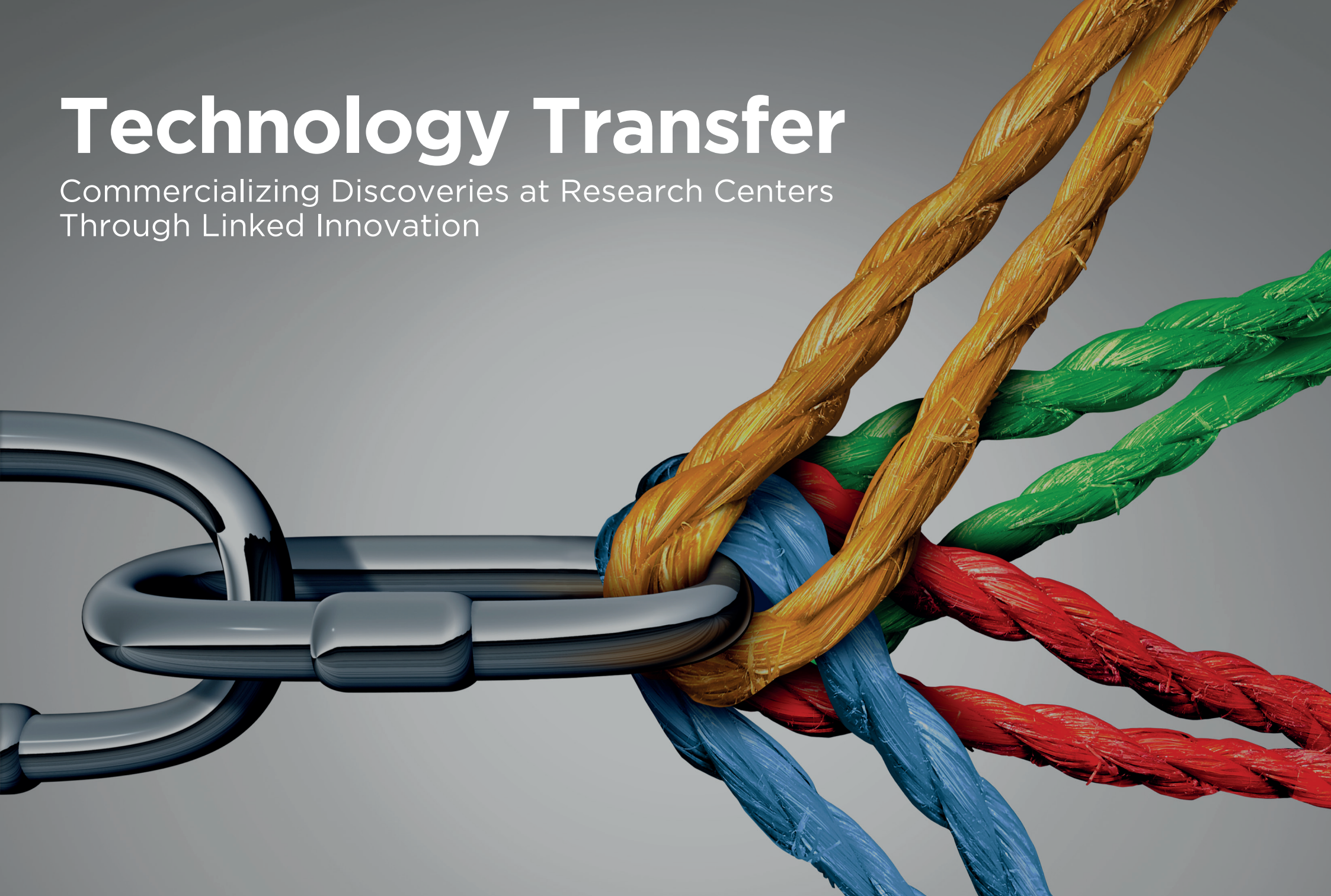


Technology Transfer

Commercializing Discoveries at Research Centers
Through Linked Innovation



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TO ALL MANAGING DIRECTORS AND ACADEMIC LEADERS AT RESEARCH CENTERS WHO POSITIVELY IMPACT SOCIETIES AND ECONOMIES THROUGH THEIR WORK

Partners



INTRODUCTION

PAGE 1

STAGE 1
RESEARCH

PAGE 7

STAGE 2
TRANSFORMATION

PAGE 14

STAGE 3
COMMERCIALIZATION

PAGE 23

HOW TO PASS FROM BROKEN INNOVATION TO LINKED INNOVATION?

BROKEN INNOVATION

The **unconnected process** between research and commercialization, a route in which the investigation undertaken is not transformed into economic value to make the process sustainable



LINKED INNOVATION

The **connected process** between research and commercialization, a route in which the investigation done is transformed into economic value to make the process sustainable

WE WILL SHOW YOU:

19 
MECHANISMS



12 
BUSINESS MODELS



FOR GROWTH IN RESEARCH CENTERS

BASED ON THE ANALYSIS OF:

3,881
RESEARCH CENTERS

SUCCESSFUL RESEARCH CENTERS IN:



University Industry Government

107
COUNTRIES

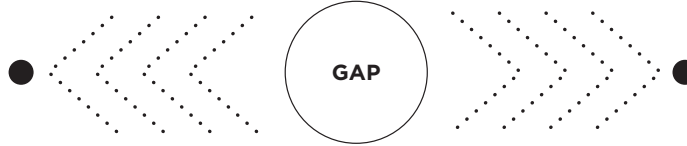
54 ON-SITE VISITS
61 INTERVIEWS WITH LEADERS

