

Kako do učinkovitejše podpore odcepljenim podjetjem?

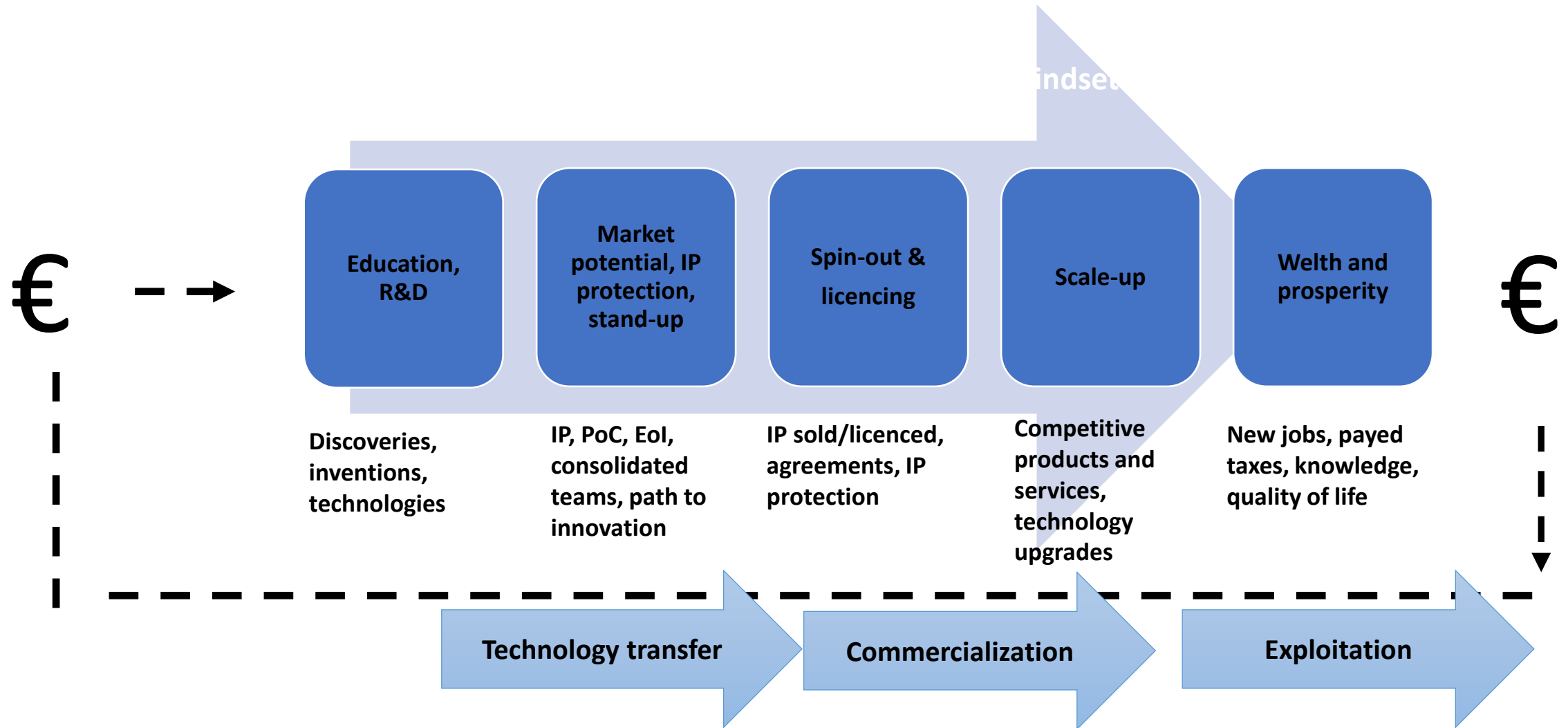
Robert Blatnik,
Institut "Jožef Stefan"

Znanstveno-tehnološki forum Rudolfovo 2025

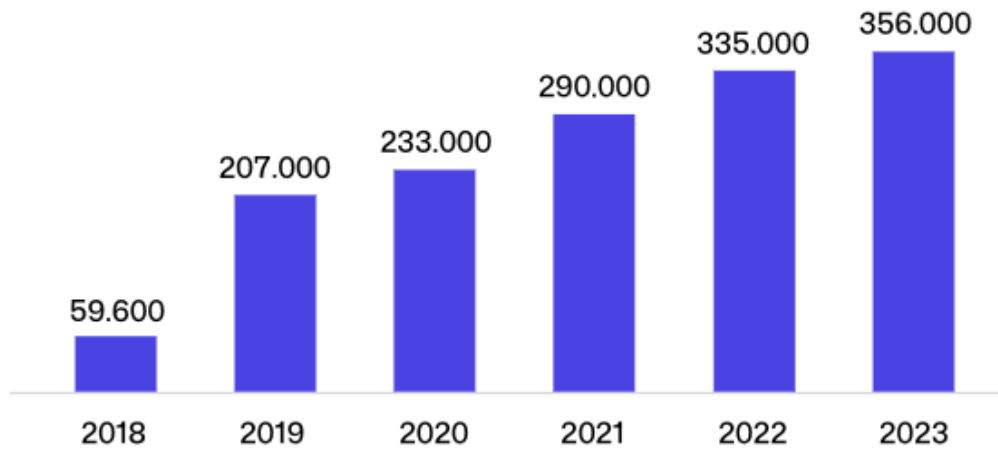
25.3.2025

- Kriteriji uspešnosti JRO, odcepljena podjetja kot kriterij evalvacije JRO, vpliv odcepljenih podjetij (ekonomski, družbeni, ... kateri še vplivi so).
- Kaj so in zakaj sploh odcepljena podjetja? Kako in kje so opredeljena?
- Podporno okolje in aktivnosti
- Izzivi za krepitev in pospeševanje aktivnosti podjetniškega odcepljanja
- Predlogi ukrepov

