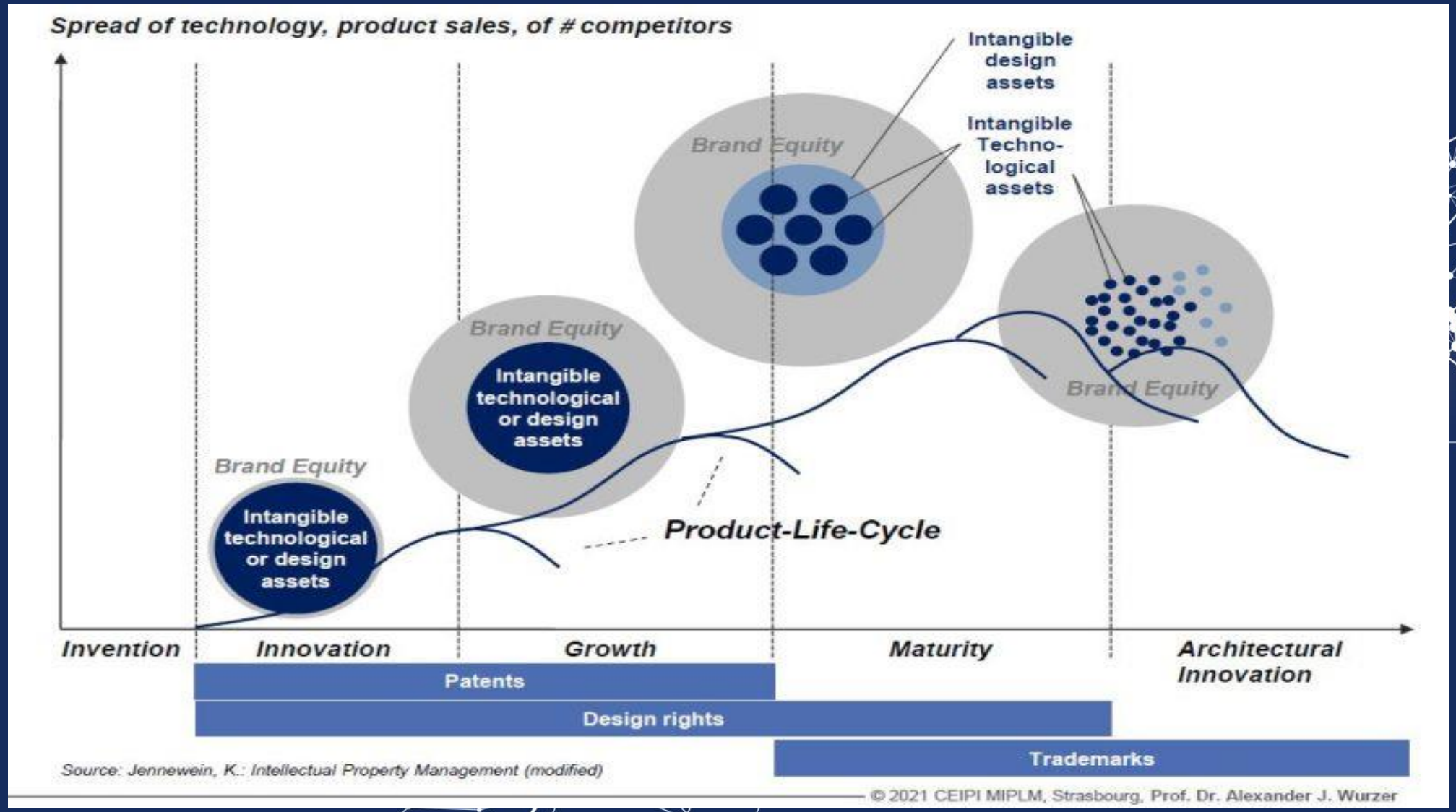
http://sci-gems.math.bas.bg/jspui/bitstream/10525/2503/1/ERIS2016-book-p02.pdf

R&D → Прототип → **Комерсиализация** → R&BD → Зрялост

http://sci-gems.math.bas.bg/jspui/bitstream/10525/2503/1/ERIS2016-book-p02.pdf

Expanding the scope of analysis on public technology transfer




Spread of technology, product sales, of # competitors
Intangible design assets
Intangible Techno-logical assets
Brand Equity
Brand Equity
Intangible technological or design assets
Brand Equity
Intangible technological or design assets
Product-Life-Cycle
Invention
Innovation
Growth
Maturity
Architectural Innovation
Patents
Design rights
Trademarks
Source: Jennewein, K.: Intellectual Property Management (modified)
© 2021 CEIPI MIPLM, Strasbourg, Prof. Dr. Alexander J. Wurzer

2024

Entrepreneurial Process

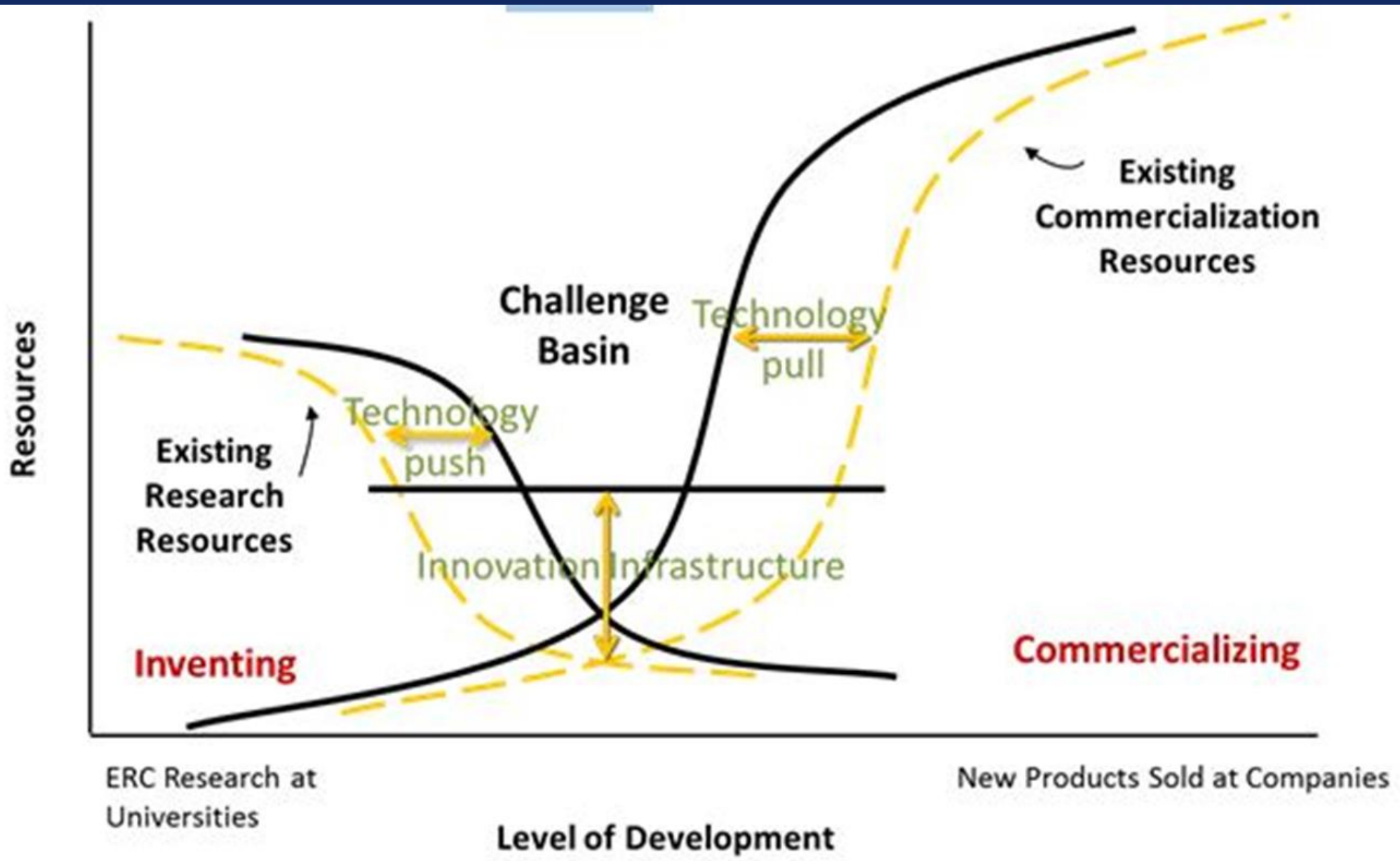
- **Identify** → *Opportunity*
  - Need
  - Solution
  - 'Unfair Advantage'
- **Acquire** → *Resources*
  - Technology rights
  - People
  - Money

Here's the correct algorithm:

If you…

- identify a NEED
- conceptualize a SOLUTION
- demonstrate a PROTOTYPE
- develop a roll-out PLAN and get FUNDING
- MARKET the product using the correct channels and packaging
- UNDERSTAND the changing climate and adjust for it, and
- develop a strong relationship with CUSTOMERS

…


Resources
Existing
Commercialization
Resources
Challenge
Basin
Technology
pull
Technology
push
Existing
Research
Resources
Innovation Infrastructure
Inventing
Commercializing
ERC Research at
Universities
New Products Sold at Companies
Level of Development

Intellectual Property Value Chain

Entrepreneurship [and value creation] is a process

"A well-characterized need is the DNA of a great invention."

