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AESIS
NETWORK FOR
ADVANCING & EVALUATING THE SOCIETAL IMPACT OF SCIENCE

Lessons and Prospects: UK

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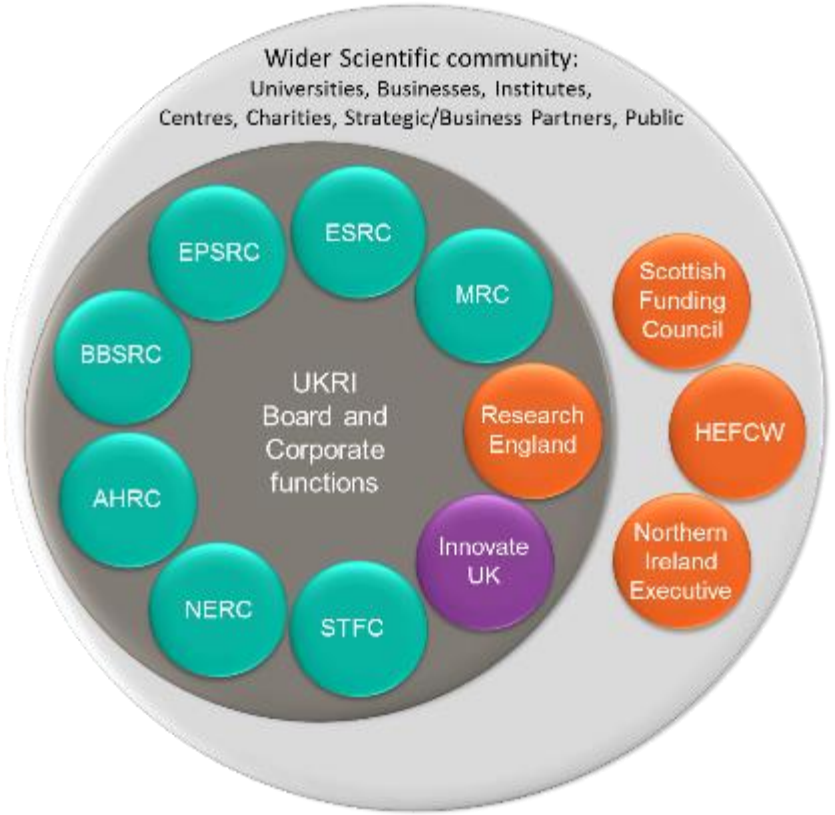
Overview

1. What is UKRI?
2. Research Assessment - REF
3. Impact Assessment in REF
4. Engagement - KEF

What is UK Research and Innovation?

UK Research and Innovation, launching in April 2018, will be the new funding organisation for research and innovation in the UK. It brings together the seven UK research councils, Innovate UK and a new organisation, Research England, working closely with its partner organisations in the devolved administrations.

