





Технологичен трансфер и комерсиализация на

Петко Русков, 19 октомври 2023 г.

технологии

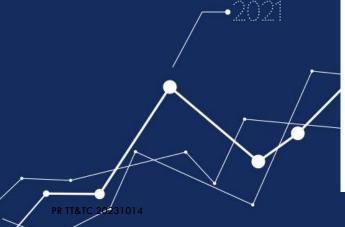
10/20/2023

PR TT&TC 20231012



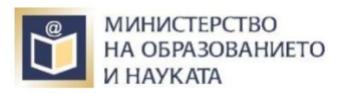






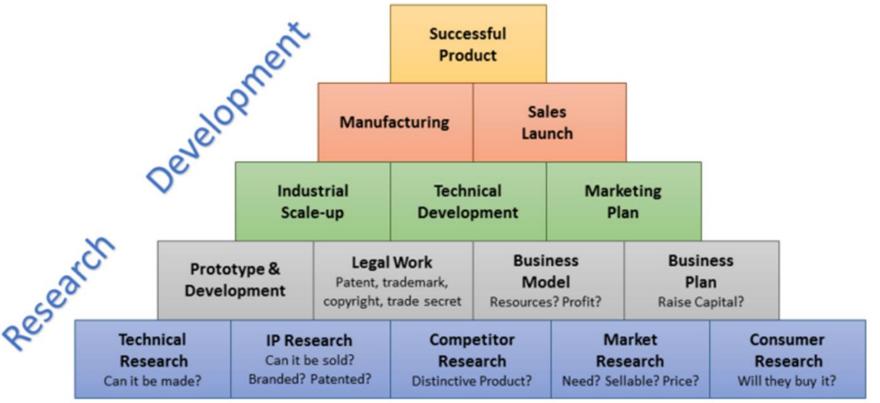




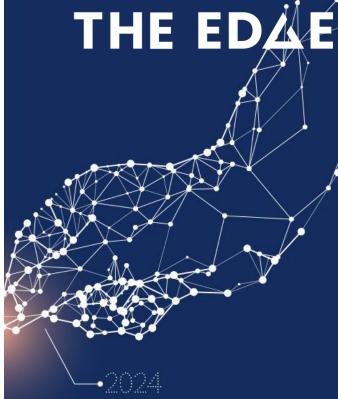




Success = R & D



Key Question: Can you make money from this product?







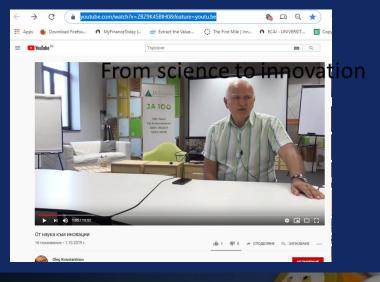
Who am I (Petko Ruskov) and Why Me

Education:

- High School TMET "Dr. Vassiliadi" Gabrovo, 1970
- Master Computer Engineering, 1977
- PhD Computer Science, 1984
- Postgraduate IT/IS, MIS Uof Arizona, Technology Entrepreneurship (UC Berkeley), TT§TC (Innopolis, GCC KAIST)

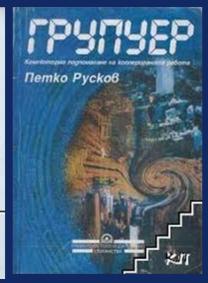
Work & Experience:

- The Edge R&BD CTCO,
- Sofia University, Professor, Creator of MSc Program "e-Business" and "Technology Entrepreneurship in IT", couse TT&TC
- Junior Achievement Bulgaria, Director Academic Programs
- 15+ years of start-up coaching and mentoring experiences in Bulgaria and Europe
- Member of Intel Challenge, Stanford REE, Innopolis Alumni, KAIST GCC and other entrepreneurship networks













■ SMART STEM

PETKO RUSKOV, PHD

EDUCATION AND INNOVATIONS

facebook



Petko Ruskov Professor of Informatics Verified email at fmi.uni-sofia.bg

Technology Entrepreneursh... TITLE How do value co-creation activities relate to the perception of firms' innovativeness? S Tanev, T Bailetti, S Allen, H Milyakov, P Durchev, P Ruskov

Journal of Innovation Economics & Management, 131-159 How can we help J Paul, U Huws Good practice in call-centre employment. Analytical Social and Economic . Strategic framework for IT education and research at Sofia University M Nisheva, E Gourova, P Ruskov, Y Todorova, A Antonova International journal of education and information technologies 4 (2), 213-225 PR TT&TC 20231012
Strategic Model for Master of Science program "Innovation and Technology Entrepreneurship" P Ruskov, M Harris, Y Todorova

3rd Balkan Conference in Informatics (BCl'2007), 27-29

Citations h-index CITED BY YEAR i10-index

Co-authors

15

Cited by

See more of National STEM Education Conference Bulgaria on Facebook

KEYNOTE SPEAKER

petko.ruskov@jabulgari ······

National STEM Education Conference Bulgaria

Очакваме с нетърпение 13-15 Април 2023 г

та Национална конференция с междунар участие "SMART STEM Образование и

представи изследване на тема "Furopean

езюме: Докладът има за цел да разгледа съвременното състояние на EBSI (Europear Blockchain Services Infrastructure) като

централизиран блокчейн модел на мрех

равление и бизнеса. В него се представят ешни практики на проекти, изпълняван

Обсъждат се архитектурата и възможности услуги и за изграждане на децентрализиран

блокчейн приложения за електронно

вропейско развитие на Web3 и

новации" National STEM Education

Conference Bulgaria! Благодарим на доц. д-р Петко Русков, СТО & Co-founder, The Edge: R&BD, който ще

GET MY OWN PROFILE

206

Q SIGN IN

VIEW ALL

Since 2013

109

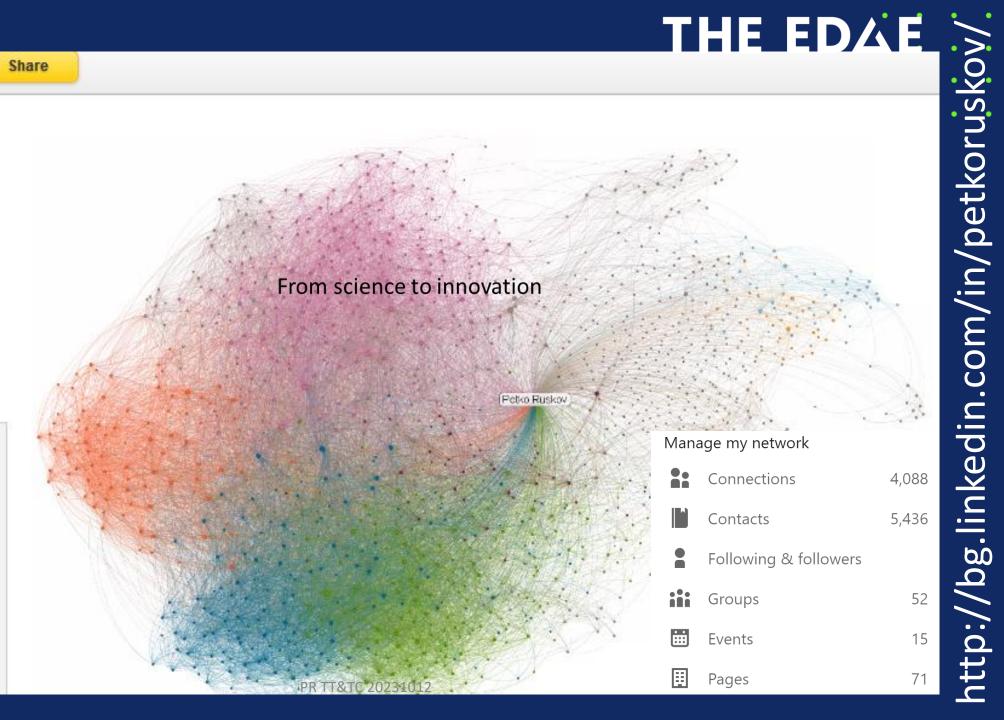
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Share



Label your

Professional Networks ■ Business Bulgaria Rila Solutions Inc. Universities DSE, Sofia Univ. EU Entrepreneours BizBarcelona ■Intel/UC Berkeley EU projects/2023





Enterprise Design Thinking Practitioner was issued by IBM to Petko Ruskov.

youracclaim.com



This badge was issued to Petko Ruskov on 24 June 2020.



Verify



Enterprise Design Thinking - Team Essentials for \mathbf{AI}

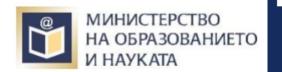
Issued by IBM

This badge earner has demonstrated proficiency in using Enterprise Design Thinking concepts and activities to design responsible artificial intelligence systems with intention and a focus on people.

Skills









- 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. Дилемата на иноваторите. Креативност, откритие и иновация. Добавена стойност. Жизнен цикъл. Капитализиране на феномена на пробивните иновации.







Рамка на занятията

<u>Теория</u>

• Процес за технологичен трансфер и комерсиализация на технологии. Обхват и цели. Дилемата на иноваторите. Креативност, откритие и → 2000 иновация. Добавена стойност...

Въпроси и отговори

С какво ще си тръгна след дискусията

Практин



• Дискусия

• Упражнения

• Работа в екипи

use cases

Рефлексия





Съдържанието днес:

THE EDALE

Тема

Продължителност мин

- Актуализация на занятието т 12.2023, Въпроси и отговори 💢 10
- Пример за прогрес на избран екип
- Процес за технологичен трансфер и комерсиализация на технологии. Обхват и цели. Модели.
- Дилемата на иноваторите. Креативност, откритие и иновация. Добавена стойност.
- Кафе пауза и разговори —2021
- Практическа работа по екипи
- Представяне и коментиране на бизнес идеите
- Заключение, рефлексия. Въпроси и Отговори

15

90

15

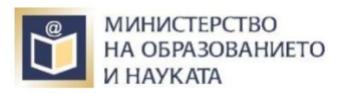
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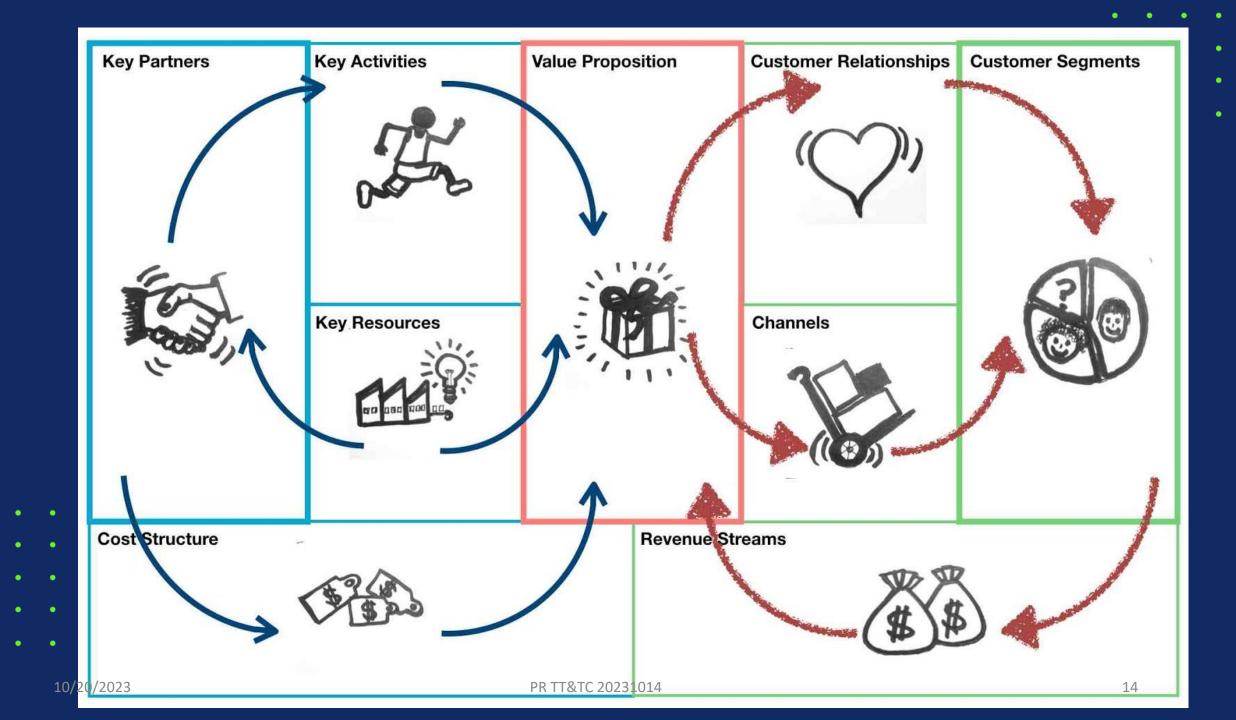




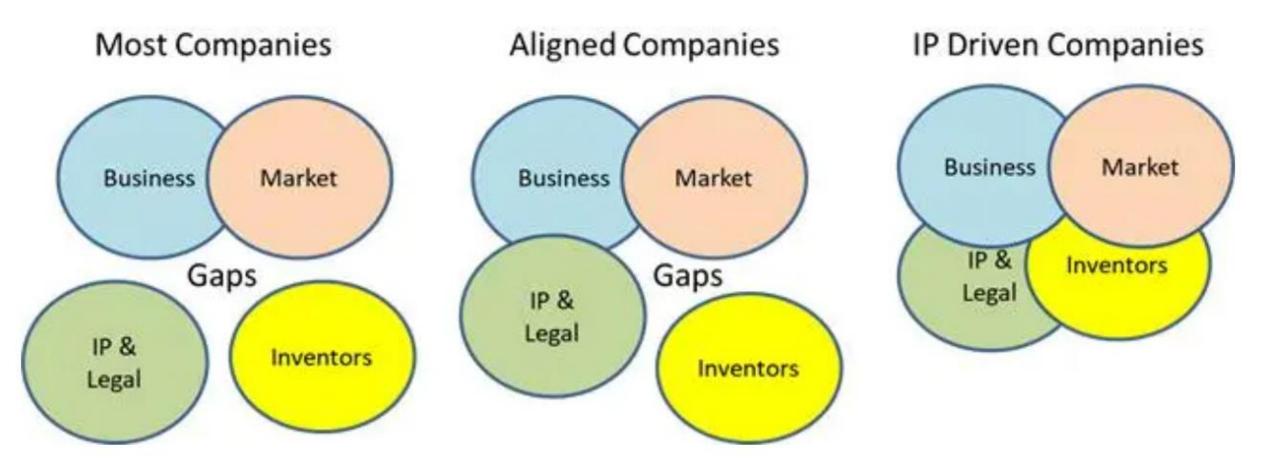


TARGET CUSTOMER JOB-TO-BE-DONE CONSUMPTION BARRIER IDEA SKETCH/ OVERVIEW BASIC BUSINESS MODEL **IMPACT POTENTIAL** Goal Price Purchase Population Frequency Required Penetration **CRITICAL UNCERTAINTIES TESTING PLAN**