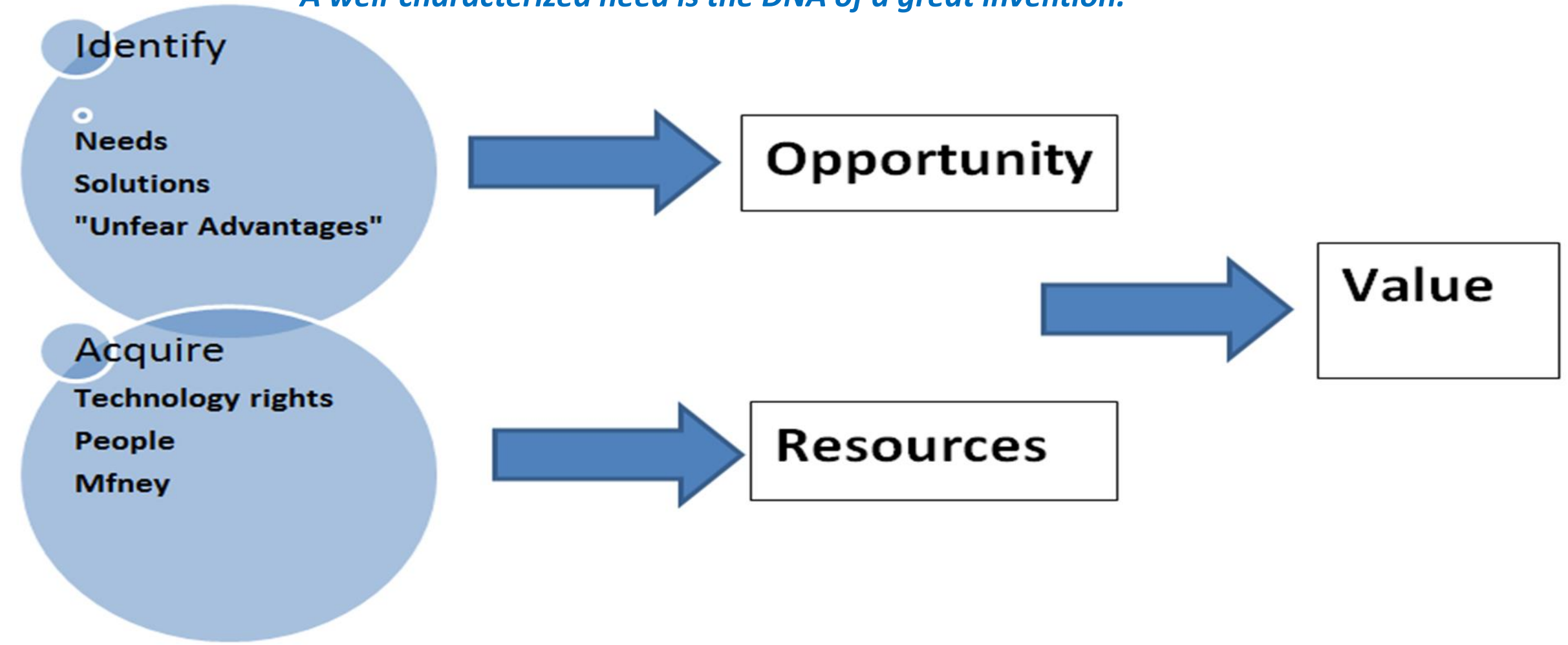
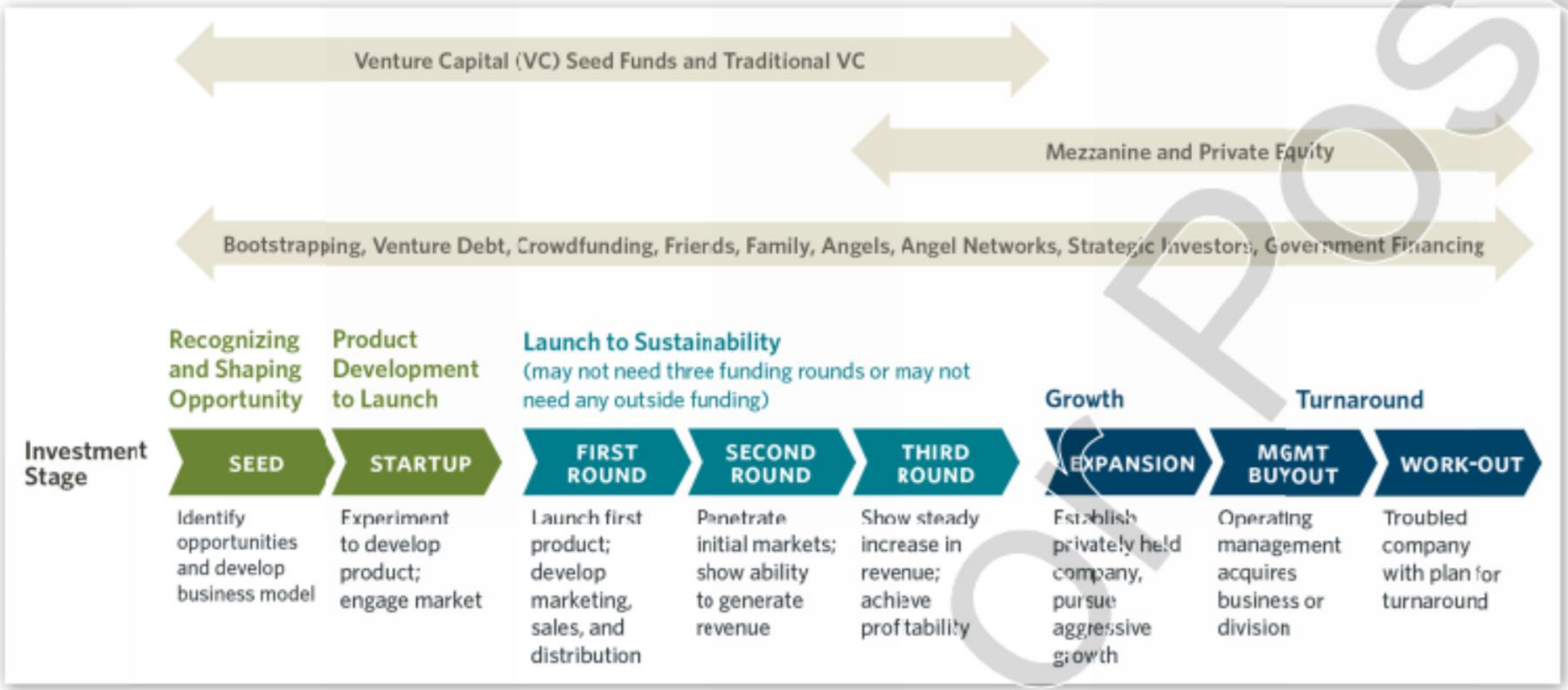
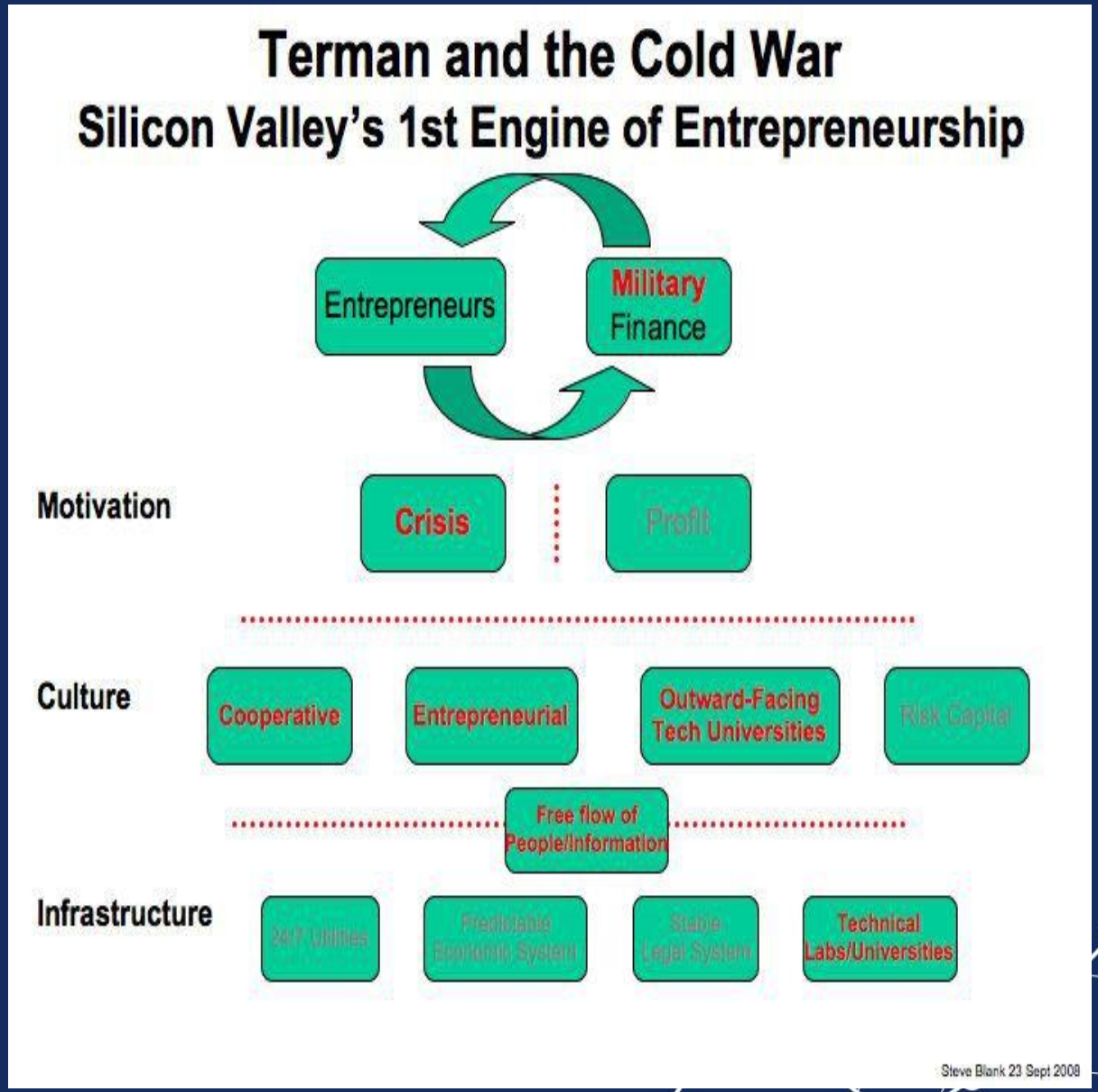
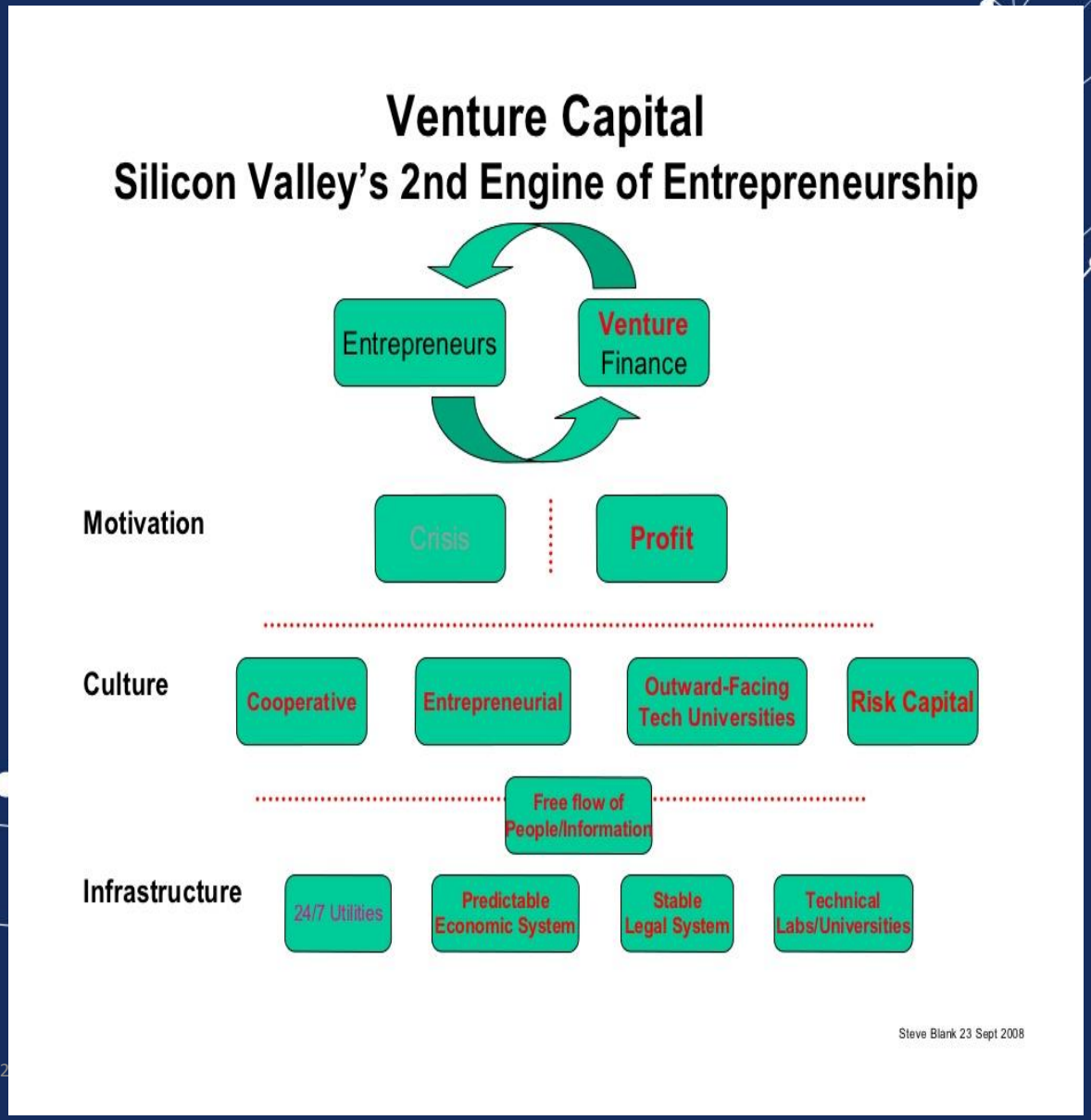


EXHIBIT 4 Financing Options and the High-Growth Venture Life Cycle



Source: Reprinted from Harvard Business School, "CommonAngels (A)," HBS No. 810-082, by Lynda M. Applegate and Kaitlyn Simpson.


Terman and the Cold War
Silicon Valley's 1st Engine of Entrepreneurship
Entrepreneurs
Military
Finance
Motivation
Crisis
Profit
Culture
Cooperative
Entrepreneurial
Outward-Facing
Tech Universities
Risk Capital
Free flow of
People/Information
Infrastructure
24/7 Utilities
Predictable
Economic System
Stable
Legal System
Technical
Labs/Universities
Steve Blank 23 Sept 2008


Venture Capital
Silicon Valley's 2nd Engine of Entrepreneurship
Entrepreneurs
Venture
Finance
Motivation
Crisis
Profit
Culture
Cooperative
Entrepreneurial
Outward-Facing
Tech Universities
Risk Capital
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Legal System
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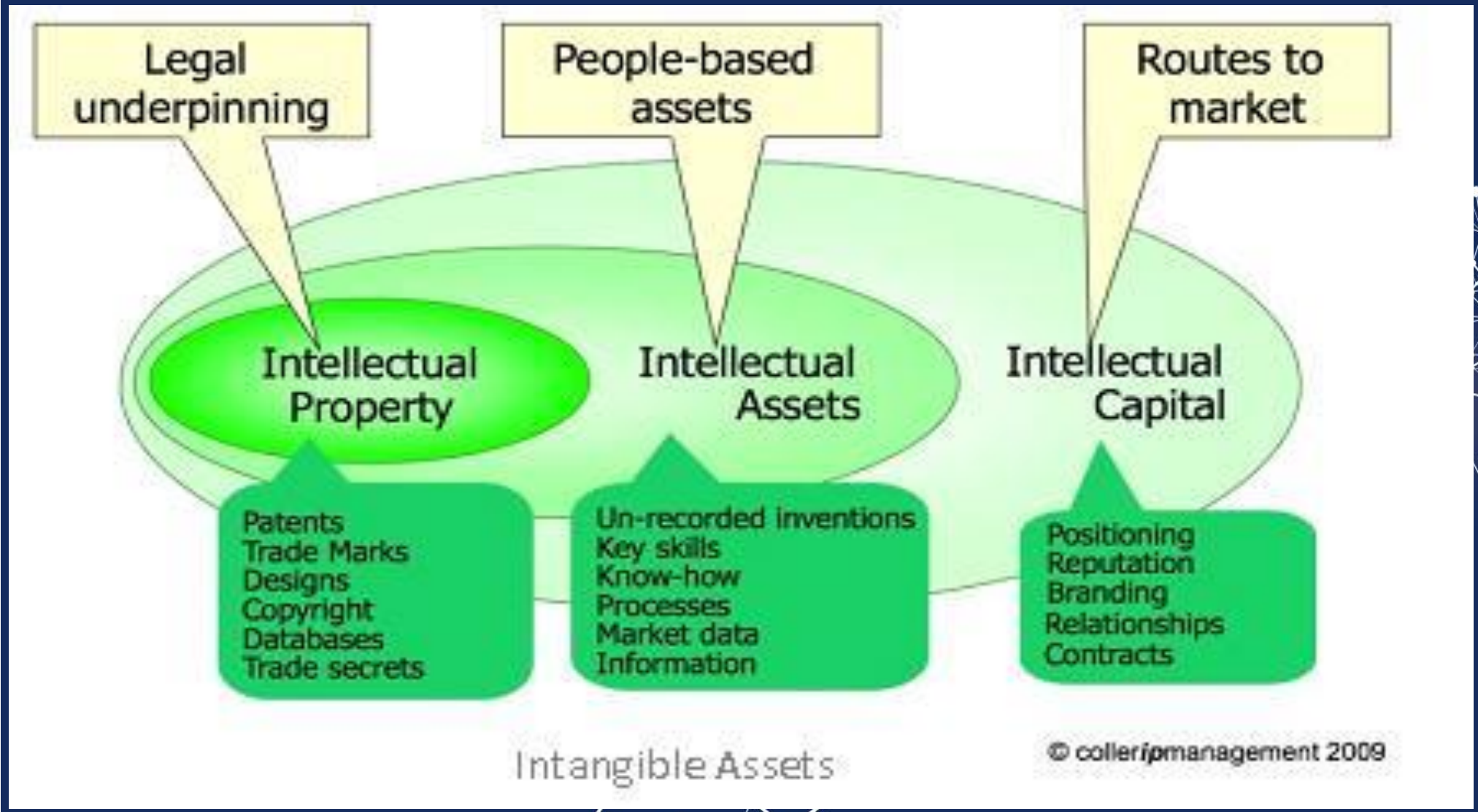


