Good practices on UBC policies

Victoria Galan-Muros

European Commission

Joint Research Centre

AREAS AND LEVELS OF POLICIES FOR UIC

Economic	Education	Industrial	STI
Fiscal policies – funding, grants and subsidies, stimulus packages, infrastructure, taxation concessions, public seed capital, etc.	Education and training programmes Hiring policies Industrial PhDs Governance of universities/ RIs	HR policies: hiring, evaluation, promotion Sector prioritization Technological upgrade Import/export focus	Joint initiatives: hiring, evaluation, promotion Knowledge/Tech transfer regulation Public promotion programmes

International

National

Regional

Local

Supply- side

Demand-side

INNOVATION AGENCIES

SWEDEN

Vinnova is the Swedish government agency for innovation policy.

- It **aims** to build Sweden's innovation capacity, contributing to sustainable growth.
- Its projects provide and promote a wide array of **collaboration** between HEIs and business sector.
- Yearly, it **invest** SEK 3 billion in research and innovation.
- According to Vinnova's model, **HEIs** are **rated** by their role and context. Depending on the ratings they received different proportions of funding

COMPETITIVENESS CLUSTERS

FRANCE

The French **Poles de Competitivité** promote the development of collaborative projects in research and development (R&D) bringing together large and small firms, research labs, specialised suppliers, educational and training providers, working in partnership in a particular field and in a specific region or territory.

To promote the development of poles, federal and regional goverments offer:

- Funds to strengthen their structures and develop projects
- Tax exemptions

NATIONAL ENTREPRENEURIAL ECOSYSTEMS

CHILE

It aims to transform the Chilean entrepreneurial ecosystem
Running since 2010.

Start-ups that join the programme have the chance to get additional funding and avoid the valley of death.

- USD40,000 funding for each new company
- 6 months programme
- Presence of entrepreneurs in Chile
- Facilities / locations sponsored by companies
- Connection with potential partners and investors

www.startupchile.org

INTERSECTORAL MOBILITY

GREECE

Staff mobility is regulated by the "2004/2011" law. This law stipulates that a Greek researcher may take a sabbatical leave of up to three years to participate in research projects abroad and this can be in industry as well. Statistics show that 10% of Greek researchers capitalise on this opportunity.

FRANCE

The regulation for the mobility of researchers in France gives a possibility to researchers to undertake a mobility of at least two years with another research organisation, abroad, in the public administration or in a business company.

UNITED KINGDOM

The Concordat to Support the Career Development of Researchers**,** is an agreement between the Funders and Employers of Researchers in the UK aiming at promotion of inter-sectoral mobility of researchers, including business placements.

FOCUSED INNOVATION EXCELLENCE

UNITED KINGDOM

The **Catapult centres** are a network of independent, world-leading centres designed to transform the UK's capability for innovation in specific areas and help drive future economic growth.

There are **nine** Catapults in the network with a national presence covering **over 30 locations**. They work in:

- Cell and gene therapy
- Compound semiconductor applications
- Smart living and traveling
- Digital Technologies
- Energy Systems
- High Value Manufacturing
- Medicines discovery
- Offshore Remewable Energy
- Satellite Applications (explotation of the space)

OVER £1BN

4,389

SMES SUPPORTED

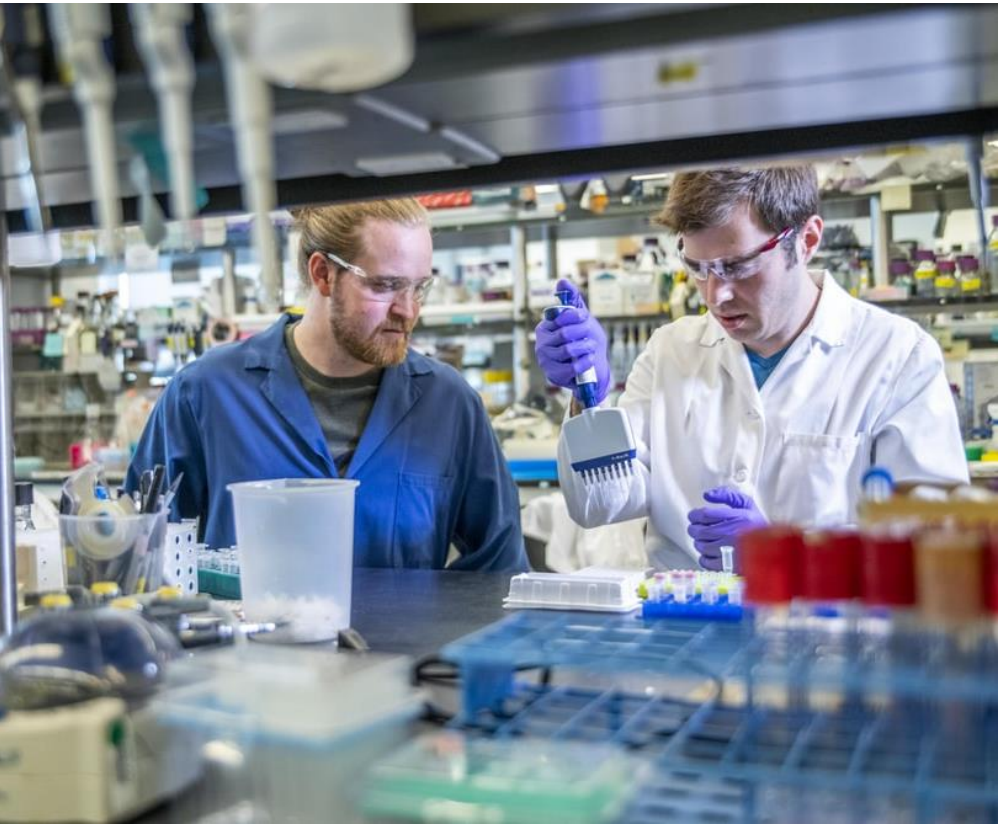
4,100

EMPLOYEES IN 2019

COL

INTERNATIONAL PROJECTS

TAX INCENTIVES FOR JOINT R&D



ICELAND

The **Icelandic tax incentive system** provides companies with a tax deduction on corporate income tax equating to 20% of the R&D expenses incurred on projects if certain conditions are met.

GREECE

The **tax law "4110/2013"** allows for an annual deduction in R&D expenses from the net profits of the firm, increased by 30% in the fiscal year when they occur.

FUNDING KNOWLEDGE-BASED BUSINESS DEVELOPMENT

ENTERPRISE IRELAND
where innovation means business

IRELAND

The **Innovation Voucher Initiative** aims developed to build links between Ireland's public **knowledge providers** (i.e. HEIs, public research bodies) and **small businesses**. 559 vouchers were awarded in 2019.