The KTO process

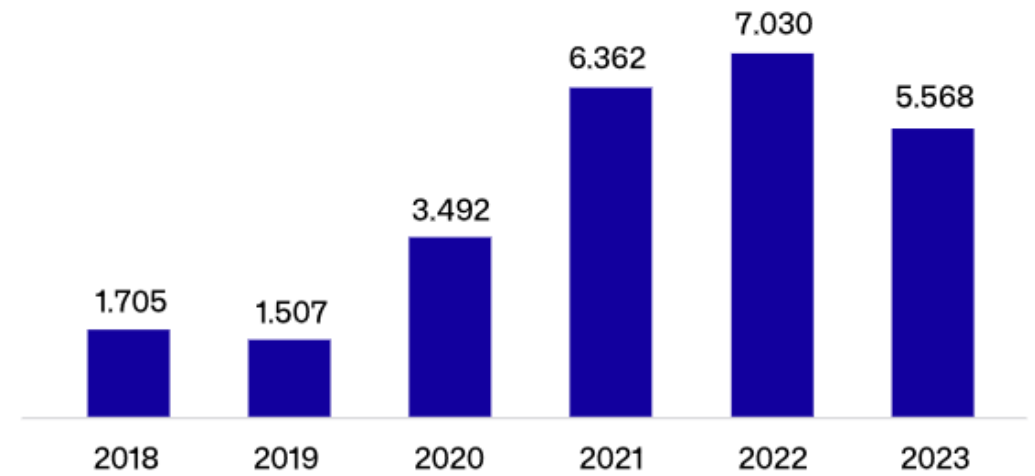


1.4 bn jobs created in the last 5 years



Jobs created by spinoffs in EU-27

24 billion € has been raised in the last 5 years



Total investments raised by spinoffs in EU-27, in mn €

Source: Dealflow

Report: Spin-offs: reinforcing a vector of value creation for EU-27

The Deep Tech opportunity

https://digital-strategy.ec.europa.eu/en/library/spin-offs-driving-innovation-across-eu-27?utm_source=chatgpt.com

Zakaj odcepljena podjetja? Raziskovalci...

- Priložnosti za razvoj kariere
- Vpliv na raziskave. Izpoved SOjevca: “Do mojega odcepljenega podjetja v življenju nisem delal toliko deep-techa, kot ga delam sedaj!”
- Nadzor nad komercializacijo lastnih raziskav
(<https://www.imperial.ac.uk/enterprise/staff/creating-a-spinout-company/what-is-a-spinout-company/>)
- Finančna nagrada (osebni kapital v podjetju, delež licenčnin za vašo IL prek delitve nagrade izumiteljem)

Zakaj odcepljena podjetja? JRO/KTO...

- Izpolnjevanje poslanstva organizacije (prenos tehnologije)
- Povečanje vrednosti IL (z licenčninami ali delnicami)
- Ustvarjanje RR sodelovanja in povečanje mreže industrijskih partnerjev
- Povečanje privlačnosti za industrijske partnerje, ki iščejo startupe za sodelovanje
- Povečanje privlačnosti za zadržanje obstoječih ali zaposlovanje novih talentov/veščin
- Evalvacije JRO / financiranje JRO
- Spodbujajo podjetniško miselnost, dvigujejo podjetniški DNK JROjev
- Dokaz uporabnosti / uspešnosti / inovativnosti JROjev

MIT impact statement:

MIT's alumni entrepreneurs generate annual revenues of roughly \$1.9 trillion (That revenue total falls between the world's ninth-largest GDP, Russia (\$2.097 trillion), and the 10th-largest, India (\$1.877 trillion), according to 2013 data on those and other countries from the International Monetary Fund). Source:

<https://web.mit.edu/innovate/entrepreneurship2015.pdf>

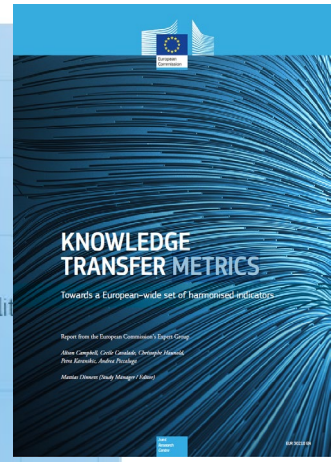
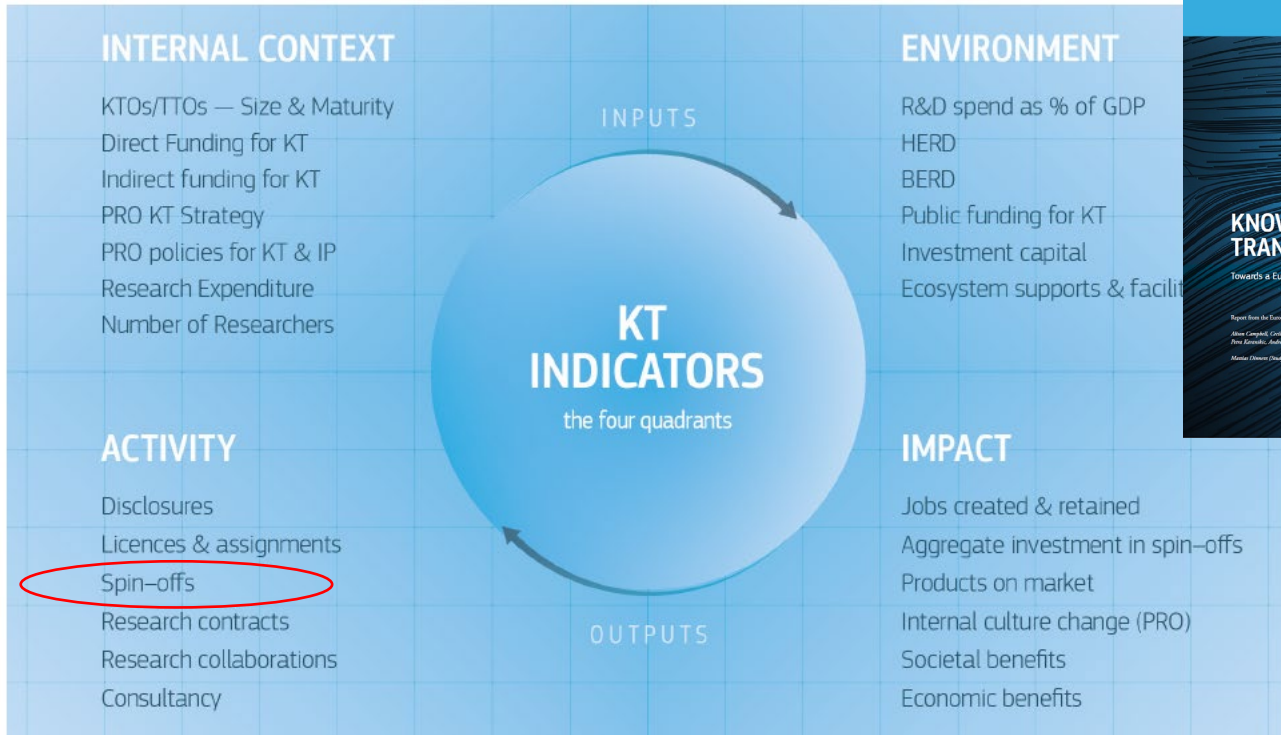
Zakaj odcepljena podjetja? Politika/ministrstva/agencije...