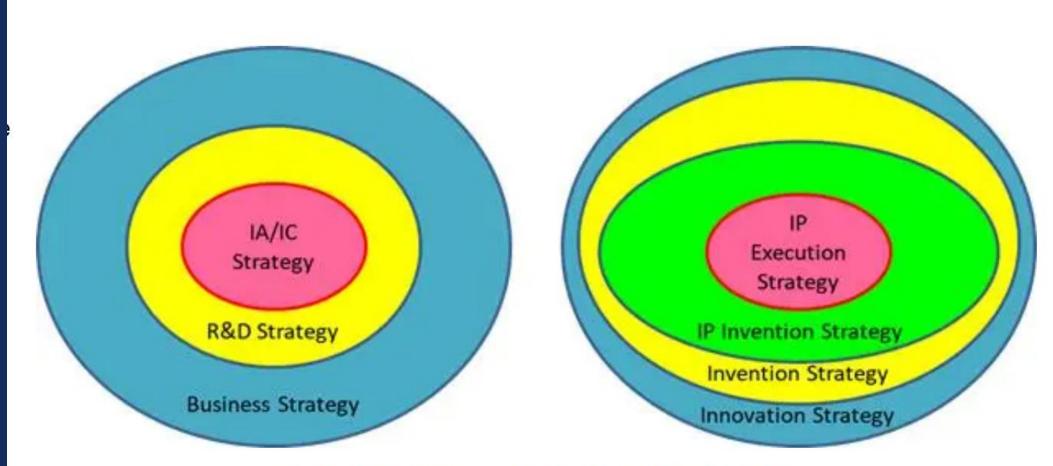
10/20/2023





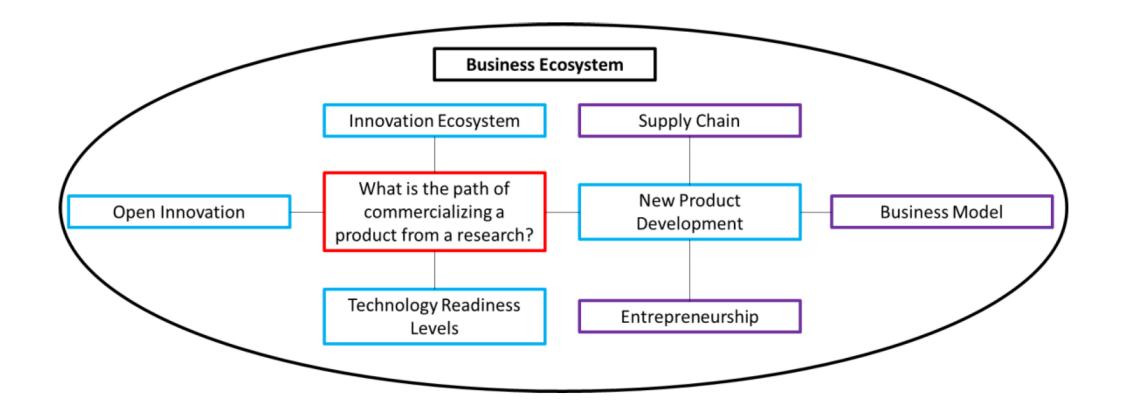


IP Strategy Should Integrate Key Business Functions



Relationship Between Business and IP Strategies

Business Ecosystem

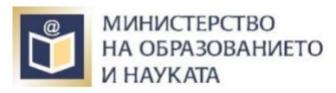


PIP strategy is not about "Can we file?" but rather about "Should we file?". Does filing align with or help build up our business vision? Prof. Dr. Alexander J. Wurzer











Иновацията от днес – правила от утре

- Домашното става желателно/почти_задължително
 - Прогрес на всеки екип за резюмето на идеята
 - Новата версия на канавата
- Представяне на резултати от търсене в базите (коя, ключови ключови думи)
 - Научни изследвания
 - Патенти,....

• Отговарям с предимство на въпроси от екипите с прогрес от

предната среща!



Investigation Market Trends in a Rose Technology Space and Assess Competitor Trends through Patent Big Databstract:

- Petko Ruskov, The Edge: R&BD, mail: petko.ruskov@theedge.solutions
- Hristina Sherbanova, Bikam Plus Ltd., mail: X_sherbanova@abv.bg
- Tzvetelina Dimitrova, Bikam Plus Ltd., mail: tzvetoluna@gmail.com

 Purpose – to study the state of the art of innovations and Intellectual Property Rights (IPRs) in rose products as rose oil and rose drinking water for pharmacy, food industry and medicine on the basis of patent analysis and to share our market trends investigation experience on rose products. Design/methodology/approach - based on a midespread Clarivate Analytics' Derwent patent data base and literature review, analysis and syntheses in the area and or the authors long-years experience in research and business development, the authors inside is described. **Practical implications** – described approach and presented results can help entrepreneurs to discover IPR/white spot and freedom to operate (FTO) in the rose product development.

Originality/value – the value of the described in the paper is in practical proving of the leading experience in patent research and insights on how to set up advanced IPR analytics and on Jessons Jearned with Derwent research in the asse oil and rose drinking water for pharmacy, food industry medicine.

Key-Words: - Intellectual Property Rights (IPRs), patents, rose огодись ването на блокчейн приложения, 20230315

3,000,000							
2,500,000							
2,000,000				_			
1,500,000		_					
1,000,000	2010	2011	2012	2013	2014	2015	2016

Industry	2018	2017	% Change	
Hardware & Electronics	35	34	↑ 3%	
Manufacturing & Medical	15	14	1 7%	
Chemicals & Cosmetics	10	12	↓ -17%	
Automotive	7	7	→ 0%	
Aerospace & Defense	6	3	100%	
Household Goods	6	6	→ 0%	
Software	6	6	→ 0%	
Telecommunications	5	5	→ 0%	
Pharmaceuticals	4	6	↓ -33%	
Oil, Gas & Energy	3	4	↓ -25%	
Institution & Government Research	3	3	→ 0%	

Figure 1. Global innovation output across 12 sectors (2009–2016)¶
•[Clarivate Analytics, 2017] • Figur

Figure · 2. · 2018 · vs · 2017 · industry · comparison · of · Derwent · Top · 100 · Global · Innovators · 9 · [Source : · Derwent · World · Patents · Index]¶

Prior Art Research Overview

Track your work for later review and reports

- Automatically record your research with Search History
- Clear your Marked List to easily track records of interest

2 Locate patents similar to your invention

- Smart Search analyzes invention descriptions to find similar patents
- Text field search finds patents with similar key terms
- Classification code searches focus on specific technology areas

31 Focus results on the most likely prior art

- Review patent families to focus on inventions, not individual patents
- Refine your results with the Results
 Dashboard to focus on likely prior art

Review records for relevance; refine search as needed

- Quickly review records and flag potentially close documents
- Refine search strategy based on similarities in flagged documents
- Save final list of highly relevant patents for deeper review





6.05.2019

Table 1. Web search results

Keywords	Google	Google scholar	Clarivate Web of Sciences	Clarivate Derwent	Clarivate Derwent Smart
"Rose oil"	3 470 000 results	12 700results			
"Rose oil cosmetics"	200 000 results	5 results			
"Rose oil	45 100 000 results	0 results			
Pharmaceuticals"					
"Rose water"	9 980 000 results	15 500 results			
"Drinking rose	12 100 results	0 results			
water"					
"Rose therapy"	38 500 results	34 results			
"Rose medicine"	20 200 results	108 results			

Table 2. Derwent patent data base results

Keywords	Derwent patents number
"Rose oil"	1347 results (Derwent Innovation Patent Export, 2017-12-04 06:01:39 -0600)
"Rose oil cosmetics"	2350 results (Derwent Innovation Patent Export, 2017-12-04 06:21:12 -0600)
"Rose oil Pharmaceuticals"	356 results (Derwent Innovation Patent Export, 2017-11-29 05:13:50 -0600)

Assignee—Who Are the Major Inventors?



Look at Assistee to:

- See top players in the space space.
- Know if the market has a few, large players or many small ones.
- Find niche players in the space

Filter on Assignee and observe:

- The IPC-4 character visual to see top technologies for that assignee
- Other data points in Assignee, which could reveal collaborations

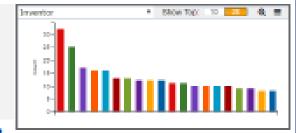
Inventor—Who Are the Major Inventors?

Look at Inventor to:

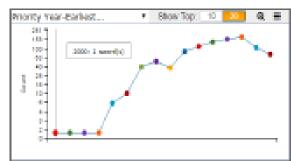
 See the top inventors in this technology space

Filter on Inventor and observed

- Assignee to see who that inventor works for
- IPC-4 character to see which technologies that inventor researches
- Priority Year-Earliest to see filing trends



Priority Year—Are There Trends in New Developments?



Look at Priority Year-Earliest to see trends in new invention development:

- Priority Year earliest indicates a patent family's (Invention) emergence
- Increased filings suggest growth in a technology domain
- Decreased filings may suggest weakening domains

Watch Priority Year-Earliest when you filter:

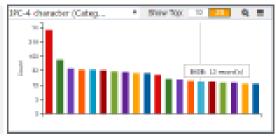
- Assignee or inventor to see who is getting into or out of the space
- IPC-4 character to see filing trends for a particular technology

IPC-4 Character—What Are the Technology Applications?

Hover your mouse over at IPC-4 character codes to see:

Descriptions of the broad categories records Select an IPC-4 code and filter to find out:

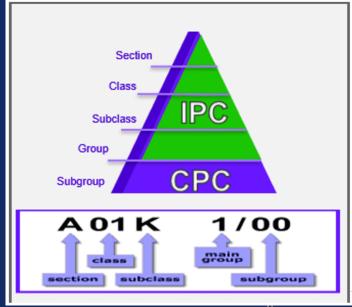
 Assignees and inventors researching a technology

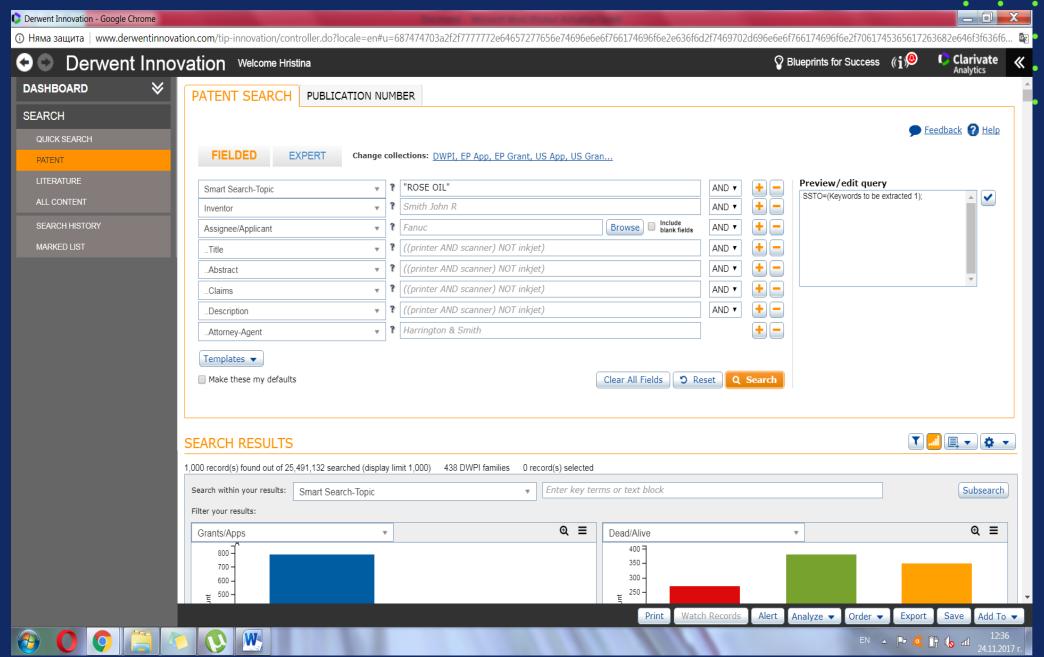


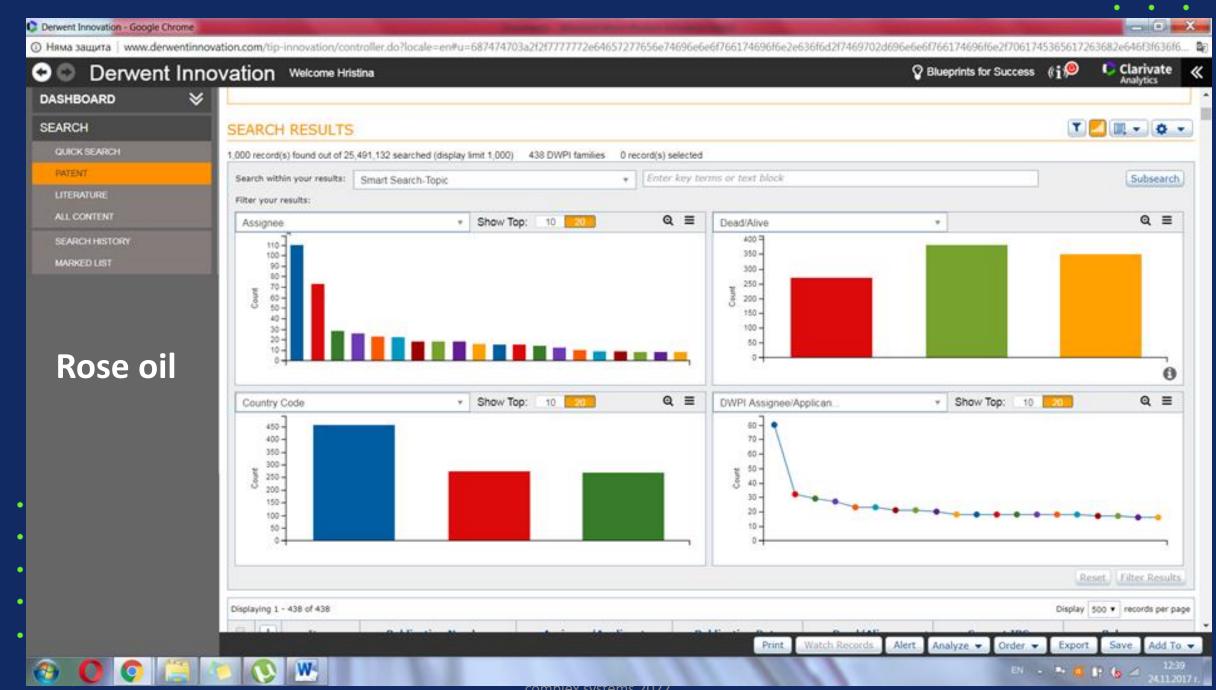
Research patents in a specific technology domain

classification you can use in Derwent Innovation

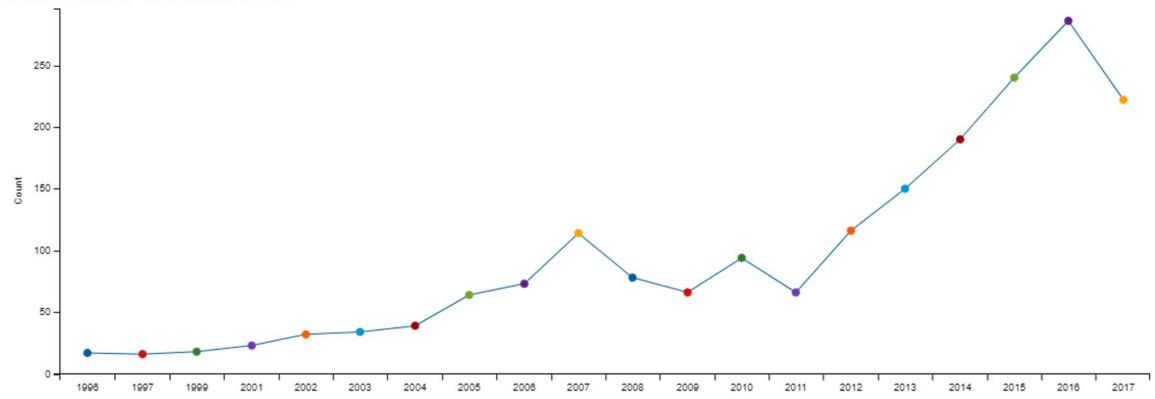
- international Patent Classification (IPC)
- Cooperative Patent Classification
 System (CPC)