- *Innovation Vouchers are* worth €5,000
- Available to assist a company or companies to explore a business opportunity or problem with a registered knowledge provider.
- Innovation vouchers are exempt of VAT

INTERMEDIARIES TRAINING

Some governments have invested in the training of those people who **work on the interface** between universities, business and government (knowledge and technology transfer professionals, engagement leaders, responsible for incubators/ accelerators), as they are **critical for the success** of the innovation ecosystems and there is no formal education for these positions. All programmes:

- Address both technical and soft skills
- Include good-practise site / country visits
- Include a personal application project

DAAD - UniTransfer

CONACYT - GeT-In

DGEAC – Boundary Spanning

Which of these policies do you think are more feasible in your region

www.menti.com
Code: 3576023

INDUSTRIAL PHD PROGRAMMES

DENMARK

In 1970, Denmark established **Industrial PhD Program**, today managed by Innovation Fund Demark, main research funding body in the country, as part of the Industrial Researcher Programme.

The **aim** is fostering UBC through joint curriculum design and delivery.

- Students supported are enrolled in a PhD programme at a university whilst also working for a private enterprise.
- The competitive grants provide funding for three years and the model became an international good practice example adopted in many European countries.

EVALUATION AND PROMOTION OF RESEACHERS

SPAIN

Traditionally, the Spanish Government only considered teaching and research indicators for the evaluation and promotion of academics every six years. A new category was addded in 2018 – **Transfer Sexenies**.

The **aim** was to recognise the valorisation of the research activity developed by universities and public research organisations, and encourage their development and quality. The evaluation considers KPIs on:

- Joint basic and applied research
- Knowledge and Technology transfer
- Patents
- Licensing

The last call registered 16,151 applications, 42.47% of them were evaluated positively.

PARTICIPATION IN UNIVERSITIES' GOVERNANCE

GREECE

The legislation governing Greek universities states that there must be a **council** of 15 people that sit above the university and provide input, direction and assessment, composed by: 7 internal professors, 7 representatives from outside the university and 1 student.

SPAIN

The legislation governing Spanish universities requires the constitution of a **Social Council** though which society participates in the university. It approves annual budgets and must be composed by: 3 representatives of the university management (rector, general secretary and provost), 3 representatives of the university (students, academics, admin), 7 representatives from outside the university.

LIFELONG LEARNING STRATEGIES

ESTONIA

Lifelong learning is regulated in **'The Estonian Lifelong Learning Strategy 2020'.**

This strategy provides essential support and reference points for the advancement of adult learning in the coming years and is viewed as a main strategic document influencing lifelong learning-related funding decisions as well.

The goals set by the lifelong learning strategy reinforce the country's main development objectives as described in the reform programme entitled 'Estonia 2020'.

ATTRACTING TALENT

CHILE

Inspired by the successful international model *New York Tech Talent Pipeline*, **Digital Talent** (*Talento Digital*) is the only country initiative that integrates companies, training institutions and government.

The **aim** is to develop new skills in people, in line with the demands of the digital economy, generating more opportunities to access quality jobs.

Goal to 2022: 16,000 people trained

SKILLS AT THE BASE OF DEVELOPMENT

CANADA

Future Skills Centre

Consortium Partners

Ryerson University — Public university

blueprint analytics, design & evaluation — Non-profit research org.

The Conference Board of Canada — Non-profit applied research org.

Funded by the Government of Canada's Future Skills Program | Canada

Partners

Activities

- Research
- Community of Practice
- Innovation projects
- Regional Sounding-Tour

Advisory board

Representatives of goverment agencies, companies, chambers of commerce, unions, NGOs, research org., universities, institutes, etc.

Aim

¨The Future Skills Centre is dedicated to helping Canadians gain the skills they need to thrive in a changing labor market¨

Which of these policies do you think are more feasible in your region?

www.menti.com
Code: 3576023

Placed-based innovation: from industrial parks to innovation districts

Victoria Galan-Muros

European Commission

Joint Research Centre

Industrial Parks


Business Parks

Technology Parks

Science Parks

Innovation Districts

Ørestad Innovation City, Denmark

Well-connected high-density highly collaborative innovation spaces

Innovative Organizations
Innovative Companies (Large, SMEs, start-ups, spin-offs, entrepreneurs)
HEIs / Ris
Intermediaries
Talented People
Talent attraction / retention
Quality Place
Third spaces
Shared facilities
Mixed Governance
Sustainable Finance
Strategies
Programming
Relationship with community

Innovation Districts

THE EVOLUTION OF PLACE-BASED INNOVATION

	Industrial Parks	Business Parks	Technology Parks	Science Parks	Innovation Districts
Variety of actors					
Presence of HEIs/RIs	-	-	-/+	-/+	+
Governance					
Quality of place					
Community	-	-	-	-	+
Potential for innovation					

MAIN BARRIERS AND A BIG QUESTION GOING FORWARD

Three top Barriers:

- Top-down approach
- Focus on infrastructure/real state vs people
- Inappropriate mix of actors

Big question:

What's the future of place-based innovation in a post-Covid digital world?

BREAK

European Commission

Joint Research Centre

See beyond a lack of funding: Effective low/no cost UBC activities

Victoria Galan-Muros

European Commission

Joint Research Centre

UBC BARRIERS IN EUROPE | Top 3 most relevant

University Management

- Limited resources of SMEs
- Lack of business funding for UBC
- Lack of government funding for UBC

Academics

- Limited resources of SMEs
- Bureaucracy related to UBC
- Insufficient work time allocated by the university for academics´ UBC activities

Business

- Lack of people with business knowledge within universities
- Differing motivations between universities and our business
- Differing time horizons between universities and business