- Ustvarjanje vpliva v regiji s pretvorbo tehnologije v BDP
- Razvoj/podpora lokalnemu/nacionalnemu inovacijskemu ekosistemu
- Vpliv na družbo/blagostanje, konkurenčnost gospodarstva?
- Tranzicija inovacijskega sistema v SLO / EU (Draghi report, nacionalne strategije)

Viri: JRC TTO circle survey: the role and impact of TTOs in Deeptech spinoff creation


<https://digital-strategy.ec.europa.eu/en/library/spin-offs-driving-innovation-across-eu-27>

Odcepljena podjetja - kriterij evalvacije JRO



3 Types of Evaluation Six-Year Cycle of Block Funding

- SEv – Self-evaluation**
- PEv – Evaluation of research programs** by research field (ERC classification)
- IEv – Institutional evaluation**



Vir: Dr. Klemen Miklavič,
Assistant Director ARIS, (Self)Evaluation of Research in Slovenia – Proposed Model and Approaches, 17.ITTC, https://ittc.ijs.si/wp-content/uploads/2024/10/Presentation-ARIS-Evaluation-dr-Miklavic-EN_IJS-conf-Oct24.pdf



Vir: Knowledge Transfer Metrics (JRC): <https://publications.jrc.ec.europa.eu/repository/handle/JRC120716>

CRP ISERO: Izhodišča za samoevalvacijo raziskovalnih organizacij na področju prenosa znanja (UP, IJS, NIB, ZAG, vodja projekta: prof. dr. Simona Kustec)

KTO3: Izhodišča za razvoj metrike in kazalnikov za spremljanje in vrednotenje postopkov valorizacije znanja (WP3: Jure Vindišar, NIB).



Indikatorji uspeha odcepljenih podjetij (globokih tehnologij)?

- Število neposredno ustvarjenih delovnih mest
- Življenjska doba
- Število kakovostnih delovnih mest (akademiki, doktorji znanosti, MBA...)
- Pokrivanje trga
- Odnos z deležniki in drugimi člani lokalnega ekosistema
- Ustvarjanje novih regionalnih dobavnih verig
- Vrednotenje podjetja (tržna kapitalizacija)
- Plače, ki jih izplačuje
- Vpliv na cilje trajnostnega razvoja

Difinicije / opredelitve odcepljenega podjetja

 Zakon o znanstvenoraziskovalni in inovacijski dejavnosti (ZZrID)



REPUBLIKA
SLOVENIJA

Razvojni svet Republike Slovenije

Uradni list RS, št. [186/21](#), [40/23](#) in [102/24](#)

GOV.SI

Razvojni svet Republike Slovenije (v nadaljnjem besedilu: svet) je strokovno posvetovalno telo vlade za področje znanstvenoraziskovalne in inovacijske dejavnosti.

(prenos znanja in ustanovitev gospodarske družbe)

(1) Javne raziskovalne organizacije in raziskovalci spodbujajo uporabo, zaščito in prenos znanja na način, da so raziskovalni rezultati, financirani iz javnih virov, preneseni v družbo oziroma gospodarstvo. Prihodki iz dejavnosti prenosa znanja se lahko namenijo le za financiranje osnovne dejavnosti javne raziskovalne organizacije ali uporabijo za nagrajevanje izumiteljev skladno z zakonom, ki ureja izume iz delovnega razmerja.

(2) Ne glede na zakon, ki ureja javne finance, lahko javna raziskovalna organizacija, zaradi prenosa znanja v družbo oziroma gospodarstvo, ustanovi gospodarsko družbo.

(3) Gospodarsko družbo javna raziskovalna organizacija ustanovi skladno z zakonom, ki ureja gospodarske družbe, in vanjo vstopa z intelektualno lastnino, pridobljeno z izvajanjem znanstvenoraziskovalne dejavnosti. Intelektualna lastnina mora biti veljavno vrednotena na dan sklenitve družbene pogodbe skladno s postopki, ki urejajo intelektualno lastnino. Pri tem kot ustanovitelj odgovarja za obveznosti ustanovljene pravne osebe do višine svojega kapitalskega vložka.

(4) Način vrednotenja intelektualne lastnine, postopek izbire zasebnega soustanovitelja, postopek in pogoji ustanavljanja, gospodarske družbe ter strategija izstopa iz ustanovljene pravne osebe so opredeljeni v posebnem aktu javne raziskovalne organizacije, ki ga sprejme upravni odbor in h kateremu poda soglasje vlada. Določila, ki se nanašajo na posamičen primer ustanovitve gospodarske družbe, so opredeljena v družbeni pogodbi.

(5) Za ustanovitev gospodarske družbe, ki mora temeljiti na družbeni pogodbi, javna raziskovalna organizacija potrebuje soglasje ustanovitelja, in sicer na predlog upravnega odbora javne raziskovalne organizacije. Pripravljena mora biti vsa potrebna dokumentacija, na podlagi katere lahko ustanovitelj sprejme odločitev.

Delovna skupina za vzpodbujanje ustanavljanja spin-off, spin-out in visokotehnoloških zagonskih podjetij

1. Sklep 1: Delavna skupina predlaga nasladno definicijo pojma "visokotehnološko oz odcepljeno podjetje", ki naj bo osnova za nadaljnjo razpravo in sprejemanje ukrepov:

»Visoko-tehnološko odcepljeno ali izločeno podjetje je ustanovljeno z namenom trženja tehnološko naprednih izdelkov ali storitev na odprtem globalnem trgu. Izdelki ali storitve podjetja, ki ustvarjajo glavni prihodek, morajo temeljiti na novih znanstvenih ali tehnoloških dognanjih ali rešitvah, ki so rezultat raziskovalno-razvojnega dela udeleženih posameznikov, institucij, ali podjetij, v katerih so bila ustvarjena ta nova dognanja ali rešitve.

Odcepljena ali izločena podjetja, katerih prihodki so pretežno rezultat rutinskih inženjerskih, razvojnih, prodajnih ali podobnih storitev ali izdelkov ne sodijo v to kategorijo.

