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Integrating impact in a research strategy

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KU Leuven

Content

1. Defining impact

2. Dealing with impact at the university; disciplinary characteristics, attitudes and cultures within the university

3. Research impact and quality assurance

1. Defining impact

Peter Paul Rubens;
in book of
Franciscus Aguilon's
"Opticorum" (1613)

1. Defining Impact

"The duty of intellectuals in society is to make a difference"

Sir Thomas More, shortly before his execution (1535)

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1. Defining Impact

"The duty of intellectuals in society is to make a difference"

Sir Thomas More, shortly before his execution (1535)

Alexander Von Humboldt (1850): "The university's features include a *unity in teaching and research*,

freedom of study for students and

corporate autonomy for universities

despite their being funded by the state."

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1. Defining Impact in University Missions

- “The mission of the University of Cambridge is to contribute to society through the pursuit of education, learning and research at the highest international levels of excellence.”
- [University of California] “The distinctive mission of the University is to serve society as a center of higher learning, providing long-term societal benefits through transmitting advanced knowledge, discovering new knowledge, and functioning as an active working repository of organized knowledge. …”

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1. Defining Impact in Mission KU Leuven

- “KU Leuven offers its students an academic education based on high-level research, with the aim of preparing them to assume their social responsibilities.
- KU Leuven is a research-intensive, internationally oriented university that carries out both fundamental and applied research. It is strongly inter- and multidisciplinary in focus and strives for international excellence. To this end, KU Leuven works together actively with its research partners at home and abroad.
- KU Leuven encourages personal initiative and critical reflection in a culture of idea exchange, cooperation, solidarity and academic freedom. It pursues a proactive diversity policy for its students and staff.
- KU Leuven aims to actively participate in public and cultural debate and in the advancement of a knowledge-based society. It puts its expertise to the service of society, with particular consideration for its most vulnerable members.
- From a basis of social responsibility and scientific expertise, KU Leuven provides high-quality, comprehensive health care, including specialised tertiary care, in its University Hospitals. In doing so it strives toward optimum accessibility and respect for all patients.”

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1. Defining Impact
What is our reference framework?

- Mission
- Independent and “as open as possible”
- Research ànd teaching ànd societal engagement
- Mid long and long term research
- Diversity of funding sources for research (governmental/private)
- Diversity in disciplines (particularly at comprehensive universities)
- Diversity of stakeholders (citizens, governmental organisations, societal interest groups, students, industry….)

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1. Defining Impact

=

+ a definition

+ principles

+ process

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1. Defining Impact
= a definition + principles + process

- [REF Research Excellence Framework UK]: Impact is defined as ‘any effect on, change or benefit to economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia.’
- [ESF European Science Foundation: Impact can be described as consequences of an action that affects people’s lives in areas that matter to them
- [KNAW – Academy NL]: (translated) The contribution on short and long term of scientific research to changings in development of societal sectors and societal challenges

1. Defining Impact
= a definition + principles + process

- *Principles [Mertonian Norms]:*
  - **communism**: all scientists should have common ownership of scientific goods (intellectual property), to promote collective collaboration; secrecy is the opposite of this norm.
  - **universalism**: scientific validity is independent of the sociopolitical status/personal attributes of its participants
  - **disinterestedness**: scientific institutions act for the benefit of a common scientific enterprise, rather than for the personal gain of individuals within them
  - **organized scepticism**: scientific claims should be exposed to critical scrunity before being accepted: both in methodology and institutional codes of conduct.

1. Defining Impact
= a definition + principles + process

- Definition [REF]: “Impact is defined as ‘any effect on, change or benefit to economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia.”
- *Principles [Mertonian Norms]: “communism; universalism; disinterestedness; organized scepticism”*
- *Process*
  A. *Bottom up >< societal challenges*
  B. *Improving ongoing research (not changing our research!)*
  C. *Assessment : who to decide? Criteria?*

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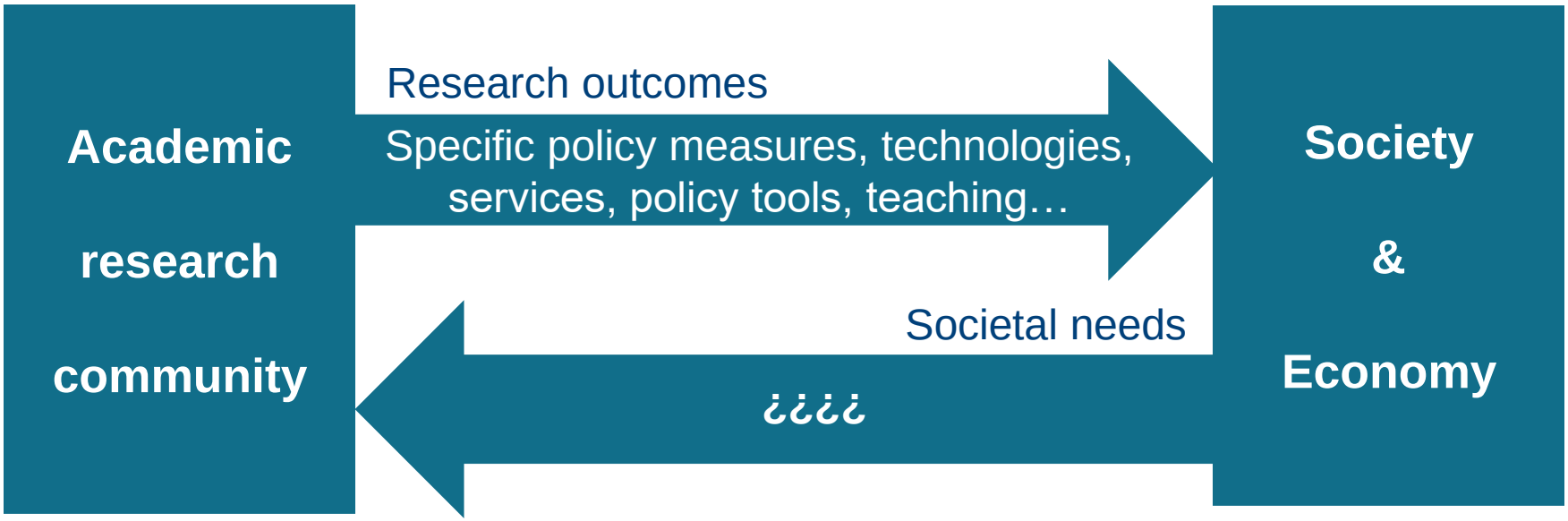
1. Defining Impact
A. Bottom up >< societal challenges