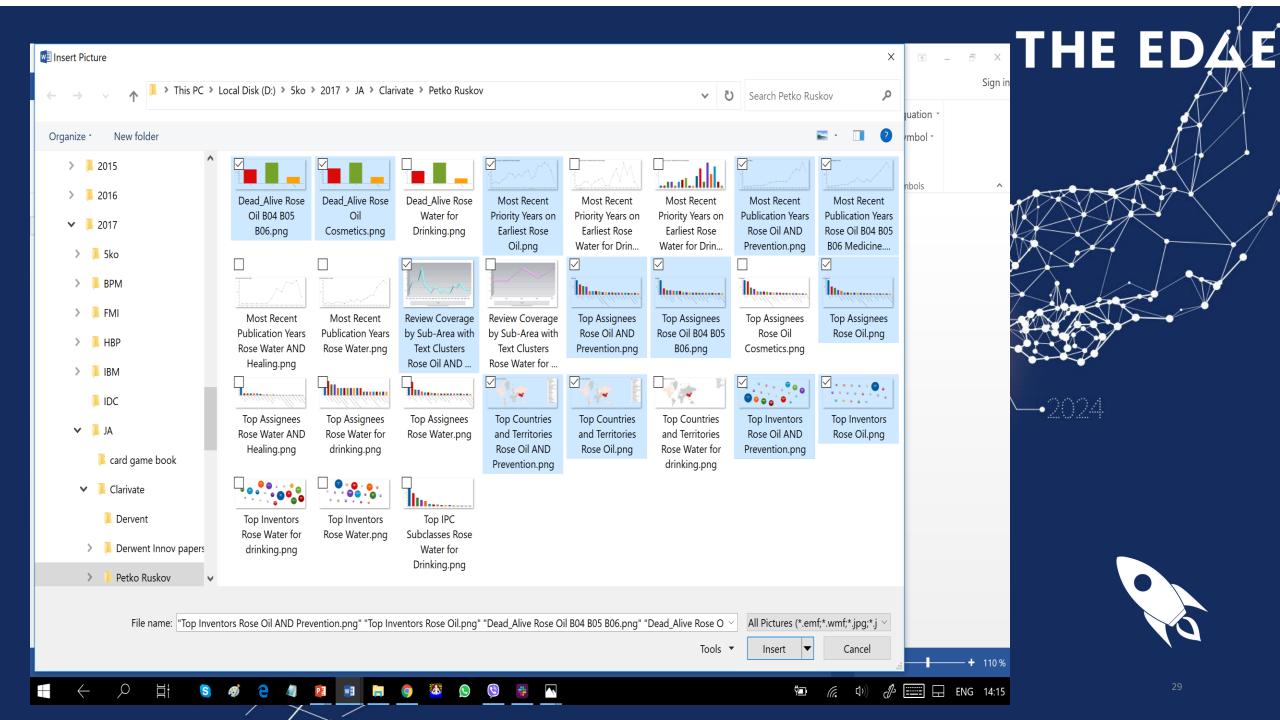






Most Recent Publication Years







10/20/2023

PR TT&TC 20231012



Resources -

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Resources

The world's chemical patents, indexed and enhanced

- Find more relevant chemistry patent publications from keyword searches
- Access comprehensive, in-depth chemical information

Related products

Our solution

Benefits

- Monitor and analyze competitive activity in specific chemistry domains
- Retrieve highly relevant compounds using precise polymer indexing



More insight, less reading: chemistry innovation, accelerated

Chemistry Research combines proprietary, gold-standard patent content with in-house IP expertise and cutting-edge AI technology to help chemistry professionals automate key research tasks, intelligently prioritize result sets, and access faster and more accurate answers.

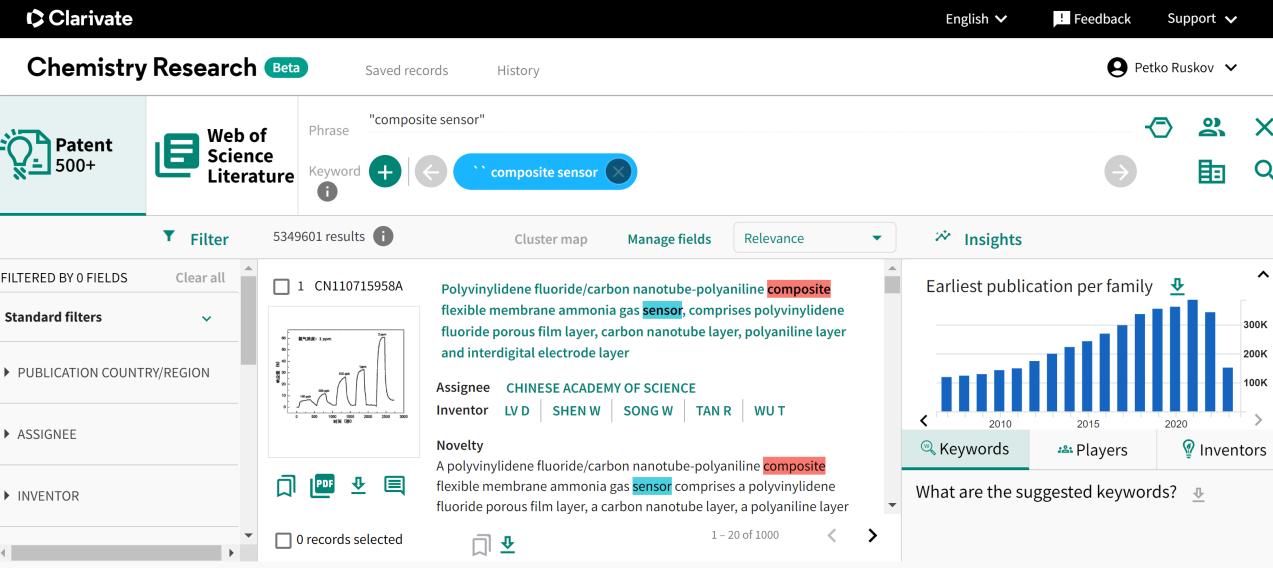
- Search more intuitively with keywords and chemical structures
- Accurately assess novelty faster with chemistry-specific patent content
- Easily access search records in Derwent InnovationTM for further analysis





IP Lifecycle Management -----Services Search Filing Docketing Maintenance Advisory IP lifecycle Discover **Protect** Commercialize Auto-docket Auto-watch Auto-search Insights Data







ec.europa.eu/ip-helpdesk

Structure of Patent Documents

- Front Page
- Bibliographic Data
- Title
- Abstract
- Description
- Drawings
- Claims
- Search Report



Dargolitisches Patentamt

Caropean Palent Office

Office suropeen des br

EP 1 000 000 A1

(12)

EUROPEAN PATENT APPLICATION

- (43) Detect publication: 17.05.2000 Bulletin 2000:20
- (21) Approach rumper 99203729.1
- (22) Date of litry 06,11,1999
- (84) Designated Contracting States: AT BE CHICY DE SK ESHI YA GB GH IE IT LILLU MC NL PT SK Designated Extension States ALLIT LIVING RO SI
- (30) Prorty 12.11,1999 NJ, 1010636
- (21) Applicant: Se hermanischappi, De Boer Nijmegen B.V. (Set 25 Nijmegen (NL)

(72) Investor

Korman, Withelmas Jacobus Maria 6562 DA Groecheek (NL)

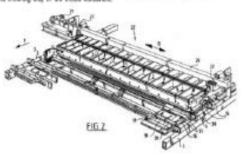
(51) H. (a.7) B288 5/02, B28B 7/00,

B28B 1/29

[74] Representative: Scharmens, Semand Rennan Johan et al Areald & Siederna, Advaceters on Distreoigeneshtigetes, Sweetleskiptes 1 2517 GK. Den Heap (MJ)

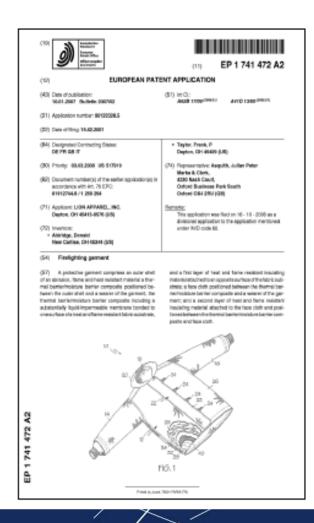
(54) Apparatus for manufacturing green bricks for the brick manufacturing industry

(87) The twention relate to an apparatus (i) the manufacturing green broke from day for the broke featretecturing inclusivy, comparing a creativity conveyor. (3) conyring insulad containers commissed to mound commer year 14, a seasonal (3) for clay example above. the mound containers, means for conyring day and of the received (3) that the insulad containers, means (6) for assessing and otherwise, of in the insulad containers. mann (11) for supplying and prioring take off pilates the the groot brisks (15) and recent for discharging preen brisks released from the model containing, characteristic field the applicable britisher commisces means (25) to moving the miscal containing parts (4) filled with green brisks such that a politicating patts (4) filled with green brisks such that a politicating patting is filmreed on all least one and of the green tricks.



2000001





Title of the invention, name of the inventor

Detailed description of the invention: how it is constructed, how it is used, benefits compared with what already exists

Claims providing a precise definition of what the patent protects

Drawings

Abstracts: summary of the invention – particularly useful for search engines

(19) Europäisches Patentamt European Patent Office Office européen des brevets



(11) EP 3 629 001 B1

(12) EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention of the grant of the patent:

14.12.2022 Bulletin 2022/50

(21) Application number: 19199520.8

(22) Date of filing: 25.09.2019

(51) International Patent Classification (IPC):

G01N 3/12 (2006.01) B29C 70/24 (2006.01)

B29C 70/54 (2006.01) B29C 70/56 (2006.01)

B29C 33/42 (2006.01) B29C 33/30 (2006.01)

B29C 70/72 (2006.01) B29C 70/82 (2006.01)

(52) Cooperative Patent Classification (CPC):
B29C 33/307; B29C 70/24; B29C 70/541;
B29C 70/543; B29C 70/549; B29C 70/56;
G01N 3/28; B29C 33/42; B29C 70/72; B29C 70/82;
G01N 2033/0003; G01N 2203/0082;
G01N 2203/0096; G01N 2203/0244;

(54) TEST SYSTEM AND METHOD FOR CREATING CONTROLLED AND REPEATABLE OUT-OF-PLANE FIBER DISTORTION IN COMPOSITE LAMINATES

TESTSYSTEM UND VERFAHREN ZUR ERZEUGUNG VON GESTEUERTER UND WIEDERHOLBARER FASERVERSCHIEBUNG AUSSERHALB DER EBENE IN VERBUNDLAMINATEN

SYSTÈME ET PROCÉDÉ D'ESSAI POUR LA CRÉATION D'UNE DISTORSION HORS PLAN CONTRÔLÉE ET REPRODUCTIBLE DE FIBRES DANS DES STRATIFIÉS COMPOSITES

(84) Designated Contracting States:

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB

GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO

PL PT RO RS SE SI SK SM TR

- INGRAM, William H.
 CHICAGO, IL Illinois 60606-2016 (US)
- (74) Representative: Plasseraud IP 66, rue de la Chaussée d'Antin

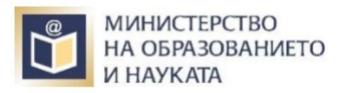
G01N 2203/0298

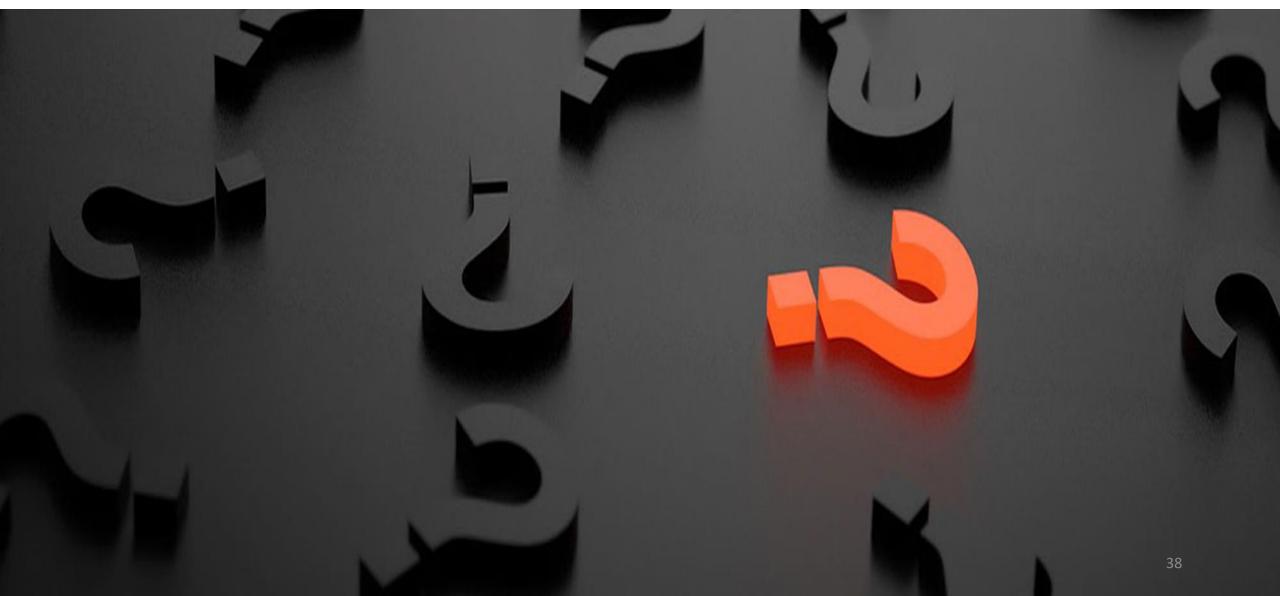












THE ED Процес за технологичен трансфер и комерсиализация на технологии. Обхват и цели... Petko Ruskov. Снови на разработването на блокчейн приложения. 20230315