V kategorijo podjetij, ki so upravičena do ugodnosti in prednosti iz naslova visokotehnoloških odcepljenih ali izločenih podjetij, ne sodijo tista podjetja, katerih aktivnosti sicer temeljijo na ustvarjanju novih znanstvenih ali tehnoloških dognanj ali rešitev, a večji del sredstev pridobijo iz javnih sredstev in projektov s končnim TRL 5 ali manj. Ob tem se med prihodke iz javnih sredstev ne štejejo prihodki, ki so bili pridobljeni iz javnih programov ali projektov izrecno namenjenih vzpodbujanju ali zagonu visokotehnoloških odcepljenih ali izločenih podjetij. «

Difinicije / opredelitve odcepljenega podjetja

- **Spin-off** je podjetje, ki nastane na podlagi intelektualne lastnine, razvite na univerzi/inštitutu, razvoj pa je bil financiran z javnimi sredstvi; podjetje je na podlagi vložka IL in/ali drugih kapitalskih vložkov v solastništvu univerze ali inštituta.
- **Spin-out** je podjetje, ki nastane na podlagi intelektualne lastnine, razvite na univerzi/inštitutu, razvoj pa je bil financiran z javnimi sredstvi; univerza/inštitut daje podjetju licenco za IL; podjetje je v 100-odstotni lasti investitorjev, ki so/niso zaposleni na univerzi/inštitutu.
- **Start-up** je podjetje, nastalo na podlagi ideje, katere nastanek ni povezan z javnimi sredstvi; lastniki podjetja niso zaposlitveno povezani z univerzo/inštitutom (so npr. študenti).

Vir: http://tehnologije.ijs.si/?page_id=3127

Difinicije / opredelitve odcepljenega podjetja

- Spin-off A company expressly established to develop or exploit IP created by a PRO and with a formal contractual relationship. Include, but do not limit to, spin-offs established by PRO staff. Exclude companies that have no formal agreement for commercially developing IP or know-how created by the institution.
- Start-up A newly registered company that is founded by PRO students or employees but that is not directly involved with the exploitation of intellectual property generated within that PRO.

European Knowledge Transfer Landscape. ASTP 2023 Annual Survey | Executive Data Report. <https://www.astp4kt.eu/about-us/surveys.html>

- Spin-out companies (“spin-outs”) are start-up companies that are created based on intellectual property (IP) generated through a university’s research.

Independent Review of University Spin-out Companies. Final report and recommendations. https://assets.publishing.service.gov.uk/media/6549fcb23ff5770013a88131/independent_review_of_university_spin-out_companies.pdf

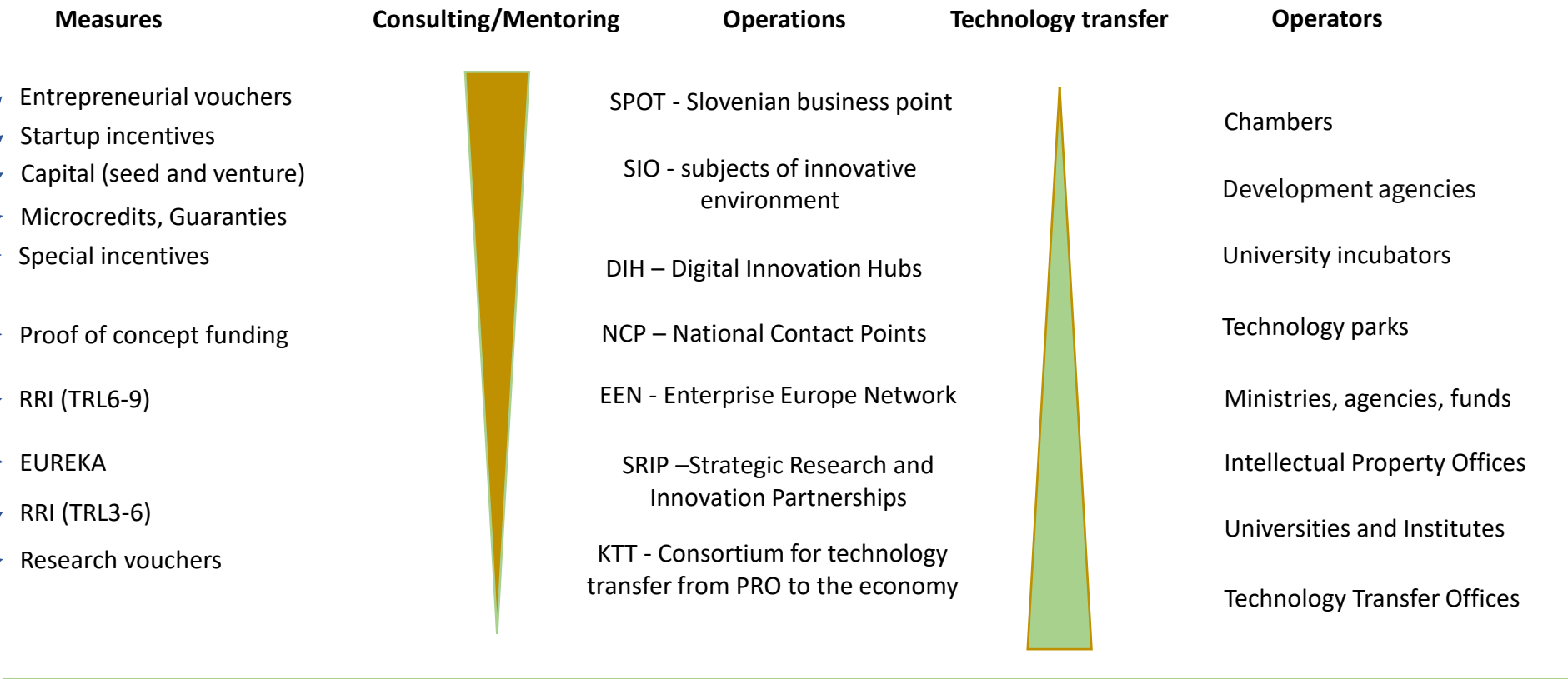
Slovenian innovation ecosystem

European Regional Development Fund
 ↓
 Government Office for Development and European Cohesion Policy

↓
 Ministries, public agencies, public funds

Ministry of Public Administration (MJU)
 SPIRIT Slovenia
 Slovene Enterprise Fund (SPS)
 SID Bank
 Ministry of the Economy, Tourism and Sport (MGTS)
 Ministry of Higher Education, Science and Innovation (MVZI)
 Slovenian Research & Innovation Agency (ARIS)

COMPANIES



PUBLIC RESEARCH ORGANIZATIONS

Konzorcij KTO (MVZI): svetovanje in strokovna podpora pri ustanavljanju odcepljenih podjetij (skladno z ZZrID)

Podporne aktivnosti

- Konzorcij KTO (MVZI): *svetovanje in strokovna podpora pri ustanavljanju odcepljenih podjetij (skladno z ZZrID)*

Spin-out support system:

“... drive economic growth, create jobs, and ultimately bring positive societal impact”

“...compare with well known and learn from them”

MIT: > 85 resources dedicated to fostering innovation and entrepreneurship (report of Sloan School of Management in 2015)

JSI: 37th position in European Research Ranking. (Year 2014: <http://www.researchranking.org/>)

Slovenia: high research rankings, and...

one of the lowest ranking countries in venture capital (VC) investments as share of GDP in Europe in 2021.