- Universities have internal structures to make research outcomes available for society (dedicated activities, tech transfer office, websites, etc..
- *Otherwize: structures for 'inducing' (indirect steering) research activities based on societal concerns are rather exceptional*



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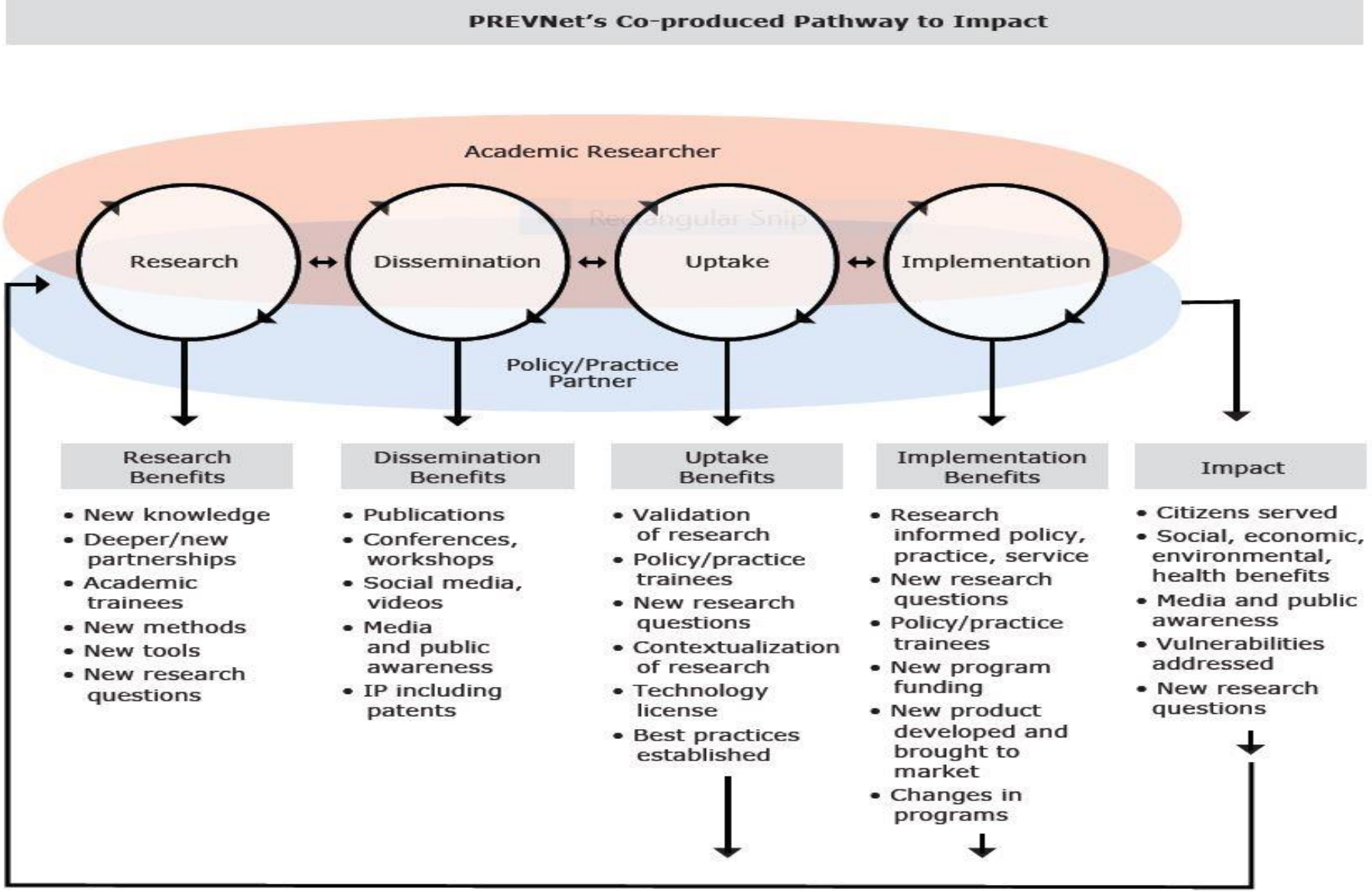

Phipps, D.J., Cummings, J. Pepler, D., Craig, W. and Cardinal, S. (2016) The *Co-Produced Pathway to Impact* describes Knowledge Mobilization Processes. *J. Community Engagement and Scholarship,* 9(1): 31-40.

1. Defining Impact
B. Improving >< not changing research

- Researchers may receive valuable feedback from their stakeholders = useful for future research; may improve methodology, effectiveness, efficiency….
- The research process is still 'bottom up': the researcher decides
- In line with 'Open Science' approach

➢ NOT: implementing an impact policy should NOT have the objective to create a shift towards more application oriented academic research

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1. Defining Impact
C. Assessment : who to decide? Criteria?

- Who:
  - Researchers within their labs/ research group
  - Assessments at all levels within the university (personal, group, project assessments, e.o.)...

- Criteria:
  - To be defined per (big) domain at ‘academic level’ (within the universities or inter-university research councils)
  - Assessments by panels of experts no politicians

