



The State of European University- Business Cooperation

27th May

Prof. Dr. Todd Davey
European Convention of
Engineering Deans
Leuven, Belgium



**Institut Mines-Télécom
Business School**



360° of university-business cooperation

1. **Professor / educator** – A/Professor at Institut Mines-Télécom Business School (FR), Visiting Fellow: Imperial College (UK), University of Adelaide (AU), *Technical University of Vienna*
2. **Researcher** – *PhD, Science-to-Business Marketing Research Centre*
3. **Business professional & policy consultant** – MD at *Apprimo*, Senior Manager at *Deloitte in the Technology Commercialisation Group*
4. **Entrepreneur** – *Chimo (Head of strategy and BD in a fast growth start-up), TechAdvance, Tipayatung, Apprimo*



About *(me)*



UNIVERSITY-BUSINESS
COOPERATION IN EUROPE

Why university-business cooperation (UBC)?

WHY UBC?

U-B relationships are the engines of
a *(knowledge)* society

Farming¹
(land)

Industrial age²
(labour)

Knowledge society³
(Innovation)

Consisting of:

1. Innovative business
2. 3rd gen. university / science
3. Govt. (support)



Why UBC?

University-Business cooperation is crucial for creating (*innovative*) businesses

(1) Innovative business (SME focus)

Possessing:

- a) Innovation
 - R&D
 - ICT
 - Technology
- b) Skilled people (Human capital)

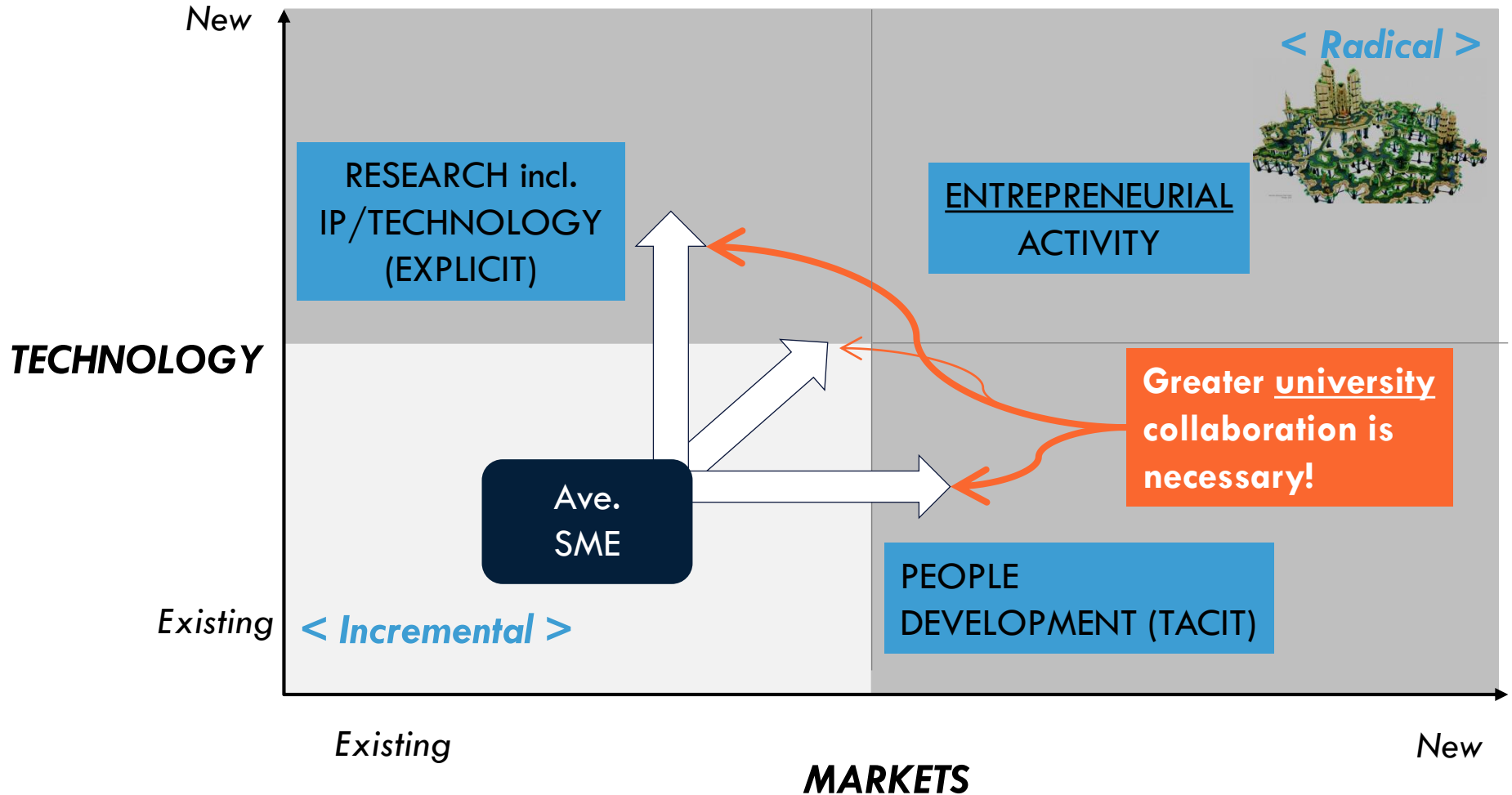
(2) Third-generation university

1. Teaching
2. Research
3. Engagement

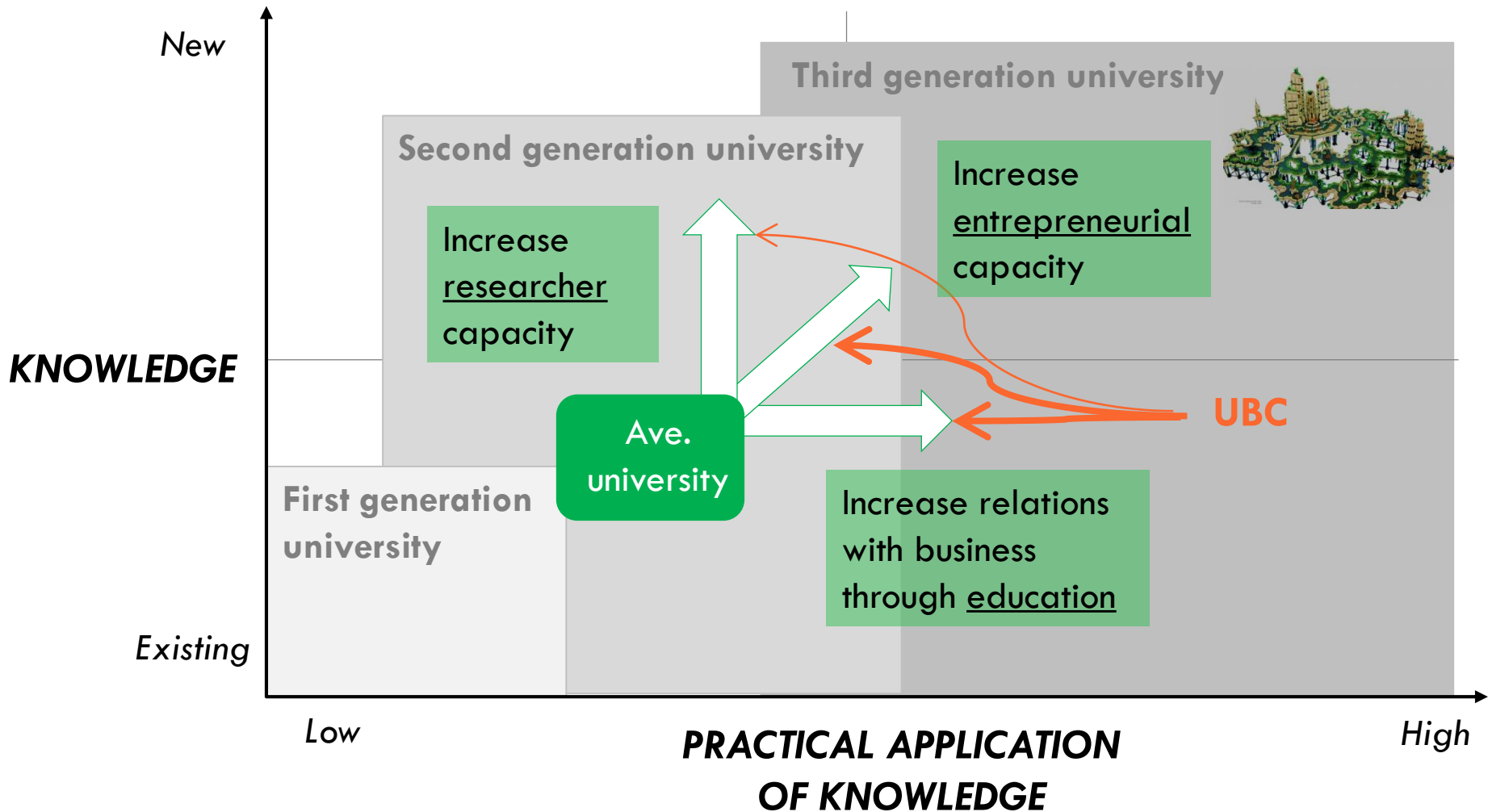
University-business cooperation



... UBC is crucial for (business) innovation development



... and university-cooperation is vital to develop the **3rd GENERATION UNIVERSITY**



**So, should we just
commercialise research
more?**

In 1991, the total license revenue for US universities was \$130 million, in 2015 it was \$2.4 billion.