“...can't replicate; create your own support system...”

- Jožef Stefan Institute: 1987: first JSI spin-out; 1991: change of political system; 1995: established Technology park; 2009: established TTO; first formal spin-outs in 2010.
- Since 2010: on average 1 spin-out established per year (per 1000 employees)
- + alumni and “other employee” businesses / start-ups.

Spin-out support system:

“encompasses various elements that work together synergistically...such as: KTOs...”

Technology Transfer and Innovation support @ JSI

- Project support, technology transfer and innovation (5)
- Industrial liaison (3)
- Project informatics, events and conferences (5)

Core activities are grounds for spin-out support:

- IP protection and marketing
- Licensing
- Contract and Collaborative research
- Research on Innovation Principles

One stop shop for companies & researchers

A gateway for specialist platform and infrastructure:

Enterprise Europe Network, KET, DIH, KTT

It's a team work! Various challenges with:

- *researchers (our clients),*
- *patent attorneys (external service providers),*
- *industry partners (our clients),*
- *ministries (our financiers),*
- *external mentors (our friends),*
- *our partners (other TTOs),*
- *investors...*

Different competences of the team

Economics and bussines, Science (chemistry, biotech, electronics and computer science)

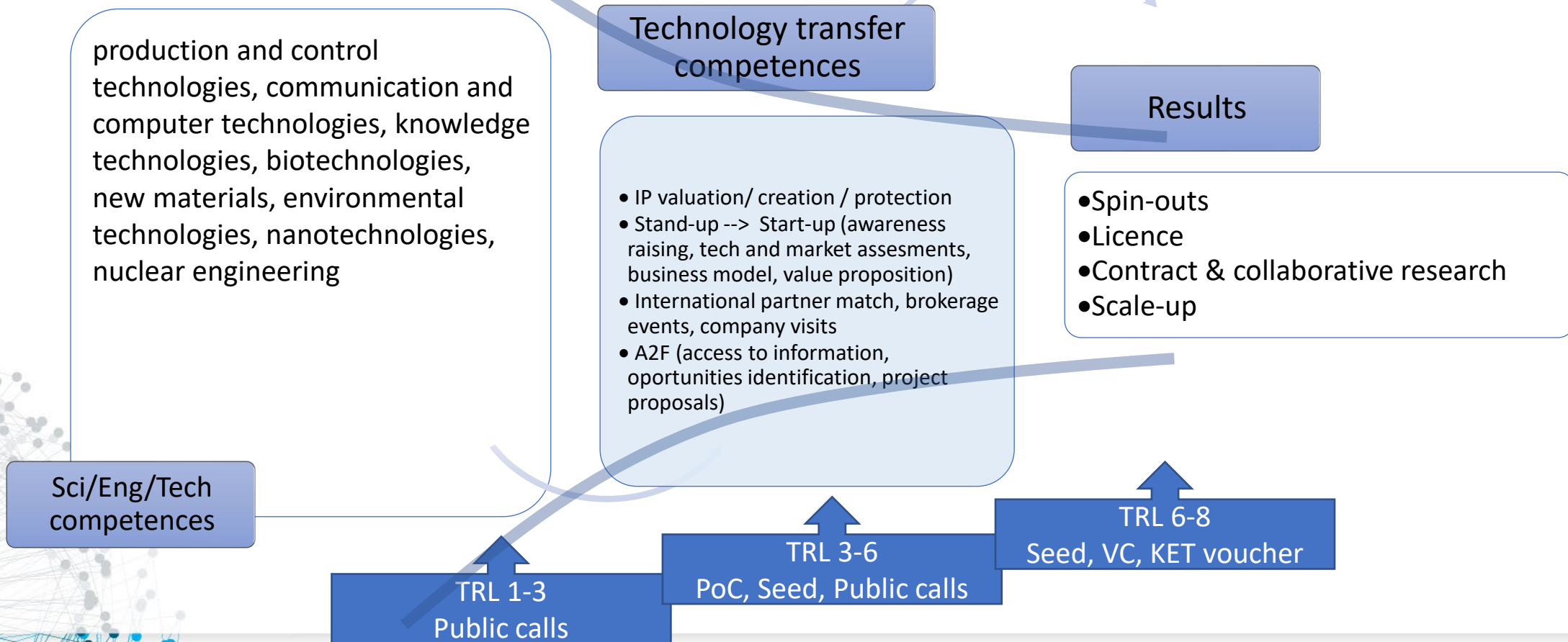
4 PhD, 2 MSc, 1 MBA, 2 Certified Licensing Professionals

Members of ASTP Proton, LES, EEN sector groups, SI-TT, KTT...

Constant learning, improving skills, processes and it's “cook books”

Spin-out support system:

“by providing a range of resources and support, it helps researchers realize the full potential of their inventions, drive economic growth”



Spin-out support system:

“offering mentorship, ...and a network of experienced entrepreneurs”

Friends of Jožef Stefan Institute / Venture Mentorship Service

Free and Confidential mentoring service for JSI spin-out entrepreneurs.

We connect entrepreneurs with selected mentors to help turn their ideas into successful spin-outs.

- *to develop, inspire and empower JSI entrepreneurs.*
- *to create and sustain world-class mentorship experiences for entrepreneurs.*

Inspired by MIT Venture Mentoring Service: <https://vms.mit.edu/>

Clearly communicate the rules of engagement of mentors – have written statement of principles.

Avoid conflicts of interest (mentors can not be members of the team, investors, consultants...).

Be appreciative for their voluntary support and give them something back (access to network of mentors, events...)!

Spin-out support system:

“Entrepreneurship education and training programs”

ITTC CONFERENCE PRIZE FOR THE BEST INNOVATION WITH COMMERCIAL POTENTIAL IN 2024

Each year since 2010

International public call

International evaluation commission

93 teams participated

60.000 Euro rewards (own TTO / JSI innovation funds)

8 of 13 JSI spin-outs participated.

For some of the future spin-outs: first experience in creating business model and pitch

Clearly communicate the aim of the competition to the evaluators!