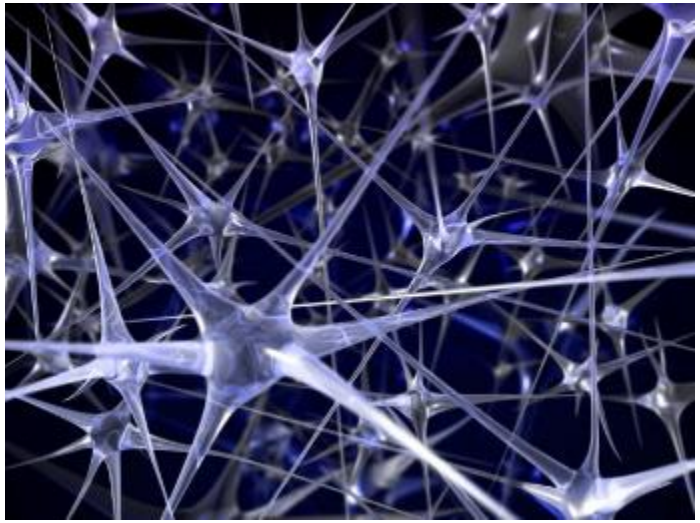


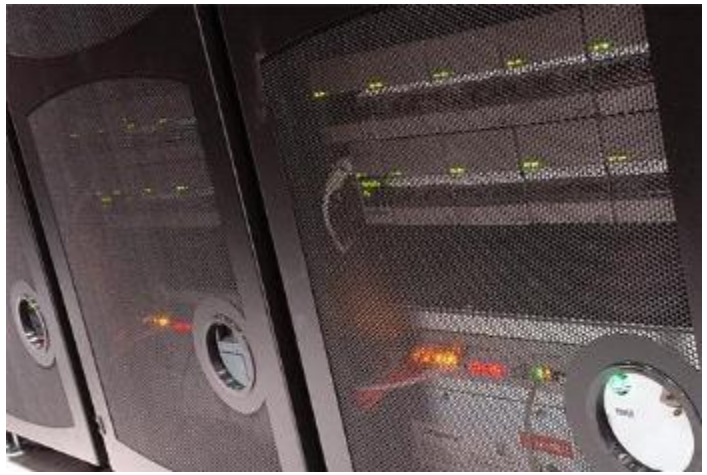
Our mission

Research England creates and sustains the conditions for a healthy and dynamic research and knowledge exchange system in English higher education institutions.

The vision for UK Research and Innovation

National objectives (1)





Intellectual leadership in the development of new knowledge

- ‘International comparative performance of the UK research base’– ‘better than world average in all subject fields based on field-weighted citation impacts
- ‘Well-rounded portfolio’

National objectives (2)

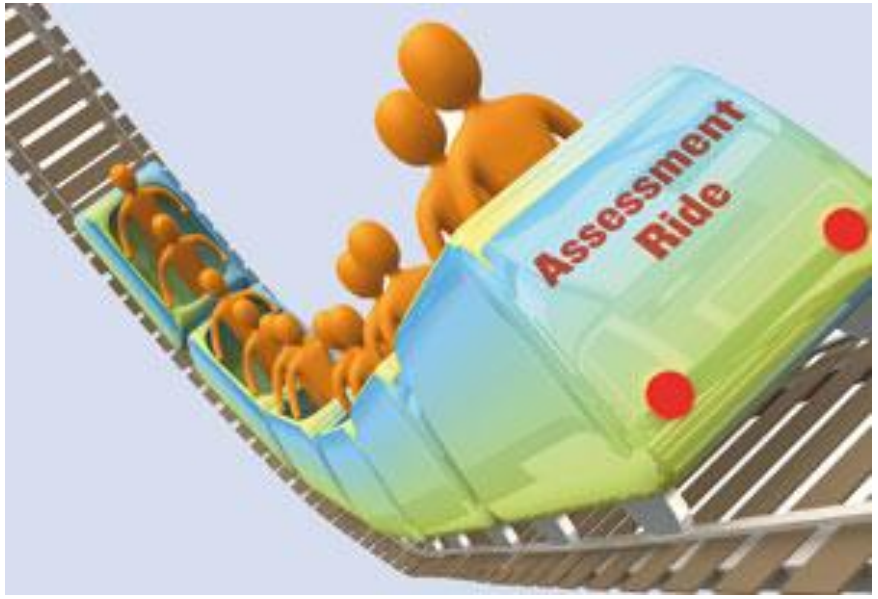
- Optimal contribution to society from that new knowledge – ‘Impact’
  - Culture change & broad engagement of universities/academics
  - Greater investment from business, not just to capture cash but to support shared objectives
- ‘When do we want it’ – now, of course, but recognizing that is based on past investment.
- Long-term success e.g. e-infrastructure, graphene

The Industrial Strategy

- Automotive
- Aerospace
- Life sciences
- Higher education
- Professional business services
- Energy
- Construction

Determining strategy

- Performance-based funding
  - Past success is a good guide to future success in a stable environment with long cycles
  - A mixture of metrics, peer judgement and expert advice to determine ‘excellence’
- Public funding to unlock private funding
- Investing now for long-term success



Checchi, Malgarini & Sarlo

Performance-based funding

- *‘is a very useful instrument to steer the university system’*
- *‘increase the overall impact of the scientific research of a country on a permanent basis’*
- *‘more efficient the higher the share of the funds which is distributed on the basis of the results of the evaluation’*
- *‘less expensive than relying on ex ante evaluation’*