2024

https://www.globalbankingandfinance.com/trading-on-your-assets/

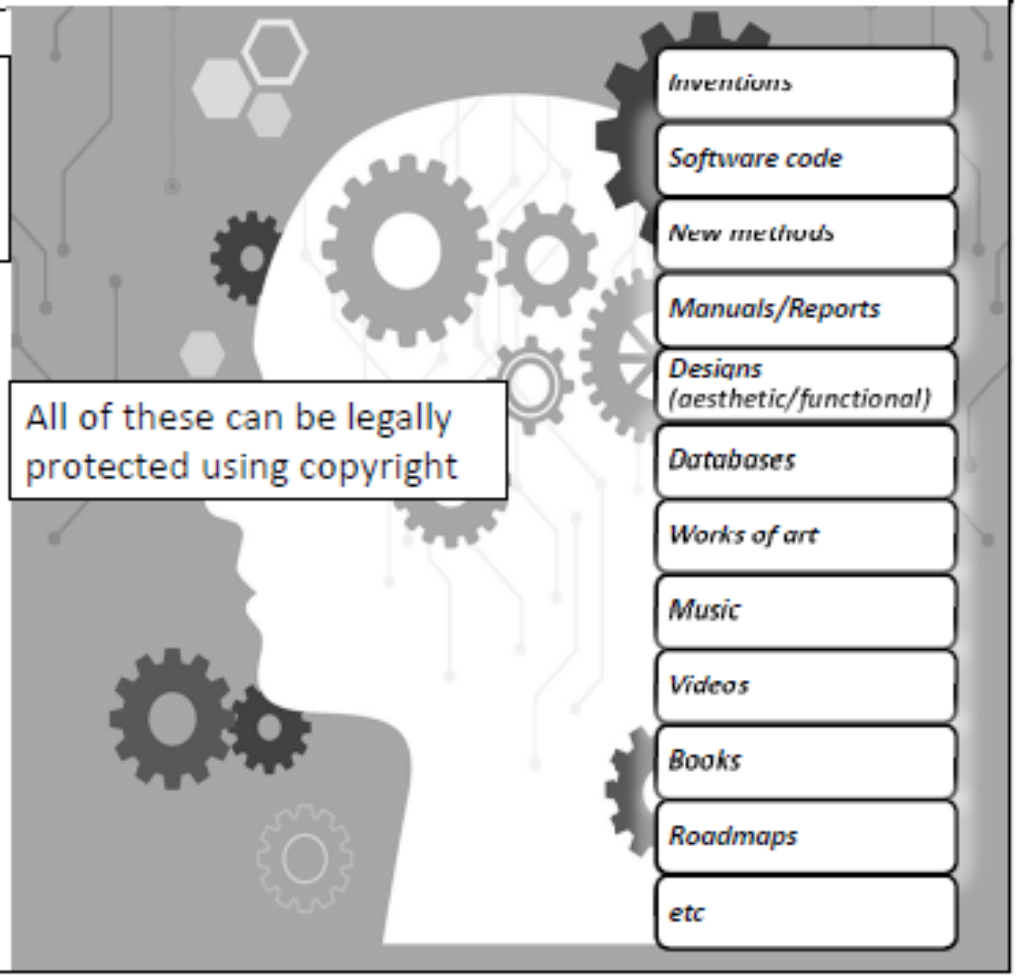
www.iprhelpdesk.eu

Intellectual Assets

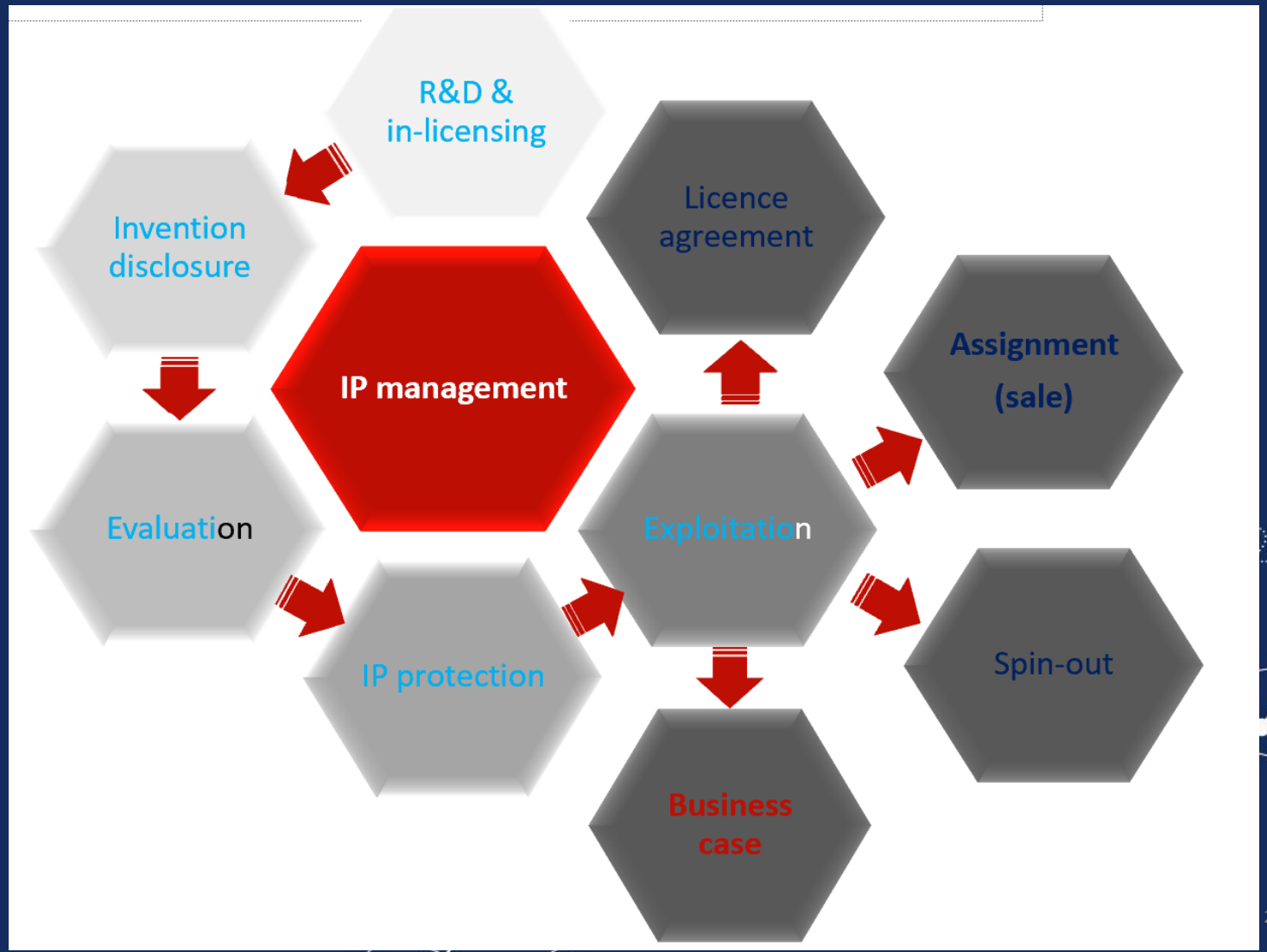
Products of the mind

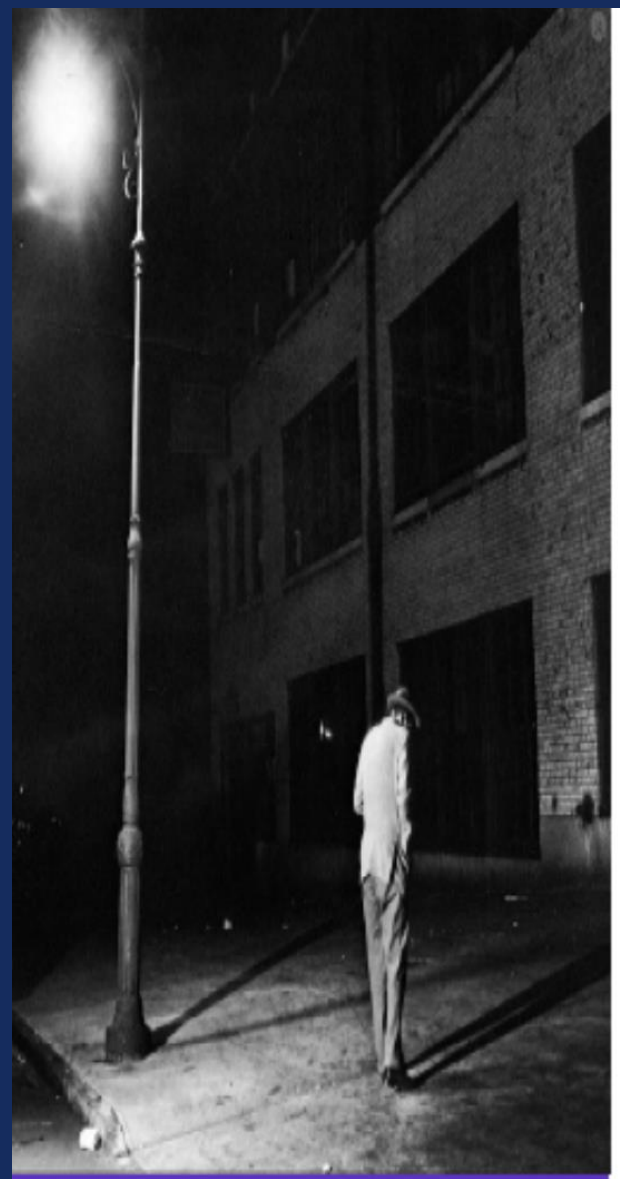
An asset which can be traded

The KEY assets in any project or company
Project Inputs & Outputs
Company USPs



How businesses exploit IP





Clarivate Analytics

Technical Maturity / Immaturity

Key Academic Tech Transfer Thought Leaders

Emerging Technologies

Fastest Growing Technology

Areas of Academic focus

Where is your technology being used?

Specific industrial applications

33

Effective Technology Transfer Process

Disclosure

- Inventor submits disclosure to TTO
- Disclosure checked for completeness
- Specific number assigned

Initial Evaluation

- Ownership
- Publishing
- Initial patentability determination
- Initial glimpse at commercial landscape

Comprehensive Evaluation

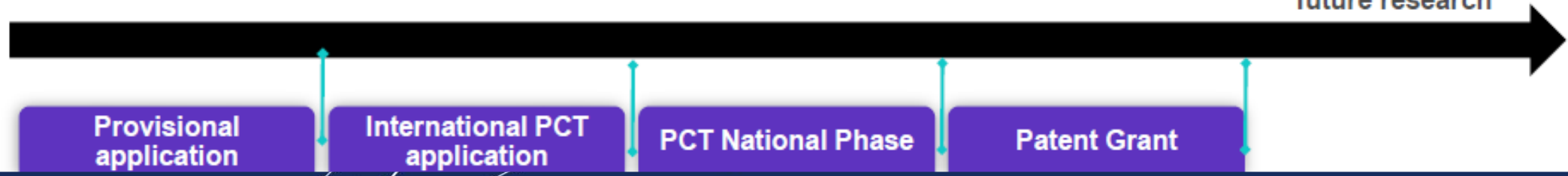
- **Market Evaluation**
- Assessment of commercial viability
- Identification of potential targets
- **IP Evaluation**
- Prior art searches
- Filing strategy

Patent Protection and assertion

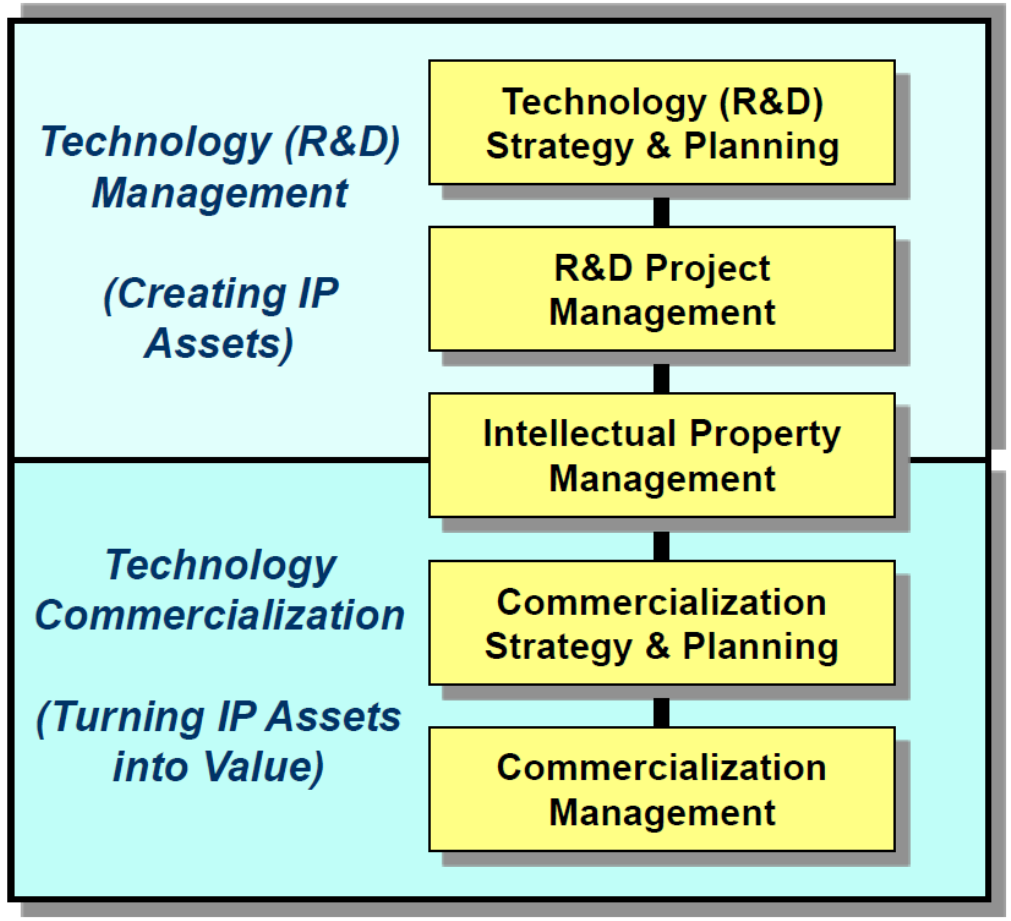
- Respond to Office Actions
- Research previously identified target companies
- Carrot or stick licensing
- Evidence of Use

Commercialization

- Contact POC's of potential licensees
- Commence license negotiations with company(s)
- Plans for start-up company
- Receive royalties, and appropriate
- **Funds received for future research**