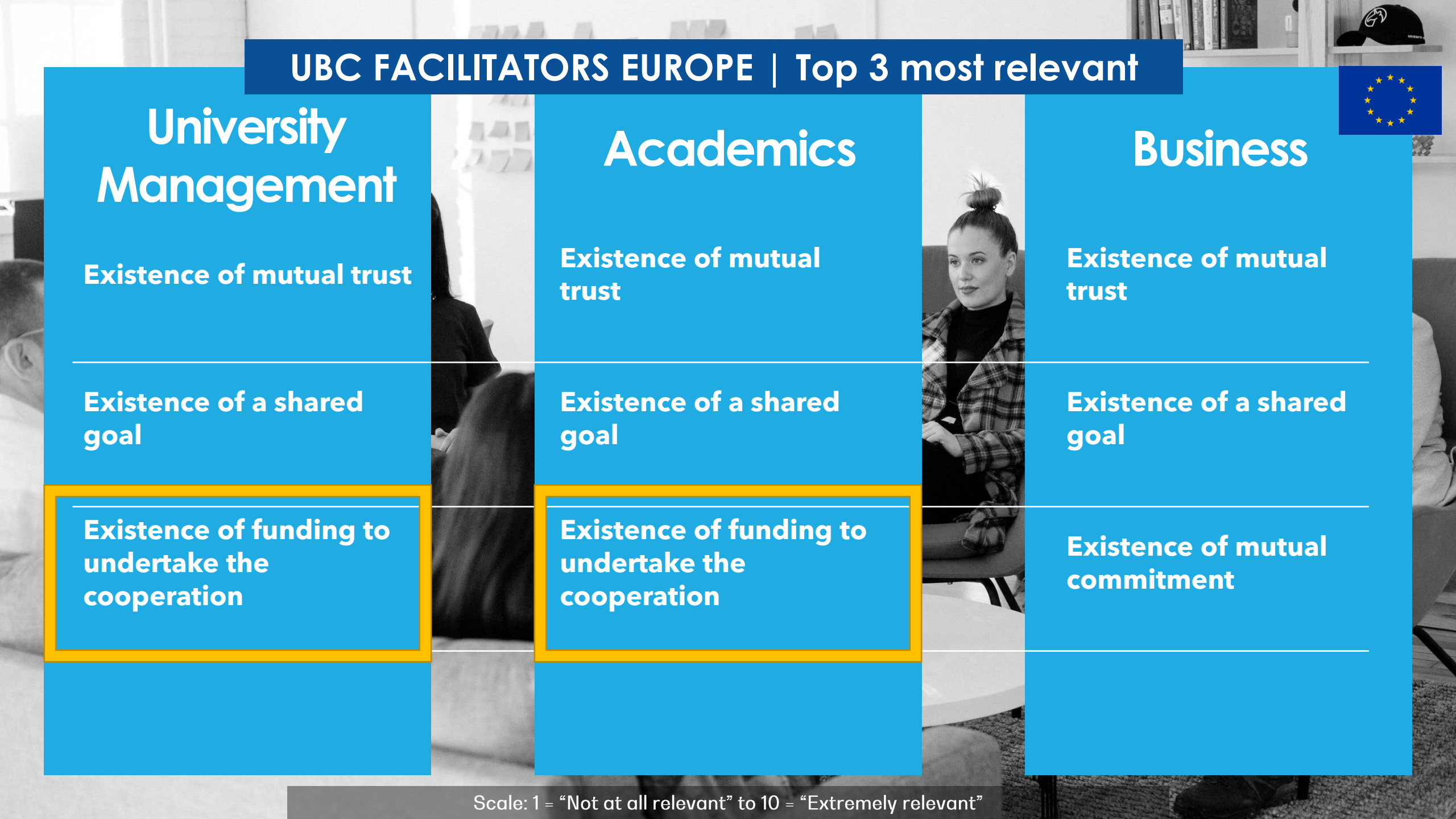
Scale: 1 = “Not at all relevant” to 10 = “Extremely relevant”

UBC MOTIVATORS EUROPE | Top 3 most relevant

University Management	Academics	Business
To obtain funding / financial resources	Gain new insights for research	Get access to new technologies and knowledge
To improve graduate employability	Use my research in practice	Improve our innovation capacity
To use the university´s research in practice	Address societal challenges and issues	Access new discoveries at an early stage

Scale: 1 = “Not at all relevant” to 10 = “Extremely relevant”

UBC FACILITATORS EUROPE | Top 3 most relevant



University Management	Academics	Business
Existence of mutual trust	Existence of mutual trust	Existence of mutual trust
Existence of a shared goal	Existence of a shared goal	Existence of a shared goal
Existence of funding to undertake the cooperation	Existence of funding to undertake the cooperation	Existence of mutual commitment

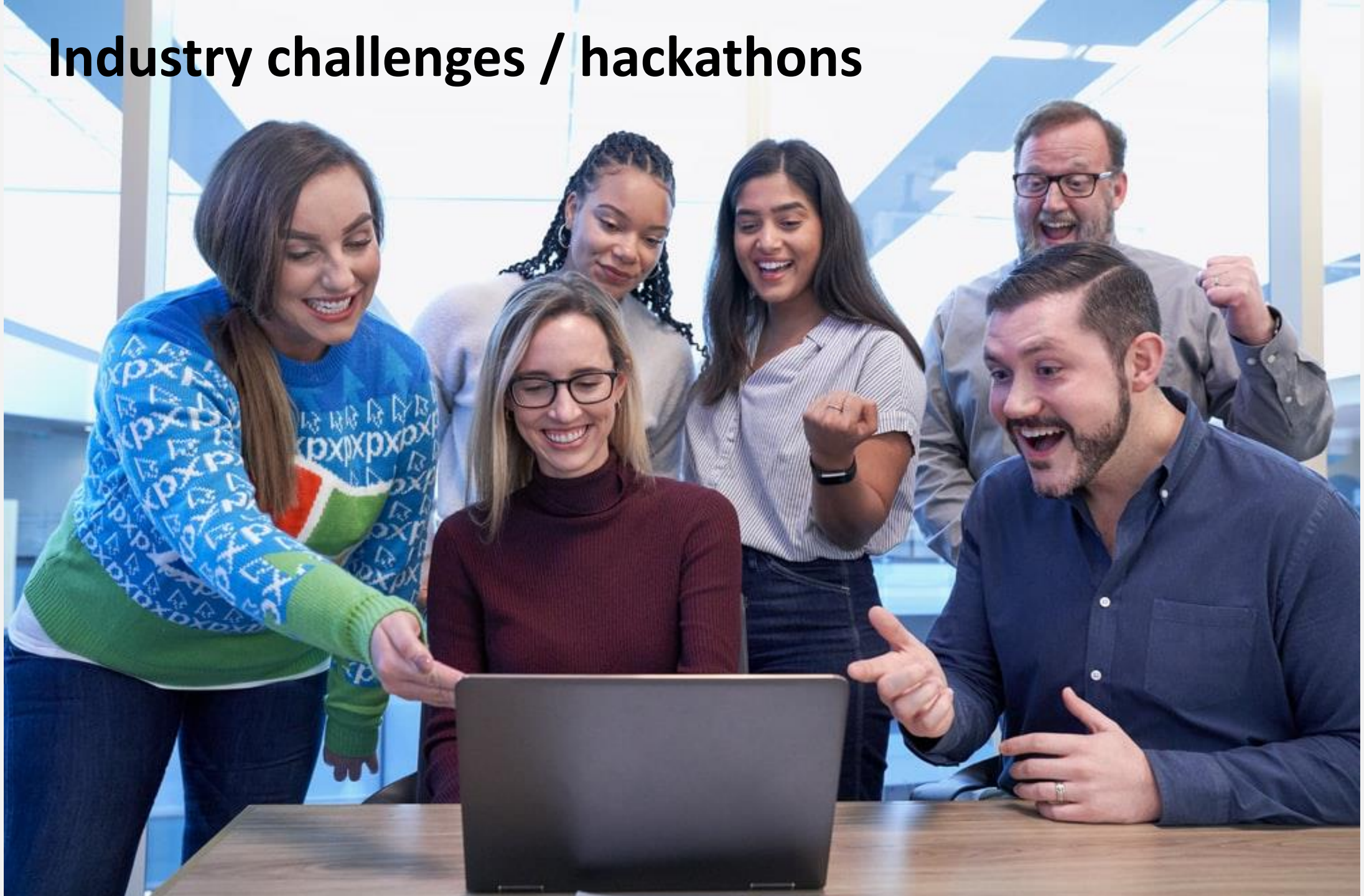
Scale: 1 = “Not at all relevant” to 10 = “Extremely relevant”