THE ED

Откриване

- 1.Откриване на нужда (стратегически фокус, нужда от проучване, разработване на предложение за разработка),
- 2. Скрининг (основи на състоянието на проблема, съществуващи решения, анализ на заинтересованите страни, анализ на пазара, избор);

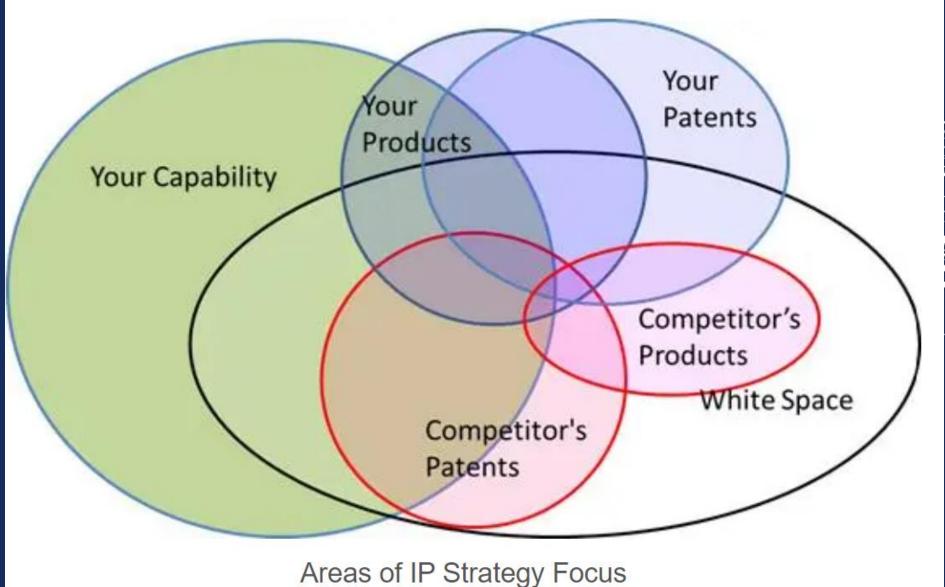
Изобретение

- Етап 3. Генериране на концепция (Идея за решението, първоначален избор на концепция,
- тап 4. Оценка на концепцията: (основи на интелектуалната собственост, основи на регулирането, основи за възстановяване на разходите, бизнес модели, проучване и тестване на концепцията, окончателен избор на концепция)

Изпълнението

- 5. Разработване на стратегия (IP стратегия, R&D стратегия, био-изследване стратегия, регулаторна стратегия, управление на качеството, стратегия за възстановяване, маркетинг и стратегия на заинтересованите страни, стратегия за продажби и дистрибуция, конкурентно предимство и бизнес стратегия),
- 6. Бизнес планиране (оперативен план и финансов модел, интегриране на стратегия и комуникация, подходи за финансиране, алтернативни решения)







-2024





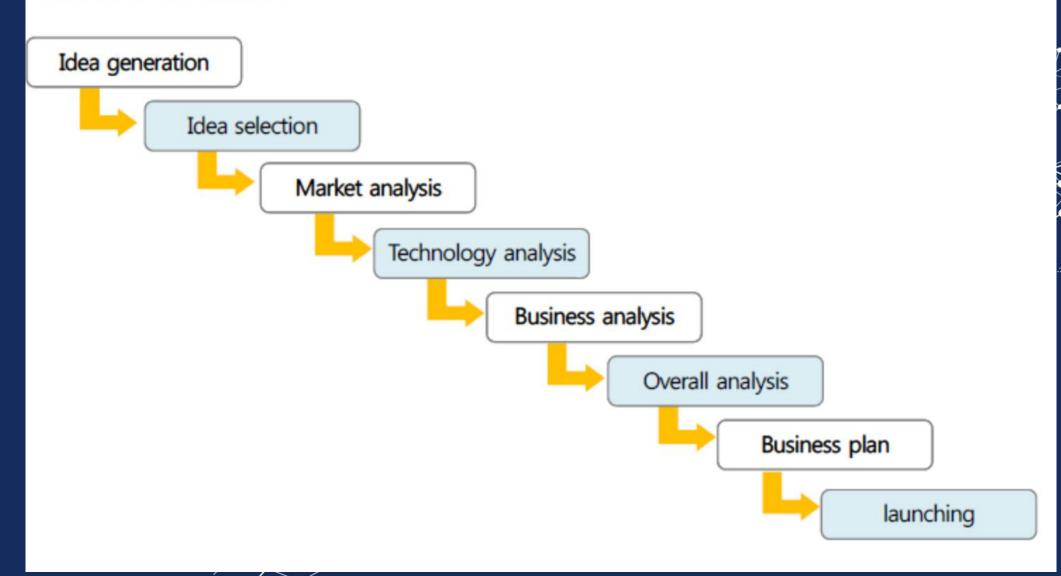
 a process which includes the technical, design, manufacturing, management and commercial activities involved in the marketing of a new (or improved) product or the first use of a new (or improved) manufacturing process or equipment (Freeman, 1976)

Innovation VS Invention

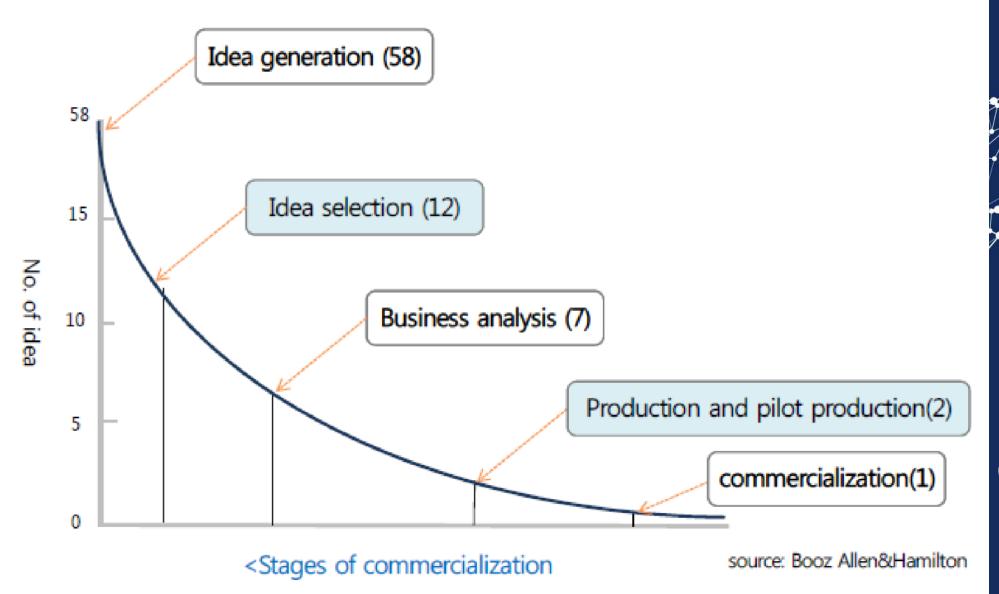
Product Innovation VS Process Innovation

Incremental Innovation VS Radical Innovation

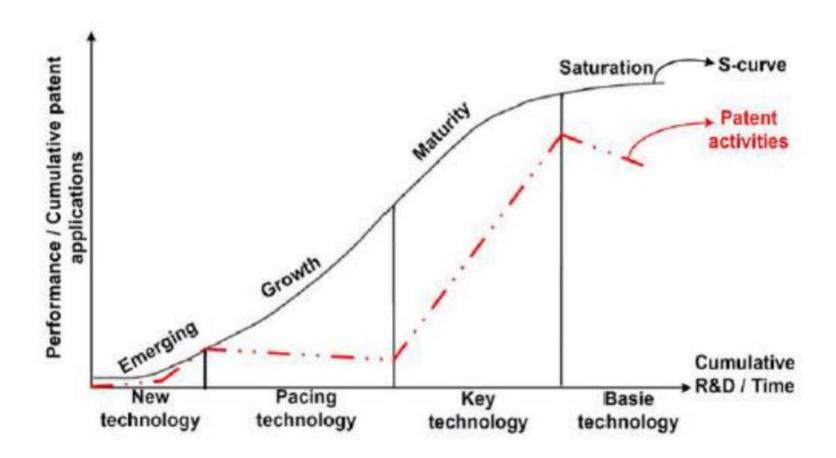
From Idea to Business







Technology life cycle and patent



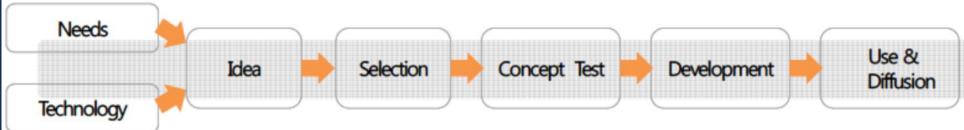


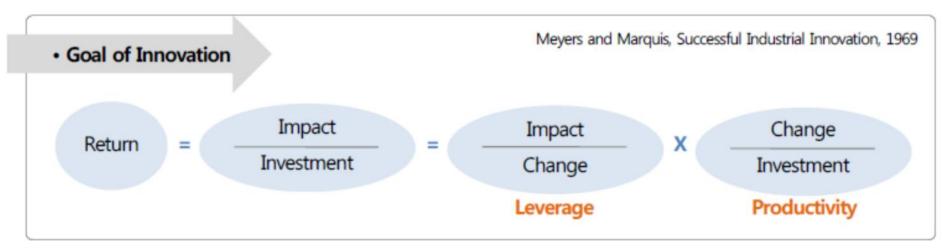
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Source: Chen, Yu-Heng, Chia-Yon Chen, and Shun-Chung Lee (2010)

(2) Innovation process and technology commercialization







-2024

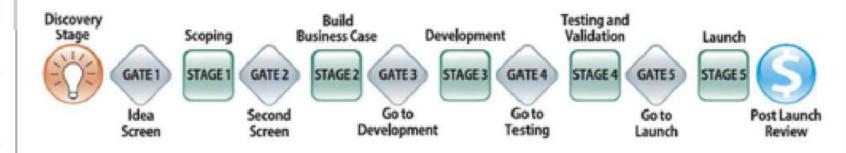




Kokobu's model

stages	details
Conception & feasibility study	Technological/commercial feasibility study
Basic research	Principle research (patent application for the prospective technology)
Application research	Usage inquiry (patent application for the prospective technology)
Commercialization research	Specific usage inquiry (patent application for the prospective technology)
Utilization research	Design/development/productio n of specific product
Merchandising model design	Improvement & final production preparation
Actual manufacture	In-house manufacture & consigned manufacture

Cooper's model



Jolly's model

- Idea Imaging
- Technology Commercialization Possibility Inquiry & Incubating
- Product/Process Demonstrating
- Promoting Reception/Accumulation
- Sustaining continuous commercialization & realization of long-term profits

Idea Screen

Checklist of 'must meet' criteria

Concept Screen

- 1. Read all Concept stage documents
- 2. Fill in 'gate evaluation' sheet for Concept Screen
- 'Gate result' is produced

Business Review

- 1. Review and approve documents in orange text
- 2. Fill in 'gate evaluation' sheet for Business Review
- 3. 'Gate result' is produced

Post-development Review

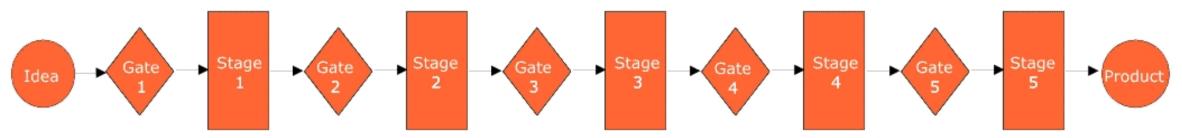
- 1. Review postmortem analysis for dev. process & quality.
- Review and approve documents in orange text
- 2. Fill in 'gate evaluation' sheet for this gate.
- 3. 'Gate result' is produced

Pre-launch Review

- 1. Review and approve documents in orange text
- 2. Fill in 'gate evaluation' sheet for Pre-launch Review
- 3. 'Gate result' is produced

Project Review

- 1. Review project performance
- 2. Review product performance
- 3. Complete postproject audit



Idea Generation

Ideas stored in Idea Database from sources inside & outside the company.