”

“

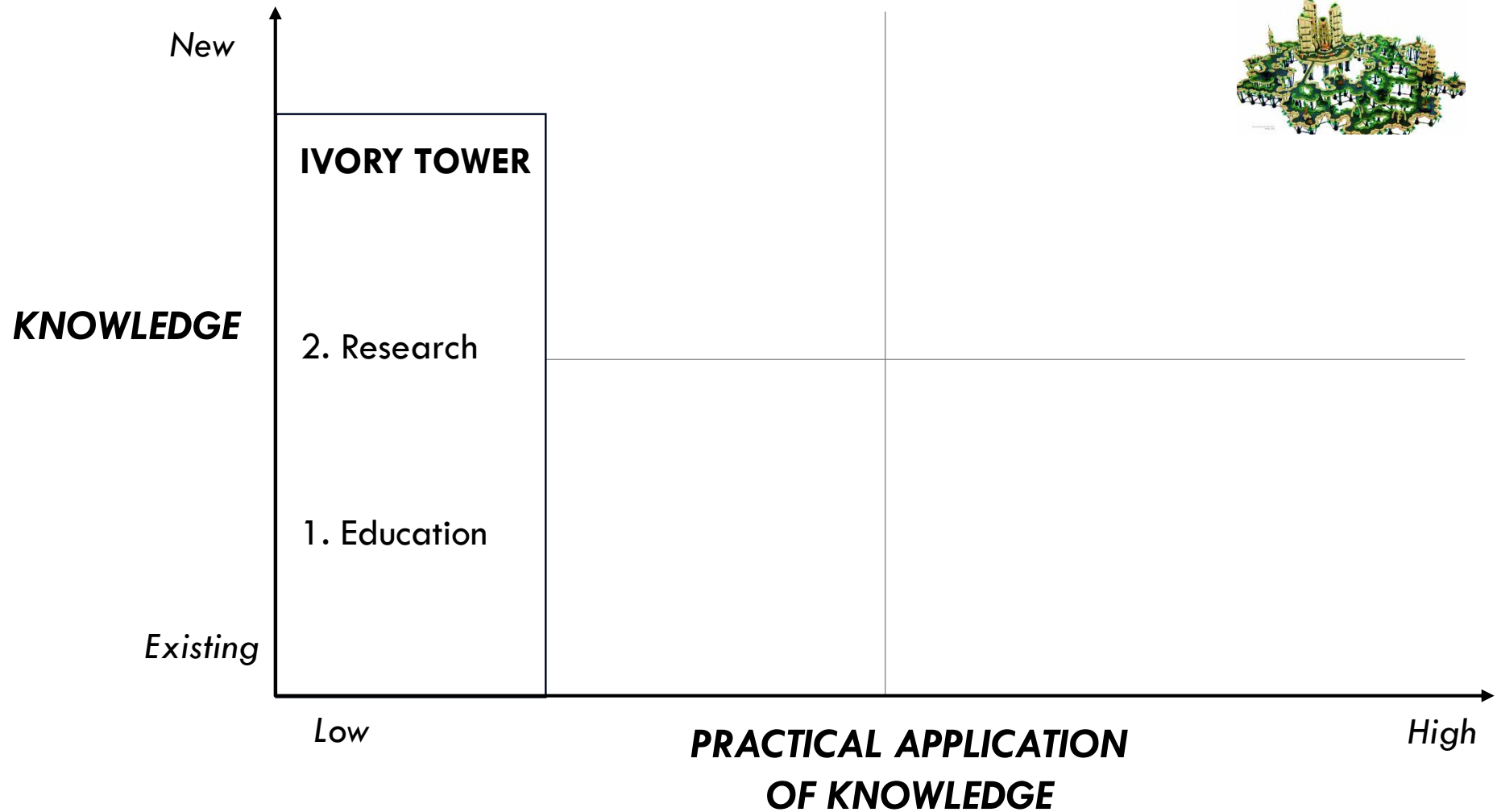
”
However, 15 US universities
produce nearly 70% of the
US license income.
“

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.

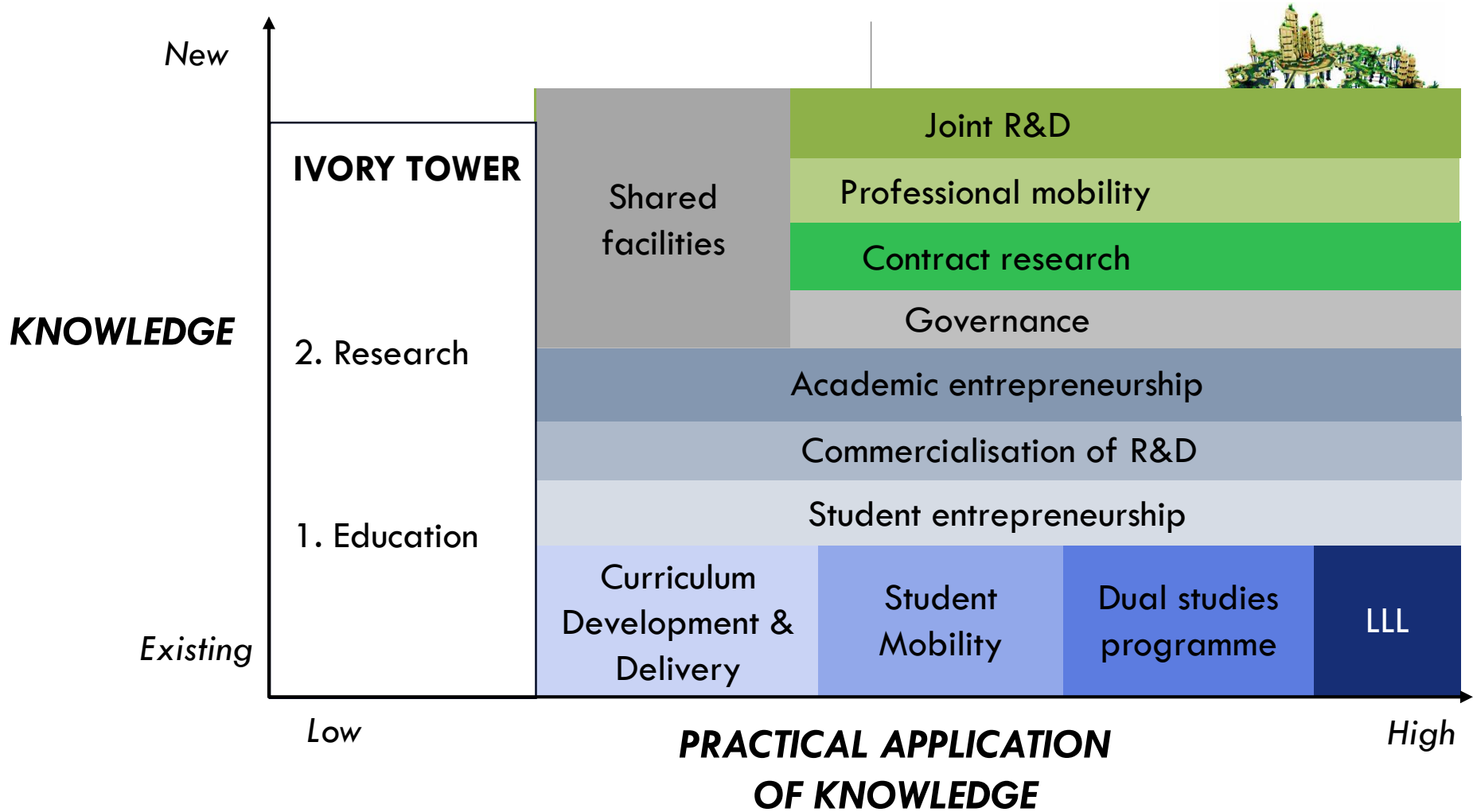
”

“

... and university-cooperation is vital to develop the **3rd GENERATION UNIVERSITY**



... and university-cooperation is vital to develop the **3rd GENERATION UNIVERSITY**





UNIVERSITY-BUSINESS
COOPERATION IN EUROPE

The State of European University- Business Cooperation Study

”
A better understanding of the
bigger picture of university-
business cooperation in Europe
“



ABOUT THE STUDY

Executed for the **DG Education & Culture, the European Commission** between 2016-2018, the project seeks to determine:

- the extent of University-Business Cooperation (UBC),
- the mechanisms supporting UBC
- the motivators, facilitators, barriers and other factors affecting UBC from the perspective of both **university** and **business**.

The project is the **largest international study yet completed** on the topic of University-Business Cooperation and includes:

1. 51 good practice case studies
2. 24 expert interviews
3. Major survey (over 17,400 responses)
4. Policy review



www.ub-cooperation.eu

Core Partners

LEAD PARTNER

Science Marketing
Science-to-Business Marketing Research Centre

PARTNERS

technopolis [group]