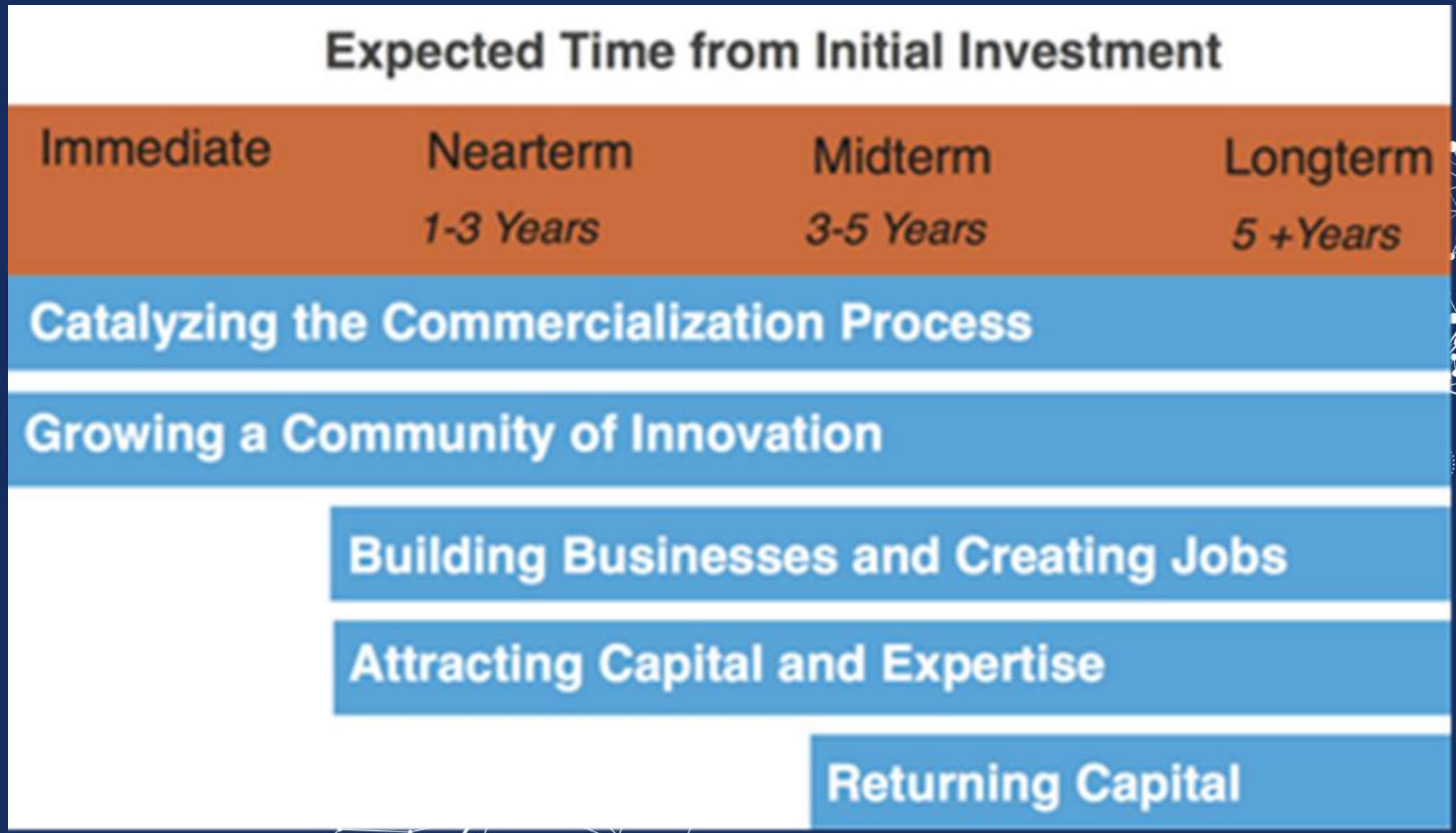


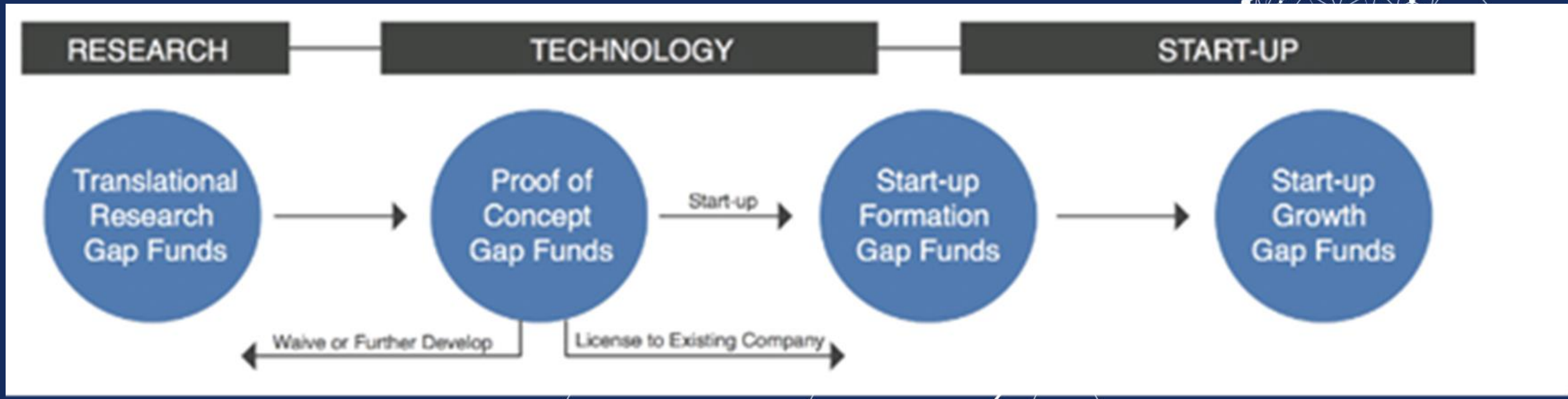
Basic Functions of Technology Management and Commercialization



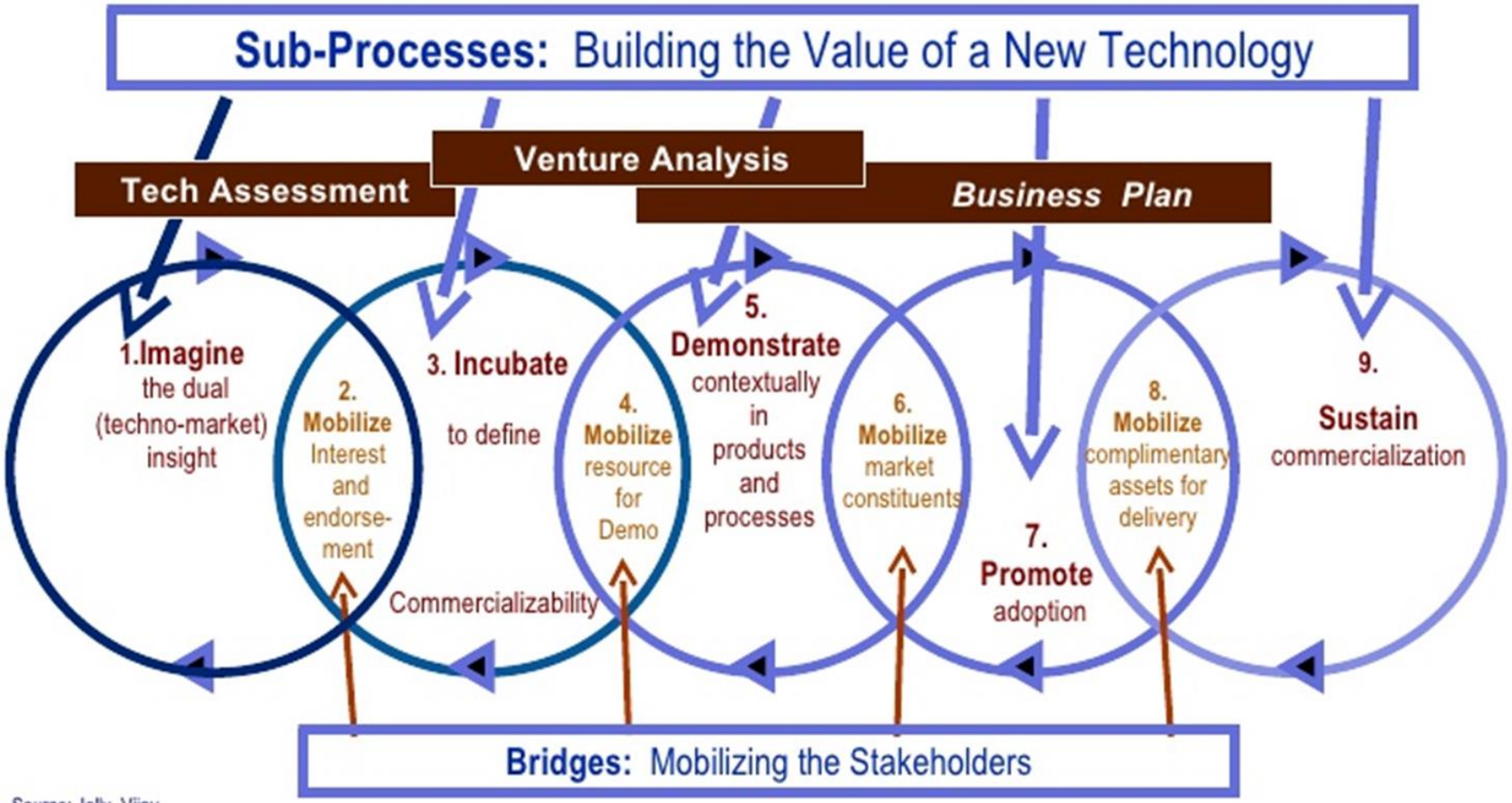
STRATEGIC BUSINESS INSIGHTS

https://www.slideshare.net/cparksbi/technology-commercialization-strategy


Expected Time from Initial Investment
Immediate
Nearterm
1-3 Years
Midterm
3-5 Years
Longterm
5 +Years
Catalyzing the Commercialization Process
Growing a Community of Innovation
Building Businesses and Creating Jobs
Attracting Capital and Expertise
Returning Capital


RESEARCH
TECHNOLOGY
START-UP
Translational Research Gap Funds
Proof of Concept Gap Funds
Start-up
Start-up Formation Gap Funds
Start-up Growth Gap Funds
Waive or Further Develop
License to Existing Company

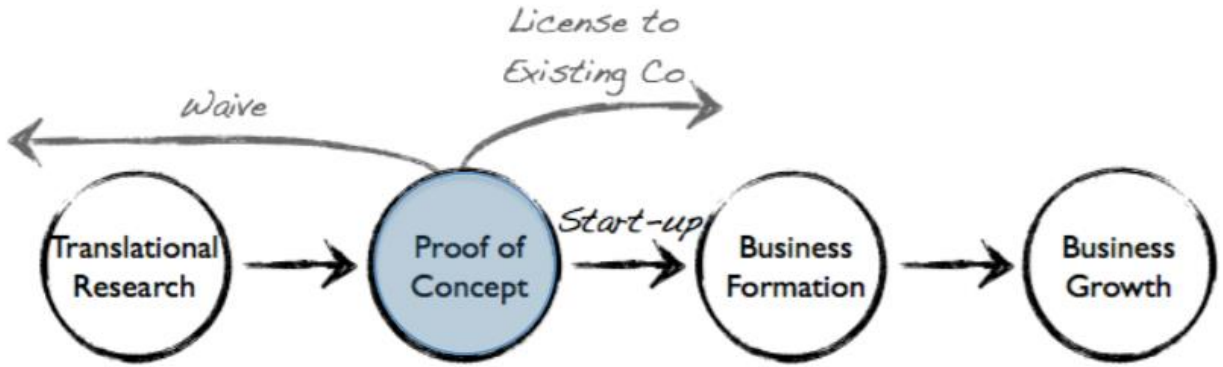
Jolly's Model of Technology Commercialization



Source: Jolly, Vijay. 1997. From Mind to Market.

DEFINING POC FUNDS

UNVERSITY GAP FUNDING CONTINUUM

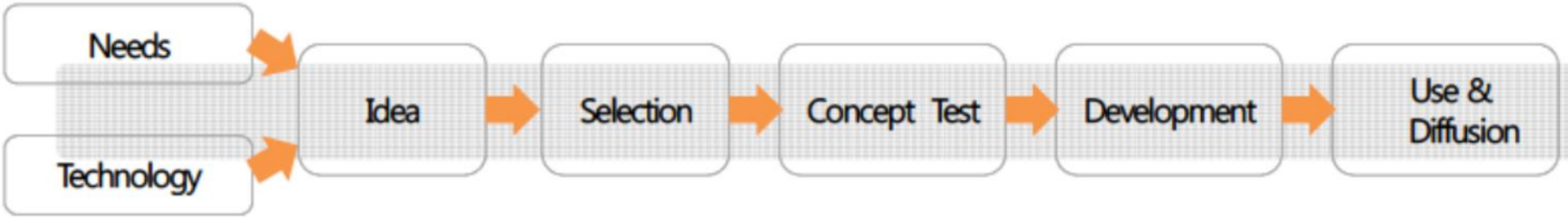


Proof of Concept (POC) funds evaluate commercial potential, demonstrate the value of the technology, and generally de-risk technologies (or perception of risk) to commercial partners or investors. These funds also act as a filters by identifying weakness in the technology for further development, or by saving resources early in the process by deciding to not pursue the technology (a common recommendation in most new product development literature). Finally, by developing the commercial groundwork, including prototypes and application evaluation, these funds aim to identify and secure a route to commercialization (license to existing company or spin-out).