UK is the only country to have been deploying peer-review-based performance-based funding since before 1995

Higher Education Quarterly Vol 73:1 Jan 2019

REF: A UK-Wide Framework

'Aiming to maintain the capacity of higher education to undertake world-leading research across a range of academic disciplines, promote economic growth and national well-being and the expansion and dissemination of knowledge'

- Drives our selective allocations of research funding, supporting excellence wherever it is found, with strong performance incentive
- Provides international benchmarks and reputational yardsticks
- Provides accountability and demonstrates the benefits of public investment in research
- Evidence base for strategic decisions at national level
- Used by universities and others for resource allocation decisions
- It provides a periodically updated reputational benchmark, which is based on rigorous peer judgement by fellow academics

Research Assessment Exercise, now Research Excellene in UK

- Periodically since 1986 approx every 6 years
- Primarily a peer review exercise for all disciplines (34 now) – metrics play a strictly limited part
- Carries the confidence of academics and universities – because it is run by academics
- A selective exercise, not an assessment of all UK research
- The single most important driver for academics and universities in the United Kingdom.
- Liked by Government as allows funding on the basis of quality.
- Reputation attached is a very significant factor
- Embedded in university management systems

Research Excellence Framework

- The benchmark for research assessment internationally – Japan, China, EU
- Efficient funding driver
- Key reputational measure both nationally and internationally
- Performance-based funding ‘drives up quantity temporarily’ but, if based on peer review, ‘drives up quality permanently’
- Increased benefit from use of REF information in UKRI
- Key part in the development of the impact agenda – culture change in universities
- Key way into EDI issues in universities

REF2014
Research Excellence Framework

The research of 154 UK universities was assessed

They made **1,911** submissions including:

- **52,061** academic staff
- **191,150** research outputs
- **6,975** impact case studies

The **overall quality** of submissions was judged, on average to be:

★★★★ **30%** world-leading (4*)

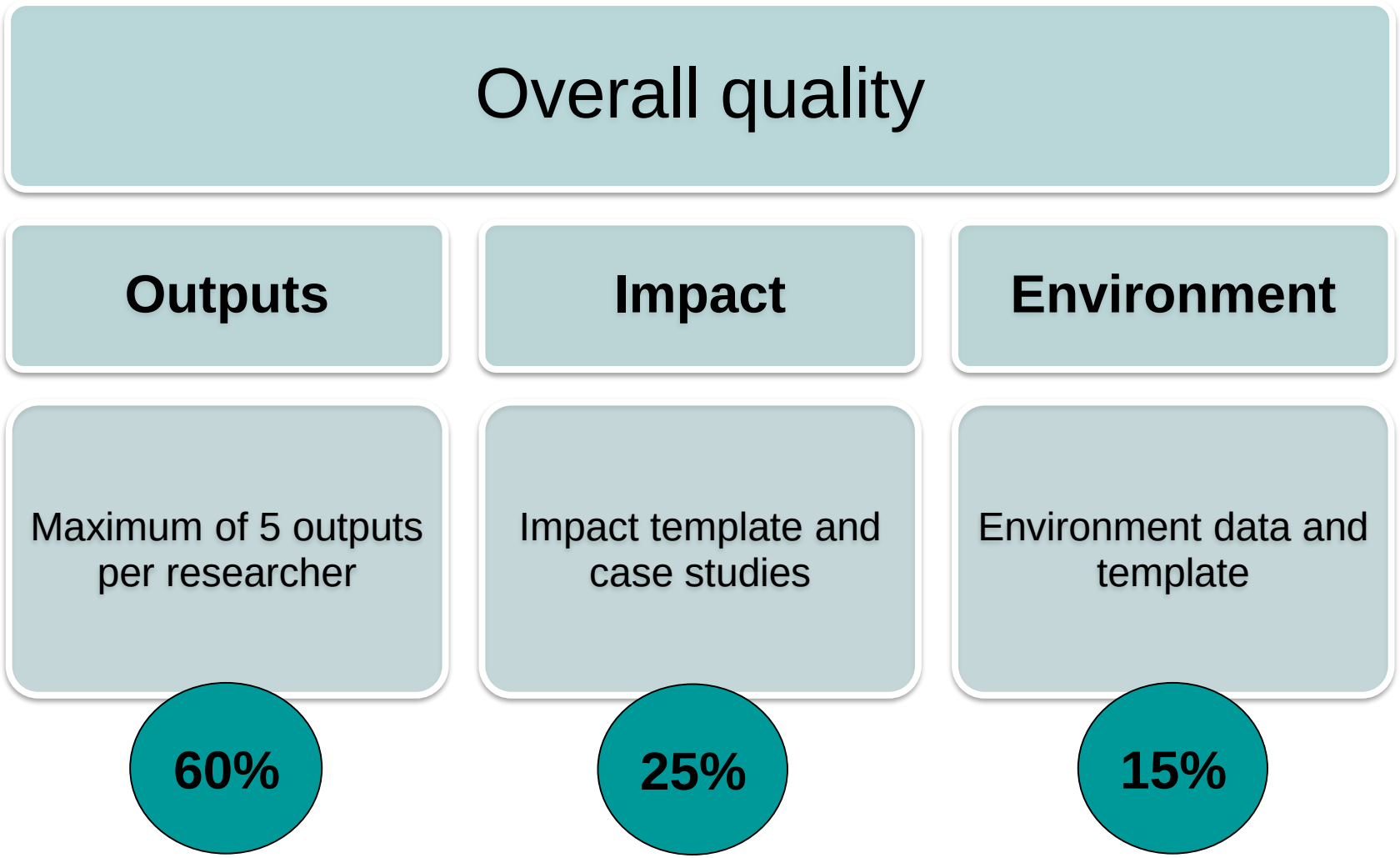
★★★ **46%** internationally excellent (3*)