UNDERSTANDING THE DIFFERENCES

BROKEN INNOVATION 

PULL RESEARCH

LACK OF CONNECTION

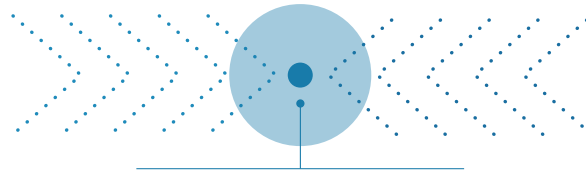


PUSH COMMERCIALIZATION

LINKED INNOVATION 

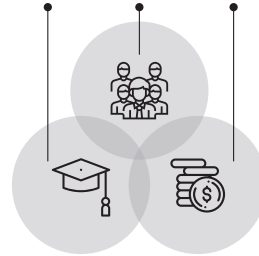
PUSH RESEARCH

CONNECTION



PULL COMMERCIALIZATION

ACADEMIC RIGOR (+) SOCIAL IMPACT (+) ECONOMIC VALUE



STAGE

STAGE 1

STAGE 2

STAGE 3

ACTIVITIES & OUTPUT

RESEARCH
Discovery



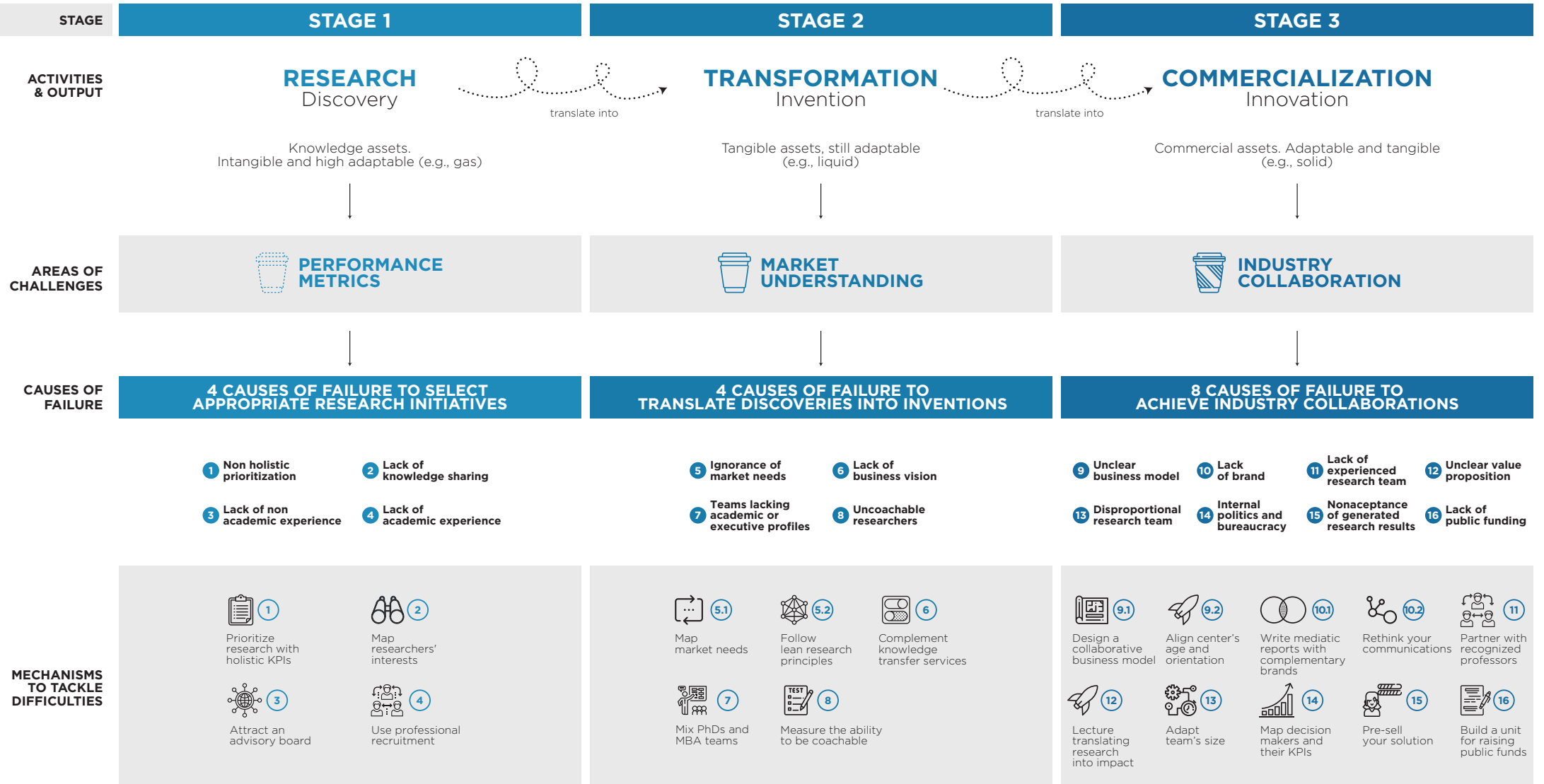
TRANSFORMATION
Invention



COMMERCIALIZATION
Innovation

INNOVATION ECOSYSTEM

THE STAGES OF INNOVATION



THE DILEMA: ACADEMIC QUALITY OR ECONOMIC SUSTAINABILITY

HOW TO ACHIEVE ECONOMIC SUSTAINABILITY WHILE PRESERVING ACADEMIC QUALITY?

This was the most common answer given by leaders of research centers when asked to identify their top challenge, according to interviews with:

61 LEADERS at 35 INTERNATIONAL RESEARCH CENTERS 28 ON-SITE VISITS



Achieve a research center that is financially sustainable

RESEARCH QUALITY



Research centers' academic directors ↓

PRIORITIZES: academic metrics
FOCUS: preserving the quality
RESULT: low levels of revenues to sustain the center economically

PARADOX

2 STREAMS OF THOUGHT REGARDING THIS PARADOX

There is not only an opposition of thought but also a:



ECONOMIC SUSTAINABILITY

Research centers' executive directors ↓

PRIORITIZES: economic metrics
FOCUS: ensuring economic sustainability
RESULT: the quality of the research may decline

KNOWLEDGE ●



● FUNDING

THE FAILURE IS THE CONTINUING ASSUMPTION THAT RESEARCH CENTERS SHOULD CHOOSE BETWEEN ACADEMIC RIGOR AND ECONOMIC PROFITABILITY

INNOVATION FUNNEL



STAGE

STAGE 1

STAGE 2

STAGE 3

ACTIVITIES & OUTPUT

RESEARCH
Discovery

TRANSFORMATION
Invention

COMMERCIALIZATION
Innovation

Knowledge assets.
Intangible and highly adaptable (e.g., gas)

Tangible assets, still adaptable
(e.g., liquid)

Commercial assets. Adaptable and tangible
(e.g., solid)

AREAS OF CHALLENGES

PERFORMANCE METRICS

MARKET UNDERSTANDING

INDUSTRY COLLABORATION

How to choose from different initiatives in the research stage

Principles for understanding the market and successfully transforming discoveries into products and services

Mechanisms to commercialize discoveries effectively

6 SYMPTOMS TO IDENTIFY BROKEN INNOVATION

ECONOMIC VS. ACADEMIC

ASSUMING VS. FOLLOWING

RESEARCH VS. FURTIVE

- 1 Are you experiencing a decline in research quality?
- 2 Are you facing a decrease in economic profitability?

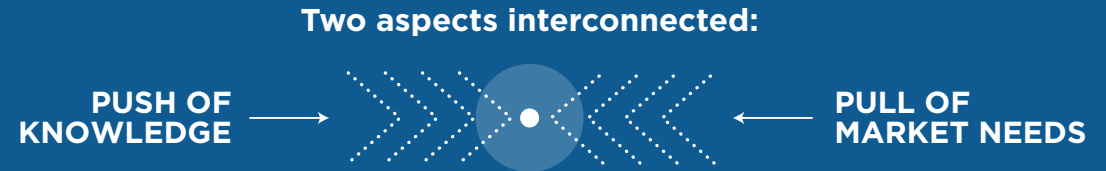
- 3 Are you coming up with products or services that no one wants to buy?
- 4 Are you producing outdated products?

- 5 Are you experiencing increased difficulty in monetizing your discoveries?
- 6 Are you experiencing increased difficulty in getting access to industry data and professional networks?

I KNOW I HAVE A BROKEN INNOVATION PROCESS, AND NOW?

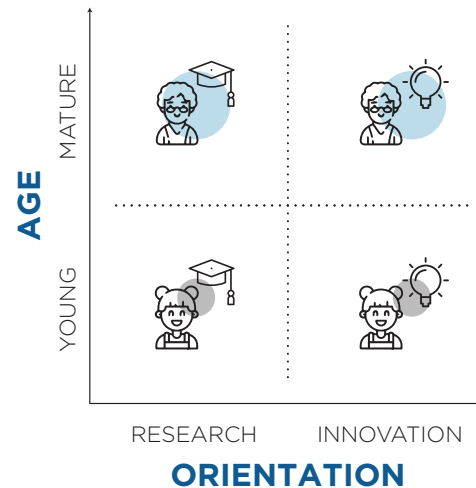
HOW CAN I SOLVE THE LACK OF CONNECTION?

Perceived demand will be met only if the appropriate knowledge or technology is available, and innovation will be realized only if there is a market for it



TWO VARIABLES

These will help you to identify what challenges are more common in research centers like yours



AGE

YOUNG: Research centers that have been created within the last 7 years

MATURE: Research centers that have been created more than 7 years ago

ORIENTATION

RESEARCH: Answering theoretical questions (e.g., centers in university)

INNOVATION: Answering more practitioner-oriented questions (e.g., centers in industry)

WHERE ARE YOU?

STAGE 1 RESEARCH

STAGE 1

STAGE 1 RESEARCH

2 SYMPTOMS OF BROKEN INNOVATION

1



ARE YOU EXPERIENCING
A DECLINE IN A
RESEARCH QUALITY?



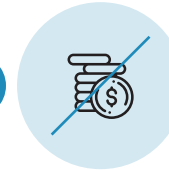
ADMINISTRATORS

Prioritizes: Economic metrics

What they want?

- Be economically sustainable to support research activities
- Provide outreach and make research results visible

2



ARE YOU FACING A
DECREASE IN ECONOMIC
PROFITABILITY?



RESEARCHERS

Prioritizes: Academic metrics

What they want?

- Greater level of research freedom
- Greater involvement in pure academic research

4 CAUSES OF FAILURE

1

NON HOLISTIC
PRIORITIZATION

2

LACK OF
KNOWLEDGE
SHARING

3

LACK OF
NONACADEMIC
EXPERIENCE

3

LACK OF
ACADEMIC
EXPERIENCE

1 NON HOLISTIC PRIORITIZATION

ANSWER THESE QUESTIONS TO CHECK WHETHER YOU HAVE THIS PROBLEM:

A Are you experiencing a decline in research quality?

B Are you not economically sustainable or experiencing a decrease in economic profitability?