POC funds are often administered centrally through the technology transfer offices, research foundations, or equivalent at the college-level. Externally-partnered state funds, accelerators, and corporate funds may assist at this level and are often run in part through the existing university technology commercialization process. From our research, this is the most widely-utilized university gap fund type.

pocfundsinnovosource-150305101332-conversion-gate01.pdf

(2) Innovation process and technology commercialization



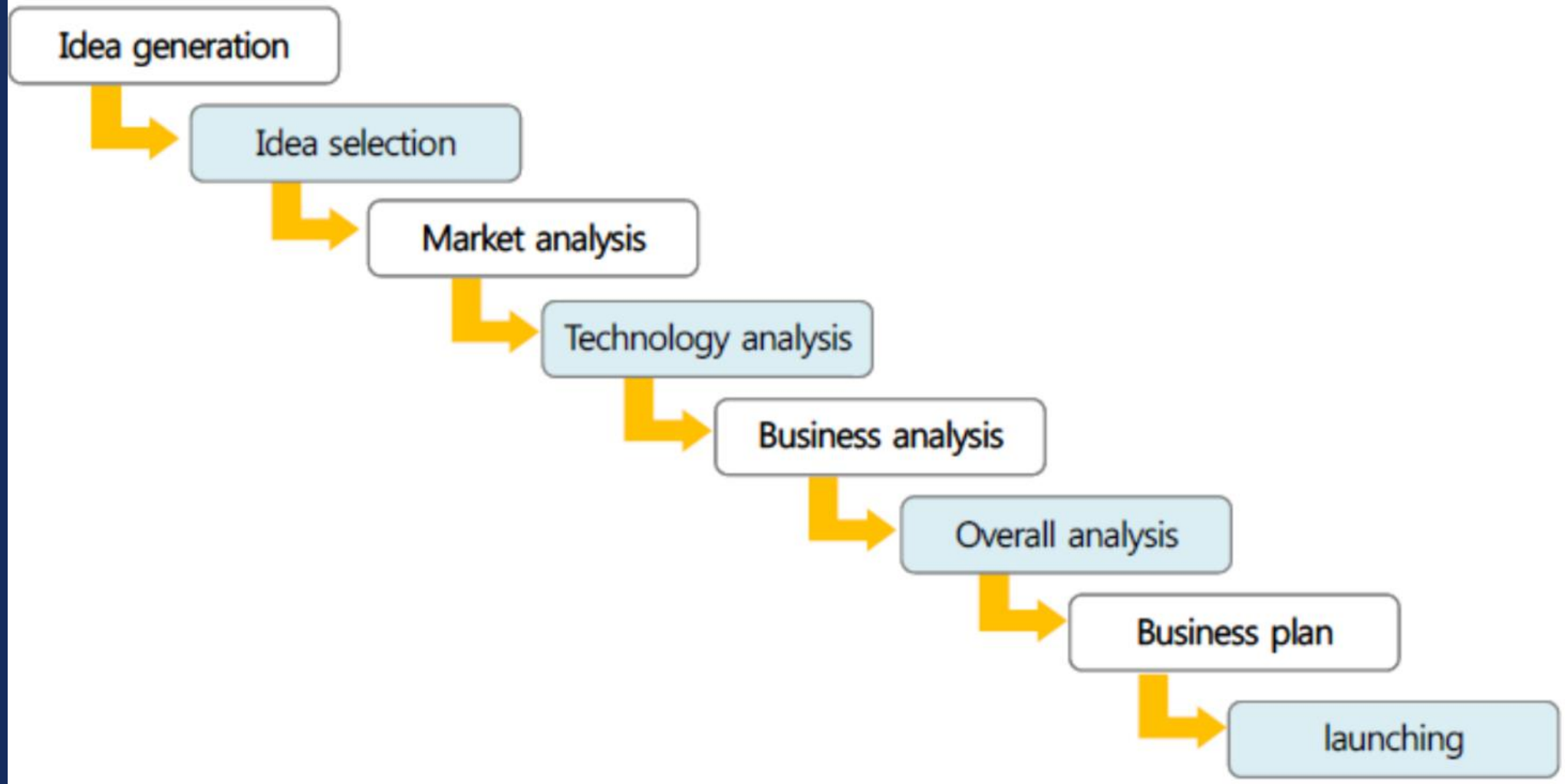
• Goal of Innovation

Meyers and Marquis, Successful Industrial Innovation, 1969

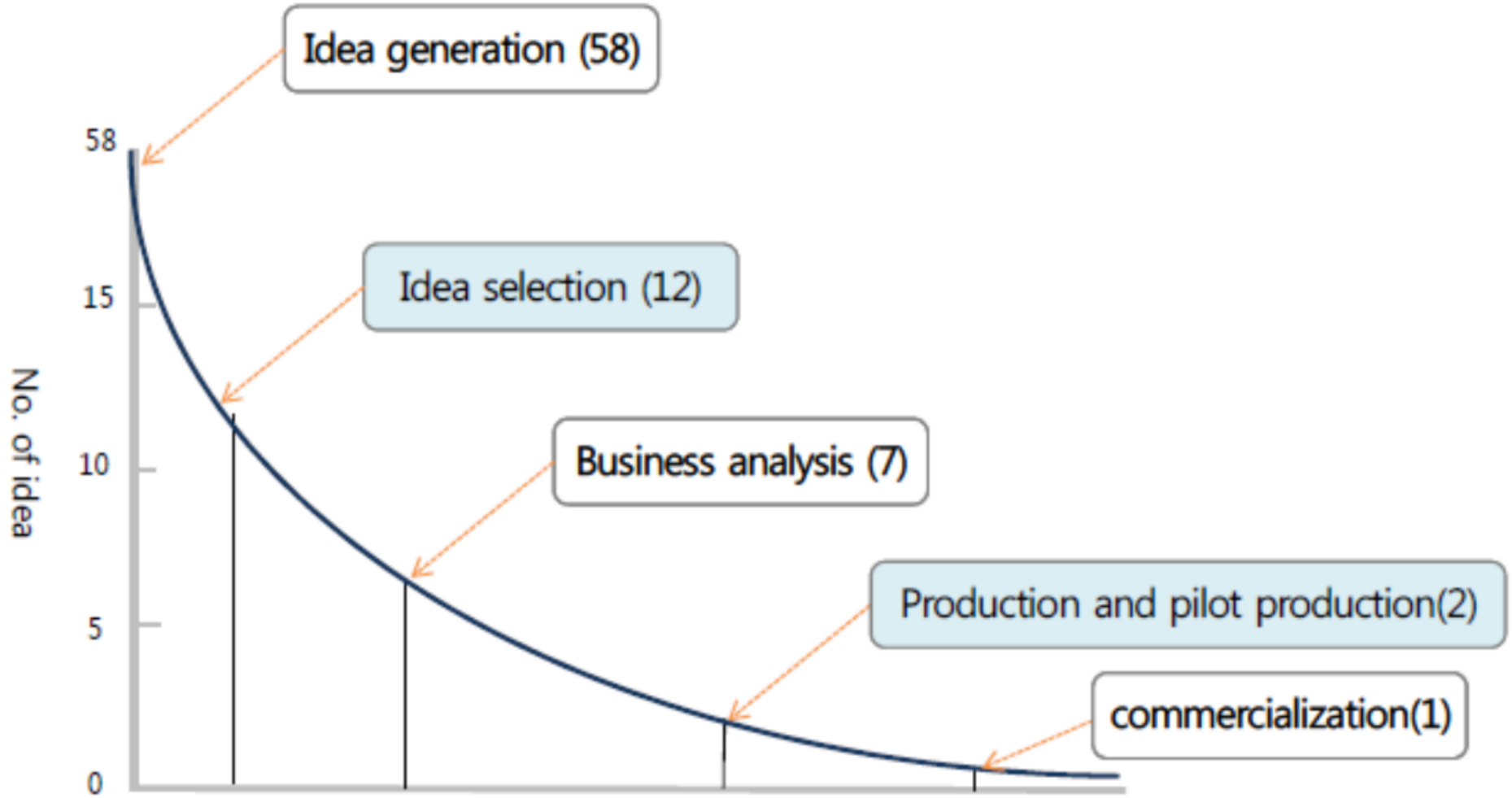
$$\text{Return} = \frac{\text{Impact}}{\text{Investment}} = \frac{\text{Impact}}{\text{Change}} \times \frac{\text{Change}}{\text{Investment}}$$

Leverage Productivity

From Idea to Business



From Idea to Business



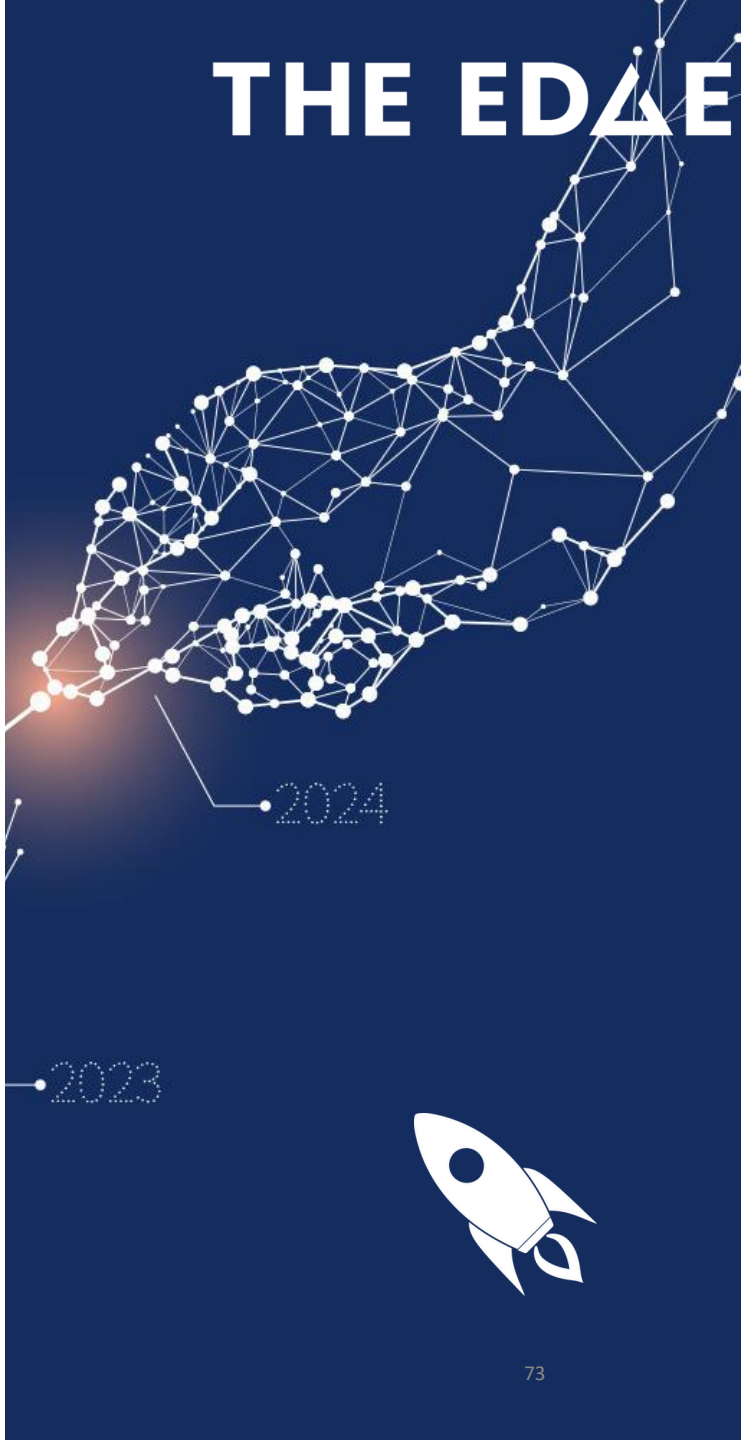
<Stages of commercialization

source: Booz Allen&Hamilton

Research and Development
vs.
Research and Business Development

Technology Commercialization

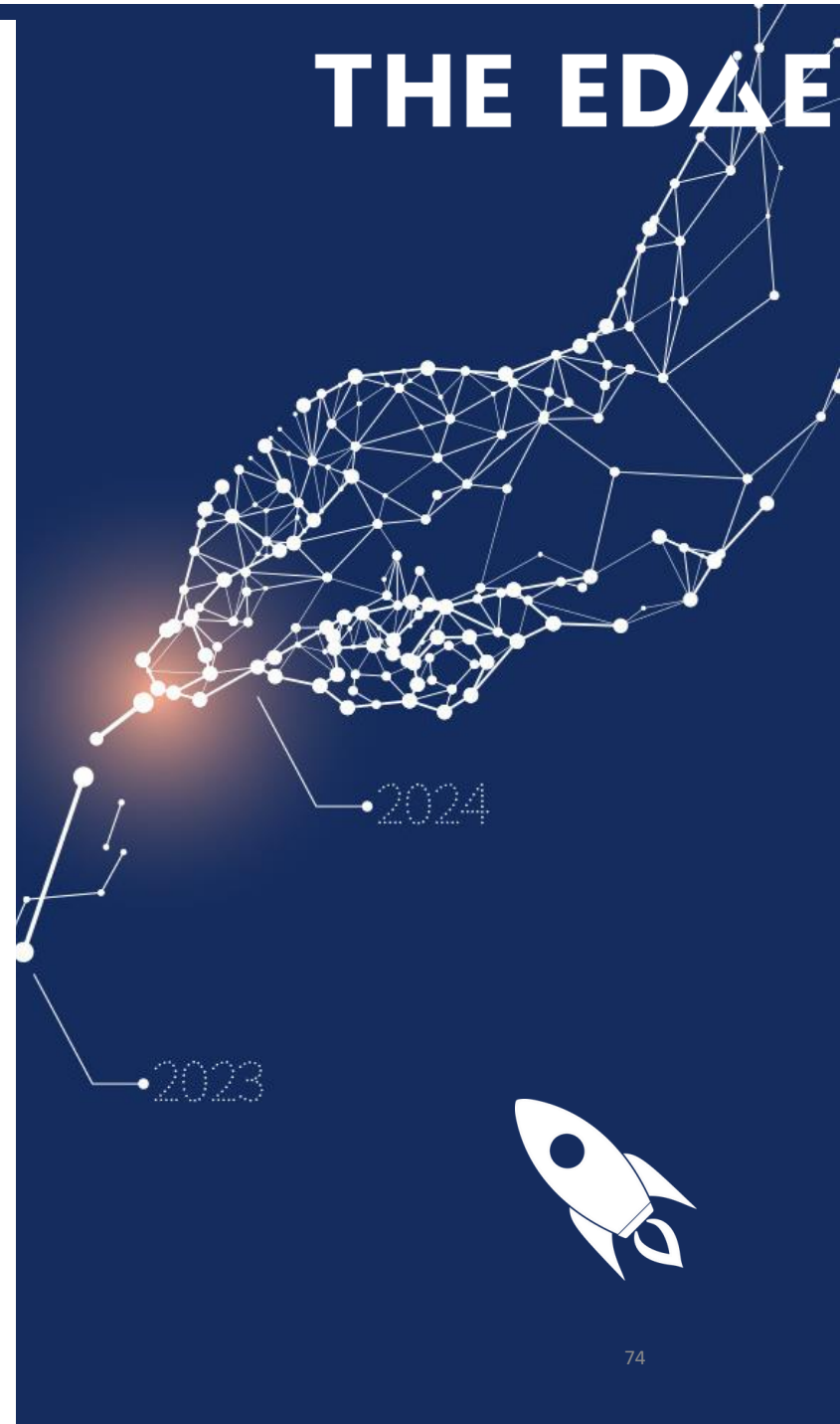
- Technology Transfer (Licensing for use of the technology)
- New Product/Service Development
- Start-up company development
- Spin-off company development