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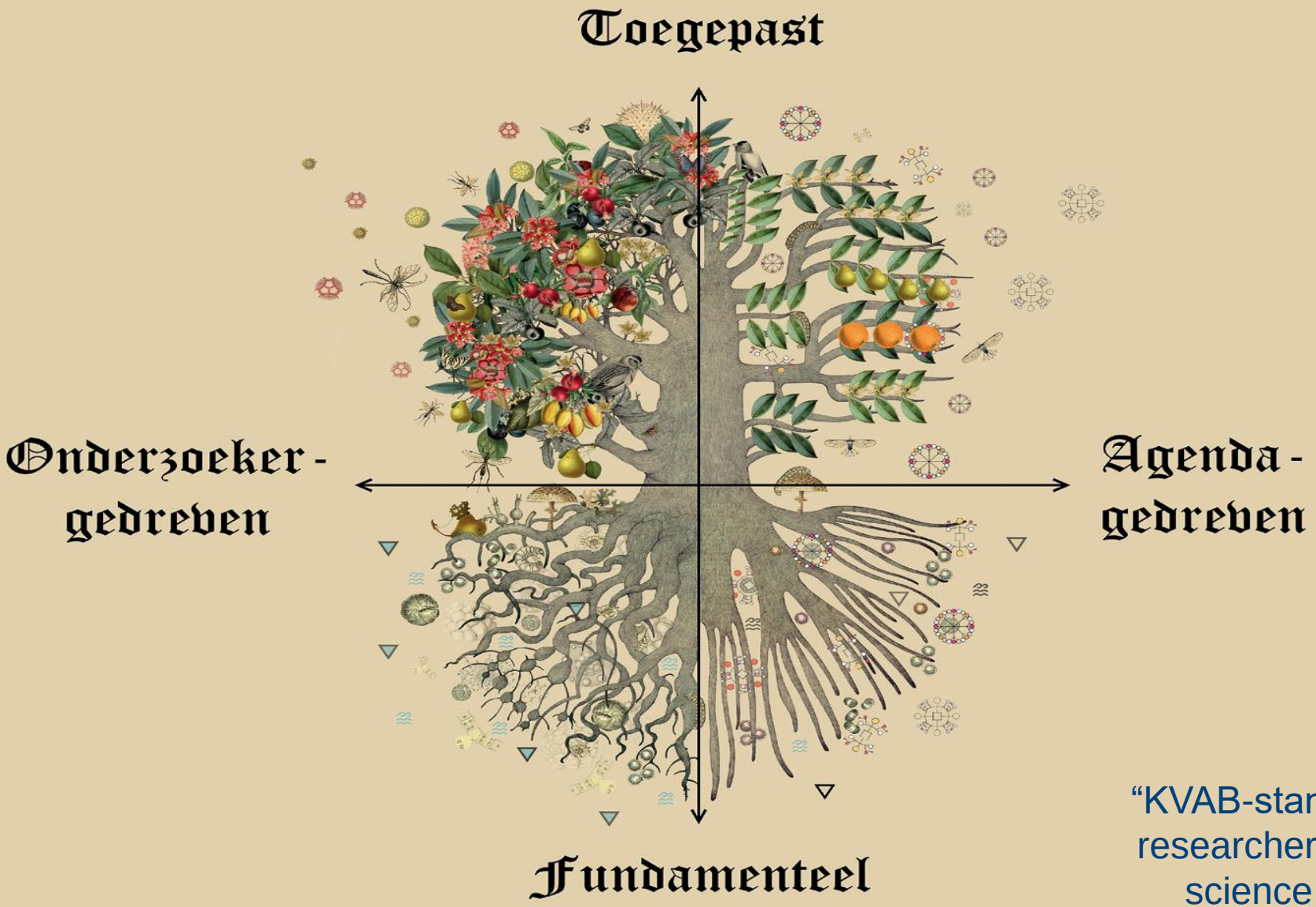
2. Dealing with impact



"KVAB-standpunt" researcher-driven science (2018)

2. Dealing with impact

disciplinary characteristics, attitudes and cultures within the university

Universities should:

- "Embrace the societal impact agenda// *fully compatible with their missions* of knowledge creation and transmission"
- "promote societal impact as a *dynamic, open and networked process* in a culture of sustained engagement and coproduction of knowledge"
- "*engage with others*…. to develop future oriented policies and implement innovative practices…"
- "*open explicit and transparent reward systems* that include all kinds of impact, reward it and take into account for individual promotion"

Source: LERU position paper 2017: Wiljan Van den Akker, Jack Spaapen; "Productive interactions: societal impact of academic research in the knowledge society"