Concept

Marketing documents:

- Preliminary Market Assessment
- Technical documents:
- Statement of Work
- Initial Requirements
- Finance documents:
- Financial Analysis

Business Case

Marketing documents:

- User Needs Research Plan
- User Needs Research Report
- Detailed Market Research
- Concept Test Plan
- ~ Concept Test Report

Technical documents:

- SRS (Software Requirements) Specification)
- Strategy Plan
- ITL (Issue Tracking Log)
- CMP (Configuration) Management Plan)

Finance documents:

- Updated Financial Analysis
- Production documents:
- Production Plan
- Distribution Plan

Team documents: Team Launch Report

Development

Marketing documents:

- Key Feature Test Plan
- Key Feature Test Report
- Product Launch Plan
- Marketing Plan
- Contingency Plan
- Concept Test Report

Technical documents:

- SRS
- HLD (High Level Design)
- DLD (Detailed Design)
- Source Code files
- User Help files
- Installation file produced

Finance documents:

- Updated Financial Analysis

Production documents:

- Updated Production Plan
- Updated Distribution Plan

Team documents:

Postmortem Analysis

Market Testing Commercialisation

Marketing documents:

- Market Test Plan
- Market Test Report Technical documents:
- User manual (optional)

Finance documents:

Updated Financial Analysis

Execute marketing launch plan

Implement production plan

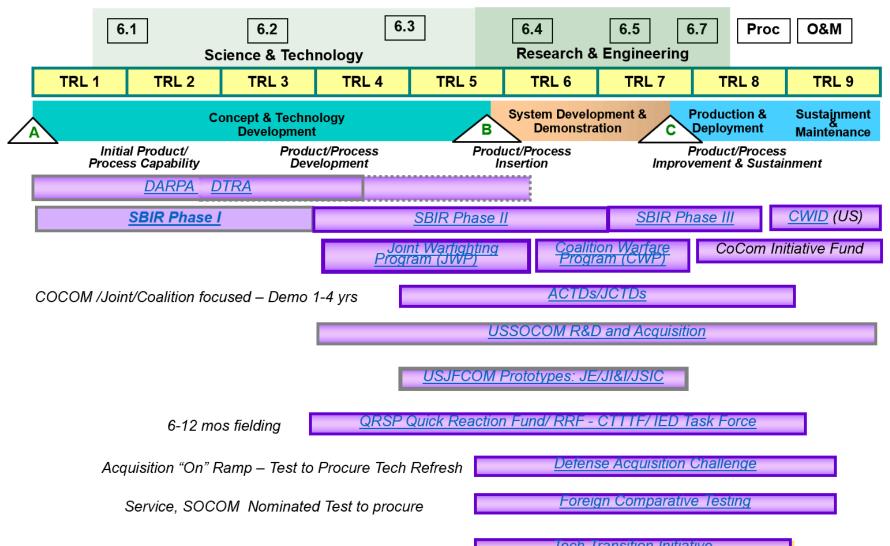
Finalise IP position

Obtain formal compliance approval

Measure product financial performance

Prepare for project review Contingency plan ready

Agile Technology Transfer Processes **DoD Programs**

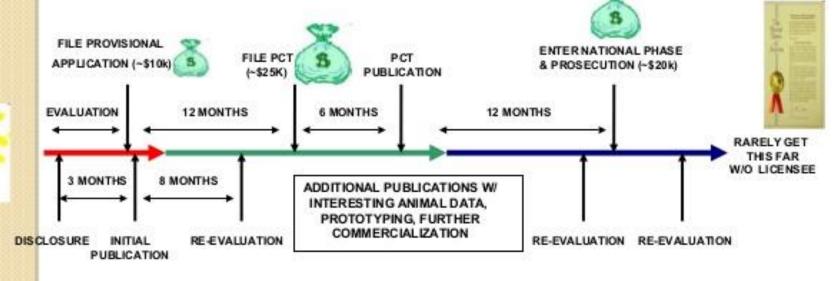




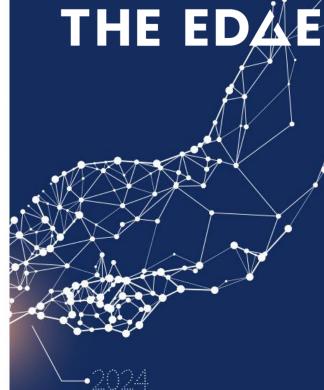


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Overview of Pathway to Commercialization









Detailed Commercialization Model

Stage I Investigation Stage 2 Feasibility Stage 3
Planning

Stage 4
Development

Stage 5 Growth Stage 6 Maturity

Technical

Technical Analysis

*Problem/Solution technical evaluation. *IP Review. *Preliminary subject matter expert review. *Preliminary cost analysis.

Technical Feasibility

*Bench design working model. *Proof of concept. *Customer-driven revisions. *Manufacturability and scalability analysis.

Engineering Prototype

*Engineered prototype
*Material, equipment,
process requirements
and sourcing plan.
*Performance assessment
plan.
*Optimize design.

Pre-production Prototype

*Pre-production prototype.
*Production process design.
*Material and supplier
agreements.
*Pilot production.
*Performance, reliability &
Quality tests.

Production

*Equipment and facility.
*Full scale production.
*Performance, reliability & quality tests.
*Field support system.

Production Support

*Customer support.

*New/improved products.

*Warranty program.

*Research and development.

Marketing

Market Need Analysis

*Problem/Solution market evaluation. *Industry trends analysis. *Preliminary competitive assessment. *Informal market validation.

Market Study

*In-depth target market assessment. *In-depth competitive analysis. *Expression of interest from primary target market.

Strategic Market Plan

*Market tests.

*Advertising, sales,
distribution plan.

*Marketing materials.

*Market development

*Resource and timeline plan.

Market Validation

*Initial sales.
*Customer satisfaction survey.
*Production, market adjustments.

Sales & Distribution

*Sales.
*Market expansion.
*Customer surveys.
*Promotional campaigns

Market Diversification

*Market trend analysis. *Marketing resource allocation. *New marketing strategies

Business

Venture Assessment

*Profitability assessment. *Preliminary business model design. *Capital requirement estimate. *Management requirements.

Economic Feasibility

*Develop 5-year pro-forma.

*Develop financial
requirements.

*Business organization.

*Secure seed financing.

*IP filing.

Strategic Business Plan

*Business plan.

*Venture financing..

*Operations implementation
plan.

*Advisory and director boards.

*Staffing plan.

Business Start-up

*Initial staff hires and training. *Business policy, procedures & operations. *Venture financing.

Business Growth

*Full staff.
*Management operations.
*Business systems.
*Contracts.
*Venture financing.

Business Maturity

*Corporate development. *Financial management. *Return on investment. Enterprise growth Strategy.



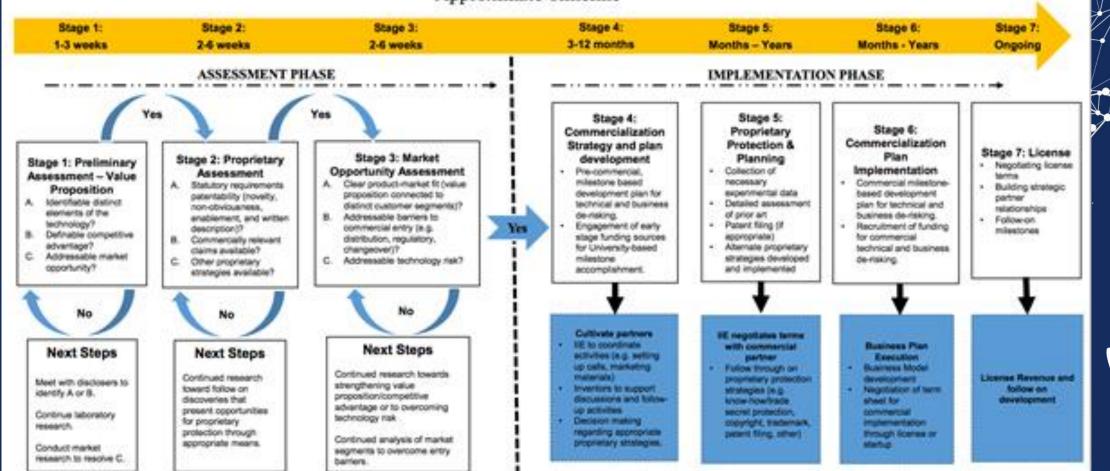




Office of Innovation and Industry Engagement

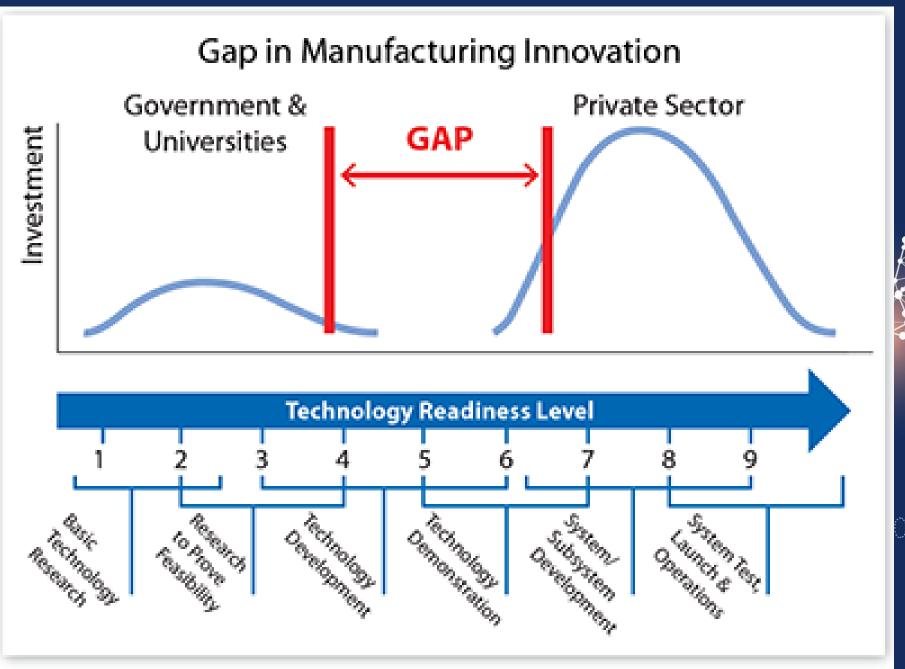
Technology Commercialization and Implementation Process

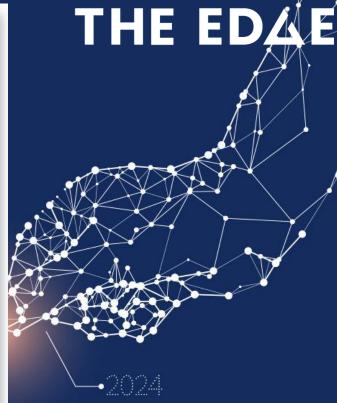
Approximate Timeline



Petko Ruskov, Уснови на разработването на блокчеин приложения, 20230315





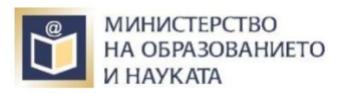


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THE ED4





THE ED Дилемата на иноваторите. Креативност, откритие и иновация. Добавена стойност Petko Ruskov. Основи на разработването на блокчейн приложения. 20230315

ec.europa.eu/ip-helpdesk

Innovation # Invention



CREATIUITY

The act of turning new and imaginative ideas into reality.



INVENTION

Creation of a new idea or concept

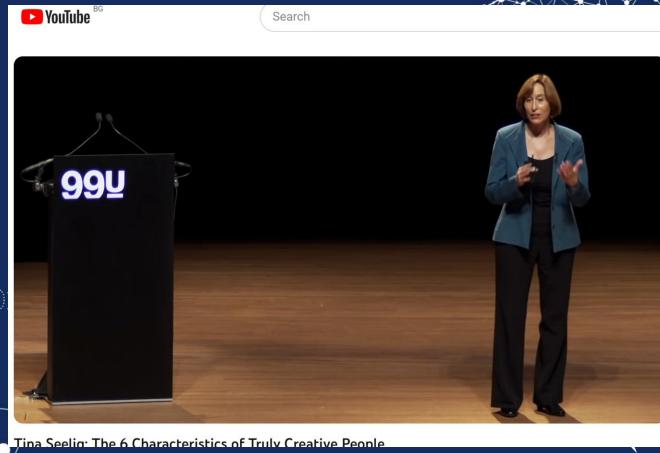


INNOUATION

concept into commercial success or widespread use

Source: https://innoway.me|@innoway_me





THE SIX COMPONENTS OF CREATIVITY - AND HOW TO MAKE YOUR ORGANISATION AN I...





Entrepreneurship Bridges the Gap



Entrepreneurship

Value

Jerry Engel



① Output ② Scenario 3 Business Value (Technology) (Commercialization) + Market Research Market (Volume) IP 3C Analysis Sales (M/S) Data STP strategy / 4P Cost Know-how Investment Profit and loss

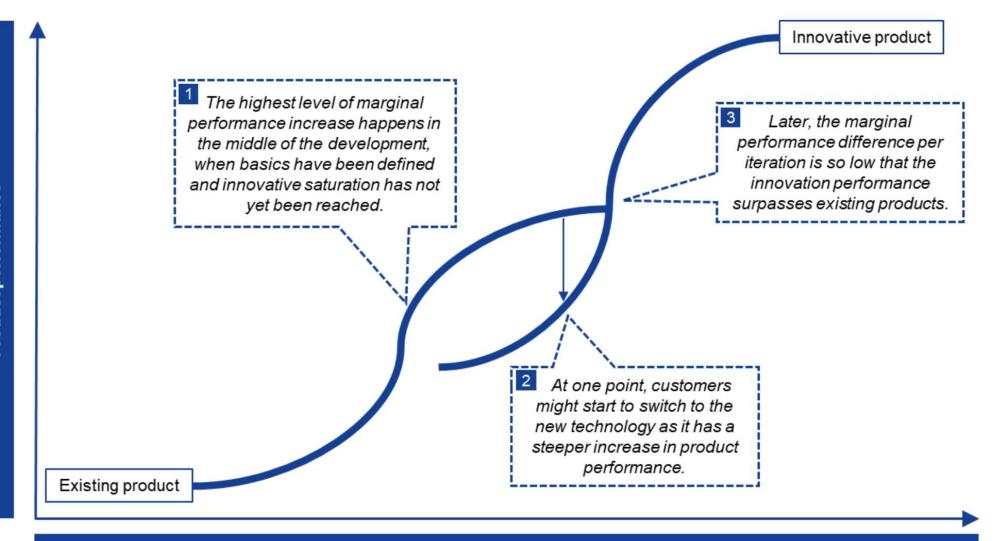


4P: Product, Price, Place, Promotion

3C analysis: Customer, Company, Competitor

STP: Segmentation, Targeting, Positioning



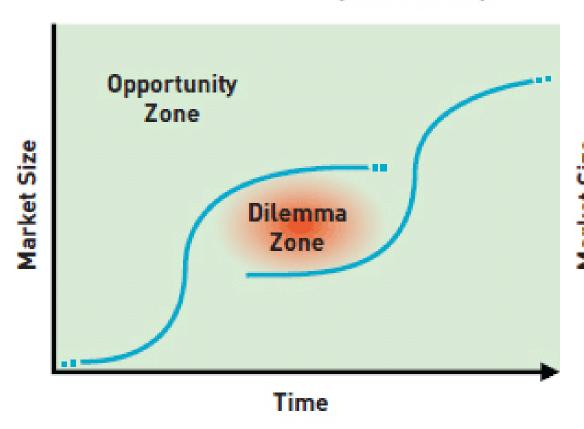


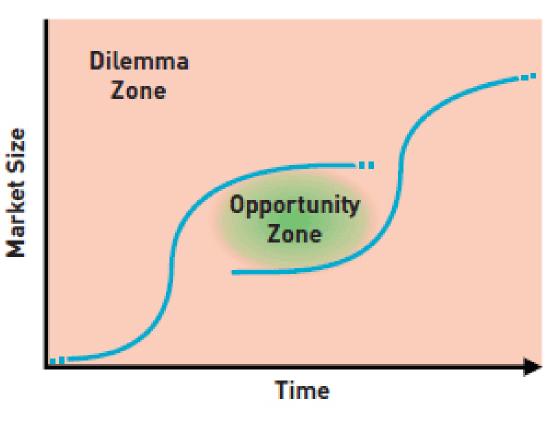


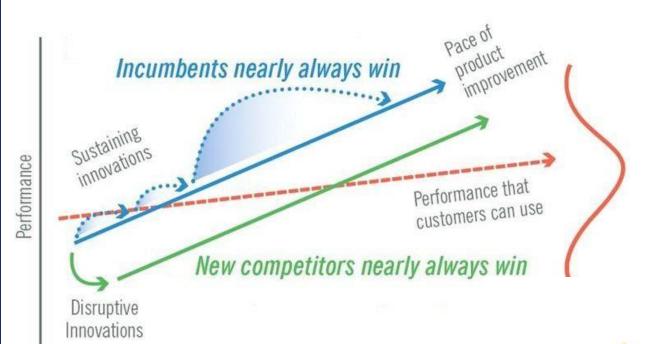
Innovator's Dilemma

[Christensen 1997]