Clearly communicated criteria for evaluation (to researchers and evaluators)

Written information (10 points)

Pitch (10 points)

6 criteria:

Application (10 points)

Value Chain (3 points)

Market size and development costs (2)

Competition (1)

Team (3)

IPR and Regulatory (1)

Source: TTO Triangle, Jon Wulff Petersen, TTO A/S, Denmark

Spin-out support system:

Collaboration with “*Entrepreneurship education and training programs...*”

“Inject TT projects into MBA courses!”(*)

Consulting project → addressing strategic-organizational issues

Extend the spin-out teams

MBA as a pool of experienced managers → potential CEOs

Select promising projects with well defined strategic challenge to avoid fictional outputs.

LJUBLJANA MBA AND THE JOŽEF STEFAN
INSTITUTE ENTREPRENEURIAL COOPERATION

15 Dec

<https://www.ljubljana-mba.com/>



(* Jeff Skinner, London business school)

Spin-out support system:

“Access to funding ...involves identifying and securing investment from various sources”



LET'S INNOVATE THE FUTURE

PoC projects (up to 20k)

Develop technology to higher TRL (from TRL3 or higher)

Increase the investment readiness

Transfer to investors, industry and spin-outs

Yearly call for proposals, well defined evaluation criteria

Rather select less (more promising) projects with more funding and with systematic follow-on support than more with less!

Have clearly written eligibility rules, aim of the call, evaluation criteria and clearly communicated results of the selection process!

feasibility study

market research

working prototype

validation of technology
performance in an
industrial/clinical
environment

establishing relationships
with relevant companies

What measures does your organization have in place to support spinoff creation?

- Venture builder
- Funding: internal investment fund
- Funding: agreement with external private funds
- Funding via Governmental initiative
- Training: Internal spinoff program dedicated to employees
- Accelerating: Program dedicated to external startups using your technologies
- Other

Does your organisation have capacities to invest in ventures before creating a spinoff?

- What does it invest in?
- Prematuration support
- Technological maturation support
- Business development
- Dedicated coaches/mentors
- Marketing studies
- IP support
- Investment support/loan
- Salaries of startup project leaders
- Other

IZZIVI razvoja odcepljenih podjetij

RS RS (DS za OP)

- Nezdružljivost akademske kariere in vodenja odcepljenih podjetij, kar ovira mnoge raziskovalce pri prehodu v podjetništvo.
- Odsotnost sistemske podpore za prehod tehnologij iz laboratorijske faze (TRL 1-3) v razvojne in tržne faze (TRL 8-9), kar predstavlja ključno oviro za rast spin-off podjetij.
- Pomanjkanje poslovnih izkušenj raziskovalcev ter omejene možnosti za poslovni razvoj.
- Slabo spodbujanje spin-off podjetij v akademski sferi, kar pogosto vodi do deviantnih praks in ovir pri ustvarjanju uspešnih podjetij.
- Financiranje velikih podjetij in pomanjkanje kapitalske udeležbe, ki bi spodbudila inovacije.
- Premajhna podpora raziskovalcem pri prehodu iz raziskovalnih projektov v podjetništvo

Priporočila

- Sistemska (top down)
- Operativni nivo (bottom up)

RS RS (DS za OP): Sklep 2:

Predlagamo ustanovitev mehanizmov, ki bodo podpirali prehod tehnologij iz TRL 3 do TRL 6 in 8, kar je ključno za uspešen razvoj spin-off podjetij. Na primer: ARIS naj vpelje aplikativne projekte namenjene ustanovitvi odcepljenih podjetij in prehodu iz TRL 2-3 v TRL 6.

Ti projekti ne zahtevajo so-financiranja, cilj pa je ustanovitev odcepljenega podjetja.

ASTP White Paper endorsed by NAAC

Catalysing Change: Exploring trends and strategies to enhance the spin-off process in Europe

ASTP White Paper endorsed by NAAC

Catalysing Change:
Exploring trends and strategies to
enhance the spin-off process in Europe

Priporočila najboljše prakse za raziskovalne inštitute:

- Zagotoviti zadostna sredstva za procese prenosa znanja in tehnologije.
- Sprejeti politične dokumente KT/TT, ki določajo mandat in cilje institucije za KT/TT.
- Zavežite se podpornim mehanizmom za odcepitev in zagon z osebjem, zmogljivostjo in sredstvi
- Sprejmite politiko spin-off in zagonskih podjetij.
- Sprejmite smernice o pogojih za dajanje intelektualne lastnine na voljo odcepljenim podjetjem in
- na jasn in pregleden način komunicirajte o vseh 5 točkah.

Best Practice Recommendations For Making IP Available To Spin-offs:

ASTP White Paper endorsed by NAAC

Catalysing Change:
Exploring trends and strategies to
enhance the spin-off process in Europe

- Licenciranje IP-ja v zgodnjih fazah odcepitve (namesto dodelitve IP-ja na začetku).
- Pravice za raziskovalno in izobraževalno uporabo ostanejo na JRO.
- Obveznost uporabe za odcepljeno podjetje z jasnimi mejniki (uporabi ali izgubi).
- JRO ne daje jamstev za svobodo delovanja (FTO).
- Uporabite lastniški kapital kot nadomestilo za opustitev obveznosti v zgodnjih fazah licence (in v primerih, ko lastniški kapital ni mogoč ali zaželen, virtualne delnice, izstopne provizije ali provizije za uspeh lahko vključite v licenčno pogodbo).

Priporočila posebnih finančnih podpor

Finančna podpora usmerjena v prenos inovativnih raziskovalnih rezultatov v odcepljena podjetja → pospeševanje dejavnosti odcepljenih podjetij. Možne oblike:

1. nepovratna sredstva za povečanje komercialnega potenciala raziskovalnih projektov (npr. sredstva za dokaz koncepta – Proof-of-Concept, in
2. instrumenti, ki raziskovalnim ustanovam omogočajo zagotavljanje začetnih (seed) investicij in mentorstva za pomoč raziskovalcem pri prehodu v podjetniške vloge.

Predlogi ukrepov

Usposabljanje in mentoriranje na poti določanja vrednosti in iskanja kupcev

Problem: raziskovalci nimajo podjetniških kompetenc, povezav, izkušenj, feedbacka od industrije. Kako naj se naučijo razumeti potrebe družbe, gospodarstva...?

Program za spodbujanje podjetnosti raziskovalcev po vzoru ameriskega NSF I-Corps programa (<https://www.colorado.edu/venturepartners/university-innovators/entrepreneurial-training/nsf-i-corps-hub-west-region>): podpora v obliki podjetniškega izobraževanja, mentorstva in financiranja za pospešitev prenosa znanja v nastajajoče izdelke in storitve, ki lahko pritegnejo investicijski kapital.