1 BEST PRACTICE:



PRIORITIZE RESEARCH WITH HOLISTIC KPIS

Design a holistic group of few KPIs to measure the ongoing progress of your center and align goals

SOLUTION TO THIS PROBLEM:

New projects

KPIs

+ circles, + value - circles, - value

Recommended order of priority

ACTIVITIES

IMPACT Academic IMPACT Economic IMPACT Social VIABILITY No-risk

Start Test viability Decline

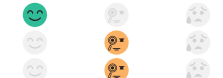
RESEARCH

- Apply to the public funding of the institution x1
- Apply to the public funding of the institution x2
- Start negotiations with the institution x3



INITIATIVES

- Create an open innovation competition with the institution x4
- Create a conference with the institution x5
- Propose a consulting project about x1



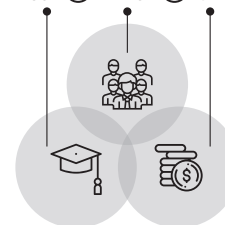
EXAMPLE: MIT Deshpande Center

MIT **DESHPANDE CENTER**
FOR TECHNOLOGICAL INNOVATION

MIT Deshpande Center uses holistic metrics in the whole organization, considering academic, economic and social impact

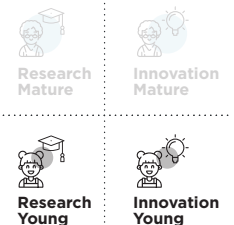
HELPS TO:

ACADEMIC RIGOR (+) SOCIAL IMPACT (+) ECONOMIC VALUE



Align both sides (academic rigor + economic value) to an integrated vision

IMPORTANT LESSON FOR CENTERS:



2 LACK OF KNOWLEDGE SHARING

ANSWER THESE QUESTIONS TO CHECK WHETHER YOU HAVE THIS PROBLEM:

A Do you know what your research teams are investing time in?

B Do your researchers know what the center's other researchers are doing?

C Are you sure that there is no duplication among your center's research projects?

2 BEST PRACTICE:



MAP RESEARCHERS' INTERESTS

Identifying and connecting the focus of researchers in a research map, which illustrates on a single page the interests of each researcher and of the center

SOLUTION TO THIS PROBLEM:

Interest vs. professor	Professor/researcher							Total
	1	2	3	4	5	6	7	
Alliances / Joint ventures	●	●	●	●	●	●	●	● ● ● ● ● ● ● ●
Behavioral finance	●	●	●	●	●	●	●	● ● ● ● ● ● ● ●
Corporate entrepreneurship	●	●	●	●	●	●	●	● ● ● ● ● ● ● ●
Corporate governance/finance/financial analysis	●	●	●	●	●	●	●	● ● ● ● ● ● ● ●
Electronic market	●	●	●	●	●	●	●	● ● ● ● ● ● ● ●
Entrepreneurial finance	●	●	●	●	●	●	●	● ● ● ● ● ● ● ●
Innovation	●	●	●	●	●	●	●	● ● ● ● ● ● ● ●
International business/globalization	●	●	●	●	●	●	●	● ● ● ● ● ● ● ●

EXAMPLE: Roche



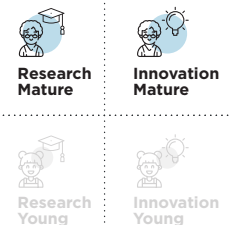
Hoffmann - La Roche uses a knowledge map - a directory that points people who need knowledge to the places where it can be found.

It has three parts. Firstly, the question that must be answered (e.g., to receive drug approval). Secondly, each question points to experts with knowledge in those areas. Thirdly, there are a set of guidelines that instruct knowledge providers as to when and with whom they should be sharing their knowledge. Lastly, a best-practice repository.

HELPS TO:

- Identify synergies between research projects
- Reduce the cost of duplication
- Improve the assignment of project needs to research interests
- Recognize collaborations with non academic units
- Improve the research strategy at the center level
- Increase networking opportunities among researchers within the institution

IMPORTANT LESSON FOR CENTERS:



3 LACK OF NON ACADEMIC EXPERIENCE

ANSWER THESE QUESTIONS TO CHECK WHETHER YOU HAVE THIS PROBLEM:

A Do you lack either the academic or business expertise for your strategy?

B Do you find it difficult to assess the potential economic impact that a project may have on the industry?

3 BEST PRACTICE:



ATTRACT AN ADVISORY BOARD

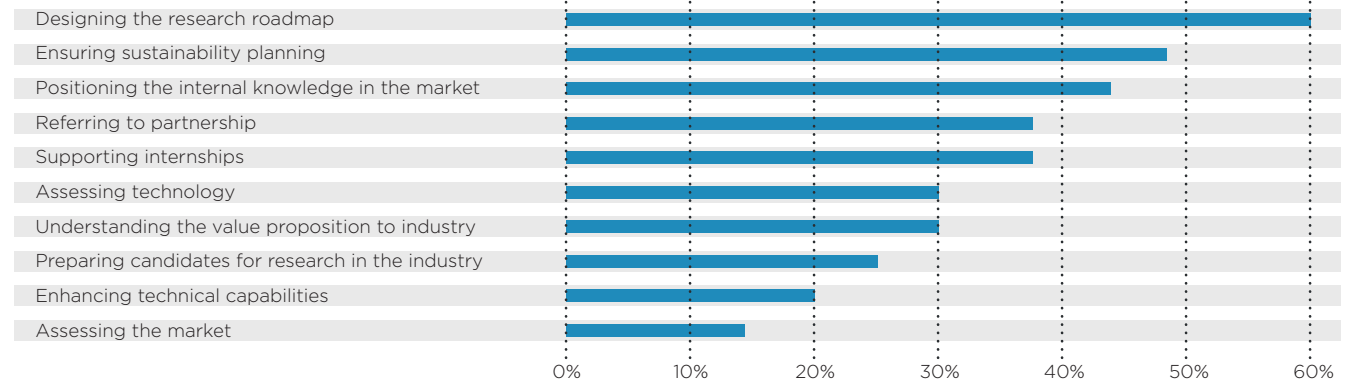
Attract and recruit an international advisory board

SOLUTION TO THIS PROBLEM:

ADD A GREAT TEAM OF ADVISORS TO HELP THE MISSION

Great advisors with a lot of experience and expertise complement their skills. Advisors guide to help avoid mistakes and to expand the network of investors, partners and/or clients

Some benefits of the advisory board



EXAMPLE: Cornell Tech



CORNELL TECH

Cornell Tech recruited a professional investor with research experience to increase the number of spin-offs from research projects and to assess built projects involving the institution's faculty and business units

HELPS TO:

Have a pool of new ideas for better connection with market need

Identify and give visibility to how those initiatives affect the external and internal ecosystem

IMPORTANT LESSON FOR CENTERS:



Research Mature



Innovation Mature



Research Young



Innovation Young

4 LACK OF ACADEMIC EXPERIENCE

ANSWER THESE QUESTIONS TO CHECK WHETHER YOU HAVE THIS PROBLEM:

- A** Is your executive team failing to understand the preferences and mindset of the institution's academics?
- B** Is it difficult for your executive team to handle academic environments?
- C** Has the academic rigor of your publications declined recently?

4 BEST PRACTICE:



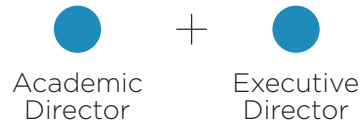
USE PROFESSIONAL RECRUITMENT

Use a professional recruitment and consider splitting the leadership in two

SOLUTION TO THIS PROBLEM:

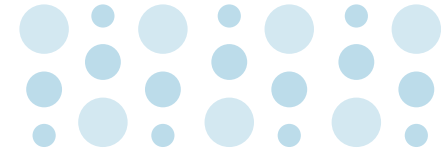


1 SPECIALIZE THE LEADERSHIP ROLE INTO TWO



2 CONSIDER PARTNERING WITH PROFESSIONAL RECRUITMENT FIRMS

To fill a talent gap or a weakness



EXAMPLE: Knowledge Circle of Amsterdam

KNOWLEDGE CIRCLE OF AMSTERDAM

The Knowledge Circle of Amsterdam meets regularly to formulate and propose ideas for enhancing knowledge based development. "After hours clubs in New York City can also be considered as a consensus space, providing venues for artists, fashion designers, and other creative individuals to develop new projects across arts and fashion" research institutions

HELPS TO:

- Identify and recruit potential directors
- Increase the quality of the process, avoiding internal biases (in some cases)
- Ensure that someone will keep the academic rigor and the financial sustainability

IMPORTANT LESSON FOR CENTERS:



CONCLUSIONS

STAGE 1: RESEARCH

2 SYMPTOMS OF BROKEN INNOVATION



ARE YOU EXPERIENCING A DECLINE IN RESEARCH QUALITY?



ARE YOU FACING A DECREASE IN ECONOMIC PROFITABILITY?