ingenio
CSIC-UPV



Universiteit Leiden

UIN
University Industry
Innovation Network



EUROCHAMBRES

EURASHE
European Association of Institutions in Higher Education



17431

HEIs
14.318

Business
3.113

Largest quantitative study of its kind

1162

**CHEMICAL
ENGINEERING**
140

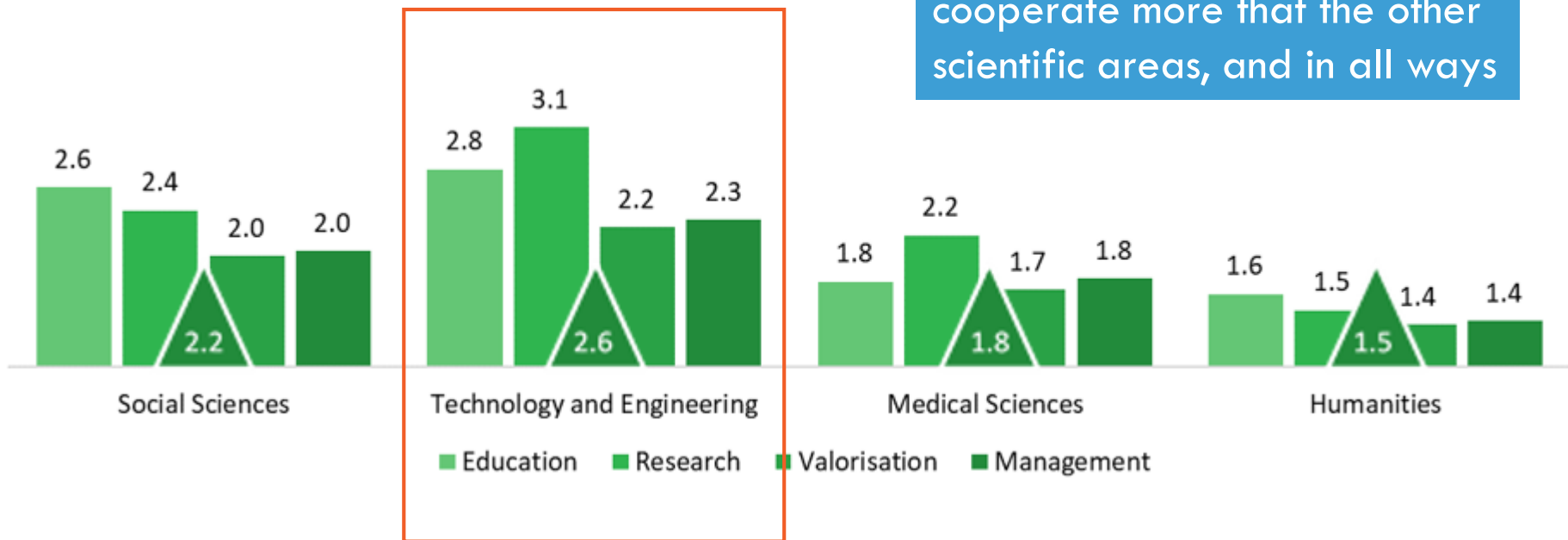
**CIVIL
ENGINEERING**
213

**ELECTRICAL
ENGINEERING**
355

**MECHANICAL
ENGINEERING**
454

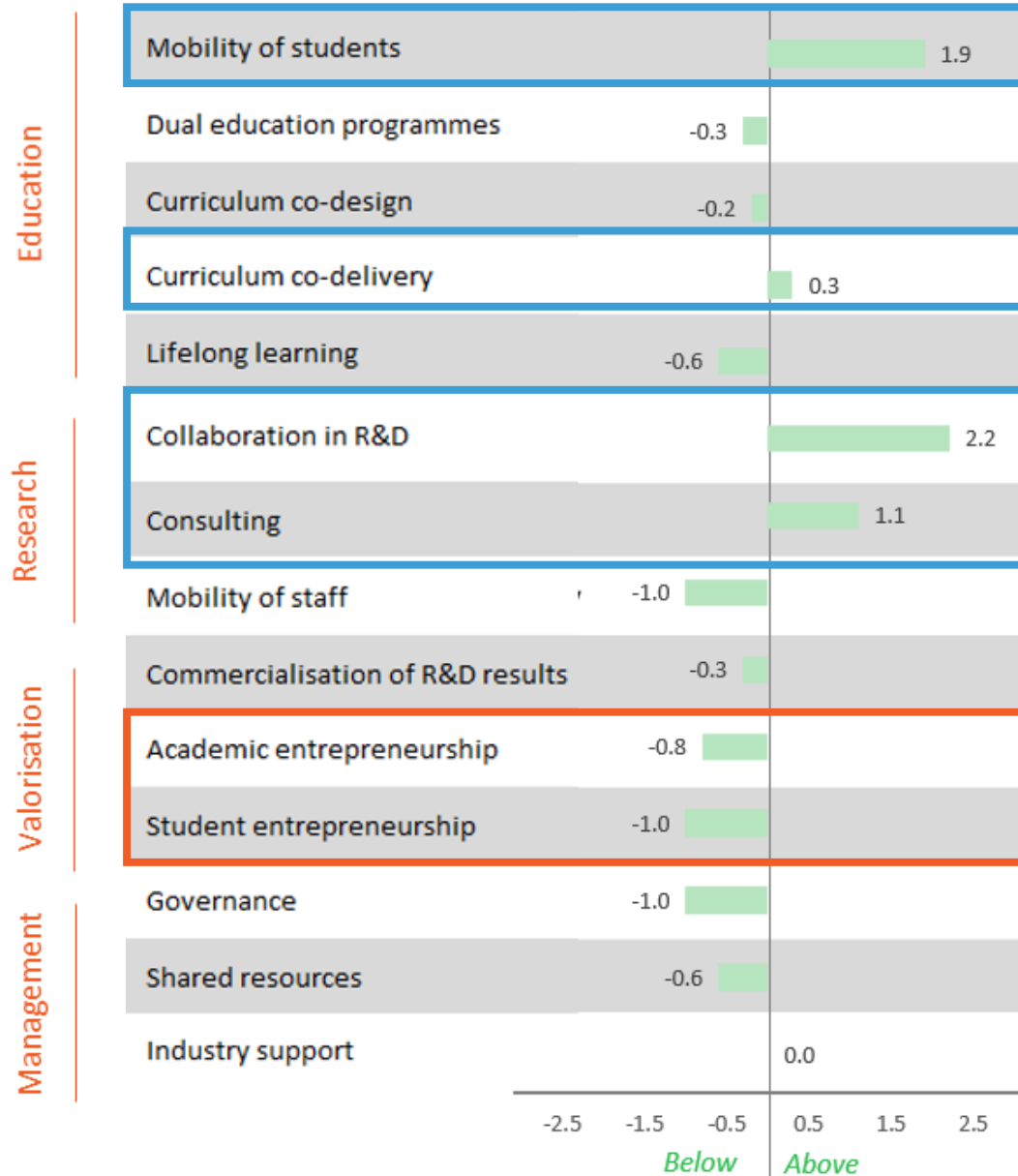
WHAT DO THEY DO WITH BUSINESS?

How do academics working in different areas of knowledge cooperate with business and to what extent (areas of UBC)? Scale from 1 = "Not at all" to 10 = "To a large extent".



ENGINEERING FACULTY RESULTS

WHAT DO THEY DO WITH BUSINESS?



Strong in student mobility, collaboration in R&D and consulting

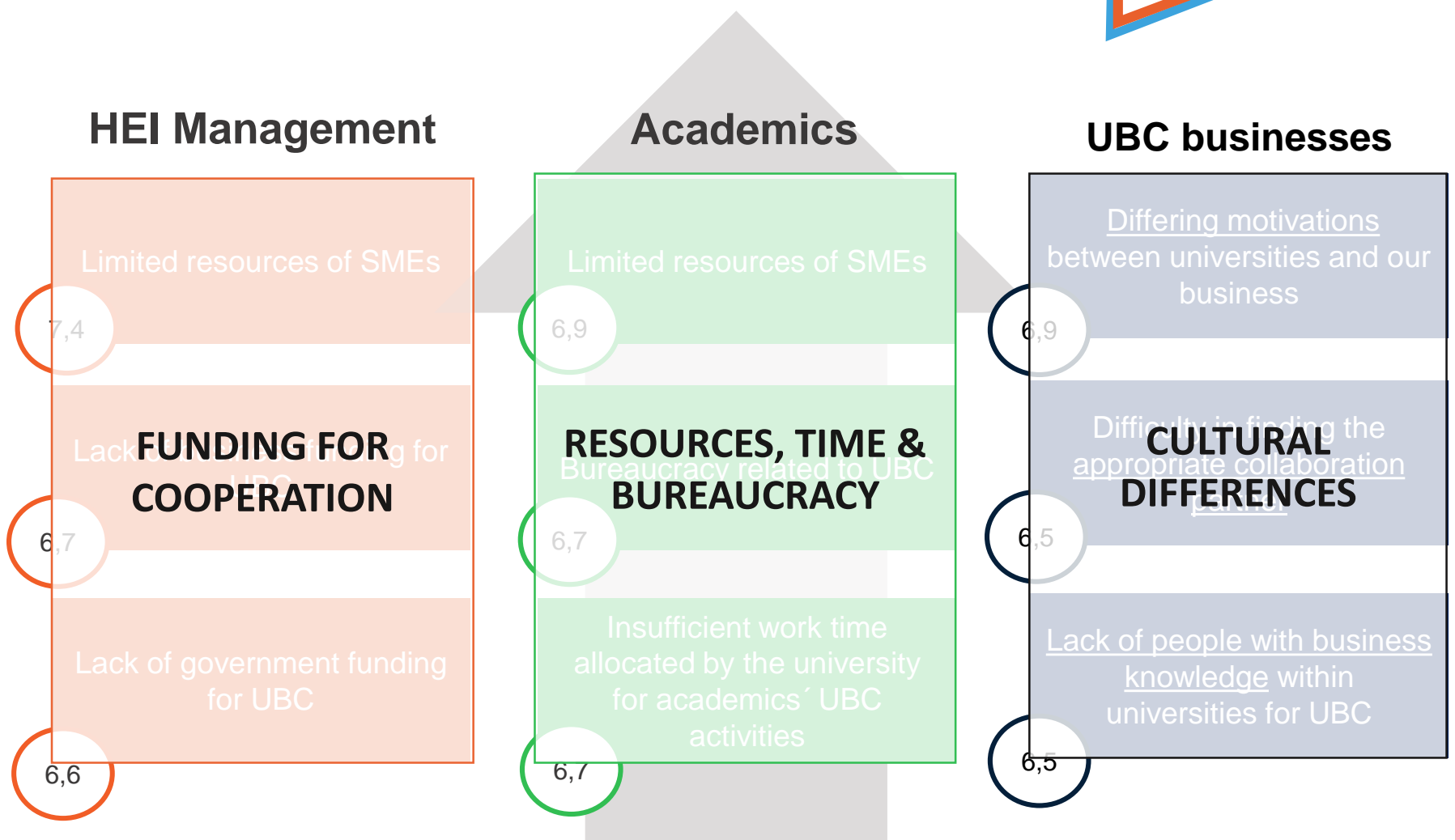
Improvement in academic and student entrepreneurship