Technology Commercialization

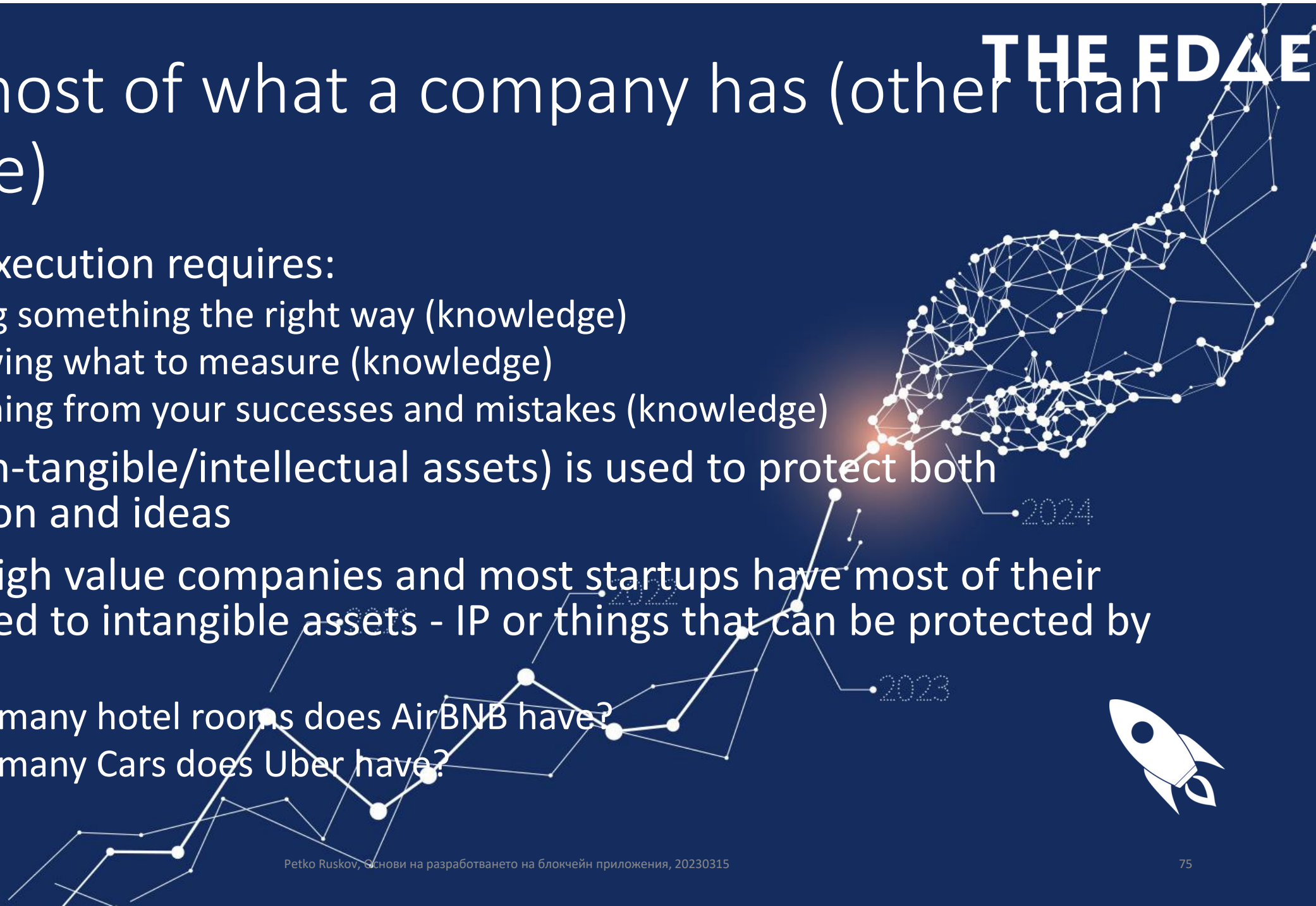
Technology Transfer (Licensing for use of the technology)

- By Purchasing of Annual License
- By Purchasing Non-exclusive rights
- By Purchasing Exclusive Rights
- Etc.



IP is most of what a company has (other than people)

- Note: execution requires:
  - Doing something the right way (knowledge)
  - Knowing what to measure (knowledge)
  - Learning from your successes and mistakes (knowledge)
- IP (=non-tangible/intellectual assets) is used to protect both execution and ideas
- Many high value companies and most startups have most of their value tied to intangible assets - IP or things that can be protected by IP
  - How many hotel rooms does AirBNB have?
  - How many Cars does Uber have?



Where does IP come from? Lots of places!

- Data
- Discovery
- Problem
- Solution
- Opportunity
- Insight
- Component
- Reframe

- Product
- Clients
- Vision
- Business need
- Competitive advantage
- Marketing & Sales
- Competitors
- Sometimes, the IP department

When one of these happens, there may be valuable IP waiting for you to create/protect

Not as common as it should be: Management

Some examples I have seen:

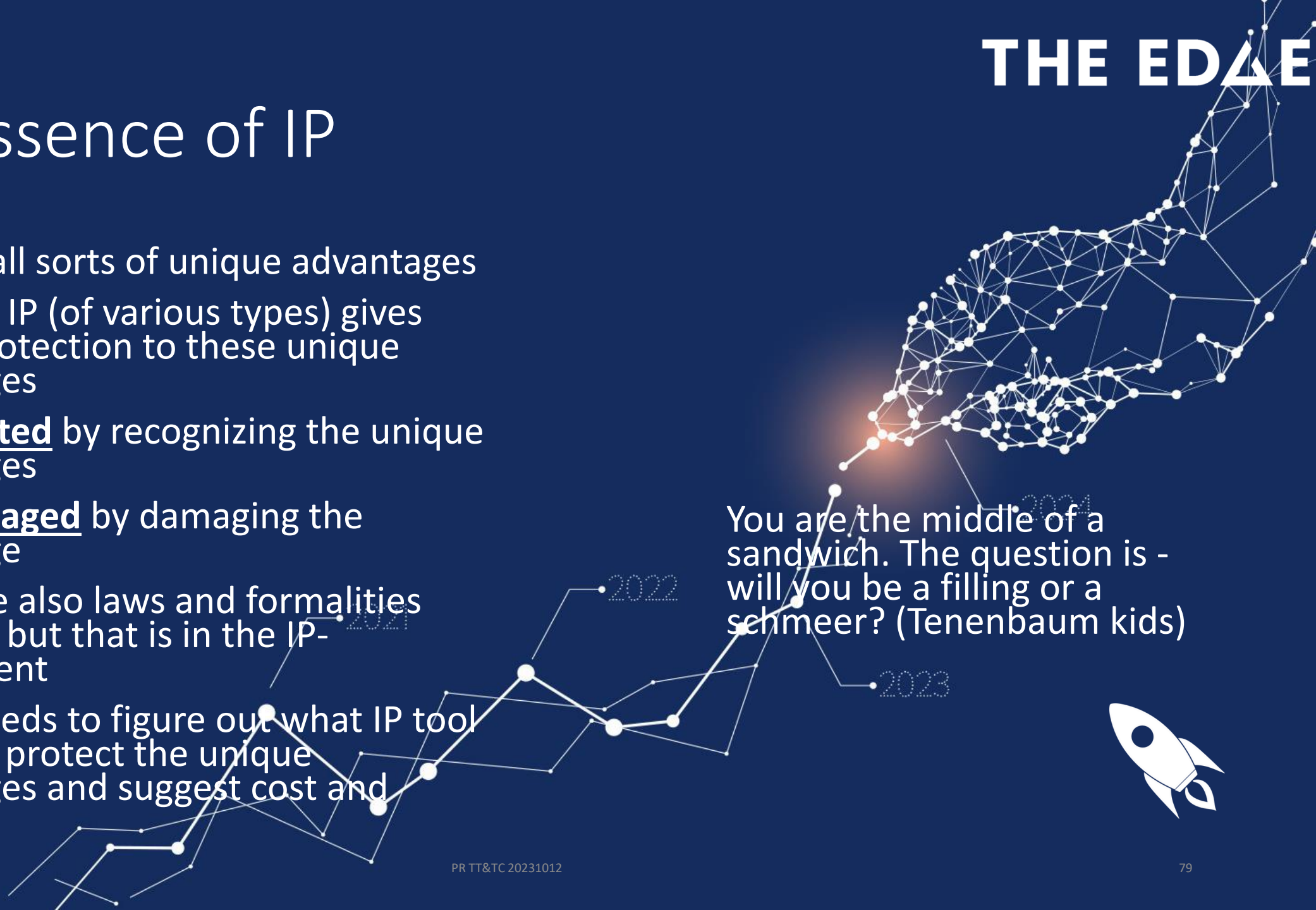
- CEO vision is entering a new market or creating a new category
- R&D Dept. is tasked with developing new products
- IP Dept. can be tasked with obtaining (buying or creating) IP even before R&D is underway
- BI Dept. identifies competitors
- IP Dept. can be tasked with obtaining IP to block competition or as a trading card
- Board identifies potential strategic partners
- IP Dept. can be tasked with obtaining IP which will appeal to or capture such partners

Summary by Steve Jobs

- “The hardest thing is: how does that fit into a cohesive, larger vision, that’s going to allow you to sell 8 billion dollars, 10 billion dollars of product a year? And, one of the things I’ve always found is that you’ve got to start with the customer experience and work backwards for the technology. You can’t start with the technology and try to figure out where you’re going to try to sell it. And I made this mistake probably more than anybody else in this room. And I got the scar tissue to prove it. And I know that it’s the case.
- And as we have tried to come up with a strategy and a vision for Apple, it started with **“What incredible benefits can we give to the customer? Where can we take the customer?”** Not starting with “Let’s sit down with the engineers and figure out what awesome technology we have and then how are we going to market that?” And I think that’s the right path to take.”

The essence of IP

- We saw all sorts of unique advantages
- Basically, IP (of various types) gives (legal) protection to these unique advantages
- IP is **created** by recognizing the unique advantages
- IP is **damaged** by damaging the advantage
- There are also laws and formalities and stuff but that is in the IP-department
- IP guy needs to figure out what IP tool to use to protect the unique advantages and suggest cost and value



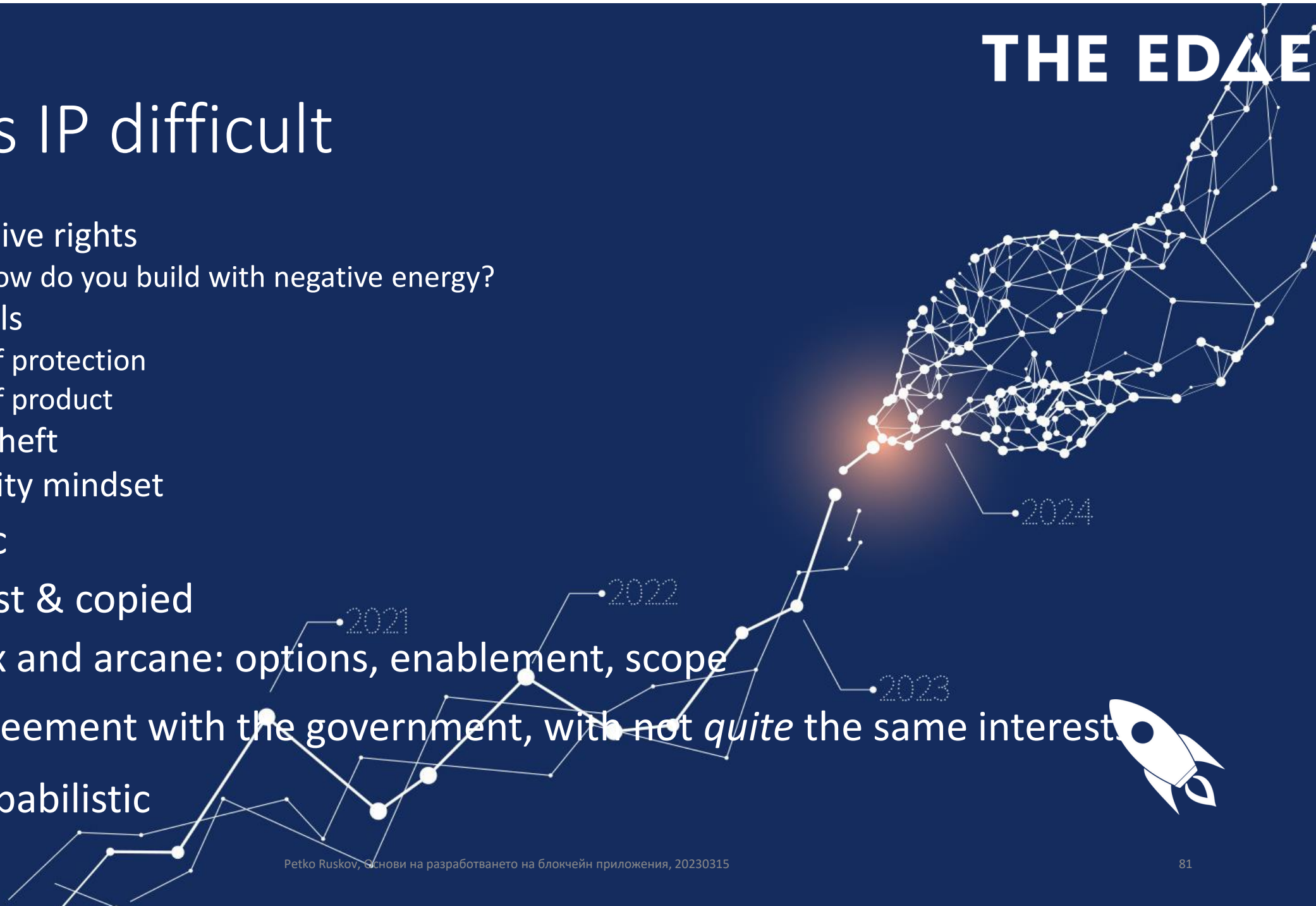
You are the middle of a sandwich. The question is - will you be a filling or a schmeer? (Tenenbaum kids)

For some IP, we do not have laws that are spot on

- Trust - a bit like a brand
- Data - maybe a secret
- Insight
- Understanding of a problem - sometimes a secret
- Know-How's friends: Know-What, Know-Why, Know-who
- ***BUT THEY ARE STILL IP***

Why is IP difficult

- Mindset
  - Negative rights
    - How do you build with negative energy?
  - Partials
    - Of protection
    - Of product
  - Anti-theft
  - Security mindset
- Strategic
- Easily lost & copied
- Complex and arcane: options, enablement, scope
- Is an agreement with the government, with not *quite* the same interests
- IP is probabilistic