4 CAUSES OF FAILURE

1 NON HOLISTIC PRIORITIZATION

INDICATORS

Too much emphasis to a particular criteria, either academic or economic

1

2 LACK OF KNOWLEDGE SHARING

INTERCONNECTION

Don't know what other teams are doing. Work duplication and no synergies

2

3 LACK OF NON ACADEMIC EXPERIENCE

LEADERSHIP

Sometimes directors come from a non academic background

3

3 LACK OF ACADEMIC EXPERIENCE

RIGOR

Shortage of work already published in top academic journals

3

BEST PRACTICES



Prioritize research with holistic KPIs



Map researchers' interests



Attract an advisory board



Use professional recruitment

STAGE 2

TRANSFORMATION



STAGE 2 TRANSFORMATION

2 SYMPTOMS OF BROKEN INNOVATION

1  **ARE YOU GETTING PRODUCTS NO ONE WANTS TO BUY?**

↓

Assuming what the market needs,
without validating what the market actually wants

2  **ARE YOU GETTING OUTDATED PRODUCTS?**

↓

Following exactly what the market says that
it currently needs, without taking into account
what the market will desire in the future

4 CAUSES OF FAILURE

5 **IGNORANCE OF
MARKET NEEDS**

6 **LACK OF
BUSINESS VISION**

7 **TEAMS LACKING
ACADEMIC OR
EXECUTIVE PROFILES**

8 **UNCOACHABLE
RESEARCHERS**

1 IGNORANCE OF MARKET NEEDS

ANSWER THESE QUESTIONS TO CHECK WHETHER YOU HAVE THIS PROBLEM:

A Do you have products that no one wants to buy?

B Do you lack market traction when you reach the commercialization stage of your discoveries?

C Do your competitors identify market opportunities before you do?

1.1 BEST PRACTICE:



MAP MARKET NEEDS

Use a market map to identify the needs of potential partners with design thinking to increase the chances to have their interest

SOLUTION TO THIS PROBLEM:

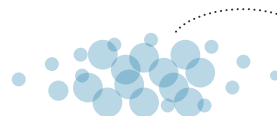


DESIGN THINKING IS A CUSTOMER-CENTERED APPROACH



CUSTOMERS

Identify customers who may use the invention



MARKET NEEDS

Understand and translate market needs into actionable insights



ACTIONABLE INSIGHTS



RAPID ITERATIONS

Prototyping allows researchers to make rapid iterations and subsequently adapt and learn from what does not work



RESULT: NEEDS GATHERED

EXAMPLE: Ideo

IDEO

IDEO, a global design company that creates positive impact through design and applies this concept in their research processes

HELPS TO:

Learn how researchers should explain their discoveries, gaining outside perspective

IMPORTANT LESSON FOR CENTERS:



Research Mature



Innovation Mature



Research Young



Innovation Young

1 IGNORANCE OF MARKET NEEDS

ANSWER THESE QUESTIONS TO CHECK WHETHER YOU HAVE THIS PROBLEM:

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1.1 BEST PRACTICE:



MAP MARKET NEEDS

Use a market map to identify the needs of potential partners with design thinking to increase the chances to have their interest

SOLUTION TO THIS PROBLEM:

PROFILING PARTNERS

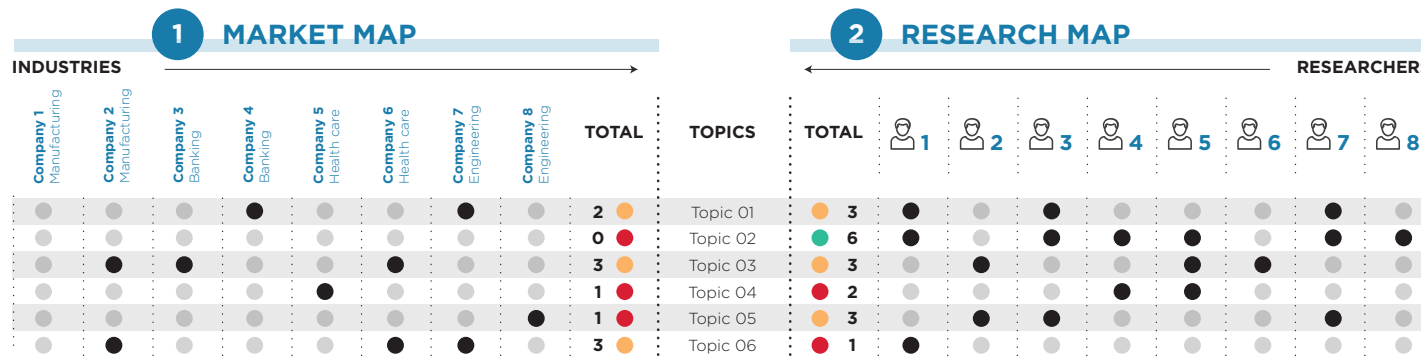
Which type of companies do you think would pay for the discoveries or knowledge assets?

VERIFYING NEEDS

- Check databases that analyze the weaknesses of companies/sectors
- Review the strategic/annual plan of companies
- Spend time with companies' executives in casual conversations

IDENTIFYING COMPANIES

Contact those businesses to validate the model, trying to discover their pain points



EXAMPLE: Barcelona Supercomputing Center



Barcelona Supercomputing Center constantly analyzes what are the needs of the market through a specific team, finding a fit with the research and development team

HELPS TO:

Learn how researchers should explain their discoveries, gaining outside's perspective

IMPORTANT LESSON FOR CENTERS:



Research Mature



Innovation Mature



Research Young



Innovation Young

1 IGNORANCE OF MARKET NEEDS

ANSWER THESE QUESTIONS TO CHECK WHETHER YOU HAVE THIS PROBLEM:

A Are the results of your research projects irrelevant to the market?

B During research processes, do your interviewees not want to repeat the process because you take up too much of their time?

C Do you exceed the estimated budget of your projects or increase the analysis sample to a size that does not change the conclusions?

1.2 BEST PRACTICE:



FOLLOWING LEAN RESEARCH PRINCIPLES

To maximize your learning speed and minimize your testing cost

SOLUTION TO THIS PROBLEM:

FOLLOW THE LEAN RESEARCH PRINCIPLES



TEST THE HYPOTHESES

Is important because great work is frequently achieved via **quick iteration**, repeating the formulation and testing of smaller hypotheses to achieve a bigger goal

If not you could invest an enormous amount of time and money in a project that might not go anywhere

+ LEARNING - TESTING COST

- ✓ SHORT FEEDBACK LOOPS**
By asking the interviewer whether they would like to include any additional thing, and after collected and analyzed pivot your prototype
- ✓ FAILING QUICKLY**
Allows to **understand your problem** and continually **improve**

EXAMPLE: MIT

MITD-Lab
designing for a more equitable world

Lean research has been championed by faculty and researchers at MIT D-Lab

HELPS TO:

Make the commercialization stage easier

IMPORTANT LESSON FOR CENTERS:

Research Mature

Innovation Mature

Research Young

Innovation Young

2 LACK OF BUSINESS VISION

ANSWER THESE QUESTIONS TO CHECK WHETHER YOU HAVE THIS PROBLEM:

A Do you have researchers who lack business knowledge or commercialization experience?

B Does your research team invest too much time in non academic issues?

C How easy is it for your research team to network with the industry to gather data, invite guest speakers and disseminate their discoveries?

2 BEST PRACTICE:

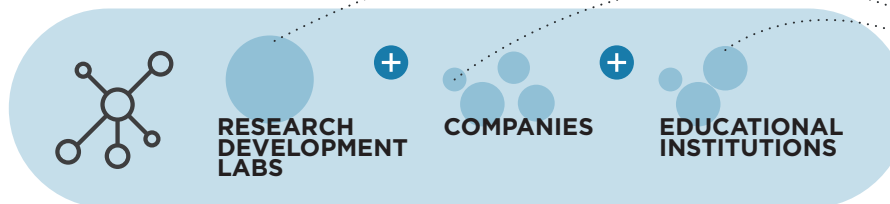


COMPLEMENTING KNOWLEDGE TRANSFER SERVICES

Complement skills and resolve the problem of lack of knowledge in specific areas related to transforming the discovery into an invention

SOLUTION TO THIS PROBLEM:

Connect individuals from:



Identify and mix the skills from the beginning

TO ACCELERATE THE PROCESS AND AVOID CONFLICTS OF INTEREST

EXAMPLE: Harvard Innovation Lab



Harvard innovation lab

Harvard Innovation Lab offers services to the Harvard community such as coaching through entrepreneurs in residence, investors in residence, legal partners, visiting practitioners, experts, etc.

HELPS TO:

Optimize the time invested by researchers (by leveraging complementary skills)

Create prototypes to conduct user or commercialization testing

Ensure a product-market fit prior to a formal launch

Engage with the potential market

IMPORTANT LESSON FOR CENTERS:



Research Mature



Innovation Mature



Research Young



Innovation Young

3 TEAMS LACKING ACADEMIC OR EXECUTIVE PROFILES

ANSWER THESE QUESTIONS TO CHECK WHETHER YOU HAVE THIS PROBLEM:

A Are your teams formed of only academics or only non academics?