Opravljen usposabljanje bi lahko prineslo dodatne točke pri prijavi na razpise za višje TRLje.

- Usposabljanje poteka zaporedno v več sklopih, glede na tehnološko in tržno stopnjo inovacijskega predloga.
- 1. Customer Discovery Workshop
- 2. Research2Market Programme

Predlogi ukrepov

Sofinanciranje nagrad za spodbujanje inovacij

- Pitching competition (10k) po vzoru ITTC nagrade za najboljše inovacije. Financira se izvedba tekmovanj inovacijskih timov z nagradnim skladom.

Zunanji programi

- EIC T2M: https://eic.ec.europa.eu/eic-funding-opportunities/bas/tech-market-programme-t2m_en
- EIT Jump Starter: <https://eitjumpstarter.eu/>
- Colorado Boulder CDP: <https://www.colorado.edu/venturepartners/university-innovators/entrepreneurial-training/nsf-i-corps-hub-west-region/research-market-r2m>
- MIT EDP: <https://executive.mit.edu/course/entrepreneurship-development-program/a056g00000URaMsAAL.html>
- ASTP (<https://www.astp4kt.eu/>)

Kako do učinkovitejše podpore odcepljenim podjetjem?

Jasnost, preglednost, spodbudnost (ASTP)

Diskusija, vprašanja...

Kako podpirate odcepljena podjetja v vaši organizaciji?

Ali imate zapisane pravilnike akademskega podjetništva in jasno določene postopke ter pristojnosti glede odločanja?

Kaj menite raziskovalci, podjetniki?

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Znanstveno-tehnološki forum Rudolfovo 2025
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Key challenges facing EU spin-offs

- The report identifies several structural barriers that hinder the growth of university spin-offs:
- **Bureaucracy and IP complexity:** lengthy intellectual property negotiations and decentralised regulatory frameworks slow down commercialisation efforts.
- **Scaling limitations:** only 11% of deep tech spin-offs in the EU reach valuations comparable to their traditional start-up counterparts, limiting their ability to compete internationally.
- **Equity structures:** universities often retain high equity stakes in spin-offs, which can discourage private investment and reduce founder incentives.
- **Fragmented support systems:** while programmes such as Horizon Europe provide significant funding for research commercialisation, access to this support remains uneven across regions and institutions.

Strategies for strengthening the spin-off ecosystem

- To improve the success rate and scalability of spin-offs, the report outlines key recommendations:
- **Regulatory reforms:** simplify IP frameworks and streamline technology transfer processes to reduce barriers to commercialisation. Standardised equity-sharing models, such as those in The Netherlands, could serve as a benchmark.
- **Financial alignment:** align academic funding models with VC expectations by introducing co-investment schemes, growth-stage venture funds, and corporate partnership incentives to attract private capital.
- **Organisational transformation:** universities should invest in entrepreneurial support structures, such as well-resourced Technology Transfer Offices (TTOs) and multidisciplinary spin-off teams that include business and financial experts alongside researchers.
- **Encouraging industry collaboration:** strengthen partnerships between spin-offs and established industries through tax benefits or grants to improve commercial viability and market entry.

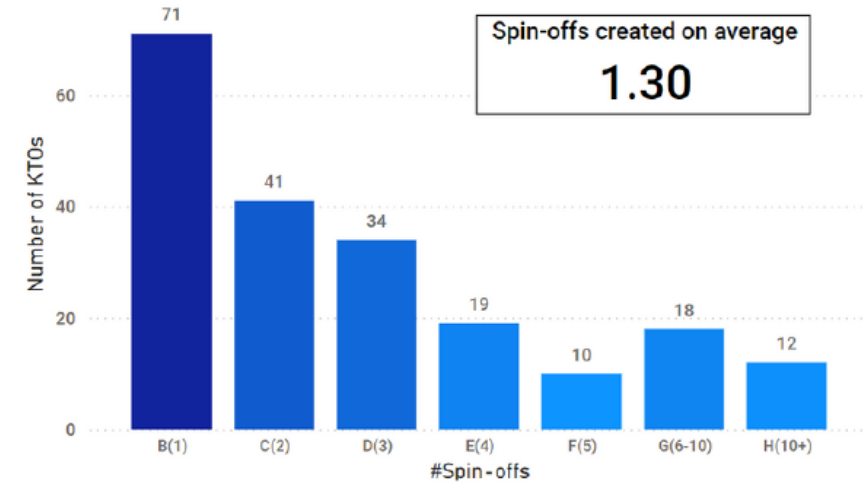
Spin-offs and Start-ups

The responses show that the creation of new start-ups was more popular than spin-offs. On average, KTOs created 13.1 start-ups in FY2021 compared to 1.3 spin-offs in the same year. In addition, a majority of responding KTOs (61%) did not create any spin-off while 50% created at least one start-up. Gathering data around the legacy of earlier spin-off creation, such as how many are currently still operating (third graph), is an attempt to take a snapshot of the potential impact on the local economy. There can often be challenges for KTOs to gather these data, especially for companies that may have been relocated, or whose connections with the PRO have expired.

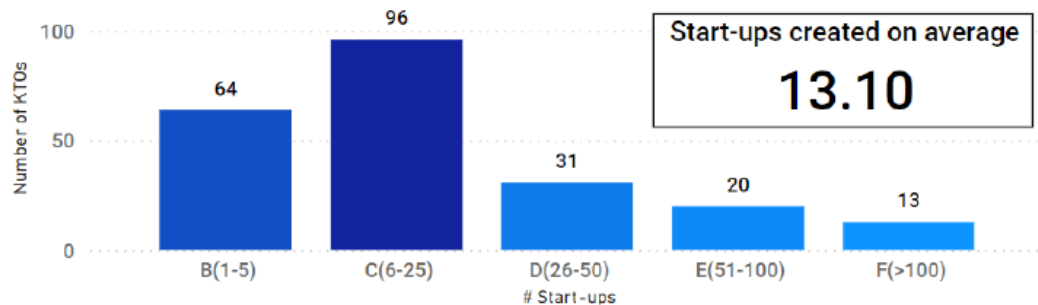
(In the graphs, the difference between the n-value (total number of answers) and the sum of the number displayed on the top of the bars corresponds to the number of 0 value answers).