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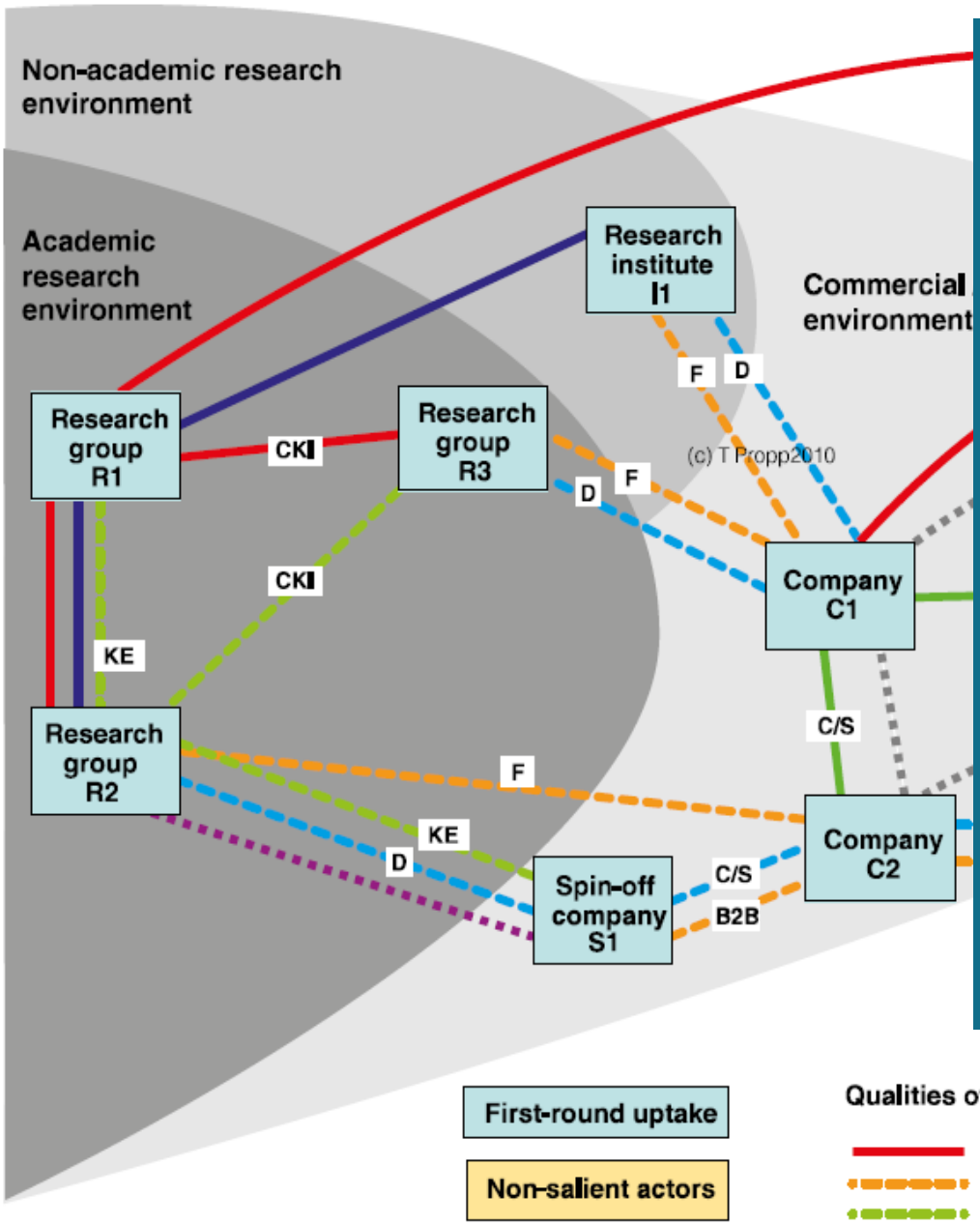
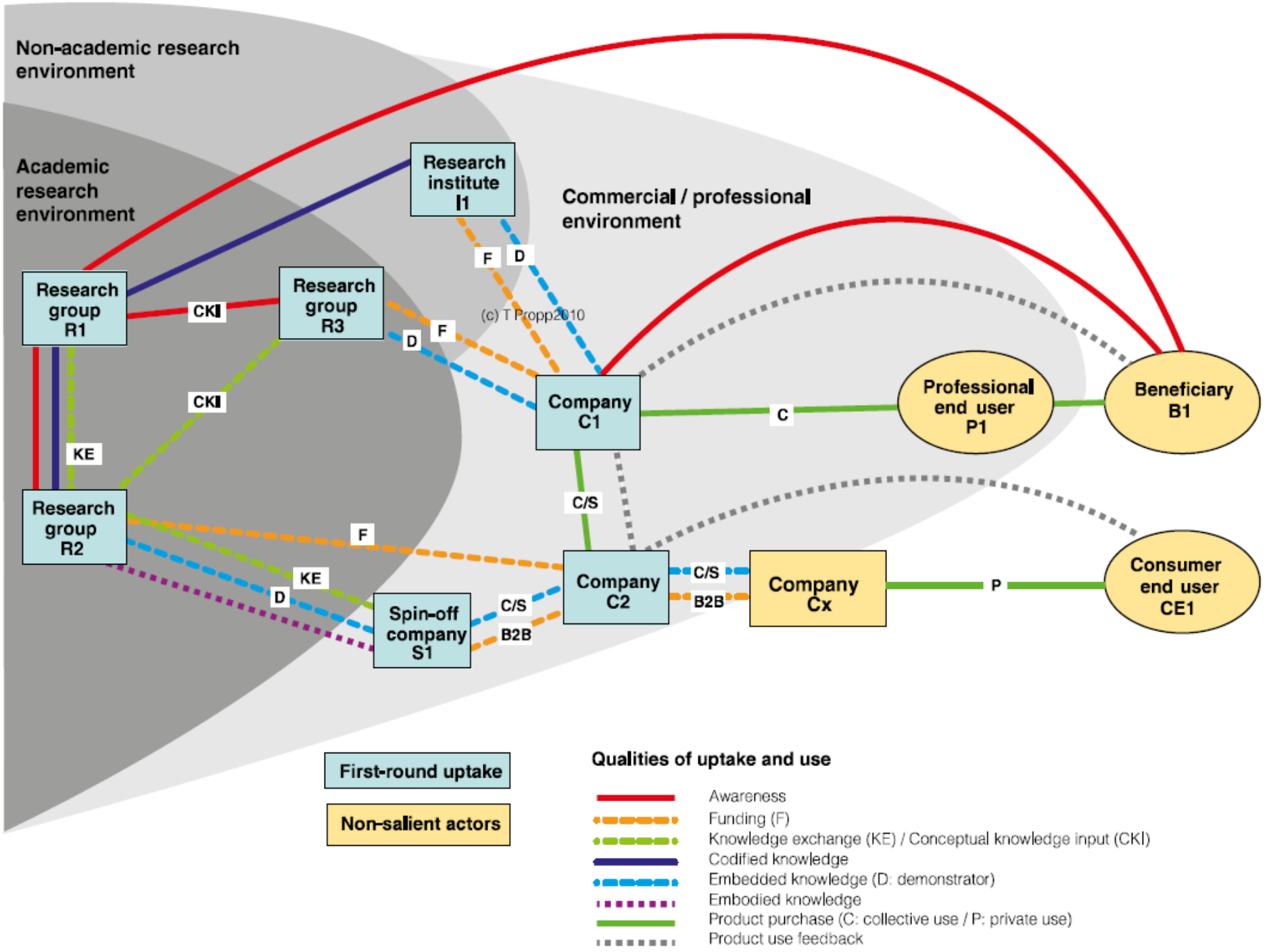


In the past:
Focus on ‘first-round’-uptake:

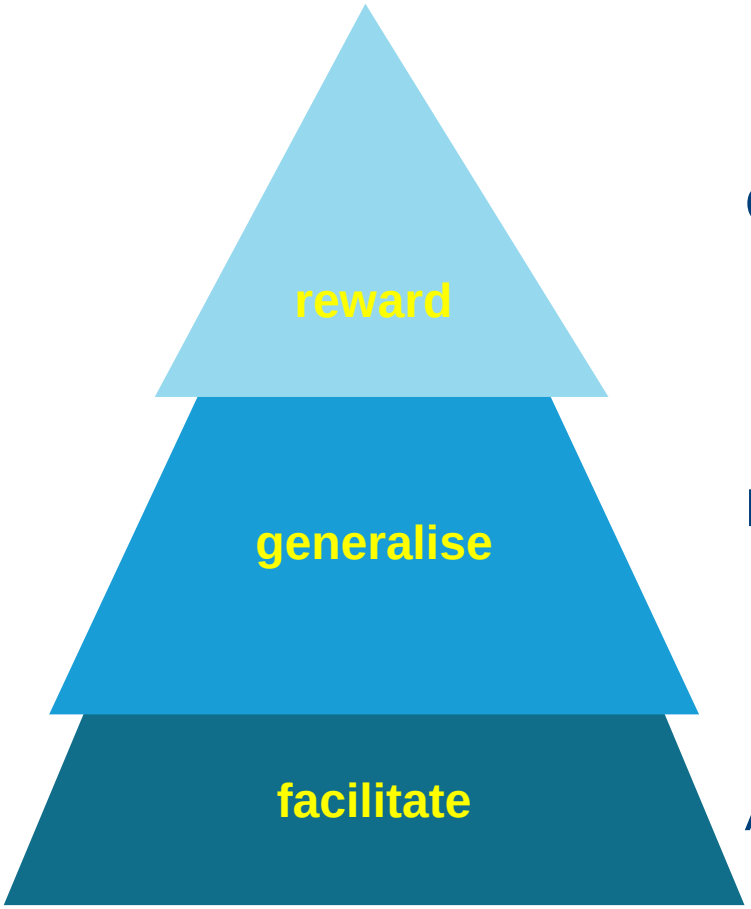
- Starting with specific knowledge (full blue line)
- of direct importance for funding (orange dashed lines)
- Supported by TTO-offices (for technologies and services)

Transition to impact culture……


Non-academic research environment
Academic research environment
Commercial / professional environment
Research institute I1
Research group R1
Research group R3
Research group R2
Company C1
Company C2
Company Cx
Spin-off company S1
Professional end user P1
Beneficiary B1
Consumer end user CE1
CKI
CKI
KE
KE
F
F
F
D
D
D
C/S
C/S
C/S
B2B
B2B
C
P
(c) T Propp2010
First-round uptake
Non-salient actors
Qualities of uptake and use
Awareness
Funding (F)
Knowledge exchange (KE) / Conceptual knowledge input (CKI)
Codified knowledge
Embedded knowledge (D: demonstrator)
Embodied knowledge
Product purchase (C: collective use / P: private use)
Product use feedback

2. Dealing with impact

disciplinary characteristics, attitudes and cultures within the university



C. Make it rewarding by integrating impact criteria in assessments

B. Make the impact-approach acceptible for the whole research community

A. Make the impact approach easy by informing and coaching

2. Dealing with impact

versus the external environment of university research ….

- National funding programmes; often focusing on specific (societal) challenges
- European Missions within Horizon Europe

Mission-oriented approach in **Horizon Europe** to

- Make it easier for citizens to understand the investments in research and innovation
- Increase the impact of investments when addressing global challenges

Policy-makers must ensure that **missions respond to the perceived social demands** and respond to the needs of the citizens

- Decision-making **no more a prerogative** of the establishment
- **New demand for further participation in policy-making** from citizens

2. Dealing with impact

versus the external environment of university research ….

- National funding programmes; often focusing on specific (societal) challenges
- European Missions within Horizon Europe
- United Nations Sustainable Development Goals (SDGs)

How do the SDGs help universities?

Create increased demand for SDG related education

Provide a comprehensive and globally accepted definition of a responsible university

Offer a framework for demonstrating impact

Create new funding streams

Support collaboration with new external and internal partners

Knowledge

Learning

Demonstration

Impact

Collaboration

How do universities help the SDGs?

Provide knowledge, innovations and solutions to the SDGs

Create current and future SDG implementers

Demonstrate how to support, adopt and implement SDGs in governance, operations and culture

Develop cross-sectoral leadership to guide the SDG response

Source:
Sustainable Development Solutions Network (SDSN);
"Getting started with SDGS in universities
–
A guide for universities and Higher Educaton Institutions, Australia; 2017"

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2. Dealing with impact & disciplines @ KU Leuven

- Nature of academic research
  - ‘fundamental’ : with high degree of “disinterestedness”
  - scientific impact
  - societal (incl. economic; cultural) impact
  - universal, covering a long trajectory in the knowledge chain
- Internal Funding for fundamental & application oriented research (approx. 75 mio euro/year)
- Tool to translate university policy into research practice
- Checks and balances…. but quality first!

2. Dealing with disciplines @ KU Leuven

- Impact = one of 5 priorities within Research Policy Plan

  - Researchers: expertise, creativity, network, …
  - Resources: internal funding for strategic basic research (C2) & application oriented research (C3) + business developers
  - Environment: leadership, management, internal organisation, networking, open…

Impact = real engagement of researchers, in a networked approach with stakeholders

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3. Research impact and quality assurance

10 Ways to scale nonprofit impact; Tom Vander Ack

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3. Research impact and quality assurance

The REF example

- Impact stories (cf REF: https://impact.ref.ac.uk/casestudies/)
  a. Summary of the impact
  b. Underpinning research
  c. References to the research
  d. Details of the impact
  e. Sources to corroborate the impact
- Expert panels: 4 main panels + 34 sub panels
  - A Medicine, Psychology, Agriculture, Food: …….: 1586 stories
  - B Earth systems, Chemistry, Physics, engineering…: 1469
  - C Architecture, Geography, Law, Sociology, Sport..: 1965
  - D Language, history, Philosophy, Cultural studies..: 1617

3. Research impact and quality assurance

The REF example

1. **Instrumental** – impacts on public policies and services, health and welfare impacts, economic and commercial impacts
2. **Capacity building** – learning, skills, confidence, social cohesion, new institutions and groups organised
3. **Conceptual** – knowledge and learning, enjoyment and inspiration and other changes in understanding
4. **Attitude or culture change** – institutional and organisational change, changes in values and behavior, public discourse and cultural life
5. **Networks** – enduring new networks, capacity for future collaborations and willingness to engage again in future

Source: https://www.ediqo.com/blog/qa-with-prof-mark-reed

3. Research impact and quality assurance

Allocation of internal funding @ KU Leuven

- Internal funding programs @ KU Leuven:
  - Cat 1: fundamental
  - Cat 2: impact oriented: societal or economic
  - Cat 3: application oriented
- Cat 2: Strategic Basic research (20 mio €/y), subdivided in two project lines:
  - Economic impact Cat 2-E
  - Societal impact Cat 2-S
- 35 innovation managers of the “industrial research fund KU Leuven”