Let's assume it is indeed true. There is a lack of funding for UBC in Europe.
Is there something we can do *(beyond waiting for it)* ?


Coffee and donuts

Breakfast with industry

Industry challenges / hackathons



High-quality internships

Entrepreneurship education and contests


Curriculum
codesign

Guest lectures

Lifelong learning courses

Shared resources

Governance

Invite industry researchers

Offer consultancy services to industry

Facilitating cooperation

(at no/low cost)

Appoint one person as unique and central contact point

Simplify bureaucracy

Training for academics and intermediaries

Showcase your research

HR Policy

(hiring & incentives)

Which other activities can you do with no/little funding?

Knowledge/ technology transfer offices and intellectual property

Victoria Galan-Muros

European Commission

Joint Research Centre

So, should we just commercialise reaserch more?

> In 1991, the total license revenue for US universities was $130 million, in 2018 it was $2.9 billion.

> However, 15 US universities produce nearly 70% of the US license income.

> Since 1970, Stanford had over 5,000 patents issued, only 79 of those generated more than a million, only 3 generated more than $100 million.

WHAT IS INTELLECTUAL PROPERTY?

Legal Right	What for?	How?
Copyright	Literary and artistic creation	Automatically exists
Patent	New Inventions	Application and examination
Trademark	Distintive sign for good and services	Use and/or registration
Industrial Design	External Appearance	Registration
Geographical Indicators	Qualities or reputation attached to that origin	Registration

HOW IS THIS PROTECTED?

TRADE SECRET

COULD BE PROTECTED? HOW?

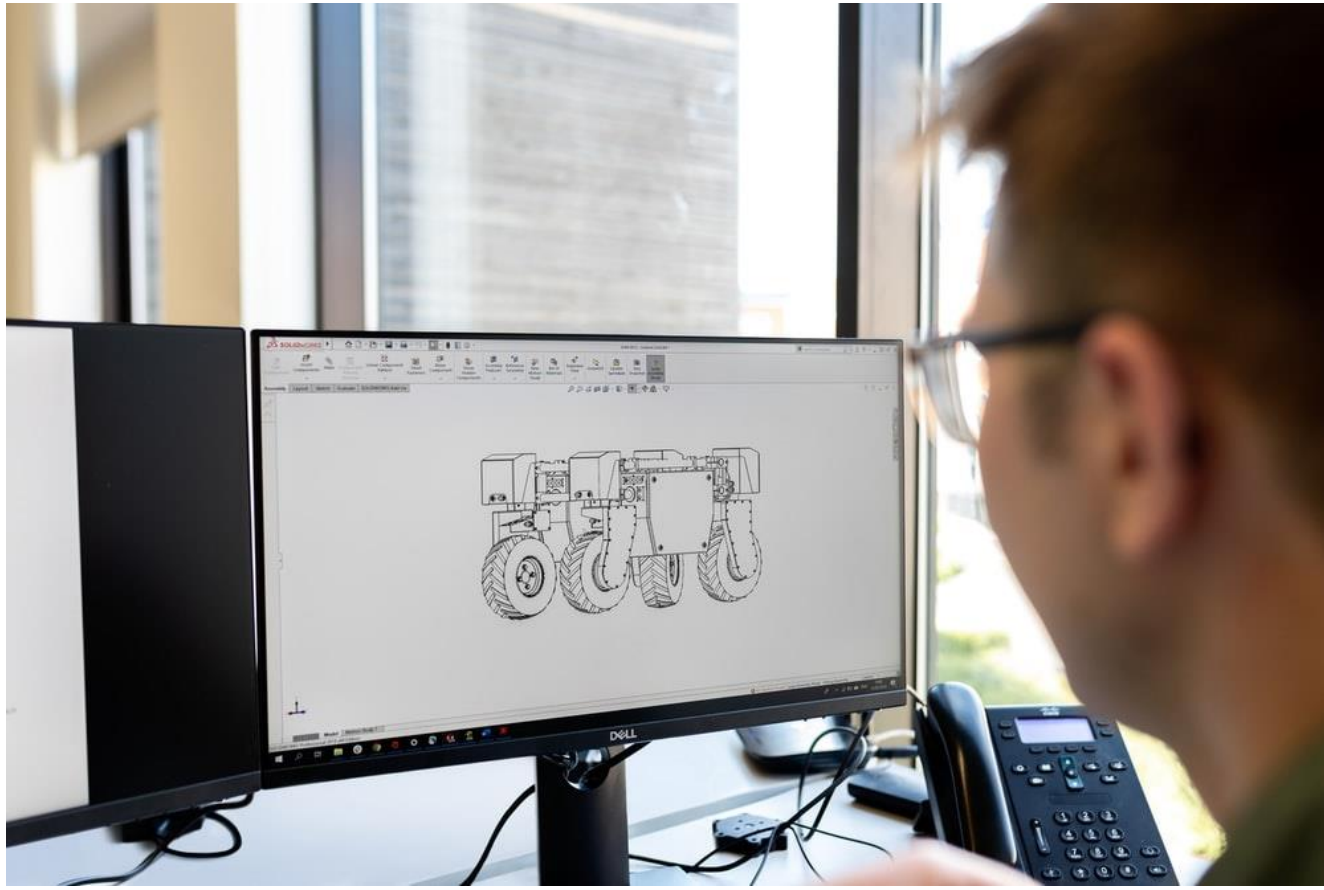
WHEN TO PROTECT?