Year	Spin-offs created (n=519)	Operating spin-offs (n=440)	Staff (FTE) in operating spin-offs (n=273)	Start-ups created (n=452)
2021	677	4606	53 124	5 921

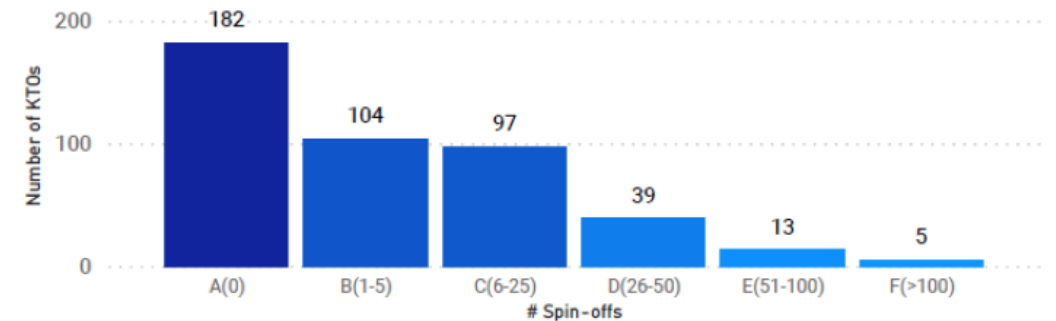
Spin-offs Created per KTO (n = 519)



Start-ups Created per KTO (n = 452)

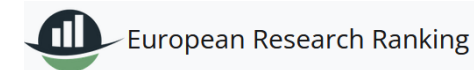


Operating Spin-offs per KTO (n = 440)



Jožef Stefan Institute

The leading Slovenian scientific research institute.



Important European Key enabling technologies (KET) centre.

The Mission

Creation, spread and transfer of knowledge in the fields of natural, life and engineering sciences to the benefit of the society.

Spin-outs

Plasmadis

Plasma reactor optimization by Laser
Optic Catalytic Sensor (LOCS)
<http://www.plasmadis.com/>

Infinite Biotech

Long-term health hazard assessment without the use of
animals
<http://infinite-biotech.com/>

Particulars

Transient Current Technique (TCT) apparatus for studies of
semiconductor devices and materials.
<http://particulars.si/>

Nanos Scientifcae Nanotechnology solutions based on
magnetic nanoparticle clusters –nanobeads platform.
<http://www.nanos-sci.com/>

RGA

Research Genetics and Agrochemistry.
<http://rga.si/>

Genuine Technologies

Synthetic bioceramic powder-like material based on
calcium tri-silicate with high bioactivity
<https://www.gen-tech.si/>

FlexHex

Alternative to dedicated jigs and fixtures in
production
<http://flexhex-robot.com/>

InoVine

Rapid separation of yeast sediment from
sparkling wine.
<http://www.ino-vine.com/>

Could Google be categorized as a spin-out?

Vir: ChatGPT

Google is **not typically categorized as a university spin-out**, though it shares some characteristics with one. Here's why:

✅ Why it *seems* like a spin-out:

- **Founders were PhD students:** Larry Page and Sergey Brin were doctoral students at Stanford University when they started developing the core algorithm behind Google (PageRank).
- **University research:** Their work was rooted in academic research and supported by university resources.
- **University IP:** Stanford owned the patent for the PageRank algorithm and later licensed it to Google in exchange for equity (which it later sold for \$336 million).

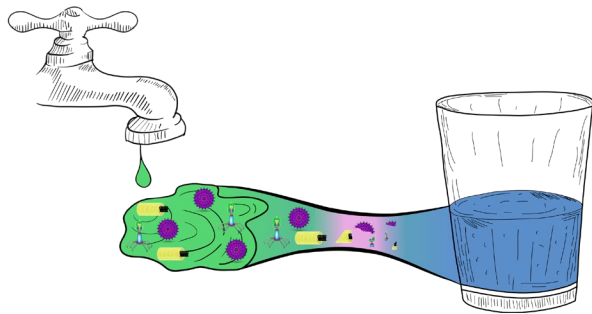
❌ Why it's *not officially* a spin-out:

- A *spin-out* is typically defined as:
 - A company formed to commercialize university-owned intellectual property, and
 - Usually initiated or supported directly by the university, often through tech transfer offices or internal innovation programs.
- Google, in contrast:
 - Was independently incorporated by the founders.
 - Did not originate as a formal university initiative or start-up program.
 - Became a commercial venture after the students took leave from Stanford.

Ključni besedi: “intelektualna lastnina” in “podpora”

VIROUT – the MBA project

VIR(uses)OUT by plasma and cavitation



Cleaning (sterilization)
of drinking water

Irrigation systems

Waste water cleaning

Team, idea and first plan

Winners of the ITTC pitch competition



Pitch and new questions

PoC & Seed funding

next steps

Strategic answers @MBA

better understanding of market situation,

broader look at possible market segments,

first customer segment in the niche segment
(beached market)

customers jobs and possible business model (selling a
service or device)

funding requirements for each stage of technology
and business development

most important variables for the financial plan,

most important value drivers



Spin-out support system:

“Collaboration and networking opportunities ...foster connections between researchers, industry professionals, investors, and potential customers...”

Small country/ecosystem: much easier to work with local industry and investors than far away USA, Asia and even UK.

**Keep an eye on local environment and use it as much as possible – as opposed to big brands, MIT, Oxford, Cambridge...”
(*)**

Potential for contract or collaborative research? Do they have in-house R&D at all?

Can they pay/invest/partly fund? Are they interested Interested?

Focus on:

Technology challenges (what we can create from “almost” scratch) require complex solutions which are not yet commercially available

Technology opportunities... (what we already have)

technology exists (at least to certain TRL)

past projects results, inventions, copyright, secret know-how

for licencing and/or as background IP for further R&D

Often industry can’t articulate clearly what they need!

Start collaboration with small incremental innovation, R&D services, feasibility studies.

Short-term projects (building trust) → long-term projects, new strategic areas, & (sometimes) brake-trough innovation.

Communicate clearly ways and potential terms of collaboration (wholly/partly funded, what they get, IP rights, responsibilities).

IP negotiations can be deal brakers if not communicated properly.

Often: smaller companies have lack of knowledge about intellectual property law and practice.

(*) Jon Wulff Petersen, Technology Transfer, Plougmann Wingtoft

What is the source of the budget used to invest before creation?

- Internal fund
- Internal resources
- National public subsidies
- European public subsidies
- Other

Do you have capacities to invest in the creation and/or development phases your spinoffs?

- none
- in pre-seed
- in seed
- in series A & B
- in growth phases C and beyond
- What is the nature of the funds?
- Grants
- Reimboursable loans
- Convertible loans
- Equity
- Other

What is the relationship with spin-offs after their creation ?

- None
- The RTO remains/may remain investor
- The RTO retains/may retain a license contract
- The RTO perform/may perform R&D collaborations
- Other