UNIVERSITY-BUSINESS
COOPERATION IN EUROPE

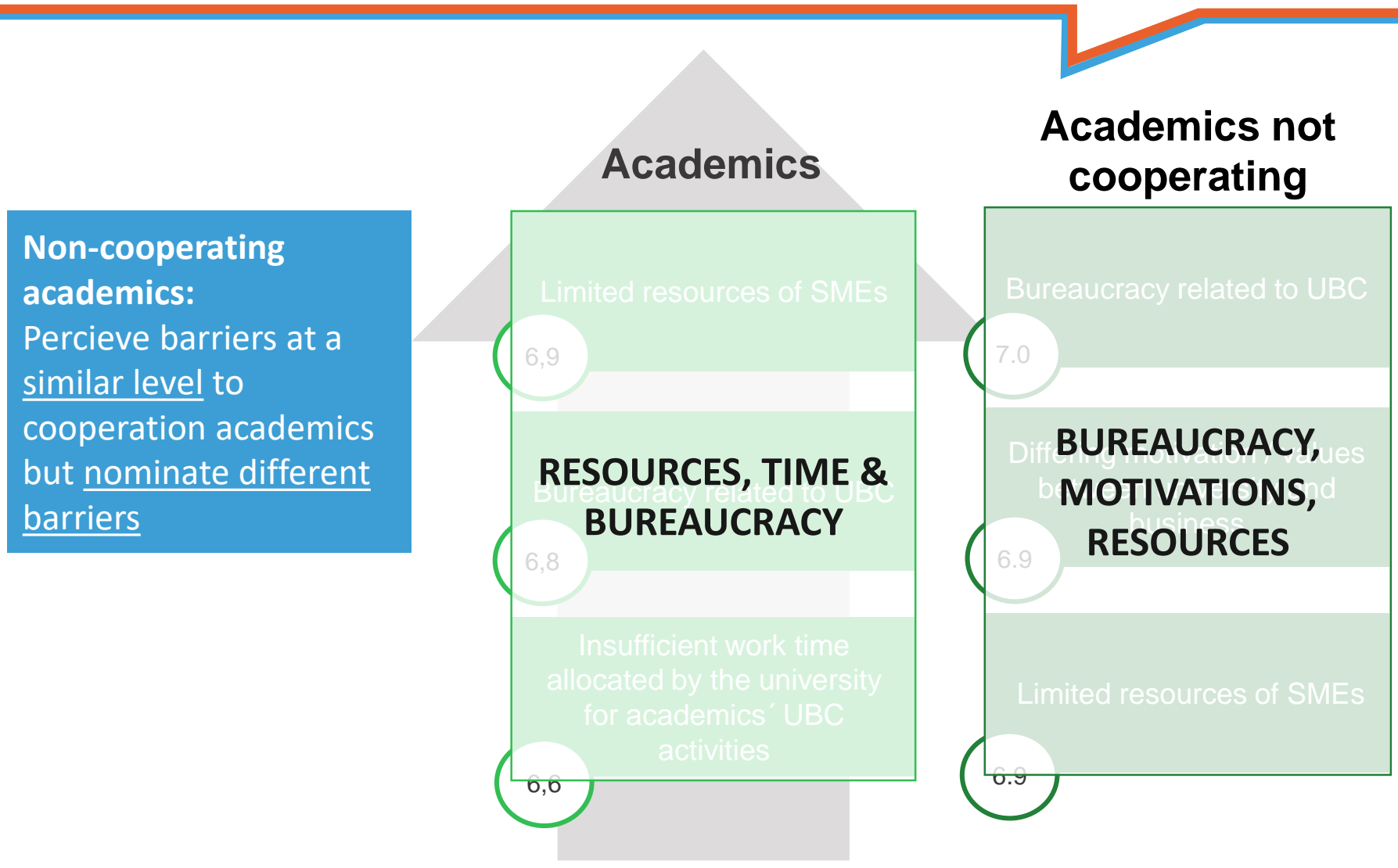
What is hindering cooperation?

BARRIERS | TOP 3 MOST RELEVANT

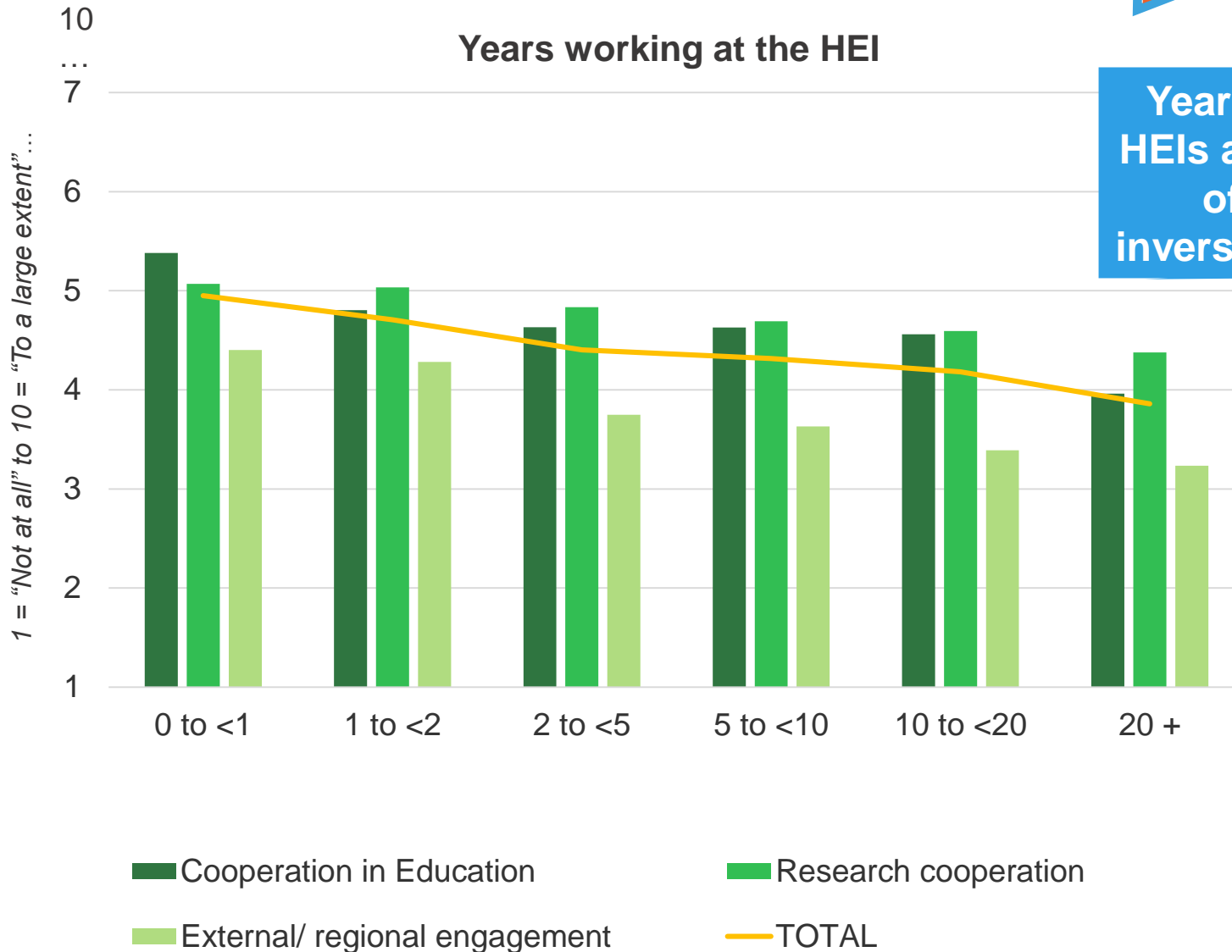


Scale: 1 = "Not at all relevant" to 10 = "Extremely relevant"

BARRIERS | TOP 3 MOST RELEVANT



The 'University' influence



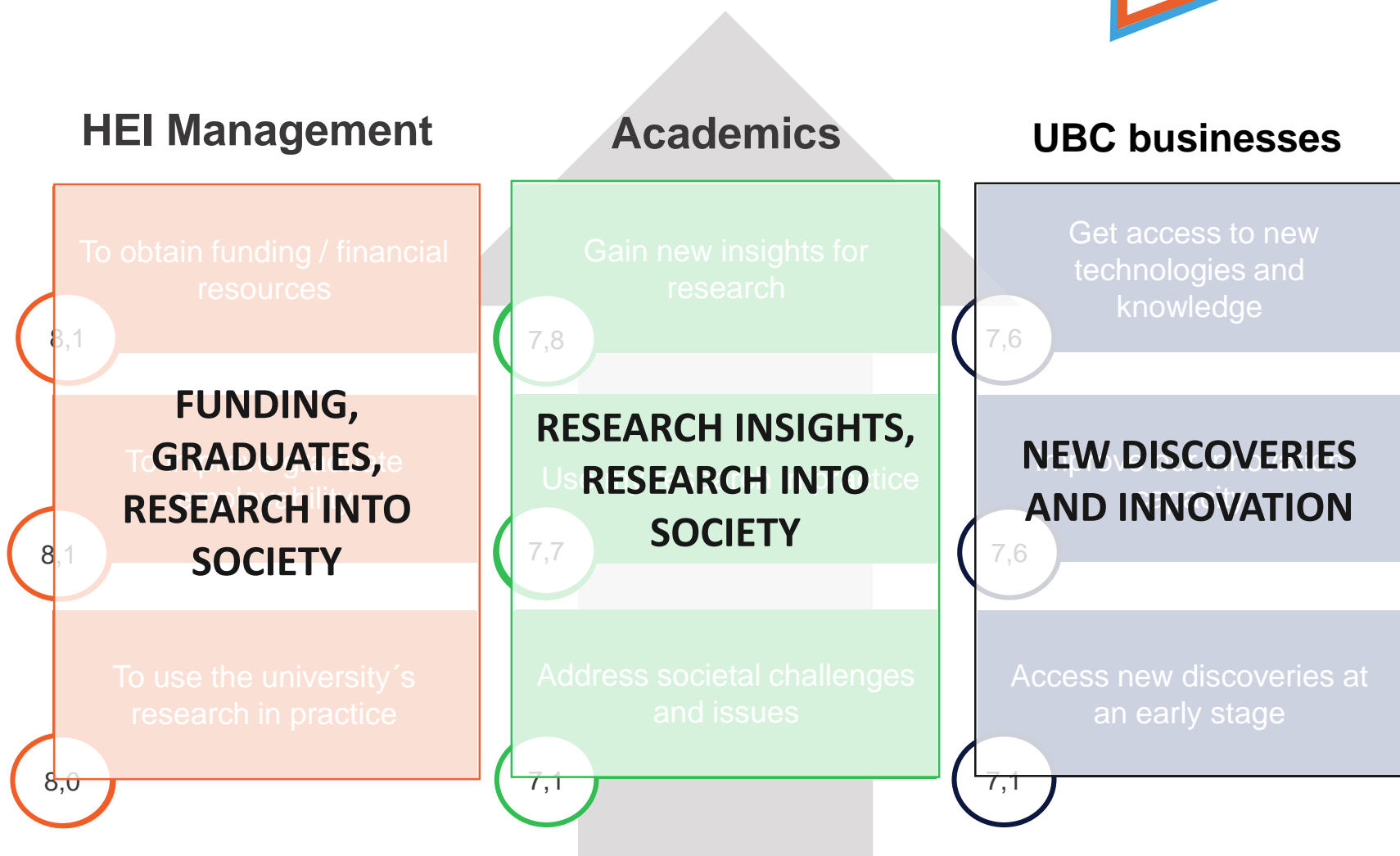
Years working in HEIs and the extent of UBC are inversely correlated