If your invention is :

- **New** (novel),
- **Useful**: improves life or solve a problem
- **Not obvious** to someone working in the related field.

You should protect it.

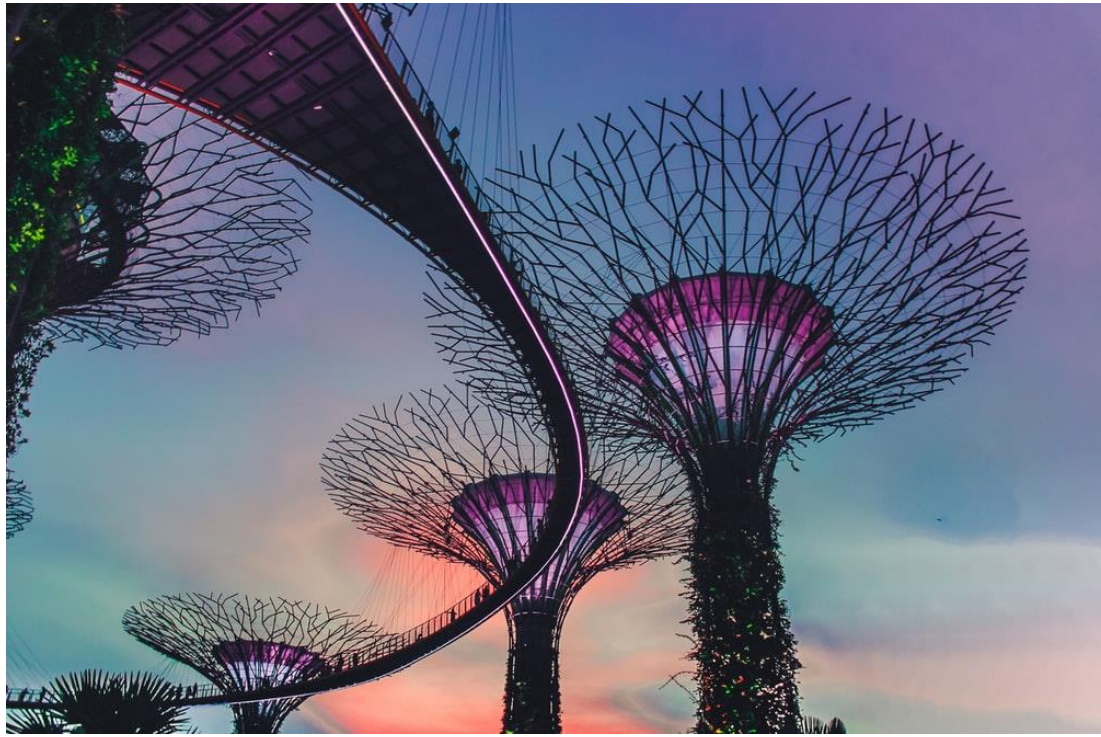
Source: WIPO



SHOULD YOU?

A PATENT CAN:

- **Recognize and reward** inventors
- **Finance** further technological research and development through commercialization revenues
- Turns an **inventor's know-how into a commercially** tradeable asset
- Make **small business more attractive** to investors
- **Spark new ideas** and promote new inventions



Source: WIPO, 2017

DOES IT ALWAYS?

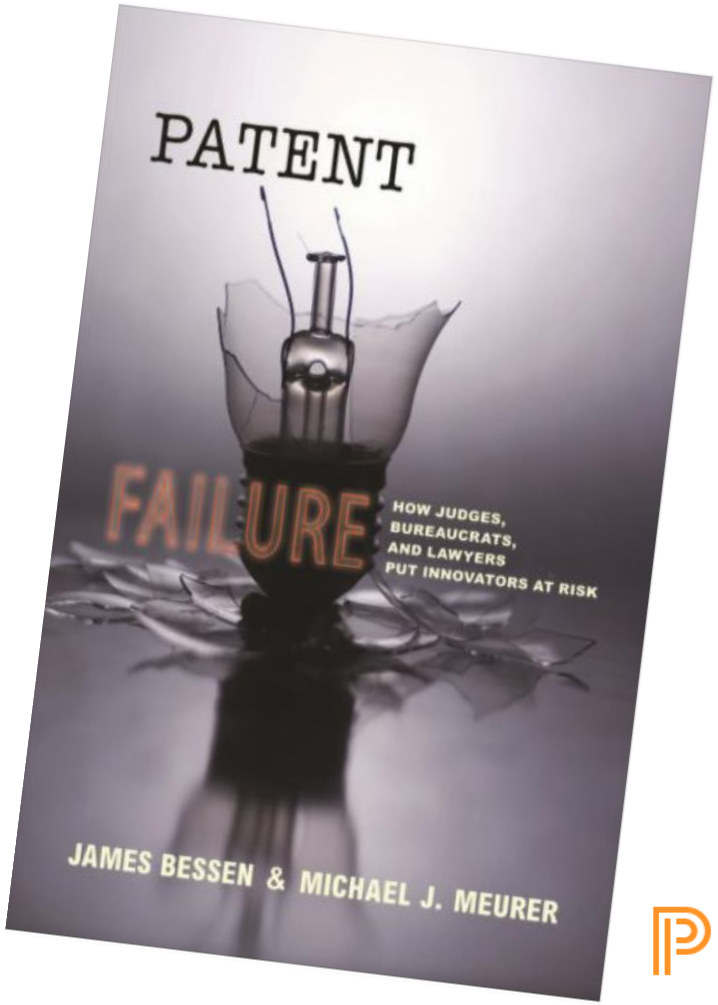
Patents can cost from 15.000 € (simple ideas and DIY approach) to +100.0000 € (more complex ideas & legal support)

“Over 95% of the patents filed are never commercialized or licensed”

PATENT FAILURE

¨While patents do provide incentives to invest in research, development, and commercialization, for ***most*** *businesses today,* ***patents fail to provide predictable property rights****. Instead, they produce* ***costly disputes and excessive litigation that outweigh positive incentives****. Only in some sectors, such as the pharmaceutical industry, do patents act as advertised, with their benefits outweighing the related costs.¨*