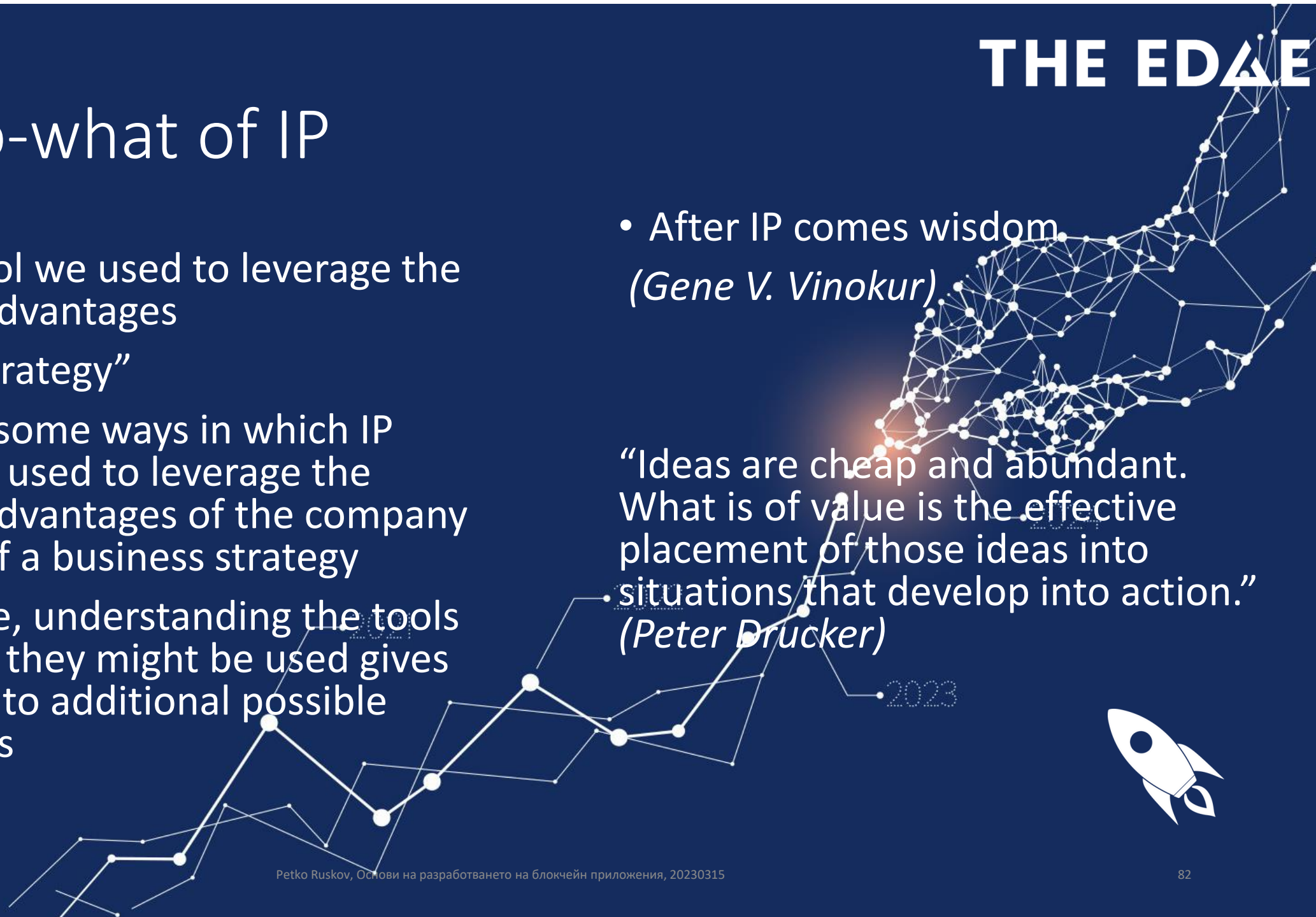
The so-what of IP

- IP is a tool we used to leverage the unique advantages
- Call it “strategy”
- Lets see some ways in which IP tools are used to leverage the unique advantages of the company as part of a business strategy
- Of course, understanding the tools and how they might be used gives insight into additional possible strategies

- After IP comes wisdom

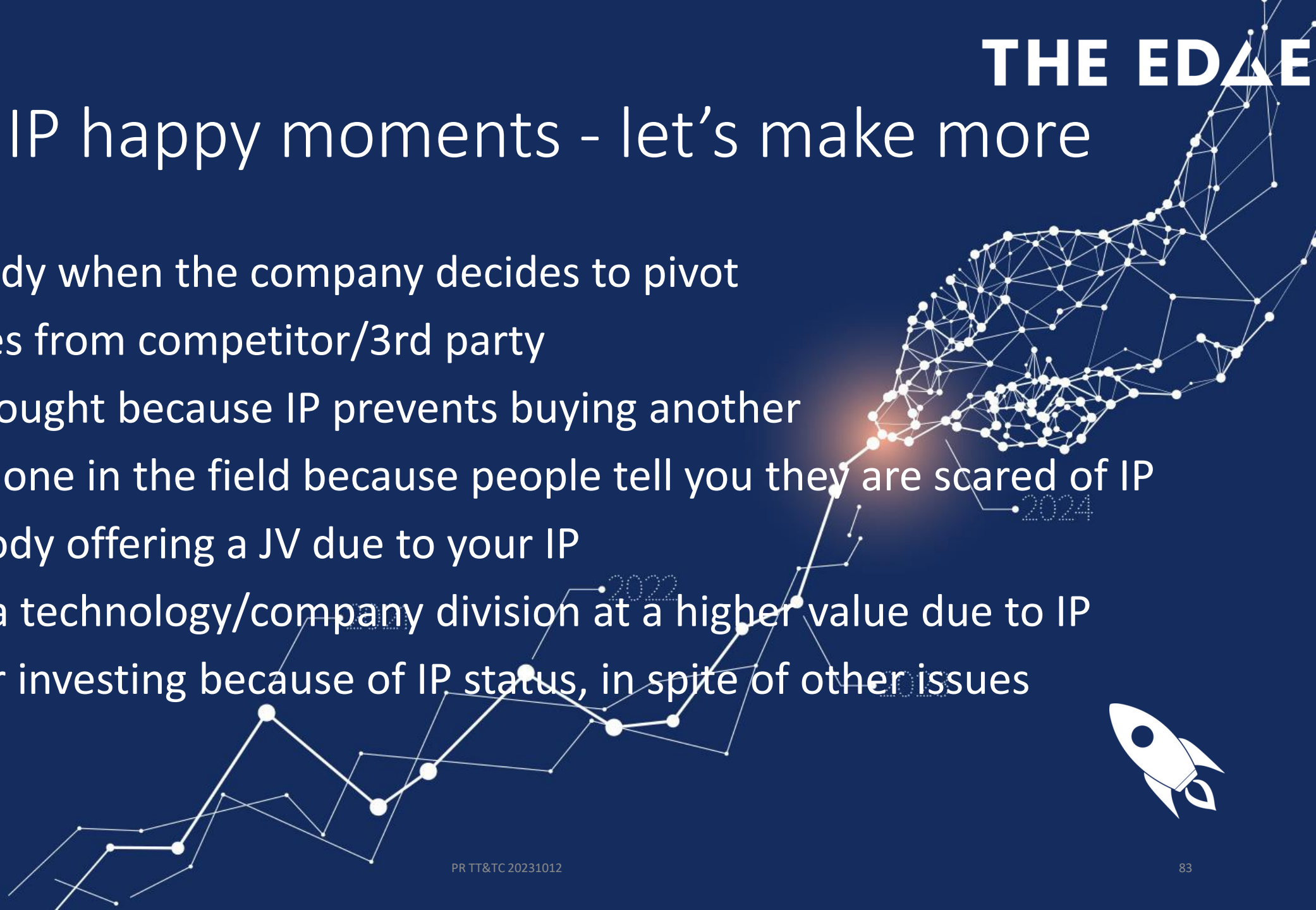
(Gene V. Vinokur)

“Ideas are cheap and abundant. What is of value is the effective placement of those ideas into situations that develop into action.”
(Peter Drucker)



Some IP happy moments - let's make more

- IP is ready when the company decides to pivot
- Royalties from competitor/3rd party
- Being bought because IP prevents buying another
- Being alone in the field because people tell you they are scared of IP
- Somebody offering a JV due to your IP
- Selling a technology/company division at a higher value due to IP
- Investor investing because of IP status, in spite of other issues



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HUMAN READINESS LEVEL

MANUFACTURING READINESS LEVEL

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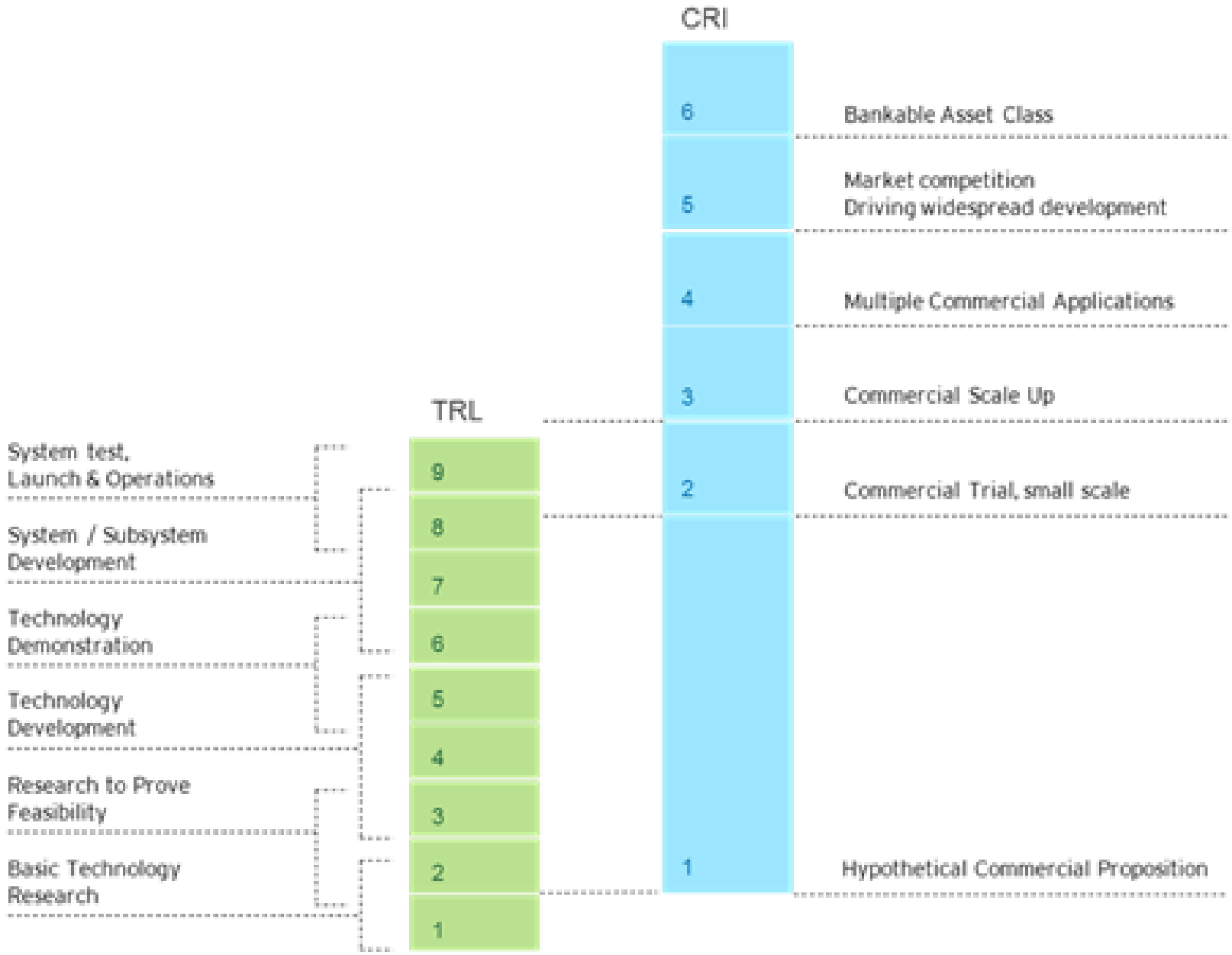
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6
Bankable Asset Class
5
Market competition
Driving widespread development
4
Multiple Commercial Applications
3
Commercial Scale Up
2
Commercial Trial, small scale
1
Hypothetical Commercial Proposition
TRL
9
8
7
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System / Subsystem
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Basic Technology
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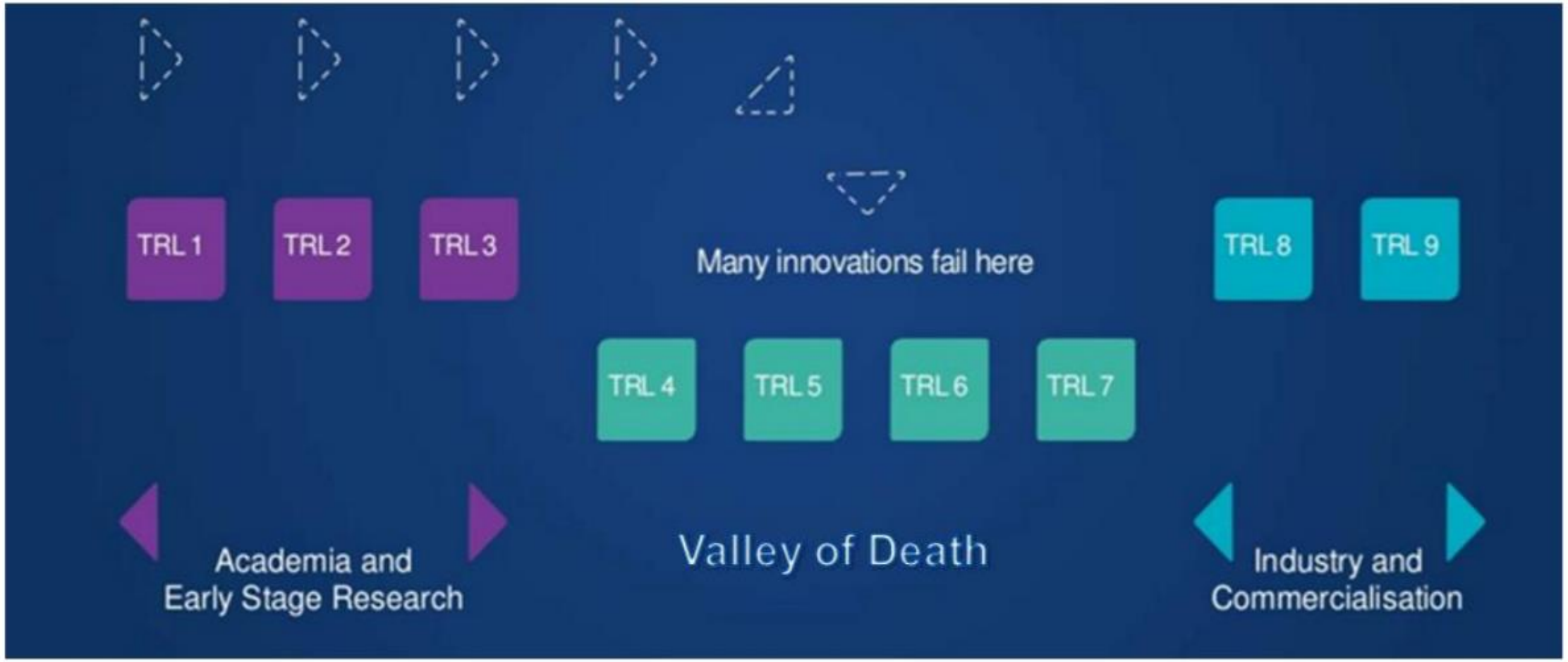

Figure 2: *Technology Readiness Levels and Valley of Death, (Mayfield, 2014)*

https://pure.strath.ac.uk/portal/files/66524941/Uflewska_etal_IPDM_2017_technology_maturity_framework_in_managing_manufacturing_improvement.pdf

"I lost some intellectual property here last night. Anybody remember what the hell I was talking about?"