UNIVERSITY-BUSINESS
COOPERATION IN EUROPE

What is driving cooperation? Motivators

MOTIVATORS | TOP 3 MOST RELEVANT

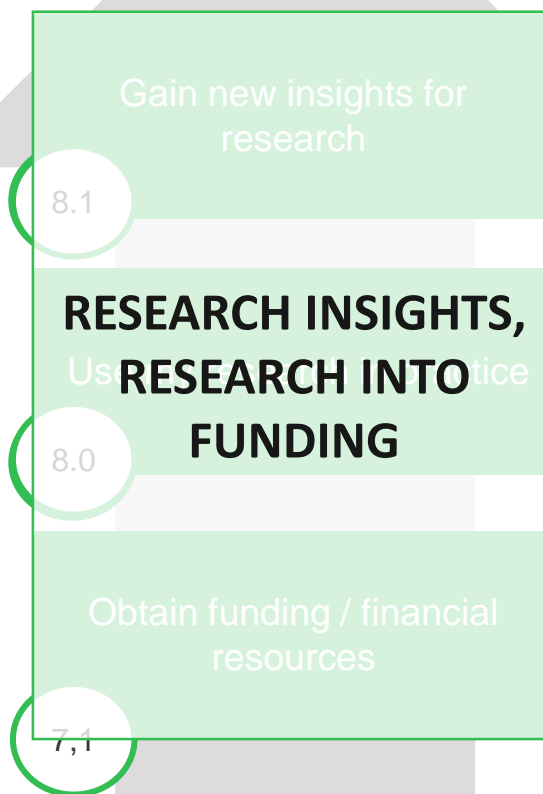


Scale: 1 = "Not at all relevant" to 10 = "Extremely relevant"

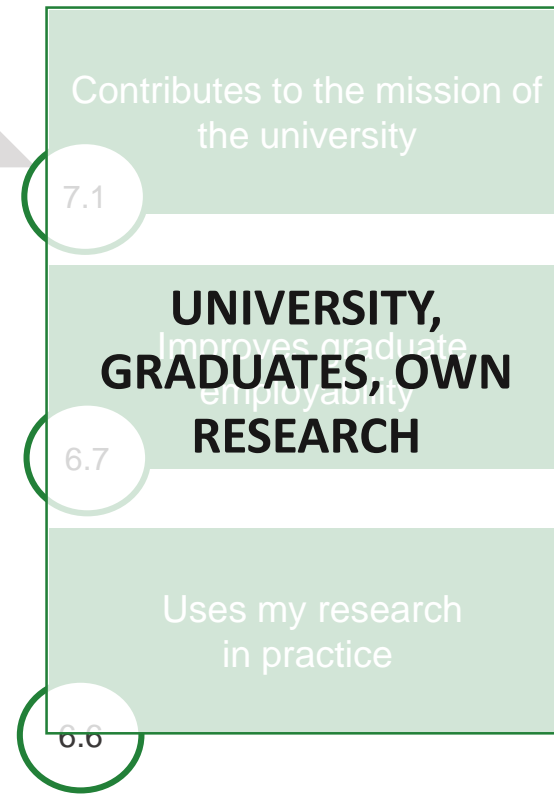
Academics

Non-cooperating academics:

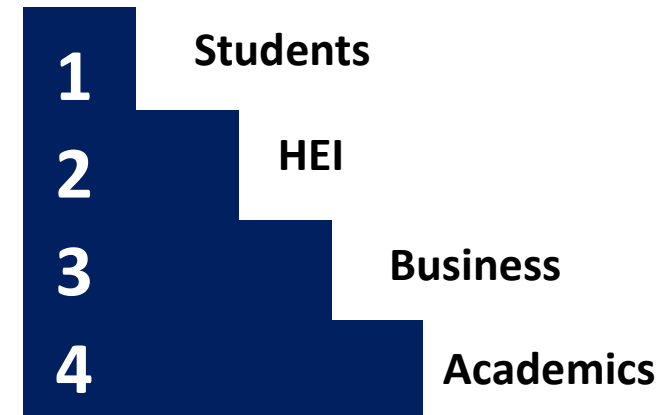
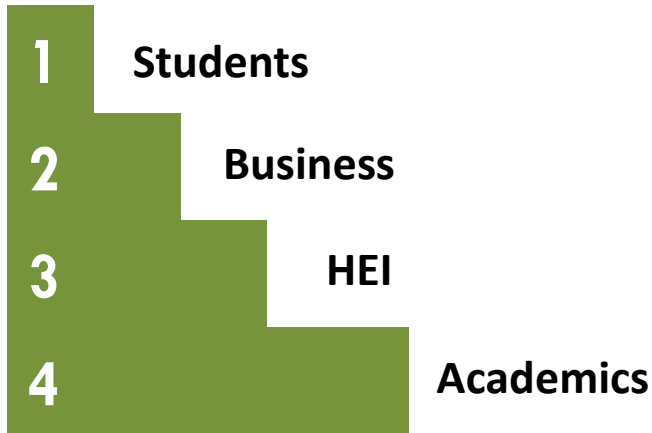
- Recognise UBC motivators as significantly less motivating
- Feel like they are doing it for others rather than themselves



Academics not cooperating



MOTIVATORS | Who gets the benefits from UBC?



We asked “who gets the benefits from UBC”?



A light gray world map is centered on the slide. A small blue dot is placed on the southern coast of Australia, indicating the location of Adelaide. A blue rectangular box is positioned below the dot, containing the text 'Adelaide, Australia'.

P260

Research projects driving
future talent for the industry
involving the entire mining
and minerals supply chain

*Adelaide,
Australia*

Short term

**SITE
VISITS**

**APPLIED
RESEARCH**

**“BLUE-SKY”
RESEARCH**

Long term

AMIRA P260

- Consortium of large mining / minerals companies
- SME supply chain partners
- Research institutions



University of
South Australia

Running for over 29 years

Project iterations (3-4 years each)

RESULTS

300+ refereed research publications

50 PhD students

41 working mining and processing sector

Total benefits: \$1AU billion (€670 Million)

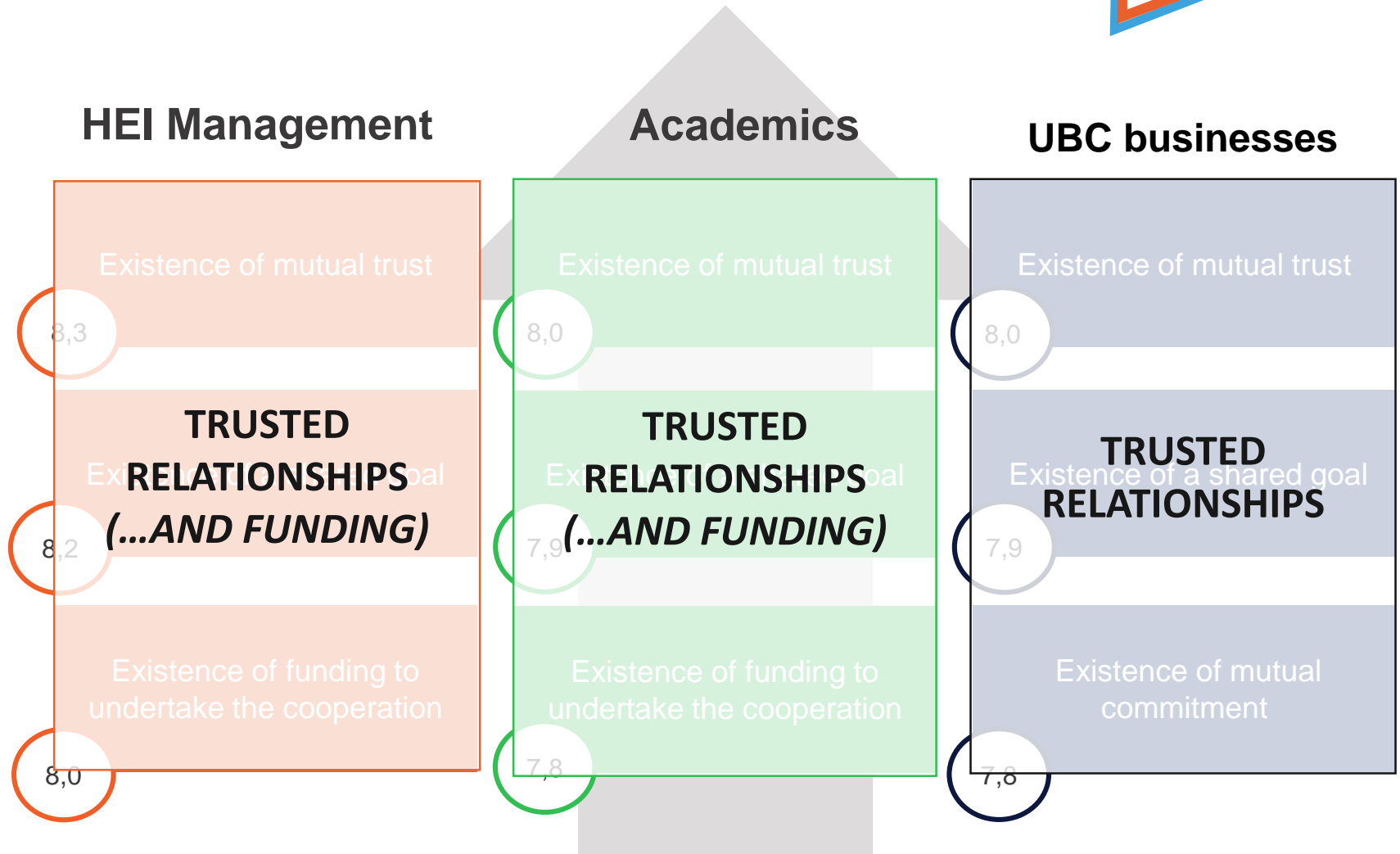
Recognise motivations & (*ideally*)
ensure desired stakeholder outcomes