3. Research impact and quality assurance

Allocation of internal funding @ KU Leuven

Category 1	Category 2	Category 3
Fundamental research ('blue sky science'), inspired by curiosity; question- or hypothesis-driven.	Strategic basic research that is society-driven and will encounter societal and/or economic challenges in the further future.	Socio-economic applied research with a concrete valorisation plan with defined stakeholders.
Scientific added value.	Scientific and societal, economic or socio-economic added value.	Socio-economic added value.
Mono- or multidisciplinary.	Mono- or multidisciplinary.	Mono- or multidisciplinary.
Leverage to, e.g. FWO, large scale infrastructure, Marie Sklodowska Curie, FET, BELSPO, ERC and ESFRI project applications.	Leverage to, e.g. FWO (like SBO, large scale infrastructure), VLAIO, FET, *Horizon 2020* multipartner and ESFRI project applications and internal Category 3 applications.	Leverage to, e.g. *Horizon 2020* multipartner project applications, VLAIO O&O projects, patents, contract research with industry/government/other

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3. Research impact and quality assurance

- Cat 2 – project evaluation (Cat 2-E / Cat 2-S)
  - Submissions: 70 (2018)
  - Available budget: approx. 20 M€/year
  - Merge of two internal funding schemes: for fundamental research fund + industrial research fund
  - Success-rate: 25 – 35%
  - Peer review + rebuttal
  - Research Council & Industrial Research Council
  - Impact panel
  - Approval by Academic Council

3. Research impact and quality assurance
Cat 2

- Cat 2 : strategic basic research; economic/societal
  - Research Council (interdisciplinary; academic members)
  - Industrial Research Council (multi-sectoral; academic + industrial members
  - Impact panel (industrial members + external societal representatives)

  - Final Approval by Academic Council

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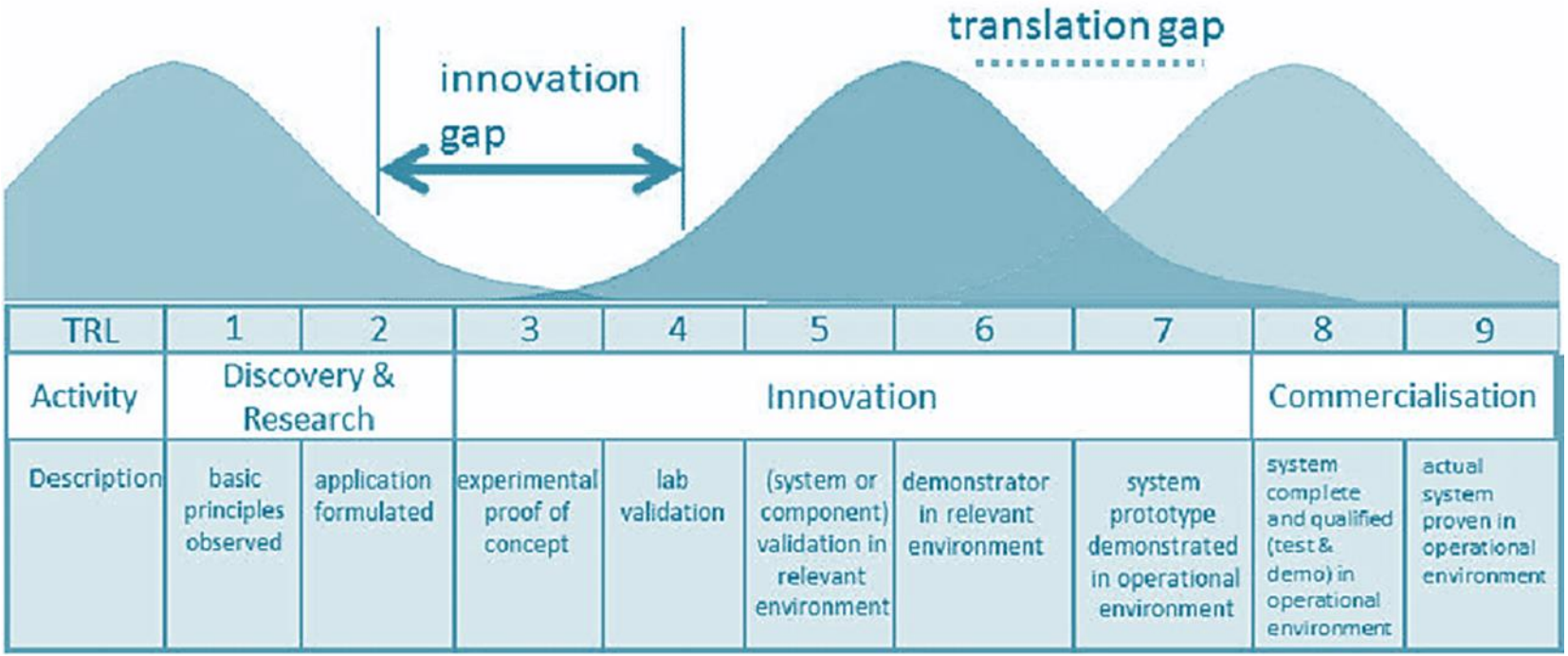
3. Research impact and quality assurance
Cat 2 - E

- the economic exploitation of knowledge production at universities and higher education schools, by building up applied science portfolio at universities, and stimulating university-industry linkages
- strengthen the link between basic research and technological innovation and develop the transfer of knowledge to third parties
- support the valorization of knowledge that is developed, e.g. by collaborating with industry, the government and the non-profit sector, or by setting up new companies

“Bridging the gap”

3. Research impact and quality assurance

"industrial research fund @ KU Leuven"



TRL	1	2	3	4	5	6	7	8	9
Activity	Discovery & Research		Innovation					Commercialisation	
Description	basic principles observed	application formulated	experimental proof of concept	lab validation	(system or component) validation in relevant environment	demonstrator in relevant environment	system prototype demonstrated in operational environment	system complete and qualified (test & demo) in operational environment	actual system proven in operational environment