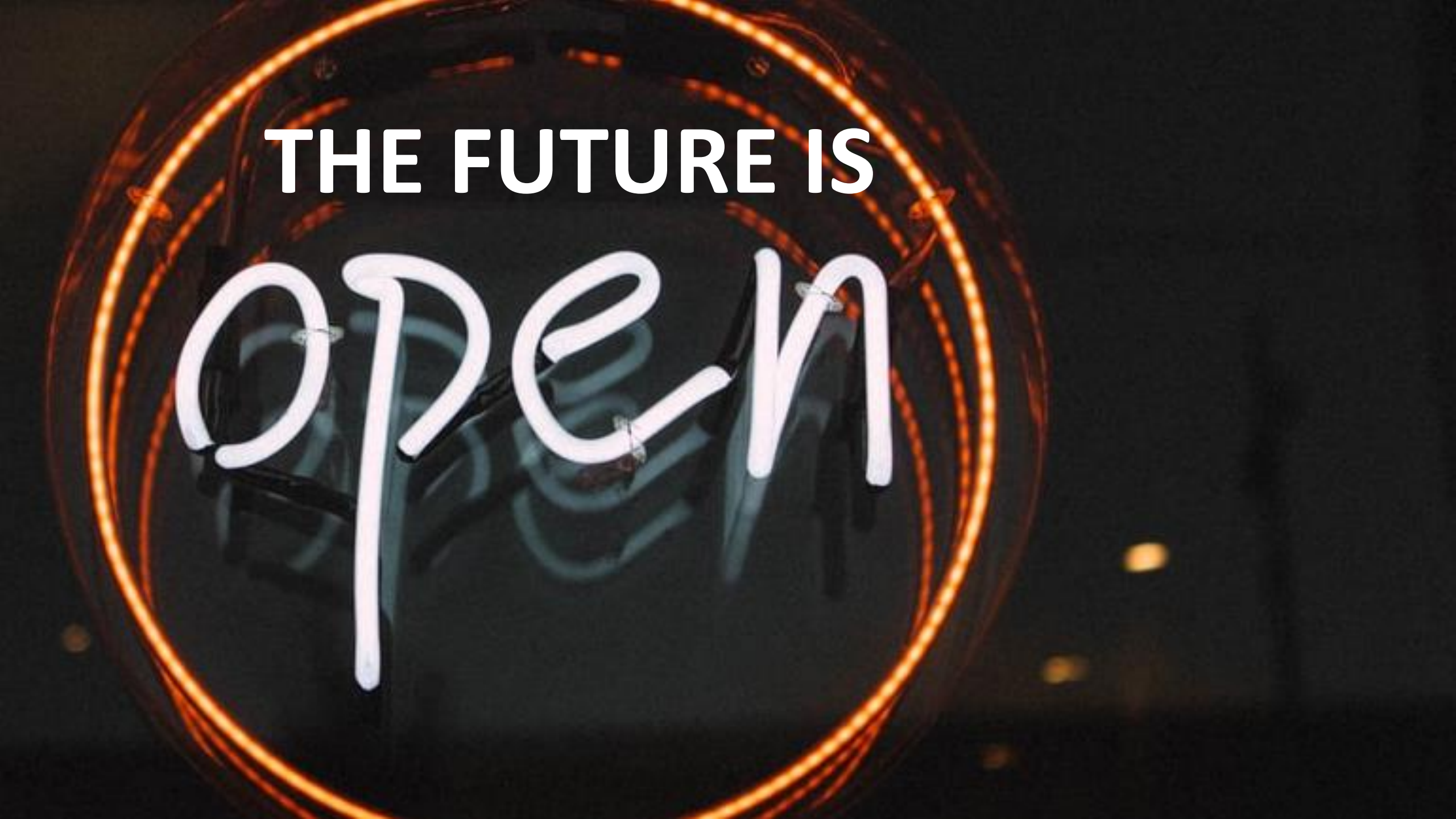
Bessen and Meurer (2009) Patent Failure



https://press.princeton.edu/books/paperback/9780691143217/patent-failure

OPPORTUNITY COST

IS IT WORTH IT?


THE FUTURE IS
open

ONE-STOP SHOP FOR INNOVATORS

UNIVERSITY OF CAMBRIDGE
enterprise

Part of the University of Cambridge, Cambridge Enterprise supports academics, researchers, staff and students in achieving knowledge transfer and research impact.

- Income from knowledge and technology transfer: **£32.3 million**
- Distributions to academics, the University and others: **£16.5 m**
- Costs (staff and other operating costs): **£5.4 million**

The university has helped academic and governmet partners around the globe that want to achieve growth by commercialising their resaserch and knowledge base. Some of them are Botswana, Brazil, Chile, China, Colombia, Czech Republic, Finland, Poland, Pakistan.

Additionally, Cambridge Enterprise offers a Research Commersialisation Open Programme.

Investment in numbers

2018-2019

13
pre-seed investments

£6.6m
invested in 27 spin-out companies

10
seed companies formed

£19.9m
returned to Cambridge Enterprise and University of Cambridge

CUMULATIVE

£1.8bn
in follow-on funding raised by portfolio companies since 1995

£25.8m
invested over fund lifetime

Impact
notable spin-outs: Quethera, BlueGnome and Solexa

4.4x
multiple across realised investments

214 investments
made in 126 companies

£56.4m
current portfolio value

UNIVERSITY OF CAMBRIDGE
enterprise

Our team

At Cambridge Enterprise we work together to provide support to University staff and students interested in commercialisation. Whether you're ready to form a spin-out or just want to have an informal chat about the applications of your research, please get in touch.

In the interests of reducing spam, we have removed individual email addresses. If you would like to contact someone, please use firstname.lastname@enterprise.cam.ac.uk. Our general email address is enquiries@enterprise.cam.ac.uk.