B Do researchers and executives understand each other in terms of language, performance metrics, timing, and mindsets?

3 BEST PRACTICE:



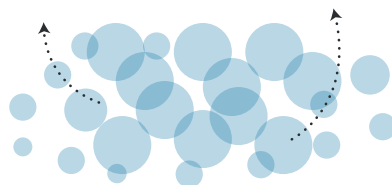
MIXING PHDS AND MBA TEAMS

Having diverse teams of executives and academics enhances rigor and relevance

SOLUTION TO THIS PROBLEM:

DIVERSE TEAMS

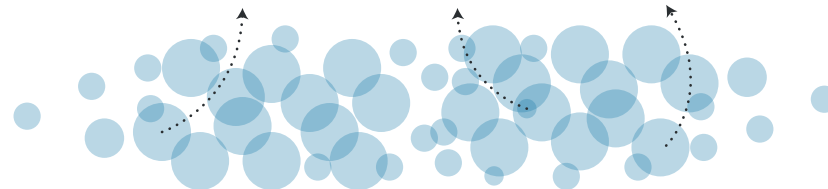
Academics with PhDs + Executives with MBAs



Some centers incorporate **“Hybrid profiles”**: people with both MBA and a PhD: understand the “language”, concept and goals of both sides

DIVERSE BACKGROUNDS

Gender + Ethnical + Geographical



Ex.: gender diverse and ethnically diverse organizations are **15 and 35%** more likely, **to financially outperform** those that are not

EXAMPLE: Deutsche Telekom Laboratories



During this collaboration **the two partners included hybrid profiles** who had a natural interest in the application of work oriented toward R&D and who understood both the academic and practitioner environments

HELPS TO:

- Increase performance
- Have a noticeable impact in academic research centers in translating discoveries to inventions

IMPORTANT LESSON FOR CENTERS:



Research Mature



Innovation Mature



Research Young



Innovation Young

4 UNCOACHABLE RESEARCHERS

ANSWER THESE QUESTIONS TO CHECK WHETHER YOU HAVE THIS PROBLEM:

A Do your researchers welcome and follow your suggestions?

B Do they follow the research center's strategy?

C Are they aligned with the center's vision and mission?

3 BEST PRACTICE:



MEASURE THE ABILITY TO BE COACHABLE

Include the indicator "coachable" in the recruitment, evaluation, and incentive scheme of your researchers to increase the likelihood of commercialization

SOLUTION TO THIS PROBLEM:

RECRUIT COACHABLE RESEARCHERS

Ensure that researchers can be coached and aligned to the strategy of the center

SELECT WHO WILL LISTEN TO MENTOR'S SUGGESTIONS



MENTOR YOUR RESEARCHERS

Educate and guide research teams during the transformation stage, help them to progress and figure out what to do

BE AVAILABLE TO GUIDE THE RESEARCH TEAM

EXAMPLE: Johns Hopkins University



Johns Hopkins University employs former venture capitalists. Its mission is to support the faculty as they think about, prepare, and advise on the opportunity for commercialization of Hopkins technologies

HELPS TO:

Be aligned and avoid duplicity

IMPORTANT LESSON FOR CENTERS:



Research Mature



Innovation Mature



Research Young



Innovation Young

CONCLUSIONS

STAGE 2: TRANSFORMATION

2 SYMPTOMS OF BROKEN INNOVATION



ARE YOU GETTING PRODUCTS NO ONE WANTS TO BUY?



ARE YOU GETTING OUTDATED PRODUCTS?

4 CAUSES OF FAILURE

1

IGNORANCE OF MARKET NEEDS

INFORMATION

Ineffective evaluation of the product-market fit create this misalignment

1

2

LACK OF BUSINESS VISION

CONTEXT

Academics specialized on research, occasionally lack knowledge in areas outside their research focus

2

3

TEAMS LACKING ACADEMIC OR EXECUTIVE PROFILES

DIVERSITY

Misalignments in academic needs (eg., consultant) or market priorities (eg., researchers)

3

4

UNCOACHABLE RESEARCHERS

MENTORING

Unaligned groups of academics grouped together

4

BEST PRACTICES



Mapping market needs



Following lean research principles



Complementing knowledge transfer services



Mixing PhDs and MBA teams



Measure the ability to be coachable

STAGE 3



COMMERCIALIZATION

STAGE 3

STAGE 3 COMMERCIALIZATION

2 SYMPTOMS OF BROKEN INNOVATION

1

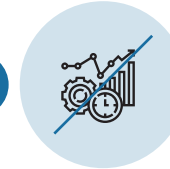


ARE YOU FINDING IT
DIFFICULT TO MONETIZE
YOUR KNOWLEDGE
ASSETS?



You are probably **doing only research collaborations**
with industry to nurture your research

2



ARE YOU HAVING MORE
TROUBLE GETTING ACCESS
TO INDUSTRY DATA AND
NETWORKS?



You are probably seen as a **furtive sales researcher**

8 CAUSES OF FAILURE

9 UNCLEAR
BUSINESS MODEL

10 LACK OF BRAND

11 LACK OF
EXPERIENCED
RESEARCH TEAM

12 UNCLEAR VALUE
PROPOSITION

13 DISPROPORTIONAL
RESEARCH TEAM

14 INTERNAL POLITICS
AND BUREAUCRACY

15 NON ACCEPTANCE
OF GENERATED
RESEARCH RESULTS

16 LACK OF
PUBLIC FUNDING

9 UNCLEAR BUSINESS MODEL

ANSWER THESE QUESTIONS TO CHECK WHETHER YOU HAVE THIS PROBLEM:

- A** Don't you know how to monetize your inventions?
- B** Are your research collaborations only a matter of gathering data?
- C** Are you seen as a furtive research seller by other stakeholders?
- D** Do you find it difficult to sustain long-term collaborations with industry?

9.1 BEST PRACTICE:



DESIGN A COLLABORATIVE BUSINESS MODEL

Understand the possible benefits of each actor (i.e., government, industry or university). Then design a win-win collaboration that generates mutual benefit

SOLUTION TO THIS PROBLEM:

THE 12 MOST COMMON BUSINESS MODELS IDENTIFIED ARE:

- | | | | |
|---|--|---|---|
| <p>9.1.1
Short-term external contracting</p> | <p>9.1.2
Medium-term external contracting</p> | <p>9.1.3
Long-term external contracting</p> | <p>9.1.4
Internal contracting through transfer pricing</p> |
| <p>9.1.5
Freemium product/service</p> | <p>9.1.6
Research licensing</p> | <p>9.1.7
Technology transfer by public funding</p> | <p>9.1.8
Creation of spin-offs</p> |
| <p>9.1.9
The search model</p> | <p>9.1.10
The consultancy joint venture</p> | <p>9.1.11
Short-term marketing collaboration</p> | <p>9.1.12
Long-term marketing collaboration</p> |

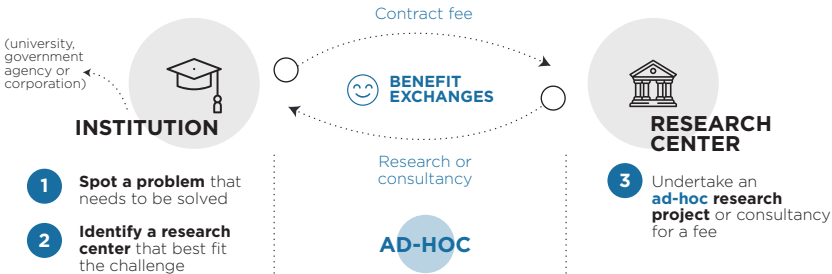
9 UNCLEAR BUSINESS MODEL

9.1 BEST PRACTICE:

DESIGN A COLLABORATIVE BUSINESS MODEL

NAME

9.1.1 Short-term external contracting

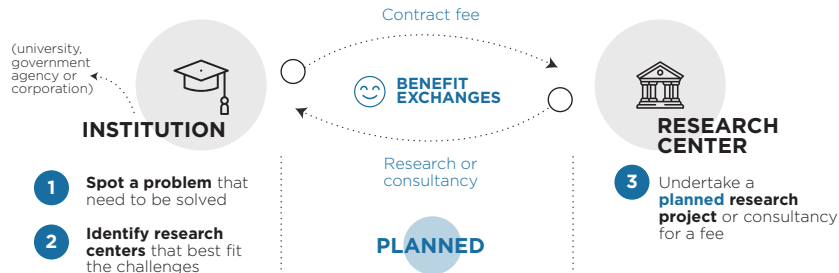


It is important to keep the research aligned with what is relevant for a client to implement