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What is driving cooperation? Facilitators

FACILITATORS | TOP 3 MOST RELEVANT



Scale: 1 = "Not at all relevant" to 10 = "Extremely relevant"

Academics

Non-cooperating academics were not asked, but...

Existence of mutual trust

8,2

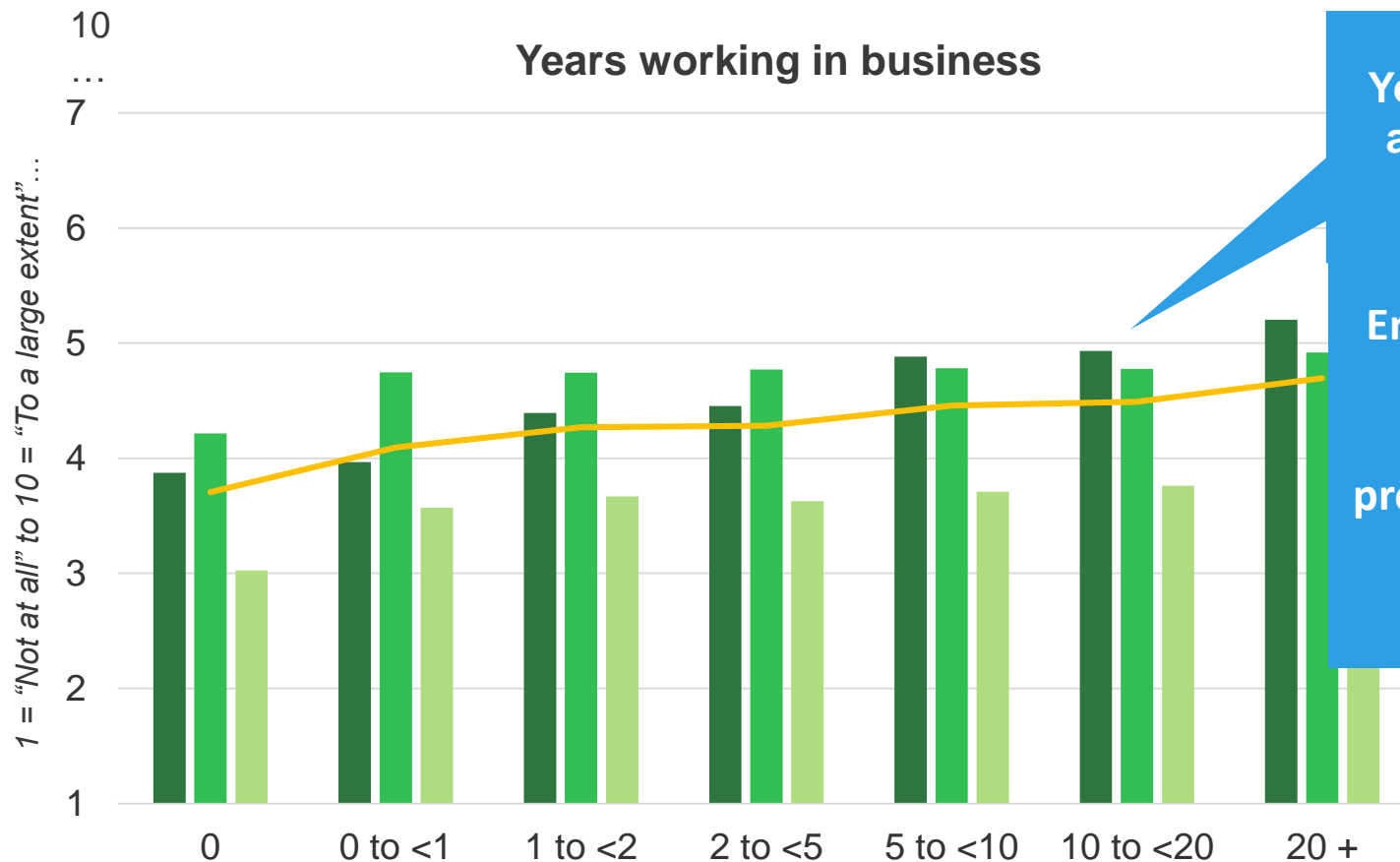
**TRUSTED
RELATIONSHIPS
(...AND FUNDING)**

8,2

Existence of funding to undertake the cooperation

8,1

The 'Experience Multiplier'



Years in business activity benefits UBC

Employ academics with business experience or provide that as part of their employment?

Cooperation in Education

Research cooperation

External/ regional engagement

TOTAL



UNIVERSITY-BUSINESS
COOPERATION IN EUROPE

Development of supporting mechanisms

Supporting mechanisms

IMPACT



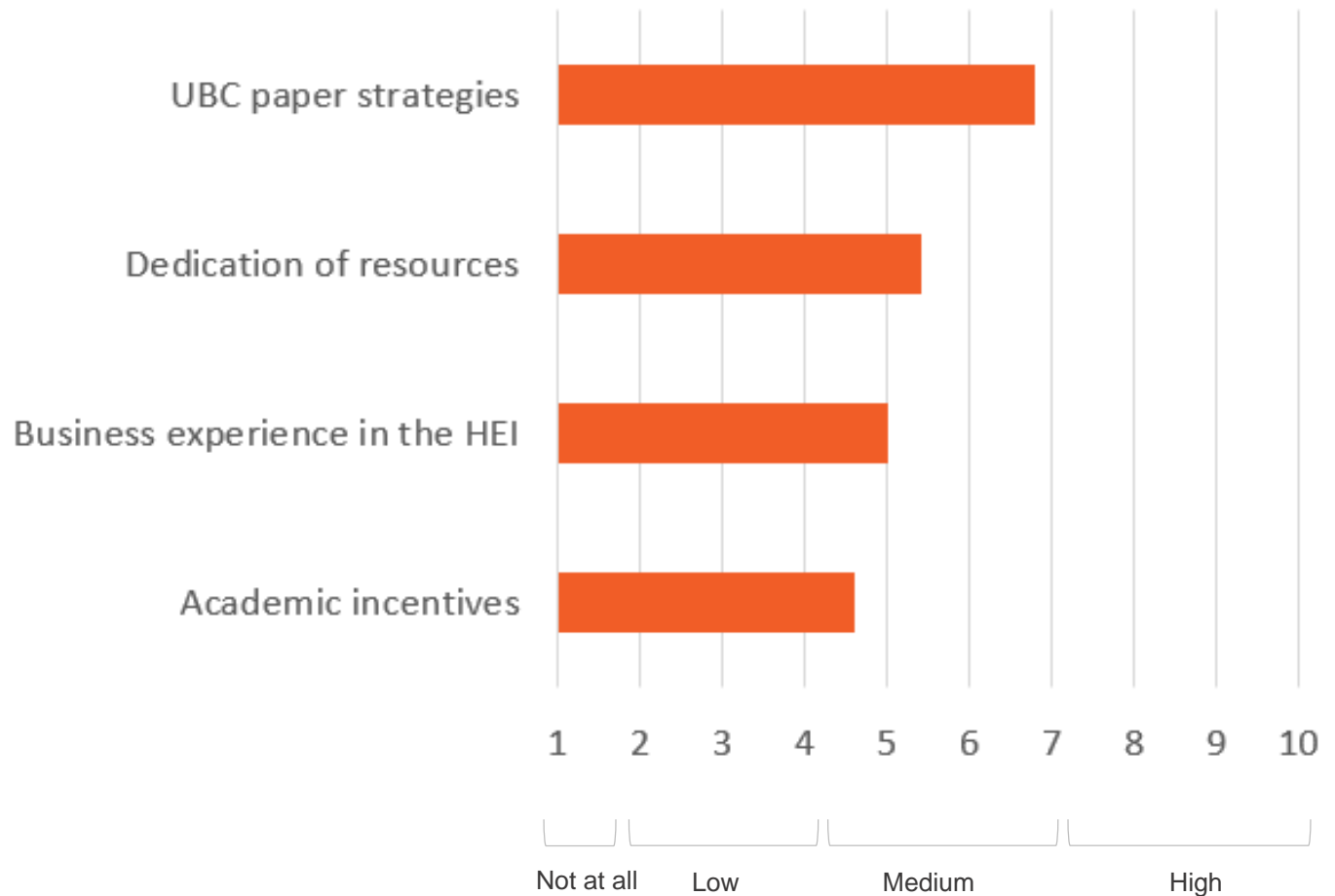
(8%)