HCI Innovator's Dilemma

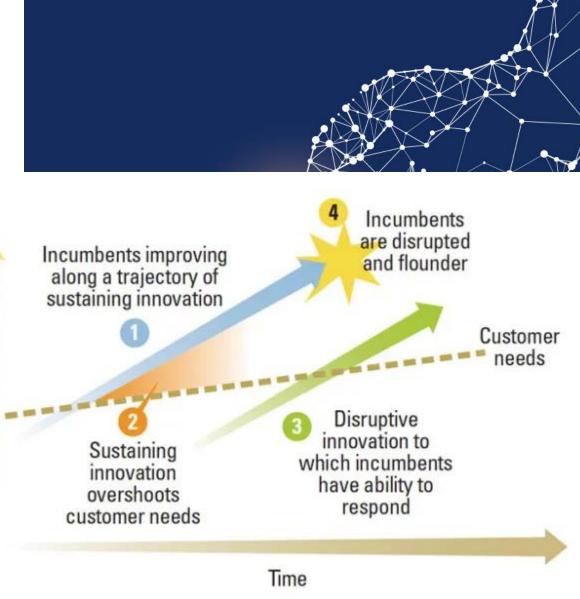








Performance



THE EDAE



Collective Intelligence

Collective intelligence (or crowdsourcing) refers to harnessing the power of a large number of people to solve a difficult problem as a group



Co-creation

Form of economic strategy, that brings different parties together in order to jointly produce a mutually valued outcome; to share, combine and renew each other's resources and capabilities to create value through new forms of interaction



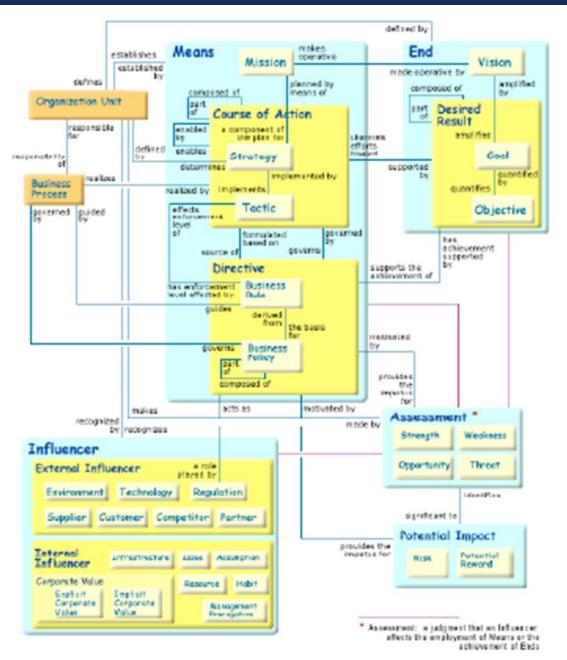
Cooperation & Collaboration

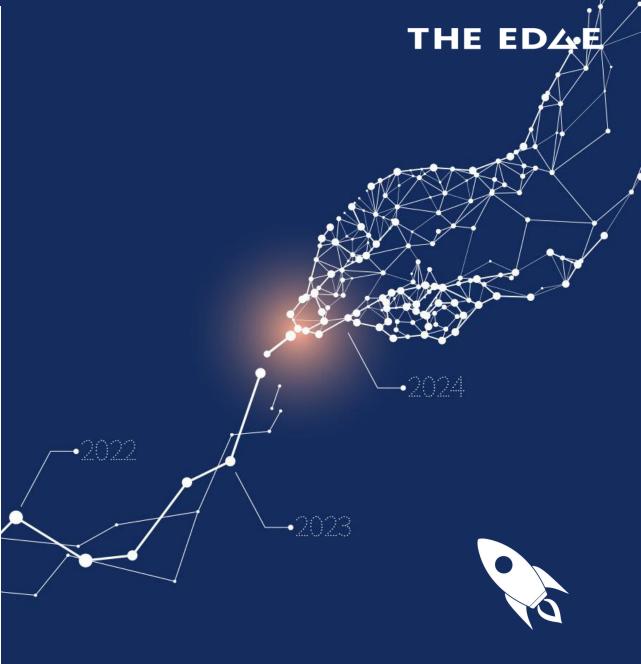
The process of groups of organisms working or acting together for their common / mutual benefit, as opposed to working in competition for selfish benefit

Lean Innovation vs. Conventional Product Development



Optimizing the business model before funding improves the chances for success





10/20/2023



Execution pays your salary.

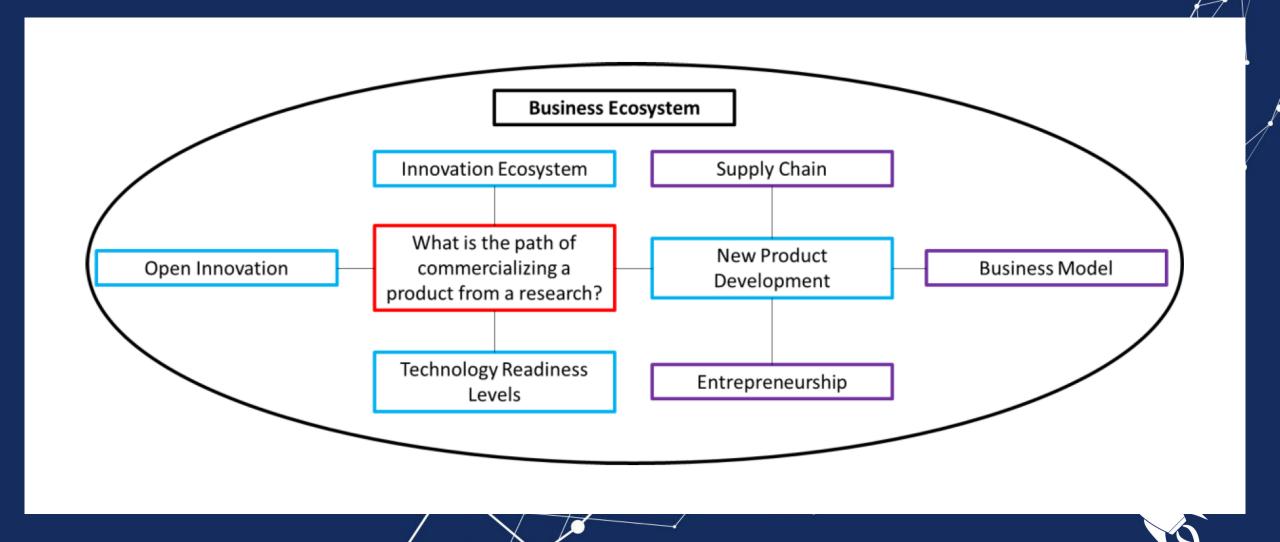
Innovation pays your pension.

STEVE BLANK

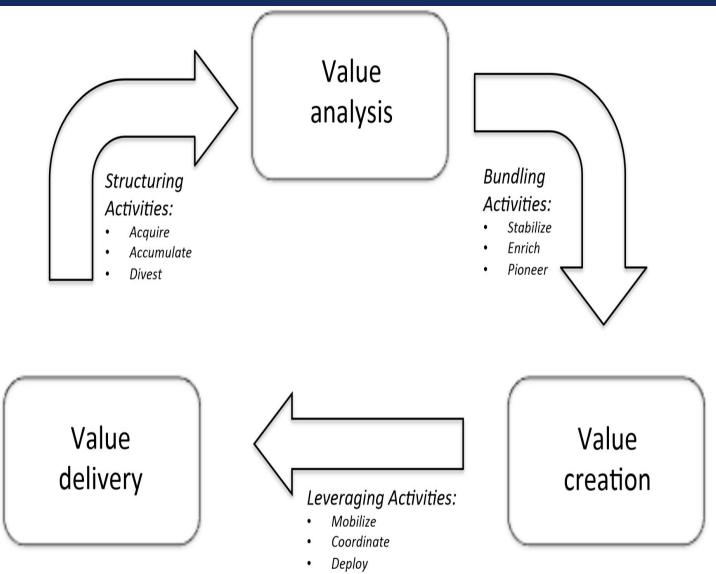


10/20/2023

PR TT&TC 20231012



Value orchestration in business and industrial markets: managerial priorities



KEY ELEMENTS OF A MINI BUSINESS PLAN (THE LENGTH OF EACH SECTION WILL VARY)

HOLLYWOOD PITCH

Mockup and high-level description of the proposed product or service.



PRODUCT/SERVICE OVERVIEW

Overview of how the proposed product or service benefits the customer. organization. and others



JOBS-TO-BE-DONE OVERVIEW

Summary of the important. unsatisfied customer jobs that the product or service targets



CUSTOMER PROFILE

Snapshot of an individual who is representative of the target segment



OFFERING PROFILE

In-depth description of the product or service for the target customer



COMPETITIVE LANDSCAPE

Performance map that compares existing products and services along the dimensions that customers value



PROPOSED BUSINESS MODEL

Overview of the proposed delivery model and profit formula to deliver on the value proposition



GROWTH PATH

High-level view of how the business will expand from the initial foothold to capture a larger share of the market



COMMERCIALIZATION PLAN

List of key activities and processes. necessary to reach the foothold market



REVERSE INCOME STATEMENT

Reverse income statement to identify key profit assumptions



CRITICAL ASSUMPTIONS LIST

List of the most critical assumptions that must be addressed. including deal-killers



90 DAY TEST-AND-LEARN PLAN

High level test and learn plan for the next 90 days

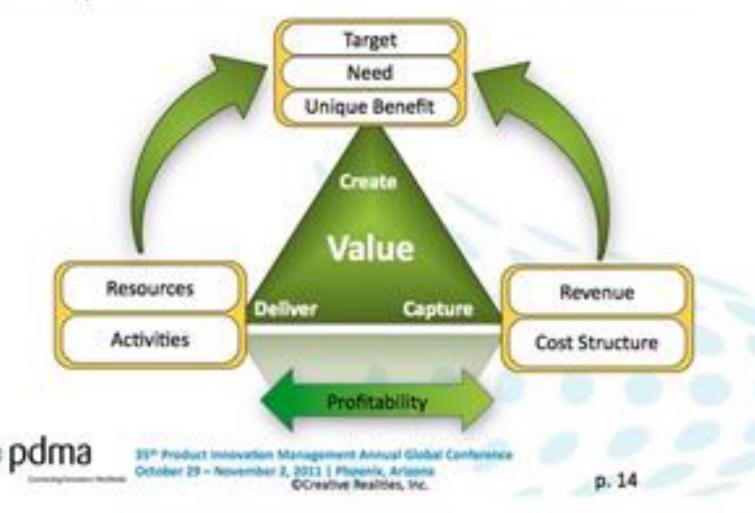


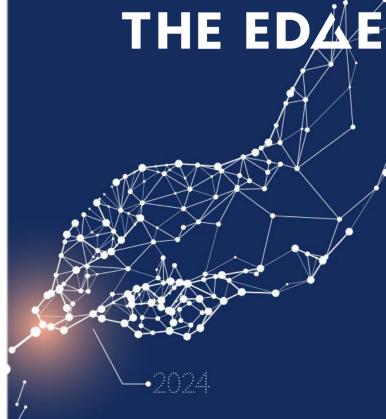




Successful Business Models

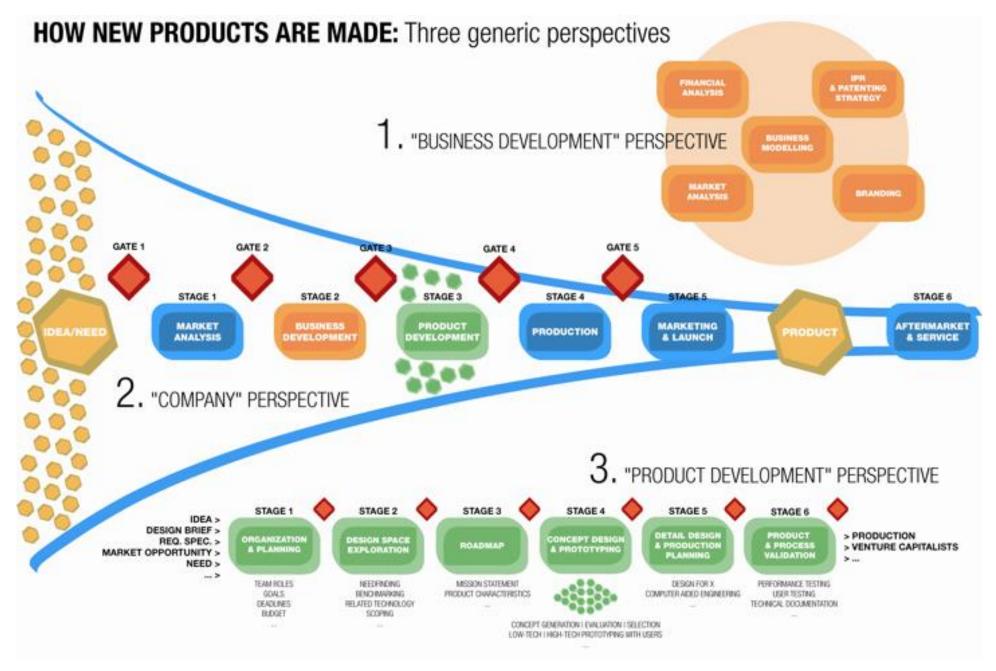
The real power is when each element works in concert