- **Bridging the gap**

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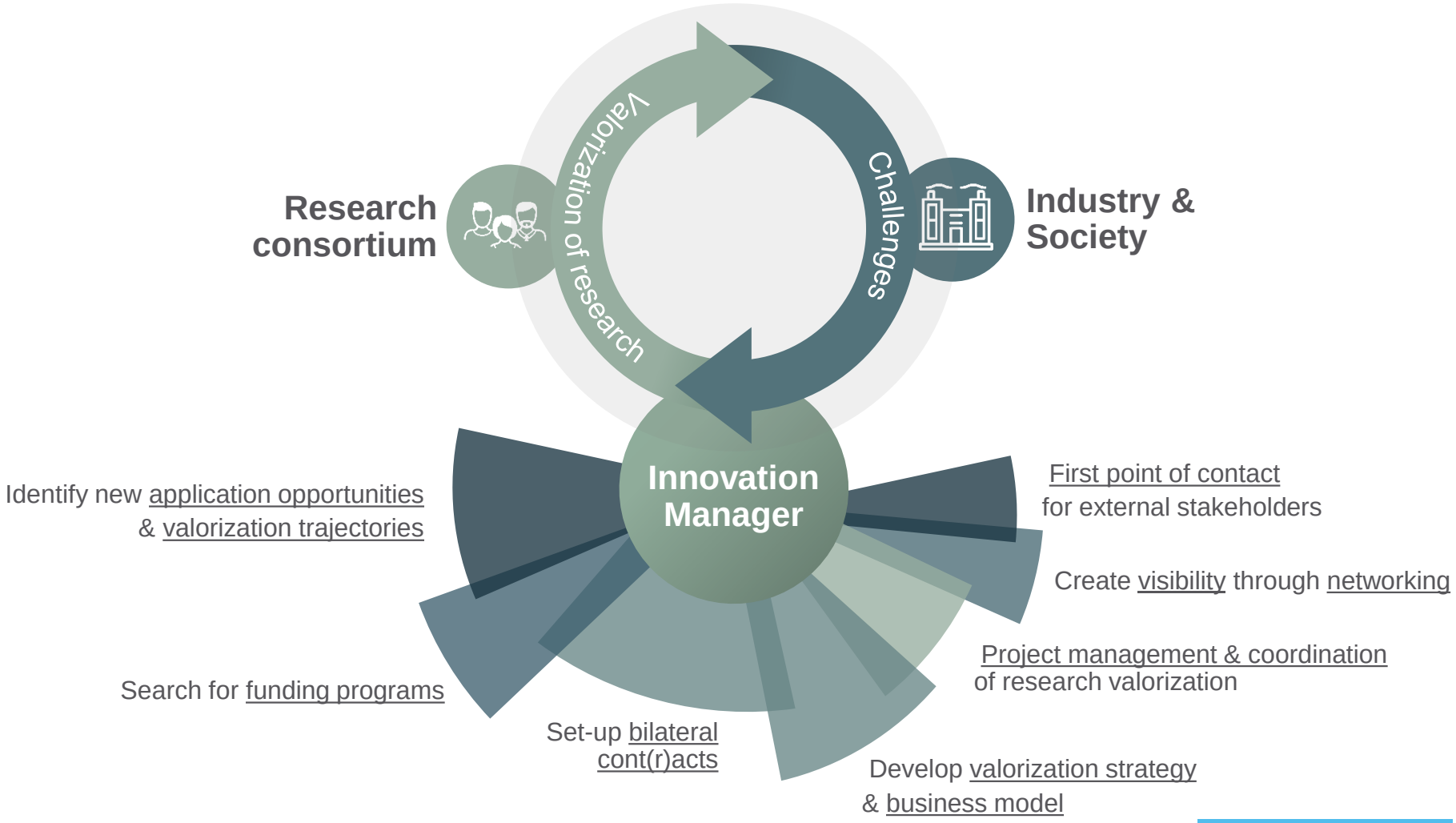
3. Research impact and quality assurance the innovation managers @ KU Leuven



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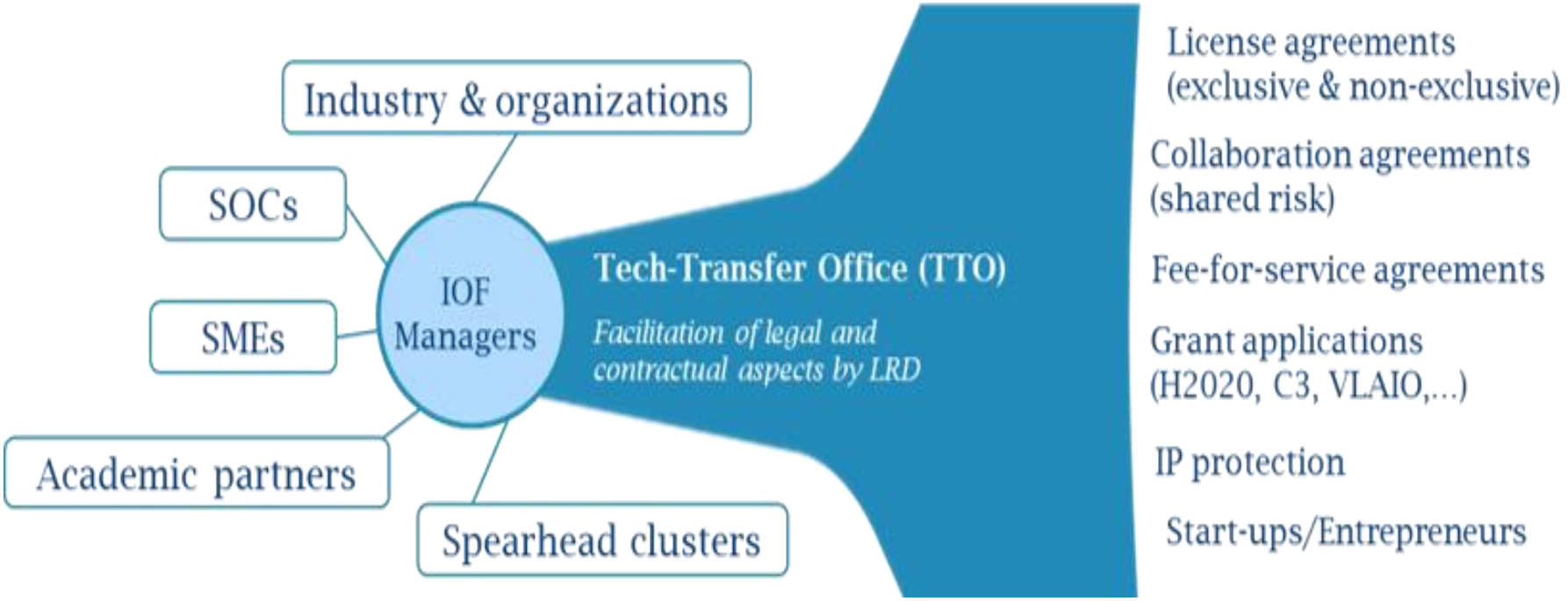
3. Research impact and quality assurance