Our Board

Executives

Consultancy Services

Seed Funds

Technology Transfer

International Outreach

Finance and Operations

Business Support

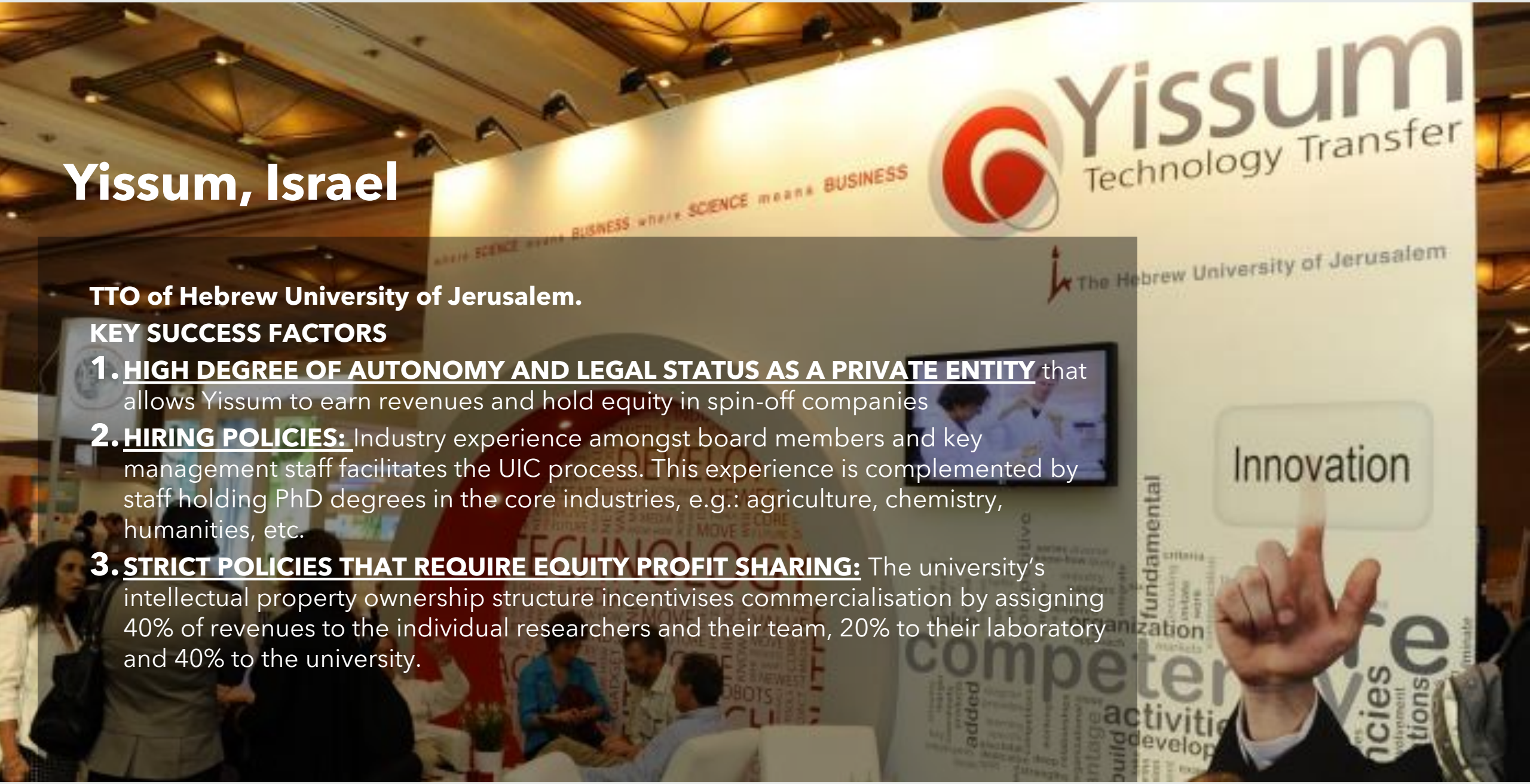
Marketing and Communications

Information Technology

UNIVERSITY OF CAMBRIDGE
enterprise

TRANSFORMING IDEAS AND INVENTIONS INTO COMMERCIAL AND SOCIAL ENTERPRISES

https://www.enterprise.cam.ac.uk/about-us/our-team/



Yissum, Israel

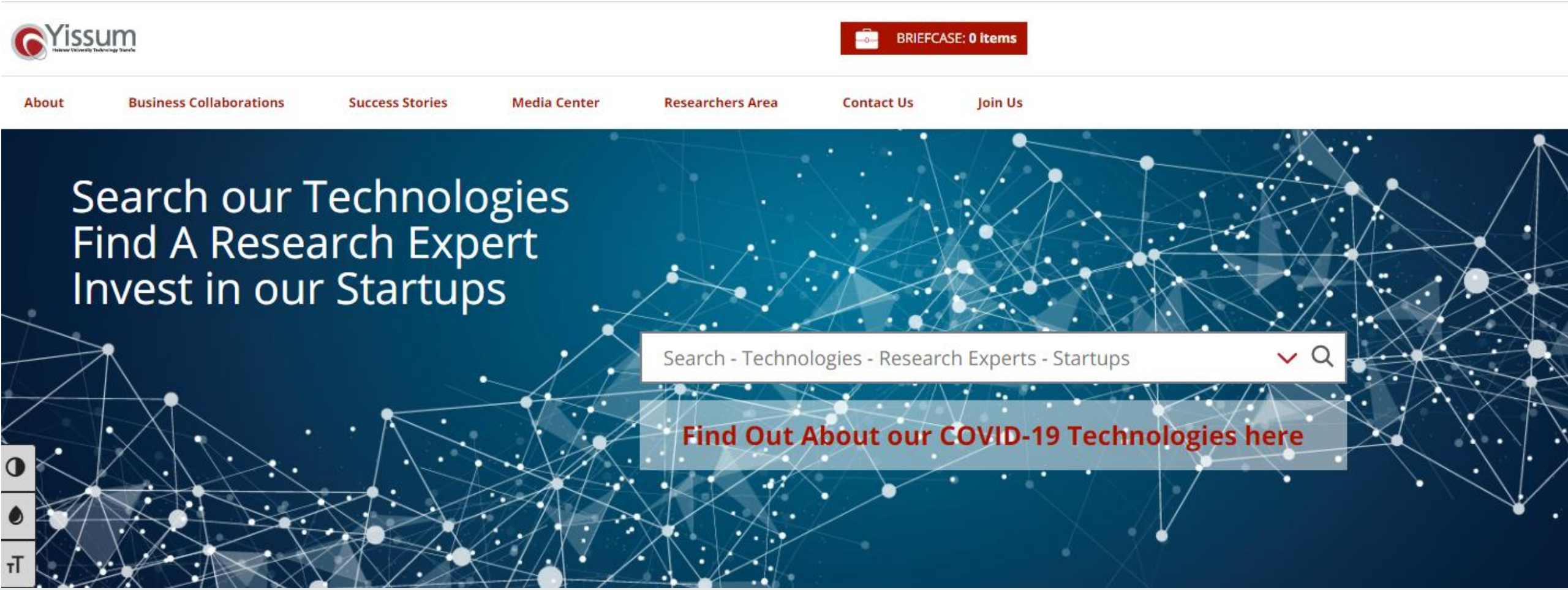
TTO of Hebrew University of Jerusalem.

KEY SUCCESS FACTORS

1. **HIGH DEGREE OF AUTONOMY AND LEGAL STATUS AS A PRIVATE ENTITY** that allows Yissum to earn revenues and hold equity in spin-off companies
2. **HIRING POLICIES:** Industry experience amongst board members and key management staff facilitates the UIC process. This experience is complemented by staff holding PhD degrees in the core industries, e.g.: agriculture, chemistry, humanities, etc.
3. **STRICT POLICIES THAT REQUIRE EQUITY PROFIT SHARING:** The university's intellectual property ownership structure incentivises commercialisation by assigning 40% of revenues to the individual researchers and their team, 20% to their laboratory and 40% to the university.