EXAMPLES:

hp Every year, HP solicits ideas from academics on selected research topics. With the aim of building new research collaborations, in exchange of modest grants. HP receives 500+ proposals per year, selecting 10% of them on the basis of its own needs

9.1.2 Medium-term external contracting

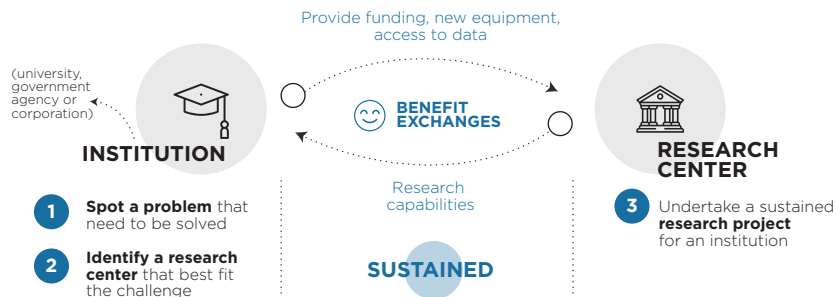


The company is aware in advance of the amount of projects that the research center is going to execute

These collaborations are done by: research centers at universities, governments and corporations such as:

- Deutsche Bank** **Banking:** Deutsche Bank Research
- The Economist INTELLIGENCE UNIT** **Media:** The Economist Group Intelligence Unit
- Jigsaw** **Technology:** Jigsaw
- A.T. Kearney Global Business Policy Council** **Consulting:** A.T. Kearney Global Business Policy Council

9.1.3 Long-term external contracting



In this case the research center is more involved with the corporation: strong relations with executives and gain a better understanding

pwc **Google** Joint venture by Google and PwC in 2014. The two companies agreed to share their core capabilities to bring further innovation to industry by leveraging PwC's business insights along with Google tools and using PwC's analytical acumen

9 UNCLEAR BUSINESS MODEL

9.1 BEST PRACTICE:

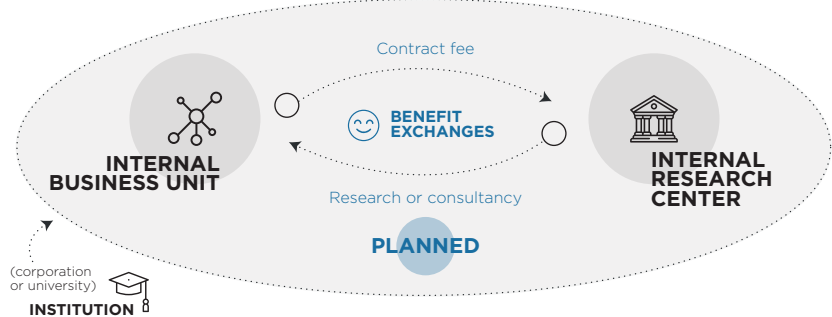
DESIGN A COLLABORATIVE BUSINESS MODEL

NAME

BUSINESS MODEL

EXAMPLES:

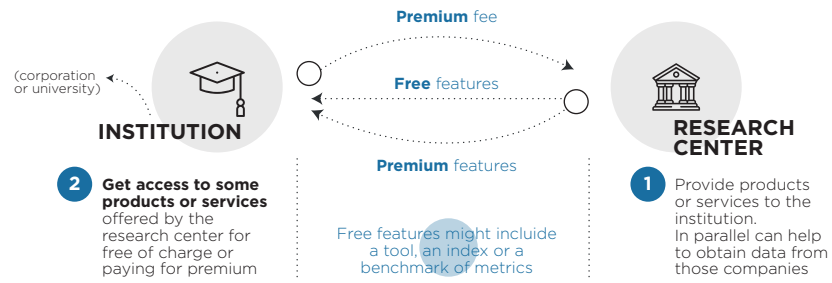
9.1.4 Internal contracting through transfer pricing



These collaborations are beneficial to the institution because it preserves the budget internally

GE
General Electric (GE) has six research centers worldwide. The centers internal investments in it's aviation plant, in Vermont, have created manufacturing capabilities.
A \$75 million investment in the plant led to more than \$300 million in engine-production savings

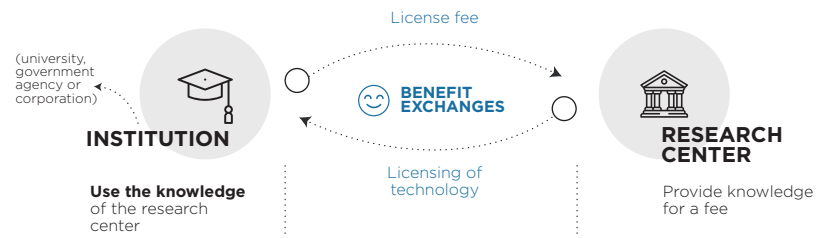
9.1.5 Freemium product/service



This tool serves as a diagnostic to identify growth opportunities for clients or can be used to diagnose potential pitfalls

USC
Noam Wasserman, the founding director of the University of Southern California's initiative used this model to gather data from founding teams of start-ups

9.1.6 Research licensing



With the licensing contract, the research institute and the company brought two technologies together to form and commercialize one product

SAP
SAP traditionally followed a business model that involved receiving a licensing fee up front for its software and then an annual fee of 17-18% of the original license fee for upgrades and maintenance

9 UNCLER BUSINESS MODEL

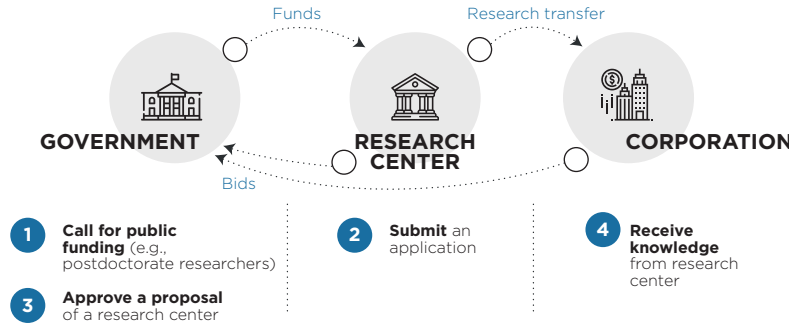
9.1 BEST PRACTICE:

DESIGN A COLLABORATIVE BUSINESS MODEL

NAME

9.1.7 Technology transfer by public funding

BUSINESS MODEL



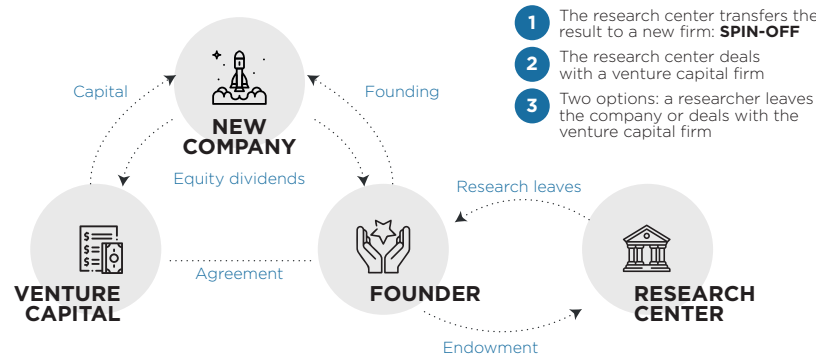
The government enhances the innovation level in corporations by boosting the technology transfer process in research institutions

EXAMPLES:



The National Aeronautics and Space Administration (NASA) has documented over 1,600 such technology transfers in its spin-off magazine since its first edition in 1976

9.1.8 Creation of spin-offs

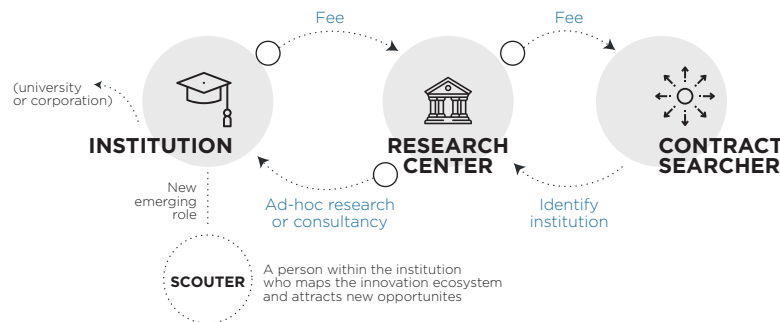


It is important the knowledge transfer for supporting spin-offs to achieve a successful transition

cyclotronroad

Cyclotron Road, launched in 2014, aims to identify and support innovators of advanced energy technology, providing them with the tools, capital, and partners needed to commercialize their technologies