(18%)

(16%)

(25%)

EXTENT OF DEVELOPMENT





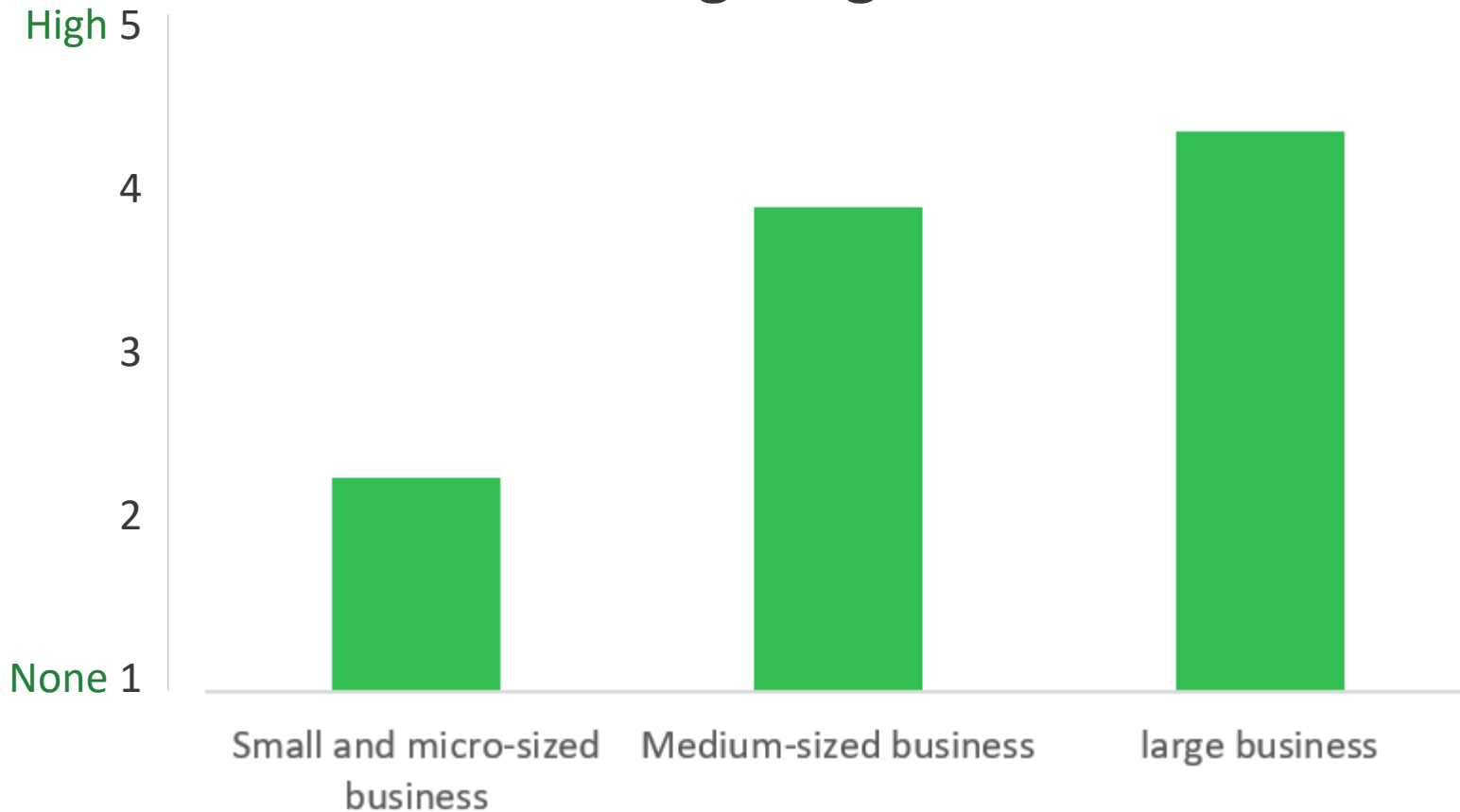
UNIVERSITY-BUSINESS
COOPERATION IN EUROPE

Other things to consider

Engineering faculty work primarily with partners in their region and country



Engineering faculty work primarily with large organisations



OTHER RELEVANT RESULTS

Results show that cooperating engineering academics could use help with:

- Knowledge about UBC
- Gaining contacts with industry
- General support for undertaking UBC (especially!)



1. **Universities** are important for **business** innovation, education and recruitment
2. There are a set of (local) **barriers** that can prevent cooperation
3. Each stakeholder (HEI Management, Business and Academics) have their own **motivation** to cooperate
4. Trusted **relationships** drive cooperation
5. Implement 'implementation strategies'

Engineering academics perceive:

- Cooperate more than other research areas
- the **barriers** to UBC to be resources, bureaucracy, and time
- the **motivators** of UBC to be primarily around their own research
- the **facilitators** to be trusted relationships

And cooperate primarily with:
Large companies in the region or nation

MAIN FINDINGS

General recommendations

1. Build understanding of business in the HEI (employ academics with business exp)
2. Reduce teaching time for academics who cooperate
3. Seek better alignment with research outcomes

* Focus activities on building relationships!

Building engineering UBC in the future:

1. Keep doing what you are doing
2. Seek to cooperate in both education and research
3. Provide time and reduce bureaucracy for academics to cooperate
4. Help convert research to outputs for academics and promote cooperate as a way to drive your research
5. Create implementing strategies especially:
 - Incentives for academics
 - Support for academics

RECOMMENDATIONS

GOOD PRACTISES



Fuelling the Aerospace Industry

University Carlos III Madrid
(UC3M) partnered with the Airbus
Group

Madrid, Spain

University Carlos III Madrid (UC3M) partnered with the Airbus Group

The Master in Aeronautical Engineering (MAE)

- Co-design and delivery of programme
- Aligned with the needs of the industry
- Access to labs, working on live projects

Results

- Above 97% employability rates in the Aeronautical Engineering degree (INE, 2014)
- 98% of graduates in Aeronautical Engineering believe that the title has helped them to find work (INE, 2014)

Airbus-UC3M Joint Centre for Aeronautic Systems Integration

- Situated at the UC3M science park
- Hosts 38 multi-disciplinary research groups
- Reflects the demands of the aerospace sector and the engineering and systems capabilities of UC3M.
- Direct collaboration of interdisciplinary teams on R&D projects

A light gray map of Europe is shown in the background. A small blue dot is placed on the map, indicating the location of the study program in Germany. The text is overlaid on the map.

Dual Study programmes: An effective symbiosis of theory and practice

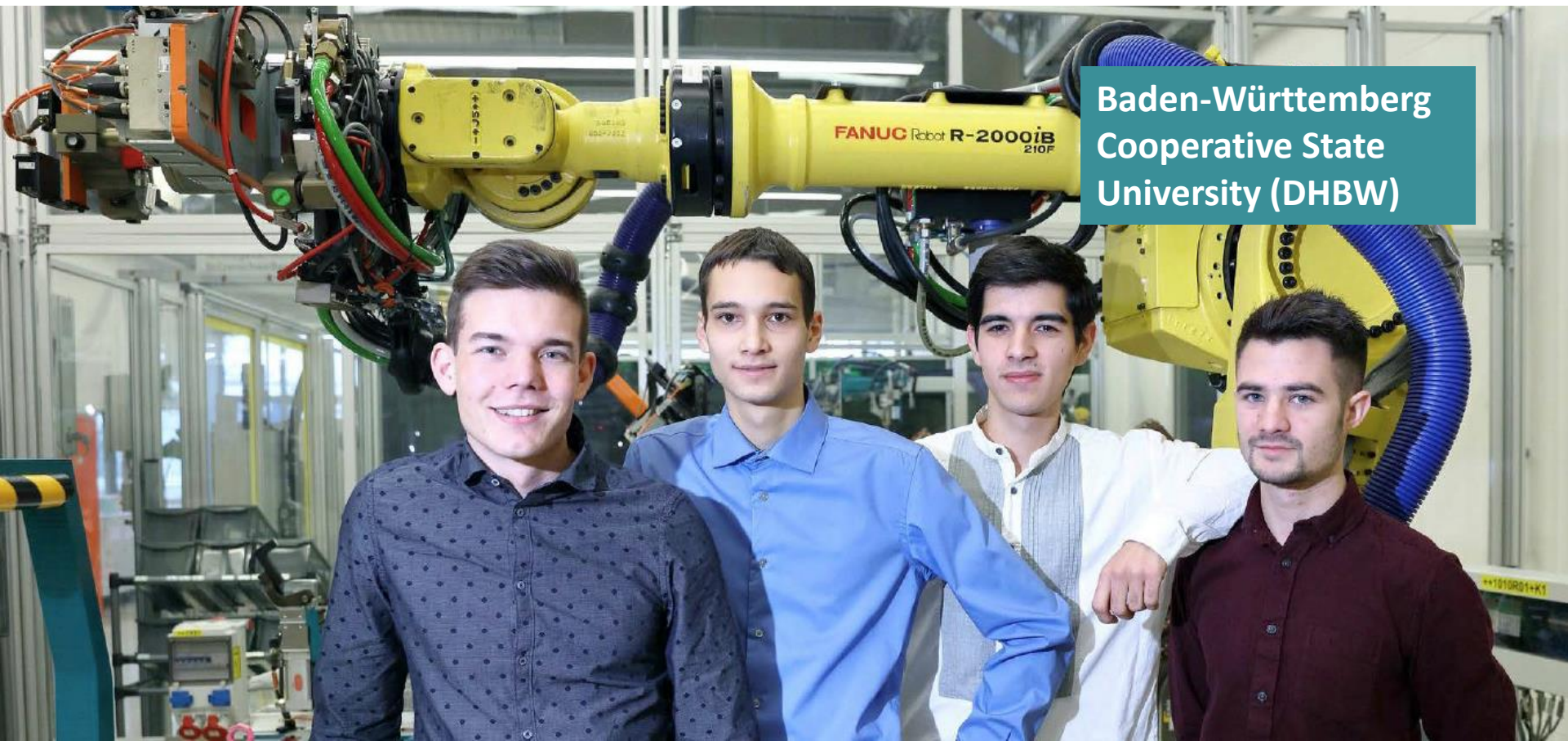
*Wolfsburg und Baden-Württemberg,
Germany*

An emerging hybrid form of higher education

1. offers a degree programme at a higher education institution
2. a certification of practical vocational training and/or
3. work experience in a company

Have around 34,000 enrolled students and over 9,000 partner companies.