the role of the innovation managers @KU Leuven



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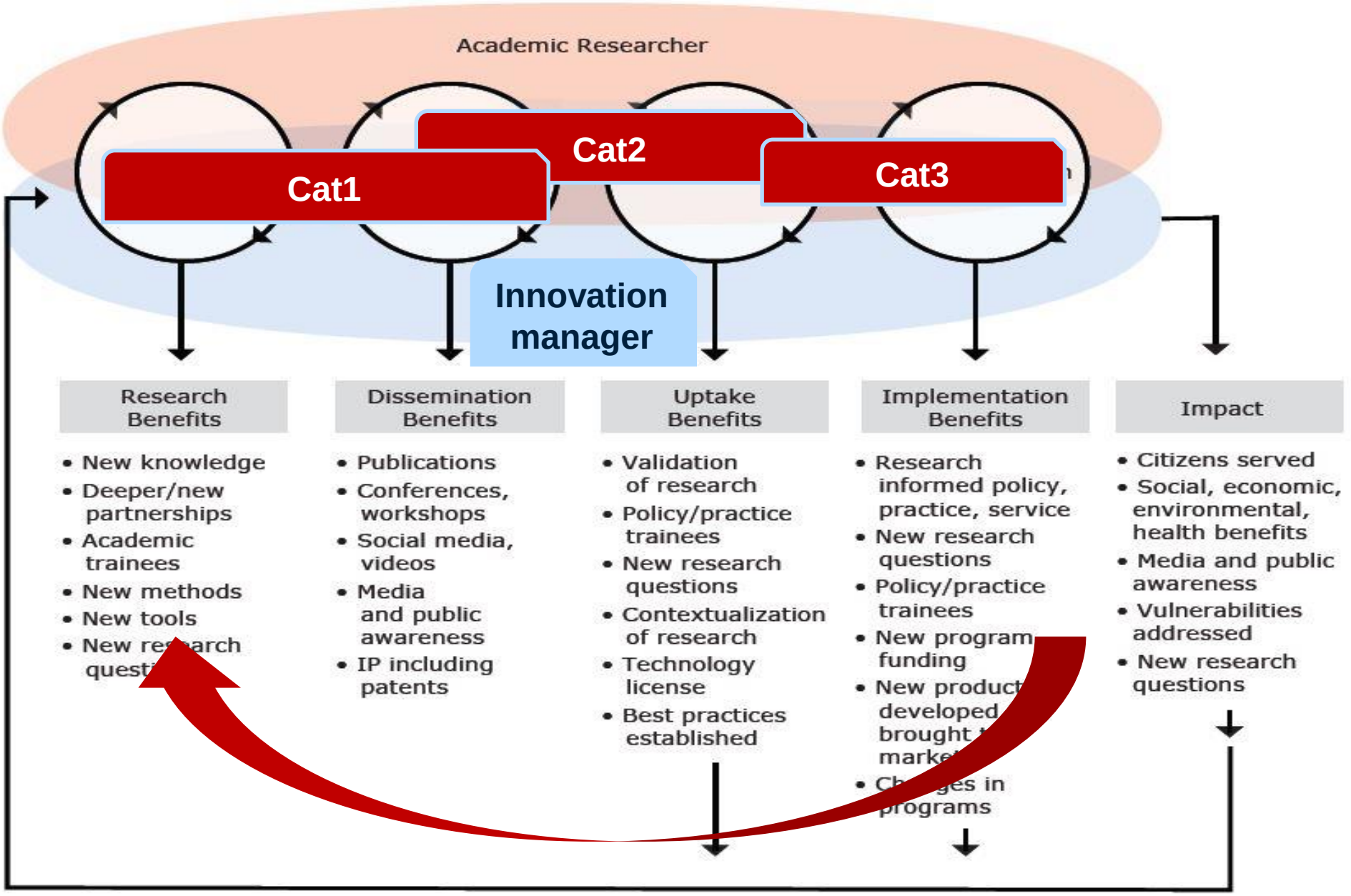
PREVNet's Co-produced Pathway to Impact



3. Research impact and quality assurance
@KU Leuven - experiences

- Follow up and coaching of innovation managers is necessary
- Paying attention to impact in project funding is positive is the scope of follow up (external) funding
- The integration of ‘impact’ in the general internal funding schemes for Cat1 - Cat2 and Cat3 projects seems to be positive (but should be evaluated in the future)
- Tradition in impact is supportive: research groups with a track record in impact continue to do so.

Conclusions

- There is still a long way to go: impact asks for a change in attitudes of researchers, change in culture and internal organisation,
- This is perfectly demonstrated by the tension between the two following viewpoints:
  - ➢Viewpoint of academia on Missions Horizon Europe
  - ➢Viewpoint Jean-Pierre Bourguignon (president ERC)

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Opinion of Academia Mission orientation

Concentration and coordination of efforts:

- Lower conviction that **R&I investments should be concentrated** towards missions to improve efficiency than other categories (such as RTOs and industry);
- Clear **preference for national and regional funding instruments** coordinated with Horizon Europe.

Stakeholder involvement

- **Not particularly positive in involving citizens**, especially in accelerators;
- **Sceptical in involving regional and municipal authorities**;
- **Particularly positive towards the involvement of universities and RTOs**

Overall expectations regarding mission-oriented

- Support the choice of higher risky R&I investments
- Improve time-to-market
- **Not stimulate job creation**

Jean-Pierre Bourguignon (ERC)

"….the 'best bets' are made when scientists are pushed to their boundaries, when submitting research proposals, and the most competent evaluators are confronted with these challenging projects. You may have to press them to take risk, as our community is actually spontaneously conservative and needs to be put outside of its comfort zone to accept some bets. This is precisely what the European Research Council is about, and I hope it plays its part in this process of educating policy makers.

Finally, we must not forget that the most essential constituents of the research system are the researchers themselves, the human beings who make all this exist and function. In consequence it is of the greatest importance that the system provides them with a decent career path"

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Thank you !