Yissum, Israel

http://www.yissum.co.il/



unitectra

Universität Basel

UNIVERSITÄT BERN

Unitectra is the technology transfer organization of the Universities of Basel, Bern and Zurich.

The main services of Unitectra are:

- Support for the creation of new spin-off companies
- Negotiation of research agreements
- Contact point for business partners with regard to technology transfer issues
- Training and education for scientists in the field of technology transfer

Results from 1999 to 2019:

- Evaluations of 2000 invention disclosures
- 200 spin-off companies
- 100 products under license
- 18,000 research project negotiated

BME FIEK – BUSINESS INTEGRATION

The BME Centre for University-Industry Cooperation (BME FIEK) was established in 2017 as the joint project of four large corporations and the Budapest University of Technology and Economics.

AIM: Promote the market utilization of scientific results generated by the University, technology and knowledge transfer, supports research, development and innovation cooperation between the University and the business community.

In FIEK projects, industrial colleagues, associate researchers and students work together. The result is the Industry-University **win-win model** resulting in a joint R&D capacity.

Funding: government funded (2/3) and self-funded (industrial partners, 1/3)

BME FIEK includes 5 applied research laboratories and aims to serve industries as a whole

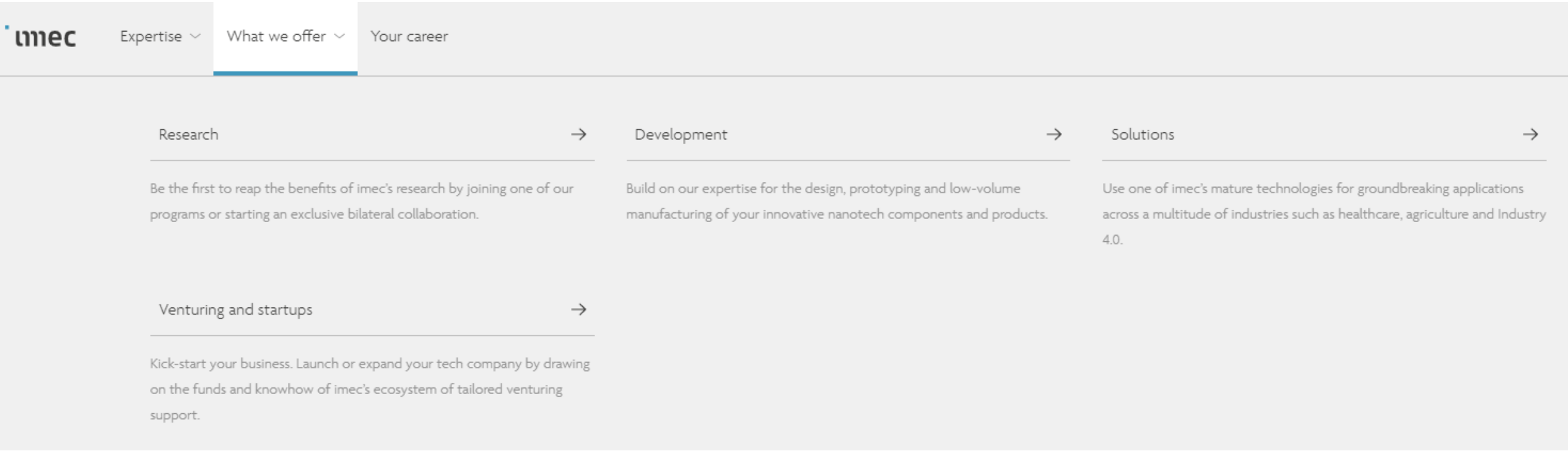
PUSHING THE BOUNDARIES OF TECHNOLOGY

iMinds has been established in 2004 by the **government of the Flemish Region**. The activities of iMinds was centred **on two pillars**: [1] collaborative and **demand-driven research**, and [2] **foster entrepreneurial behaviour amongst researchers** and externals and supporting commercialisation.

In 2016, the initiative **became an additional business unit of Imec**, a world-leading research and innovation hub in nanoelectronics and digital technologies headquartered in Leuven, Belgium.

Imec has distributed R&D groups at several **Flemish** universities, in the **Netherlands, Taiwan, USA**, and offices in China, India and Japan. In **2019, imec's revenue (P&L) totaled 640 million euro**.

PUSHING THE BOUNDARIES OF TECHNOLOGY



https://www.imec-int.com/en

FROM RESEARCH TO SPIN –OFF: A COLLABORATION CASE

The **microfluidic technology of Tide Microfluidics was discovered** when founder Mr. Wim van Hoeve investigated the principles underlying microbubble formation **as part of his PhD-thesis at the University in Twente.**

The technology works by enabling the controlled creation of micro particles–either bubbles or droplets–in a highly controlled environment.

The University of Twente and the University of Sevilla jointly own the patent protecting this technology, with an **exclusive license granted to Tide Microfluidics** to develop and commercialise the technology.

Source: WIPO, Case of Studies

TU Dublin Hothouse is the **award-winning Knowledge Transfer and Incubation Centre at Technological University Dublin**; responsible for the commercialisation of intellectual property arising from TU Dublin research.

Dublin Hothouse has a range of **spinout technologies** available to industry across: Life Sciences, Food, ICT, Software, Industrial Technology, Manufacturing and Clean Technologies.

From 2017 to 2019, Hothouse helped create nearly **400 sustainable businesses** that attracted over **€200 million** in equity **investment** and created approximately **1,700 quality jobs**.

KEY SUCCESS FACTORS

1. FOCUS and clarity about what they're good at
2. They are EASY to work with and FLEXIBLE
3. BIG PICTURE vision. 360 degrees understanding of the ecosystem
4. PERSONAL RELATIONSHIPS OVER IP
5. BUSINESS ACUMEN AND PROCESSES: Which they apply having very professional people, streucturees and systems
6. TRANSPARENCY IN THE PROCESS which helps to manage expectations and avoid misunderstandings
7. DIFFERENTIATION BETWEEN APPLICATIONS AND TECHNOLOGIES
8. THE PROFILE OF THE FOUNDER AND DIRECTOR, AS WELL AS THE TEAM
9. A SUPPORTIVE ENVIRONMENT

TUDublin Hothouse, Ireland

1 min BREAK

European Commission

Joint Research Centre