-2023



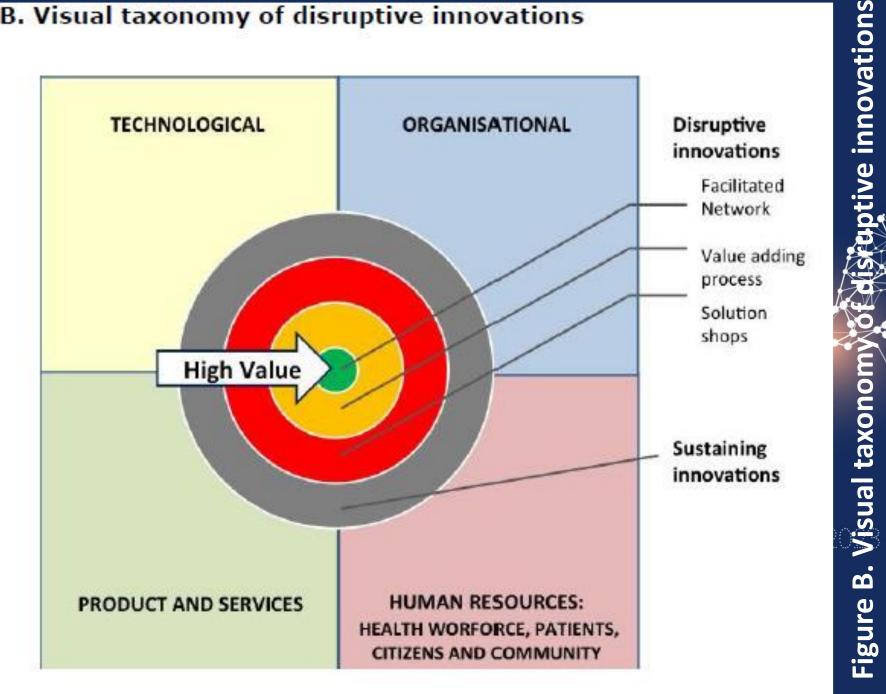


Launching a successful new business concept requires:

- a strong purpose,
- > a focus on research,
- an innovative business model, and
- a willingness to adapt to the market.



Figure B. Visual taxonomy of disruptive innovations



and 301844034 health 2/publica onside

Europe.pdf Innovation

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

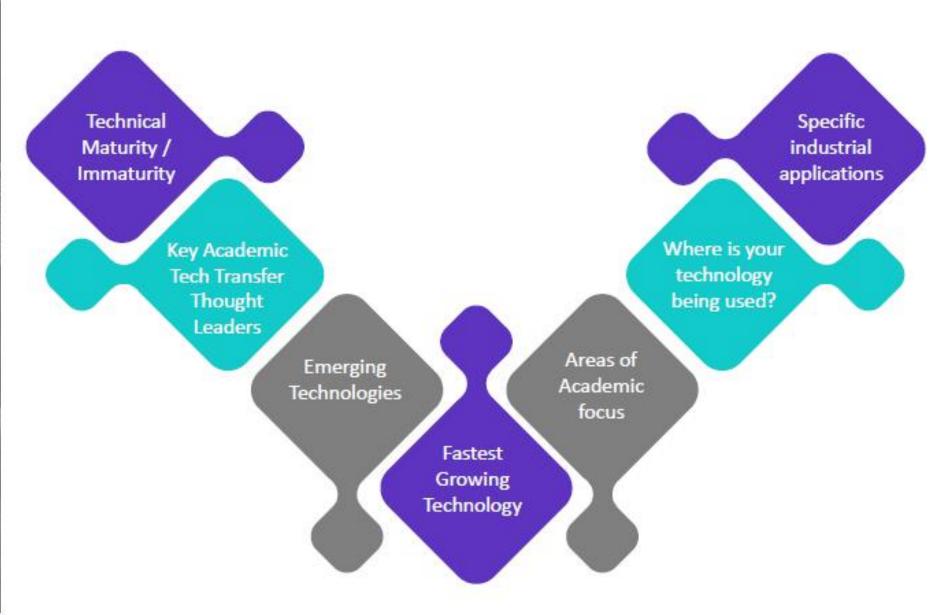
- Respond to Office Actions
- Research previously identified target companies
- Carrot or stick licensing
- Evidence of Use

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







Innobridge: Our competences and services offer

Strategic positioning Product alignment with customer needs **IDENTIFY & ASSESS** Market, technology and application roadmap 1 VALUE OPPORTUNITIES Opportunity evaluation and new business models (Business plan) Enterprise audit and due diligence Identification & evaluation of technical solutions Product improvement **CREATE VALUE** Cost reduction Second opinion Technological intelligence and scouting Project Management Industrialization support **DELIVER VALUE** Process improvement Partners identification & selection Implementation of an innovation process

Commercial Development Parameters

Four domains where the commercialisation of nanotechnologies faces hurdles

Technology

- Maturity
- Fundamental Understanding
- Reproducibility
- Reliability / Durability
- Control & Manipulation

Investment & Organisational

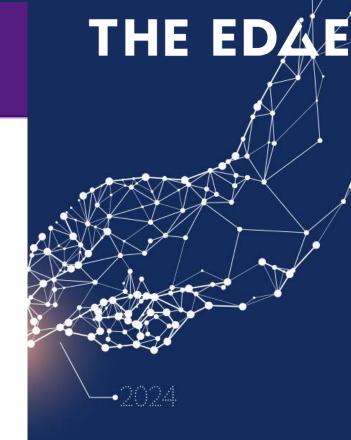
- Collaborations
- Recruitment & Critical Mass
- Infrastructure
- Return On Investment
- · National / Regional Incentives

Marketing & Strategy

- Regulations
- Acceptability
- Competition
- Market Opportunities
- Intellectual Property

Manufacturing

- Efficiency
- Commercialisation Delay
- Scalability
- Standards
- Costs









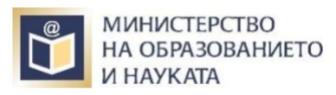


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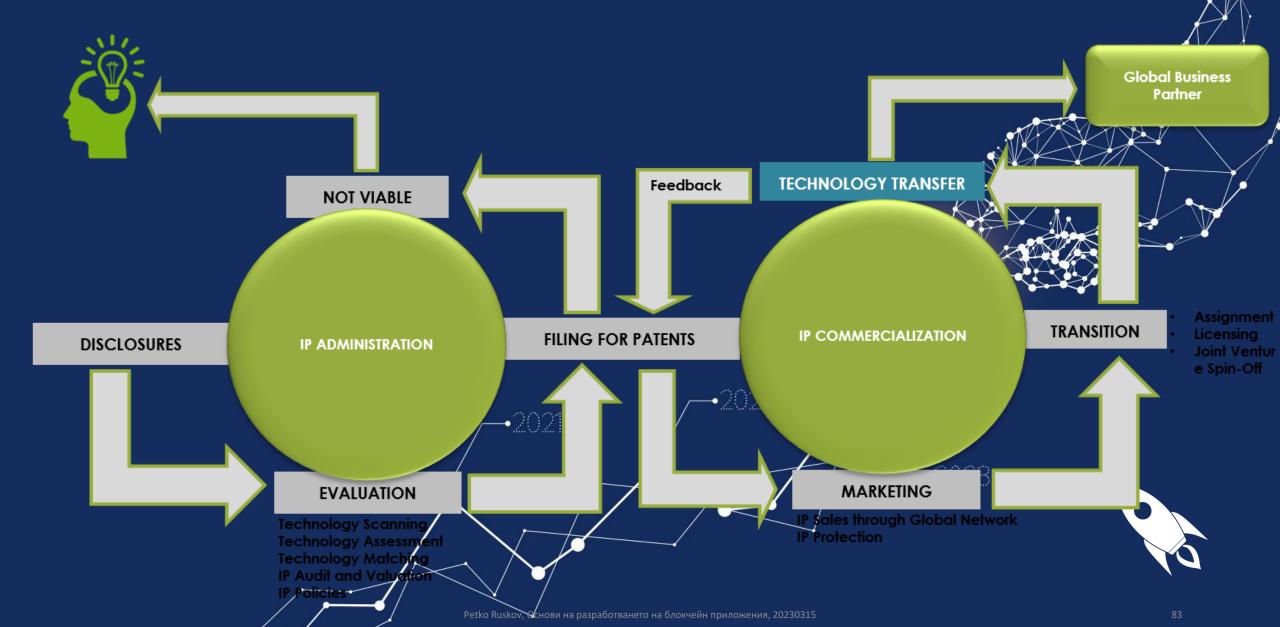






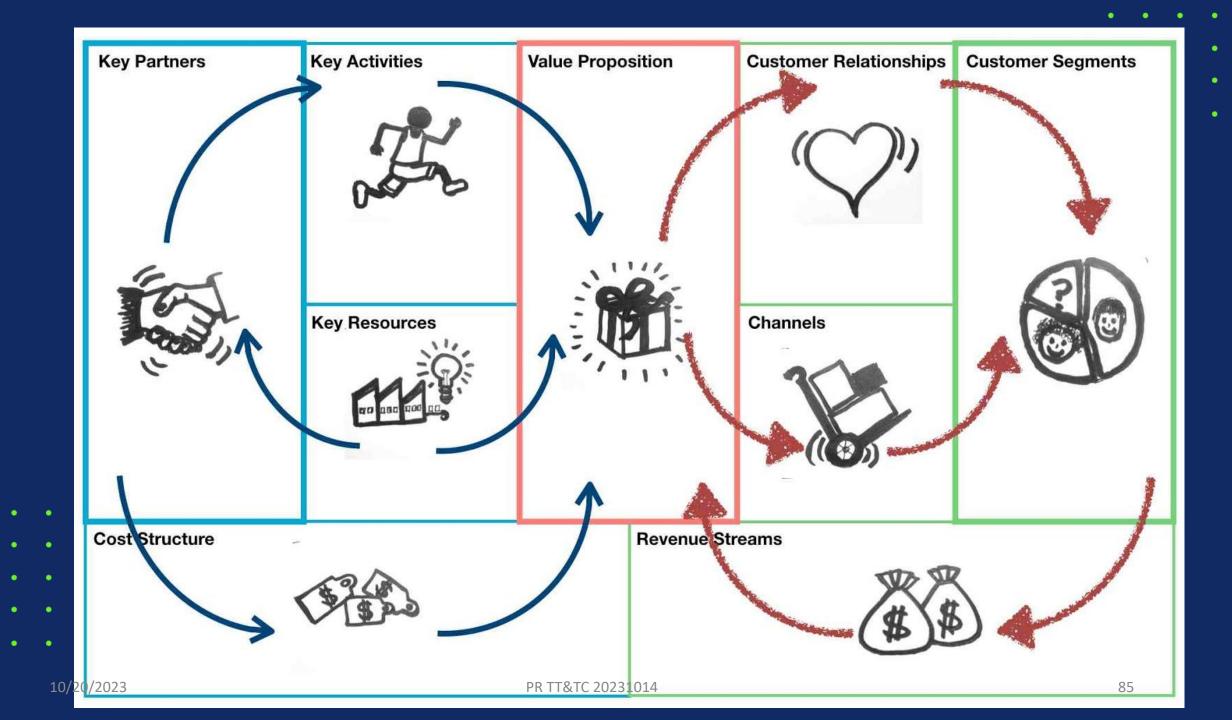




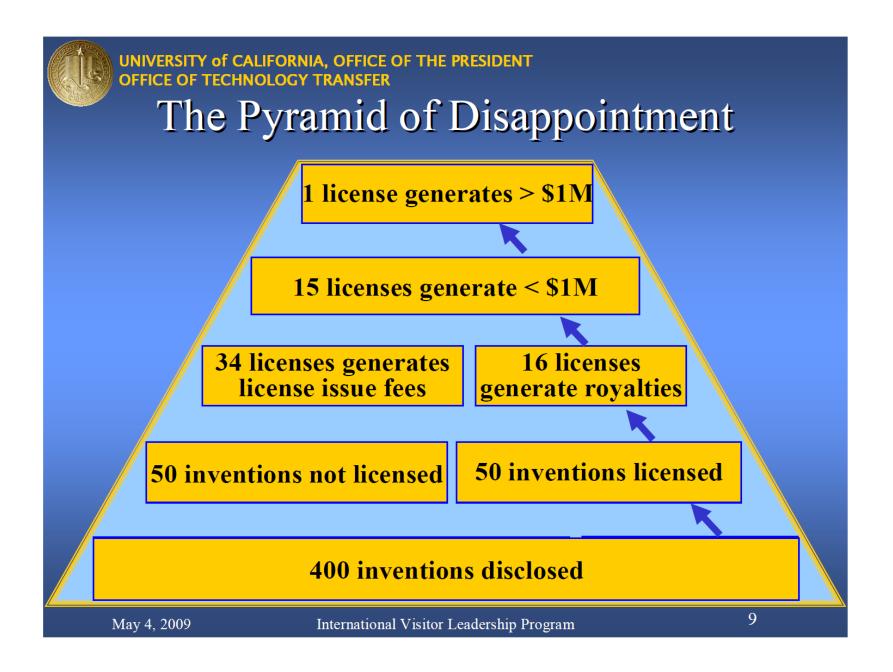


TARGET CUSTOMER JOB-TO-BE-DONE CONSUMPTION BARRIER IDEA SKETCH/ OVERVIEW BASIC BUSINESS MODEL **IMPACT POTENTIAL** Goal Price Purchase Population Frequency Required Penetration **CRITICAL UNCERTAINTIES TESTING PLAN**

10/20/2023



THE EDAE +Dunken K Bliths 10/20/2023



The building blocks of your business planning pitch . . .



Elevator Pitch

30-second/1
minute synopsis
of your venture:
core idea,
market,
potential,
analogy, etc.



"Chalk Talk"

- 2-10 minute summary of key venture elements
- Informal "on the fly" media: white board/flipchart/etc.



Power Point*

- 10-30 minute formal rehearsed presentation of your venture
- Allow >50% available time for Q&A
- Handouts/leave behinds



Demo

 Brief demonstration of prototype/ example/illustrative transaction/ model/etc. that makes your venture "real" if this is feasible



Business Plan

- 20-40 page professional explanation of your venture, with all relevant supporting analyses
- Lays out your case: why your team/why this venture/why now/why this strategy/etc.







. . . on your way to "The Deal"



- IP: patents, licenses, copyrights, trademarks
- Name registrations



- Leases
- Vendor contracts
- Banking
- Employment/HR
- Etc.