9.1.9 The search model



The external searcher has a lot of connections and experience in one particular industry. She knows the decision-makers in that industry



Roche incorporated an emerging role in research centers at corporations "the scouter" that connects new opportunities with business lines

9 UNCLEAR BUSINESS MODEL

9.1 BEST PRACTICE:

DESIGN A COLLABORATIVE BUSINESS MODEL

NAME

BUSINESS MODEL

EXAMPLES:

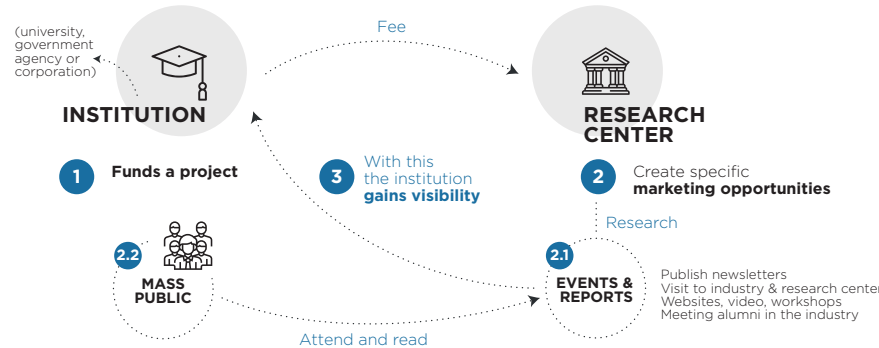
9.1.10
The consultancy joint venture



This model is common among young research centers that lack the internal infrastructure to execute specific projects or mature centers that want to scale the attraction of opportunities

Collaboration between Columbia Business School's faculty, and PwC's Strategy& (the former Booz & Company) in joint dissemination initiatives

9.1.11
Short-term marketing collaboration

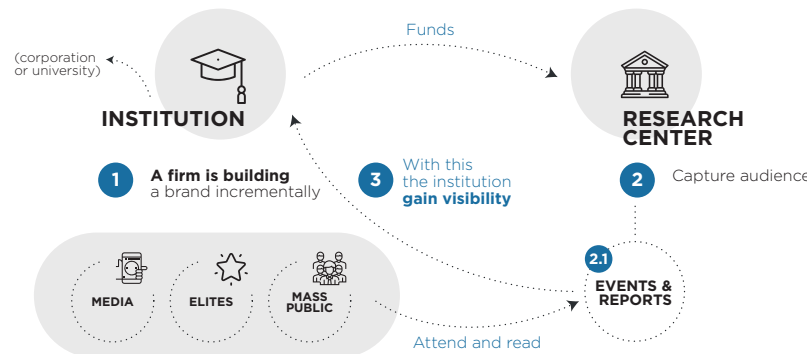


Benefit to the institution:

1. Access to new idea/technology
2. Access to centers' faculty
3. Network with other industries
4. Access to facilities
5. Employing center's graduates

The National Science Foundation's Engineering research centers reported in 2012 that, among their 20 associated centers, industry membership ranged from seven to 47 companies per center (averaging 23%)

9.1.12
Long-term marketing collaboration



The focus is that the audiences associate the firm with attractive or socially worthwhile research

Faculty chairs at Duke University in North Carolina can be established for between \$1 million and \$5 million depending on the sponsored profile, from a visiting professor to the dean

10 LACK OF BRAND

ANSWER THESE QUESTIONS TO CHECK WHETHER YOU HAVE THIS PROBLEM:

A Do you lack a recognizable brand or experienced researchers?

B Are you unable to attract industry partners for collaborations?

C Are you consolidated but want to extend your institution's brand?

10.1 BEST PRACTICE:



WRITE MEDIATIC REPORTS WITH COMPLEMENTARY BRANDS

A quick way to establish a brand is to use brand architecture by leveraging other big brands

SOLUTION TO THIS PROBLEM:



THE RESEARCH CENTER

leverage existing



POSITIONED INSTITUTIONS OR COMPANIES



Collaborate with those brands to leverage research or dissemination capabilities

Regarding the high costs of a publication: the creation of results + cost of researchers + writing the results of the research + publishing + distribution

CROWDSOURCE EXTERNAL STAKEHOLDERS

OR

PARTNER WITH A FIRM, E.G.: CONSULTANCIES

Opportunities to increase the impact of brand awareness in other geographies and give the knowledge created greater outreach

EXAMPLE: Opinno



Opinno uses a partnership to disseminate in Latin America and Spain the 10 most breakthrough technologies of the year (among other tech-related findings) according to the MIT Technology Review

HELPS TO:

- Disseminate the knowledge and content
- Increase the brand awareness of the center

IMPORTANT LESSON FOR CENTERS:



10 LACK OF BRAND

ANSWER THESE QUESTIONS TO CHECK WHETHER YOU HAVE THIS PROBLEM:

A Are you creating more value than the value perceived by the non academic market?

B Are your researchers unaware of who to contact within your organization to maximize the impact and outreach of their research results?

10.2 BEST PRACTICE:



RETHINK YOUR COMMUNICATIONS

Create a clear and scalable process of internal and external communications that maximizes the value proposition offered to media

SOLUTION TO THIS PROBLEM:

3 PRINCIPLES IDENTIFIED TO OPTIMIZE THE OUTREACH OF RESULTS:

01 MAP FUNCTIONS

Who do I have to contact when I have to do something related to communication? Then give this map to each researcher

“WHO SHOULD I CONTACT IF I ... ?”

02 REDEFINE PROCESSES IN CASCADE

Communication units of research centers were sometimes internally unconnected. Two people were doing almost the same task, talking with the same external contact or using only a few channels to communicate. However, **a cascade process leverages your internal structure to maximize the external impact.** E.g.:



03 REJECTION RATE FOR ARTICLES

Give specific pieces of information to a very segmented type of journalist, based on her interests.

Generate internal CRM with all journalists segmented by topic of interest and geographic areas: **know to whom specifically you should write**

EXAMPLE: University of Michigan

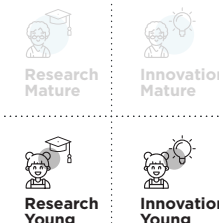


Centers at University of Michigan are already applying these principles, getting best practices from the tool kit that the university shares among its research units

HELPS TO:

- Increase the communication impact of the knowledge generated
- Solve the problems of work in external communication silos

IMPORTANT LESSON FOR CENTERS:



11 LACK OF EXPERIENCED RESEARCH TEAM

ANSWER THESE QUESTIONS TO CHECK WHETHER YOU HAVE THIS PROBLEM:

A Is your center too young to attract funding or ad hoc research contracts?

B Do you lack internal research capability?

11 BEST PRACTICE:



PARTNER WITH RECOGNIZED PROFESSORS

To improve your research capabilities by partnering with researchers who are renowned

SOLUTION TO THIS PROBLEM:



THE RESEARCH CENTER

partner with



PROFESSORS

Leverage external brands by creating awards for top researchers

RESEARCHERS

E.g.: the submission of a proposal to obtain public funds



OR



LONG-TERM COLLABORATIONS

E.g.: create long-term research projects, or a series of lectures

EXAMPLE: IBM Faculty Awards



The IBM Faculty Awards, support basic research, curriculum innovation, and educational assistance in specific focus areas. The program is intended, firstly, to foster collaboration between researchers at leading universities worldwide and those in IBM research, development, and services organizations. Second, to promote innovation to stimulate growth in disciplines and geographic areas that are strategic to IBM

HELPS TO:

Have more credibility and gain initial traction in the market

IMPORTANT LESSON FOR CENTERS:



12 UNCLEAR VALUE PROPOSITION

ANSWER THESE QUESTIONS TO CHECK WHETHER YOU HAVE THIS PROBLEM:

- A** Does the market fail to understand what you are doing in your research center?
- B** Do you lack a network for university-industry collaborations?
- C** Do you have a technology that generates value of which your customers fail to perceive?

12 BEST PRACTICE:



LECTURE TRANSLATING RESEARCH INTO IMPACT

To have clearly identified the benefits to a potential client

SOLUTION TO THIS PROBLEM:



01 PERIODIC LECTURES TO INDUSTRY LEADERS

Translate into

Research results

Qualified impact

In these lectures, professors with experience in industry-university collaboration or the director of the technology-transfer unit, would explain the implications and applications of the research projects, explaining the **value propositions** via quantified value and success cases



02 INCLUDE SERIES OF INDUSTRY SPEAKERS

Industry professionals invited to the center for **speaking engagements**, followed by a meeting with center's faculty and a look at the center's facilities

EXAMPLE: MIT Technology Review

MIT Technology Review

MIT Technology Review has a magazine that shares insights from faculty (and other experts) to equip its audiences with the intelligence to understand a world shaped by technology

HELPS TO:

Raise the awareness and visibility of the research center

Network with other industry members during or after the speaking session

IMPORTANT LESSON FOR CENTERS:



13 DISPROPORTIONAL RESEARCH TEAM

ANSWER THESE QUESTIONS TO CHECK WHETHER YOU HAVE THIS PROBLEM:

A Do you have a recognized and renowned research center but lack industry collaborations?