KKO

Kendall, Koenig & Oskouer PC

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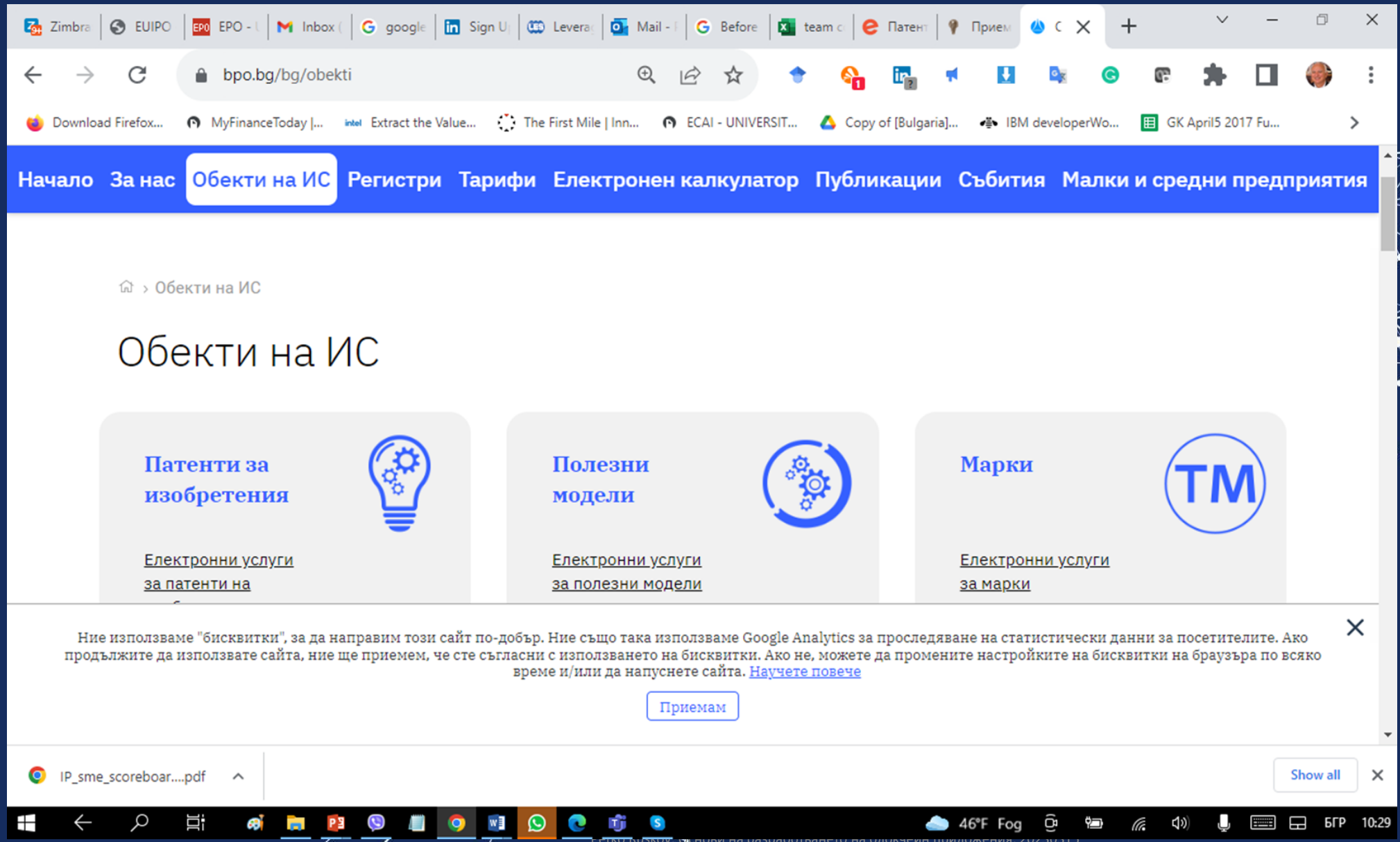
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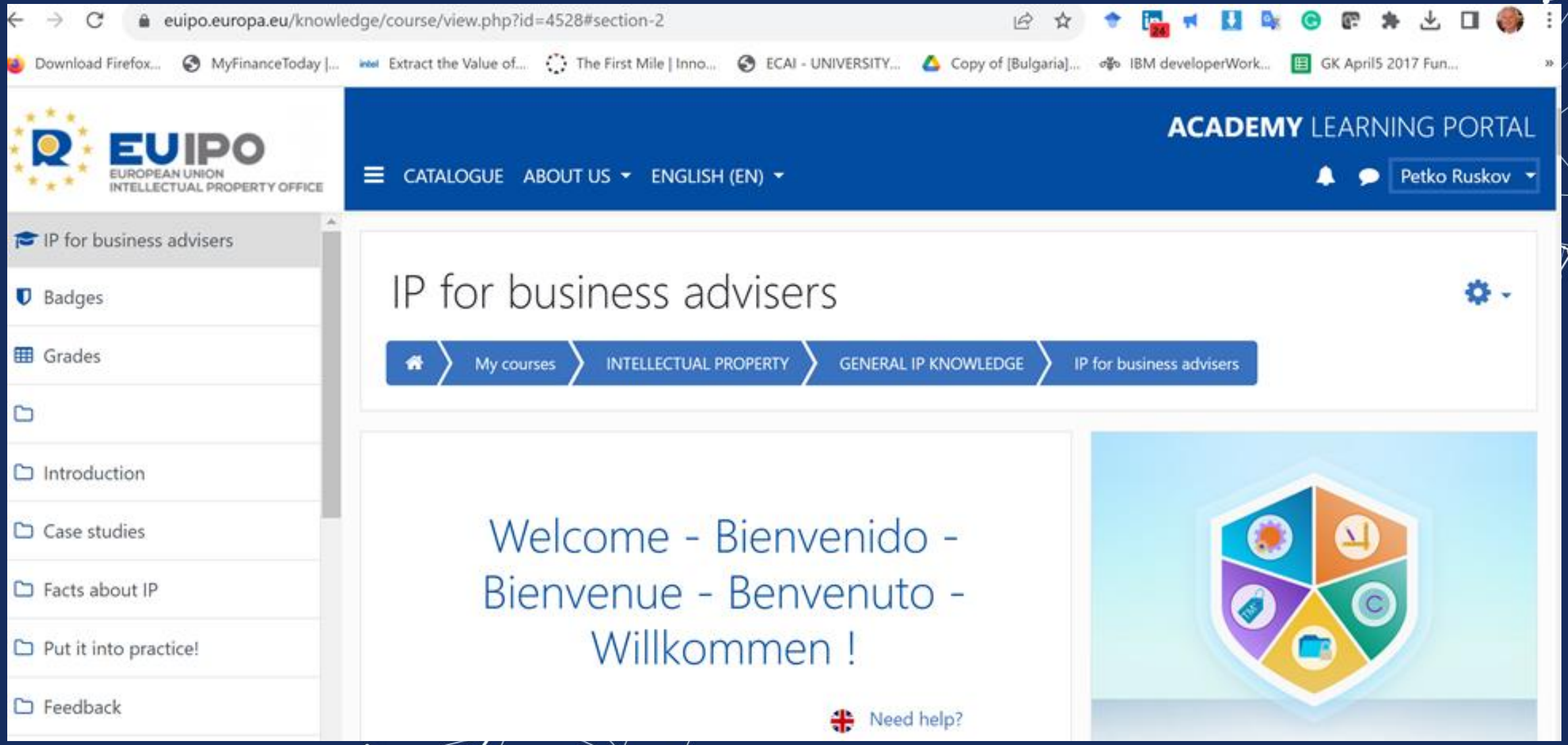
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https://intellectual-property-helpdesk.ec.europa.eu/services/horizon-ip-scan_en

NEWS ARTICLE | 5 October 2023 | European Innovation Council and SMEs Executive Agency

Safeguarding trade secrets in Horizon Europe

wipo.int/portal/en/index.html

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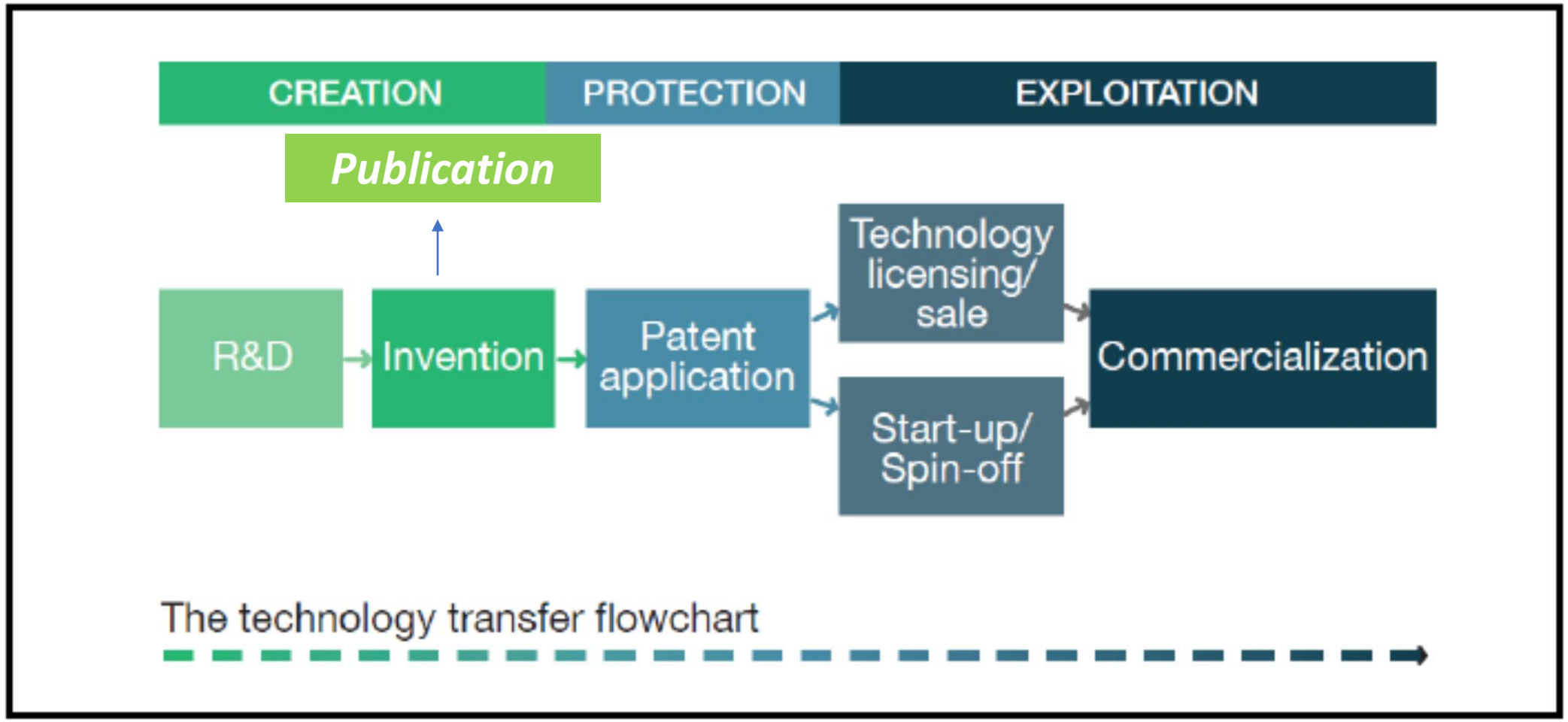

FIGURE 5: WIPO UNIVERSITY INITIATIVE PROGRAM

Source: WIPO University Initiative Program[27]

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- Technology transfer of research results through marketing of research results, and organisation of meetings between developers and users of technology, seminars, conferences, and training courses;
- Consulting in intellectual property protection;
- Training in commercialization of research results;
- Developing methodologies and training materials on:
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  - Marketing research results using the most effective forms of technology transfer (licensing, franchising, establishing joint ventures, joint research and more;
  - Commercialization of research results and establishing /spinning-off of new businesses;
- Finding sources for funding innovative projects;
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Technology Transfer Office "ICTEE" has taken part in the establishment of a network of innovation centers, technology transfer offices and innovative companies, titled **"Bulgarian Technology Transfer Network (BTTN)"**). The Network was established by the "GIS Transfer Centre" Foundation on 23 April 2013. The Network's cofounders are:

- GIS-TC1 "Technology transfer of the Institute of Mechanics";
- GIS-TC2 "Renewable energy sources and energy efficiency ";
- GIS-TC3 "Geospace modeling and prognosis";
- GIS-TC4 "Gene engineering in medicine and ecology";
- GIS-TC5 "Biochemical technology for effective and ecological agriculture";
- GIS-TC6 "Electro energy automation";
- GIS-TC7 "Sustainable planning of territories and energy efficiency architecture";
- GIS-TC8 "Innovative management";
- GIS-TC9 Office for technology transfer, Bourgas;
- GIS-TC10 "Food and Cosmetic Technology", Plovdiv;
- GIS-TC11 "Healthcare Information Technologies";
- GIS-TC12 Steinbeis-Transfer-Institut "Business, Engineering and Technology - Bulgaria";
- GIS-TC13 " Transport management and smart trasport vehicles";
- Technology Transfer Centre "Sofia University";
- TTO "PROINO";
- TTO "Risk Space Transfer";
- TTO "Bioinnovative Pool";
- TTO "Genome Centre";
- TTO "ReproBioMed";
- OTTO "University of Agribusiness and Rural Development";
- TTO "Scientific-Technical Union of Mechanical Engineering".

Bulgarian Network for Technology Transfer (BNTT)

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What is the best structure for a university's technology transfer office?

26 Aug 2009 | Viewpoint

Universities should think carefully when deciding whether to set up TTOs as separate companies or keep them in house, says Tom Hockaday from Isis Innovation.

By Tom Hockaday

Tom Hockaday is Managing Director of Isis Innovation, Oxford University, and a winner of a Science|Business ACES award.

Universities face a choice in deciding whether the technology transfer office should be part of the administration, or a separate company. There are then subsequent choices in terms of strategic alliances with partners and selling shares in a TTO if it is a company.

So how to make this decision?

First, there are three general points to make. Good people can make any system work and bad people can make any system fail. Nevertheless, some systems are better than others.

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