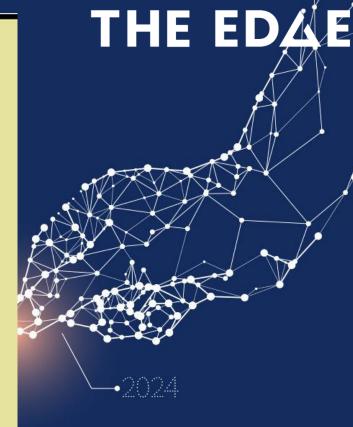


- Valuation
- Shareholder rights
- Board representation
- Major transaction approvals
- Governance
- Other



Owner & T Agreement Owner S.

- Dividing the pie
- Founders' Rights
- Buy-Sell
- Employment agreements
- Other



023





Governance

Legal

Formation

Etc.











Petko Ruskov, PhD

CTO & Co-founder, The Edge: R&BD Organizer of Beyond pre-accelerator mobile:+359 887 338 083

e-mail: petko.ruskov@theedge.solutions

website: theedge solutions

http://bg.linkedin.com/in/petkoruskov/

THE EDAE

Empirical Analysis of AHP Model for Evaluation of Bulgarian Students Startups

Stoyan Panov Petko Ruskov

https://theedge.solutions/resources/

Or

Score model for technology appraisal of Bulgarian start-ups

October 2016

Conference: International Conference "Automatics and Informatics' 2016", 2016, pp. 255 – 258, ISSN: 1313-1850.At:

SofiaVolume: 1

Authors:

Stoyan Panov

Petko Ruskov

Sofia University "St. Kliment Ohridski"

https://www.researchgate.net/publication/309770487_Score_model_for_technology_appraisal_of_Bulgarian_start-ups

KTRS and InnovationRadar methods offer systematic approach for valuation of innovations

KOREA TECHNOLOGY RATING SYSTEM (KTRS)

- KTRS is based on two step-approach:
 Valuation of the technology grade and valuation of financial stability of the company
- Technology grade is assessed using Analytic Hierarchy Process AHP method with 34 factors
- Financial stability is assessed using scoring method, similar to the ones used by rating companies Moody's, S&P and Fitch
- Successfully applied by Korean fund KOTEC

INNOVATION RADAR (IR)

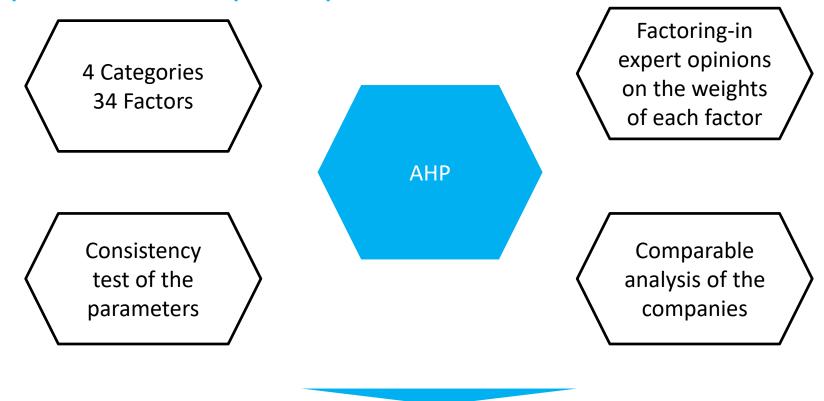
- IR is based on a two step approach:
 Calculation of a Innovation Potential
 Index (IPI) and calculation of a Innovator
 Capacity Index (ICI)
- Assessment is based on predefined surveys, created by experts, considering various factors
- Equal weights of each of the factors
- Still under development. Though successfully applied, a recent study pointed out a few shortcomings of the model

20-Oct-23

The state of the art development of AHP

- Analytic hierarchy process (AHP) is a problem-solving framework and a theory of measurement. It has been proposed as a decision analysis technique to evaluate complex multi-attribute alternatives among one or more decision-makers. Since it allows the inclusion of subjective factors, it is considered as an advancement compared to other decision-making methods. AHP has been applied extensively, especially to large-scale problems involving multiple criteria, and where the evaluation of alternatives is mostly subjective.
- Ali Emrouznejad & Marianna Marra reviewed the growing body of work on AHP published between 1979 and 2017. The analysis includes 8441 published works: 4721 papers, 3362 conference proceedings, 211 articles and proceedings papers, 19 editorial pieces and 128 other document types. They show that AHP has attracted the attention of scholars in various fields because of its ability to provide support to different decision-makers, in areas ranging from medical issues to computer science and environmental studies. The identification of areas of research expertise highlights several clusters including theoretical AHP developments, fuzzy approaches to decision-making and specific applications of AHP to support supply chain management activities including selecting the most efficient suppliers, environmental planning and expert systems.

Analytical Hierarchy Process (AHP) based on KTRS could be successfully applied for identifying high potential startup companies



The output is a list of companies ordered by the their potential for commercialization

Data/Model Analysis

Next Figure illustrates the 34 factor model. It encompasses 34 factors, grouped in four categories. Each of these categories captures key aspect of the success prospects of a tech startup.

The procedure that we will follow is as follows:

- 1. Build the factor priorities matrix
- 2. Normalize the factor matrix
- 3. Build consistency index
- 4. Build consistency ratio
- 5. Verify the consistency of the factor priorities
- 6. Evaluate each alternatives across the alternatives
- 7. Combine results
- 8. Calculate ranking

2. Illustration of KTRS

Appraisal Items for KTRS (33 small items)

Modules	Medium items	items Small items						
		1.1	Management's experience in the same industry	0				
	1. Technological experience	1.2	Technology management strategy					
	(knowledge) level	1.3	1.3 Technological knowledge level of the management					
Management		1.4	Technological understanding of the management					
	2. Managerial capability	2.1	Technology personnel management					
Competence	2. Манаденаі сарабінцу	2.2	Managerial capability / Managerial strategy					
	3. Human Resources of the	3.1	Education and experience of the management	0				
	Management	3.2	3.2 Equity participation					
	ivianagement	3.3	Relationship with the business owner and teamwork					
	1 Ability for DOD	4.1	Exclusive technology development organization	0				
	4. Ability for R&D	4.2 Technology (Design) personnel						
	5. Output of Tech.	5.1	Technology development and award-winning (certification) result	0				
	Development							
Technical	•	5.3	R&D investment rate	0				
		6.1	Technological differentiation / Design excellence					
Feasibility	6. Level of Technological	6.2	Difficulty in imitation					
	innovation (leadership)	6.3	Position on the technological life cycle / Trend conformity					
	7. Level of Technology	7.1	Technological completeness / Design completeness	0				
	Completeness and	7.2	Technological independence					
	Expandability	7.3	Technological ripple effect	0				

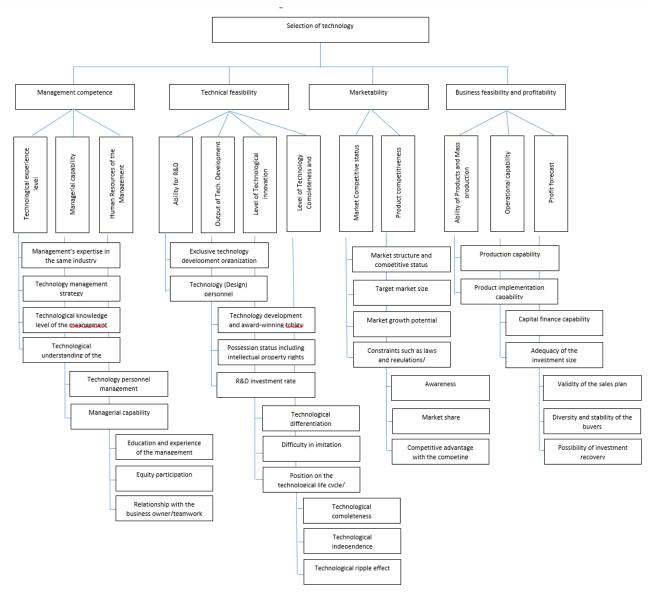
KyungJin Hyung, Technology Financing in the context of Korean Economy

2. Illustration of KTRS

Modules	Medium items		Small items	Metric						
		8.1	Market structure and competitive status							
	8. Market Competitive status	8.2	Target market size & Market growth potential	0						
Marketability		8.3	Constraints such as laws and regulations / Encouraging factors							
	9.1 Awareness									
	9. Product competitiveness	9.2	Market share							
		9.3	Competitive advantage with the competing products							
	10. Ability of Products and	10.1	Production capability / Quality management capability / Design production capability							
Business	Mass production	10.2	Procurement ease of materials and parts / Product implementation capability							
Feasibility	11 0	11.1								
and	11. Operational capability	11.2	Adequacy of the investment size							
Profitability		12.1	Validity of the sales plan							
	12. Profit forecast	12.2								
		12.3	Possibility of investment recovery							

KyungJin Hyung, Technology Financing in the context of Korean Economy

AHP Model



Experiment: Input Data - Factors

34 factors divided in 4 groups:

- Management competence
- Technical feasibility
- Marketability
- Business feasibility and profitability

Comparable analysis by experts:

 Expert assessment of the degree of relevance of each factor compared to any other factor

		Management Competence										Technical Feasibility											Marketability						
		T	echn	ologi	cal	Mar	nageri		Huma	n	Abilit	ty for	Outp	ut of	Tech.	L	evel o	of	L	evel c	ot	Mar	ket Co	ompet	itive	F	roduc	ct	
		Management's experience in the same industry	<u>m</u>	Technological knowledge level of	the management Technological understanding of the	Technology personnel management	Managerial capability/ Managerial	Education and experience of the management	Equity participation	Relationship with the business	hnol	Technology (Design) personnel	Technology development and award-winning (certification) result	status including property rights	estment r	Technological differentiation/ Design excellence	Difficulty in imitation	Position on the technological life	Technological completeness / Design completeness	Technological independence	Technological ripple effect	Market structure and competitive status	Target market size	Market growth potential	Constraitns such as laws and regulations / Encouraging factors	wareness	Market share	Competitive advantage with competing products	
	#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
Management's experience in the	1	1	0.3	0.2	1	0.1	0.3	1	1	0.1	0.3	1	0.3	0.2	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	1	0.2	0.2	0.2	
Technology management strategy	2	3	1	1	1	1	1	1	1	1	1	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.1	1	
Technological knowledge level of	3	5	1	1	1	1	0.3	1	0.3	1	1	0.3	0.3	1	0.3	1	1	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.2	0.2	
the management	٦	,	1	_		1	0.5		0.5			0.5	0.5	1	0.5	1	1	0.5	0.5	0.2	0.2	0.5	0.2	0.2	0.5	0.5	0.2	0.2	
Technological understanding of the management	4	1	1	1	1	1	1	1	1	1	1	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.3	0.3	0.2	0.3	0.2	0.2	0.2	1	0.2	0.2	
Technology personnel management	5	7	1	1	1	1	1	1	1	1	1	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	
Managerial capability/ Managerial	6	3	1	3	1	1	1	1	1	1	1	0.3	0.3	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	
Education and experience of the	7	1	1	1	1	1	1	1	0.3	0.3	0.2	0.2	0.2	0.3	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.1	0.1	0.1	0.3	0.3	0.2	0.2	
management		1	1	1	1	1	1	1	0.3	0.3	0.2	0.2	0.2	0.3	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.1	0.1	0.1	0.3	0.3	0.2	0.2	
Facility assistantian	n	1	1	1	1	1	1	2	1	^ 2	0.2	0.2	0.2	0.2	0.1	0.3	0.3	0.2	^ 2	Λ 2	Λ 2	Λ 1	0.2	Λ 1	Λ 2	0.2	Λ 1	0.1	

Experiment: Input Data - Companies

11 companies

 Assessment of the degree of relevance of each of the 32 factors for each of the companies

Category	Group	Factor	N	CareerUp	Tattoos.bg	Lexis	Зелена рабо
		Management's experience in the same industry	1	1	5	4	5
	Technological experience	Technology management strategy	2	4	5	3	4
	(knowledge) level	Technological knowledge level of the management	3	3	5	4	4
Management		Technological understanding of the management	4	3	5	4	4
Competence	Managerial capability	Technology personnel management	5	3	5	2	4
Competence	ivianageriai capability	Managerial capability/ Managerial strategy	6	4	5	3	5
	Human Resources of the	Education and experience of the management	7	3	5	4	4
		Equity participation	8	1	4	2	2
	Management	Relationship with the business owner and teamwork	9	4	5	5	5
	Ability for DOD	Exclusivetechnologydevelopment organization	10	3	5	4	4
	Ability for R&D	Technology (Design) personnel	11	2	5	3	4
		Technology development and award-winning (certification) result	12	1	2	1	1
	Output of Tech. Development	Possession status including intellectual property rights	13	1	1	1	1
		R&D investment rate	14	1	1	1	1
Technical Feasibility	Level of Technological innovation (leadership)	Technological differentiation/ Design excellence	15	1	4	4	1
recrimed reasistiney		Difficulty in imitation	16	1	2	2	1
	innovation (leadership)	Position on the technological life cycle / Trend conformity	17	1	2	2	2
	Level ot Technology	Technological completeness / Design completeness	18	1	2	4 3 4 4 2 3 3 4 2 5 4 3 1 1 1 1 4 2	2
echnical Feasibility Marketability	Completeness and	Technological independence	19	1	2	2	2
	Expandability	Technological ripple effect	20	1	1	2	2
		Market structure and competitive status	21	4	5	4	4
		Target market size	22	4	5	4	5
	Market Competitive status	Market growth potential	23	4	5	4	5
		Constraitns such as laws and regulations / Encouraging factors	24	4	5	4	5
		Awareness	25	1	5	1	5
	Product Competitiveness	Market share	26	1 5 4 4 5 3 3 5 4 3 5 2 4 5 3 3 5 4 5 3 3 5 4 2 4 5 5 3 5 4 2 4 5 3 5 4 2 4 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 2 2 2 1 2 2 1 2 2 1 2 2 1 2 2 1 3 4 4 4 5 4 4 5 4 4 5 4 4 5	5		
	·	Competitive advantage with competing products	27	1	5	2	5
	Ability of Productst and Mass	Production capability/ Quality management capability/ Design production	28	1	5	2	5
	production	Procurement ease of materials and parts/ Product implementation capa	29	1	5	2	5
B : E :: W.		Capital finance capability	30	1	4	1	3
Business Feasibility	Operational capability	Adequacy of the investment size	31	1	4	1	3
andProfitability		Validity of thesales plan	32	2	4	2	3
	Profit forecast	Diversity and stability of the buyers	33	2	5	2	5
		Possibility of investment recovery	34	1	3	1	3