B Have you spoken already to all the big players in your sector and did not found how to keep your client portfolio growing?

13 BEST PRACTICE:



ADAPT THE SIZE OF TEAMS

In some ecosystems, the majority of enterprises are small- or medium-size and doesn't have specialized resources to work with complex research teams. Adapting the size of those can ease the collaboration

SOLUTION TO THIS PROBLEM:



METRICS

Project Funding + Indexed Papers

ARE MAXIMIZED

When the size of the research team is between **two and three researchers**, according to several studies



IMPORTANT:

Consider the **relevant industry's characteristics** when designing the **internal structure** of the research center and the research teams



BARRIERS

are generally caused by the center's internal **politics and bureaucracy**

EXAMPLE: Several Spanish Research Centers

SPANISH RESEARCH CENTERS

In Spain, 99.9% of local industry is composed of small and medium-sized enterprises (SMEs). The budget, expertise, and internal structures of these companies are unable to absorb large research teams. For instance, SMEs might not have enough budget or they might lack the internal knowledge to talk with the research center's experts or absorb the center's discoveries

HELPS TO:

Improve the ease of collaborating with SMEs

IMPORTANT LESSON FOR CENTERS:

Research Mature

Innovation Mature

Research Young

Innovation Young

14 INTERNAL POLITICS AND BUREAUCRACY

ANSWER THESE QUESTIONS TO CHECK WHETHER YOU HAVE THIS PROBLEM:

A Are you designing a strategic plan without taking into account the vision and mission of your research center?

B Are you going to implement a new commercialization initiative but you do not know which stakeholders in your institution should approve the proposal or whether you should ensure their buy-in?

14 BEST PRACTICE:



MAP DECISION MAKERS AND THEIR KPIS

Understand the mind-set of the academic or executive with whom you are sitting

SOLUTION TO THIS PROBLEM:

GAINING AN UNDERSTANDING OF THE ORGANIZATION

Taking into account **3** considerations:



01 RESEARCH MAP

Used to identify their research interests



02 KPIS

Of the stakeholders (also preferences)



03 RESEARCH PYRAMID

To identify the characteristics of their roles and to understand the mind-set of each researcher

Identify what those KPIS (unwritten rules) are:



Difference between:
 • **Academics roles:** KPIS related to academic indicators
 • **Executives roles:** economic indicators



Keep in mind the **seniority of the research:**
 • **Young:** focused priorities in publishing
 • **Senior:** diverse indicators (less pressure to publish)



Have a **network map** of your institution, know the key decision-makers (then you could focus explanation of initiatives of what they value more)

EXAMPLE: Merck



Merck introduced a scouting organization within the Word Wide Licensing and Knowledge Management group, growing from 11 to 65 employees in 2011. It is a team that generates novel opportunities for the company, developing connections with Merck's internal research units and with outside partners such as entrepreneurs and venture capital firms

HELPS TO:

Increase the chances of obtaining internal approval of initiatives

IMPORTANT LESSON FOR CENTERS:



Research Mature



Innovation Mature



Research Young



Innovation Young

15 NONACCEPTANCE OF GENERATED RESEARCH RESULTS

ANSWER THESE QUESTIONS TO CHECK WHETHER YOU HAVE THIS PROBLEM:

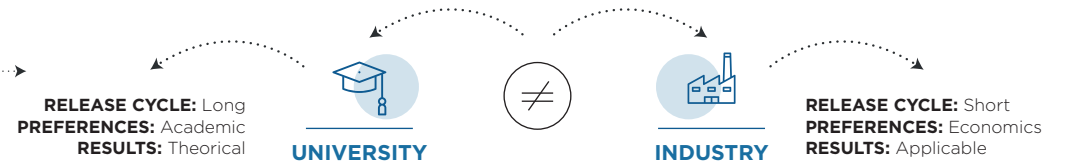
- A** Have you delivered the results of an ad hoc research project but it has not been approved?
- B** Have you been involved in a research project with very undefined end-date?
- C** Do you usually exceed the initial budget of ad hoc research projects?

15 BEST PRACTICE:

PRE-SELL YOUR SOLUTION
Align industry-university collaboration

SOLUTION TO THIS PROBLEM:

MISALIGNED PREFERENCES



TO ALIGN THIS COLLABORATION



01 DEFINE A CLEAR STRATEGY & LISTEN

Detailed deliveries, timings and scope to avoid any misalignment

02 PRE-SELL RESULTS

Before the final delivery Meet and talk regularly

EXAMPLE: Audi + Technical University of Munich

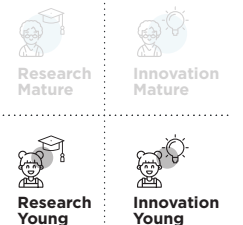


Audi proposed a strategic collaboration with the Technical University of Munich (TUM), through the establishment of a research institute near the Audi headquarters that would support more than 100 Ph.D. students working on technology and innovation issues vital to Audi's competitiveness

HELPS TO:

Solve problems of ad hoc research projects

IMPORTANT LESSON FOR CENTERS:



16 LACK OF PUBLIC FUNDING

ANSWER THESE QUESTIONS TO CHECK WHETHER YOU HAVE THIS PROBLEM:

A Do you lack the experience and in-depth expertise to apply for public funds?

B Do you have a very low acceptance rate of proposals for public funding?

16 BEST PRACTICE:



BUILD A UNIT FOR RAISING PUBLIC FUNDS

To increase the acceptance rate hire a specialist or partner with external consultancies

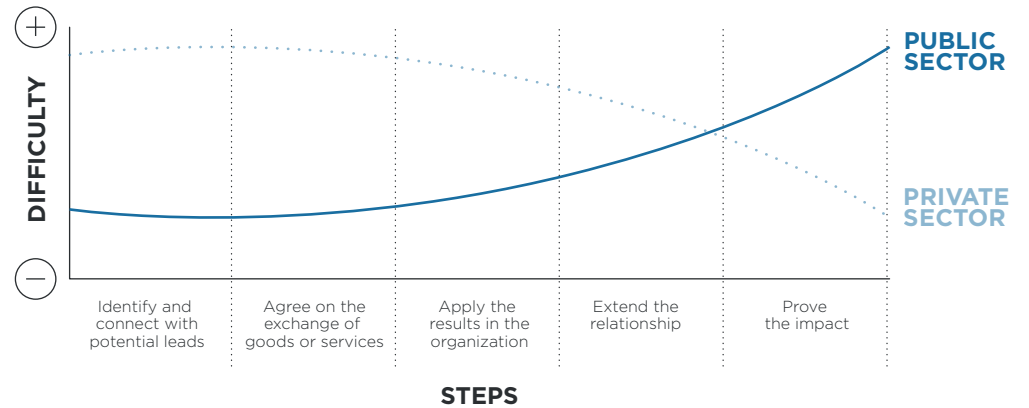
SOLUTION TO THIS PROBLEM:



Have a specialist unit of a few experts working on those funding programs

They can provide templates, benchmarks, proposals previously submitted by the institution, etc.

DIFFERENCE DIFFICULTY BETWEEN PUBLIC AND PRIVATE FUNDING



EXAMPLE: Max Planck Innovation



Max-Planck-Innovation

Max Planck Innovation has set up various incubators to validate the industrial relevance of inventions resulting from basic research - to achieve closer links with the industry and the market

HELPS TO:

Improve the acceptance rate of public funding. Decrease the cost or preparing proposals, leveraging previous knowledge

IMPORTANT LESSON FOR CENTERS:



Research Mature



Innovation Mature



Research Young



Innovation Young

CONCLUSIONS

STAGE 3: COMMERCIALIZATION

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16 LACK OF PUBLIC FUNDING

BEST PRACTICES

9.1
 Design a collaborative business model

10.1
 Write mediatic reports with complementary brands

11
 Partner with recognized professors

12
 Lecture translating research into impact

9.2
 Align your centers age and orientation

10.2
 Rethink your communications

13
 Adapt teams sizes

14
 Map decision makers and their KPIs

15
 Pre-sell your solution

16
 Build a unit for raising public funds

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