70% of these courses are related to the engineering field and to economics and business studies. The remaining 30% is made up by computing, social sciences and others.



Baden-Württemberg
Cooperative State
University (DHBW)

VW group (VW, Audi, MAN, Porsche, Seat, Škoda, Bentley, Lamborghini, Scania and Ducati)

- Approx. 120 production plants in approx. 30 different countries (DEC2015).
- Work together with universities to create dual studies programmes
- Exporting success of bachelor dual study programmes for VW Group in Germany

Features

- 8 semester programme (ca. 4 years)
- Students work at VW (get paid)
- Undertake academic study resulting in a bachelor degree
- Undertake vocational study to receive a qualification
- 231 students started in 2016



A light gray map of Europe serves as the background. A small blue dot is placed on the eastern coast of Sweden, indicating the location of Linköping. The text is centered over the map.

Strategic partnership drives careers

SAAB and Univeristy of Linköping developing a common future

Linköping, Sweden

Developing effective HEI-employer relationships in Sweden

The regional embeddedness of Linköping University

- Linköping University (Sweden) leads an HEI-driven regional innovation system
- The University has a strategic relationship with Saab
- Saab managers also work as adjunct professors (20% of their time is spent at the University). They:
 - Sit on university boards,
 - Teach in courses,
 - Supervise theses,
 - Mentor researchers and students
- **Industrial PhDs**” (who spend 50% of their time in Saab’s workplace and half at the university department), collaborative projects and co-publications are further avenues of cooperation
- **Students** become more employable (even directly)
- **SAAB** becomes a more engaging place to work and so improves their staff recruitment and retention.

Clemson University International Center for Automotive Research

An exemplary automotive-sector
public-private cooperation in
research and education

A light gray world map is shown in the background. A blue dot is placed on the eastern coast of the United States. A blue rectangular callout box with white text points to this dot.

Anderson, USA

CLEMSON UNIVERSITY'S ACCELERATED CONCEPT DEVELOPMENT PROGRAM

A 2-YEAR MASTERS DEGREE PROGRAM FOR
AUTOMOTIVE ENGINEERING STUDENTS



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**Deep Orange Vehicle
Prototyping Program**
is an extraordinary
initiative that gives
students the opportunity
to create a prototype
vehicle in two years

URBAN MOBILITY FOR GENERATION Y & Z

DEEP ORANGE 5

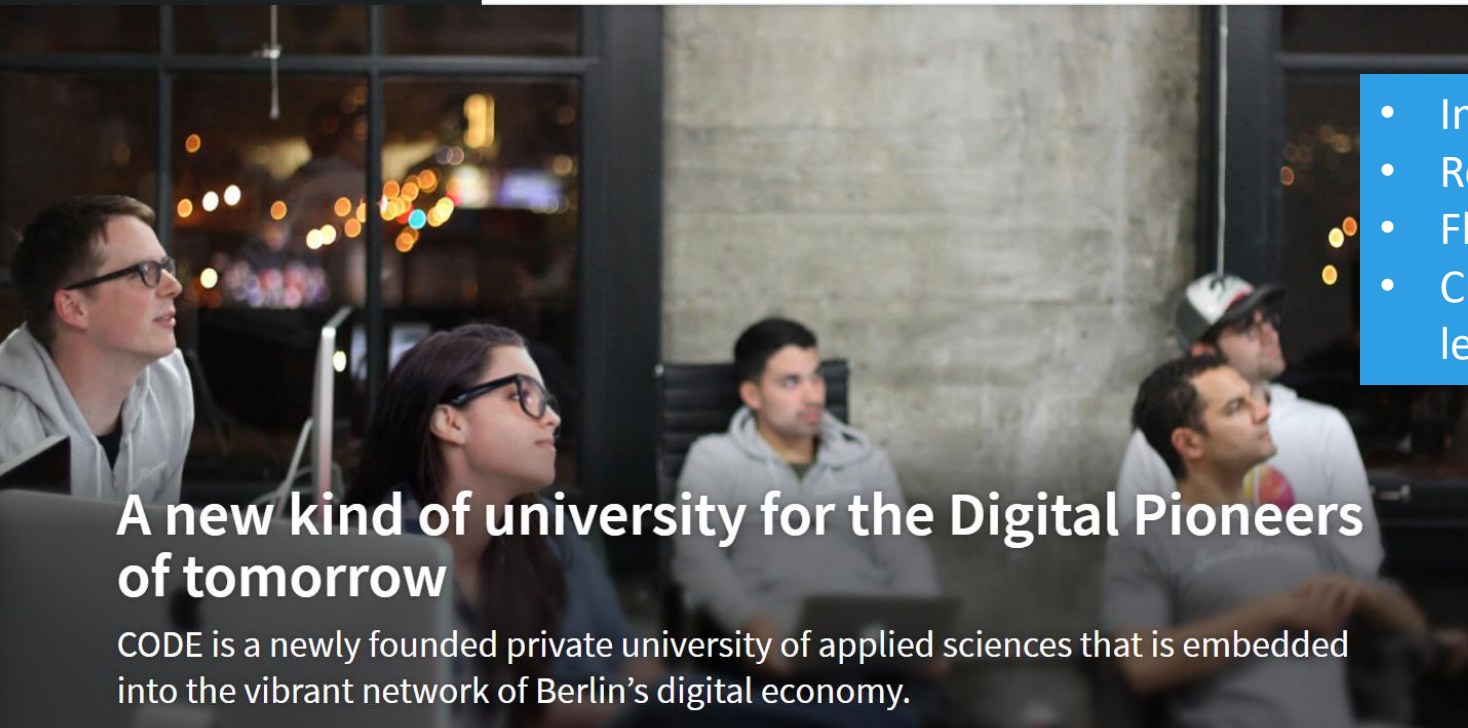






CODE
Rethinking Higher Education

Berlin, Germany



- Interdisciplinary
- Real world projects
- Flipped classroom
- Challenge based learning

- Campus & Partners
- Admission & Tuition
- About CODE

A new kind of university for the Digital Pioneers of tomorrow

CODE is a newly founded private university of applied sciences that is embedded into the vibrant network of Berlin's digital economy.



Rethinking higher education

Studying at CODE will be unlike any other higher education experience. Our intensive, interdisciplinary bachelor programs are designed to dramatically improve the way you work and to prepare you for the reality of tomorrow's workplace.



Innovative study programs
CODE offers three bachelor programs for young talents striving to become developers, designers and digital entrepreneurs.



Creating something meaningful
The core of our study programs are real-world projects, accompanied by seminars and workshops with an advanced flipped-classroom concept.



Challenge-based learning
Assisted by a mentor, you will evolve your competencies, learn how to collaborate, and reach your full potential.



Positive impact on society
A Science, Technology and Society Program that supports a broad horizon and a multidisciplinary approach to problem-solving.



www.ub-cooperation.eu

GOOD PRACTICE CASE STUDIES



www.uni-engagement.com

www.ub-cooperation.eu

THE GLOBAL UNIVERSITY ENGAGEMENT MONITOR

To establish a global indicator for university engagement and university-business cooperation to set a baseline for university-driven innovation

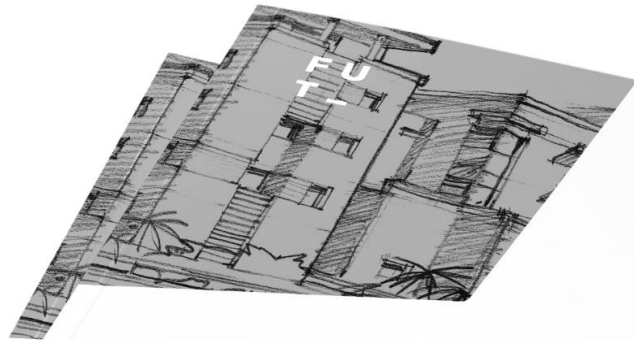


Science Marketing
Science-to-Business Marketing Research Centre



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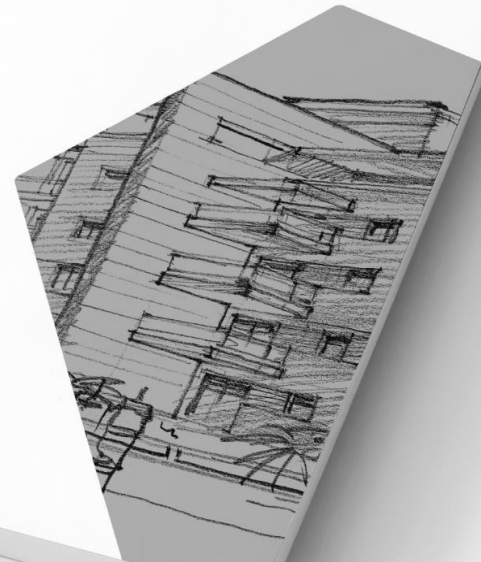




40 PERSPECTIVES ON HOW ENGAGED
AND ENTREPRENEURIAL UNIVERSITIES
WILL DRIVE GROWTH AND SHAPE OUR
KNOWLEDGE-DRIVEN FUTURE UNTIL 2040

THE FUTURE OF UNIVERSITIES THOUGHTBOOK

TODD DAVEY, ARNO MEERMAN,
BALZHAN ORAZBAYEVA, MAX FRIEDEL,
VICTORIA GALAN-MUROS, CAROLIN PLEWA,
NATASCHA ECKERT



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Thank you

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