★★ **20%** recognised internationally (2*)

★ **3%** recognised nationally (1*)

Overview:

The assessment framework



Objectives of ERA

- Establish an evaluation framework that gives government, industry, business and the wider community assurance of the excellence of research conducted in Australia's institutions
- Provide a national stock take of discipline-level research
- Identify excellence across the full spectrum of research performance
- Identify emerging research areas and opportunities for further development
- Allow for comparison of Australia's research nationally and internationally for all discipline areas

Impact in Research

Assessing quality – ‘Impact Agenda’

To identify and reward the contribution that high quality research has made to the economy and society:

- Making these explicit to the Government and wider society
- Creating a level playing field between applied and theoretical work but recognising only impact based on excellent research
- Encouraging institutions to achieve the full potential contribution of their research in future
- Intellectually coherent with the historical purposes of universities

Impact: Definition for the REF

- An effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia
- Impact **includes** an effect, change or benefit to:
  - The activity, attitude, awareness, behaviour, capacity, opportunity, performance, policy, practice, process or understanding
  - Of an audience, beneficiary, community, constituency, organisation or individuals
  - In any geographic location whether locally, regionally, nationally or internationally
- It **excludes** impacts on research or the advancement of academic knowledge within HE; and impacts on teaching or other activities within the submitting HEI

Assessment criteria

- Expert panels to assess benefit in terms of their ‘reach’ and ‘significance’
- All panels to include substantial user representation – we suggest user members focus on the impact element, with reviewing outputs as ’optional’

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Impact: Case Studies (REF3)

- In each case study, the impact described must:
  - Meet the REF definition of impact (Annex C)
  - Have occurred between 1 August 2013 and 31 July 2020 (can be at any stage of maturity)
  - Be underpinned by excellent research (at least equivalent to 2*) produced by the submitting unit between 1 January 2000 to 31 December 2020
- Submitted case studies need **not** be representative of activity across the unit: pick the strongest examples

Impact: Case Studies (REF3)

- Each case study is limited to 5 pages and must:
  - Describe the underpinning research produced by the submitting unit
  - Reference one or more key outputs and provide evidence of the quality of the research
  - Explain how the research made a ‘material and distinct’ contribution to the impact (there are many ways in which this may have taken place)
  - Explain and provide appropriate evidence of the nature and extent of the impact: Who / what was affected? How were they affected? When?
  - Provide independent sources that could be used to verify claims about the impact (on a sample audit basis)

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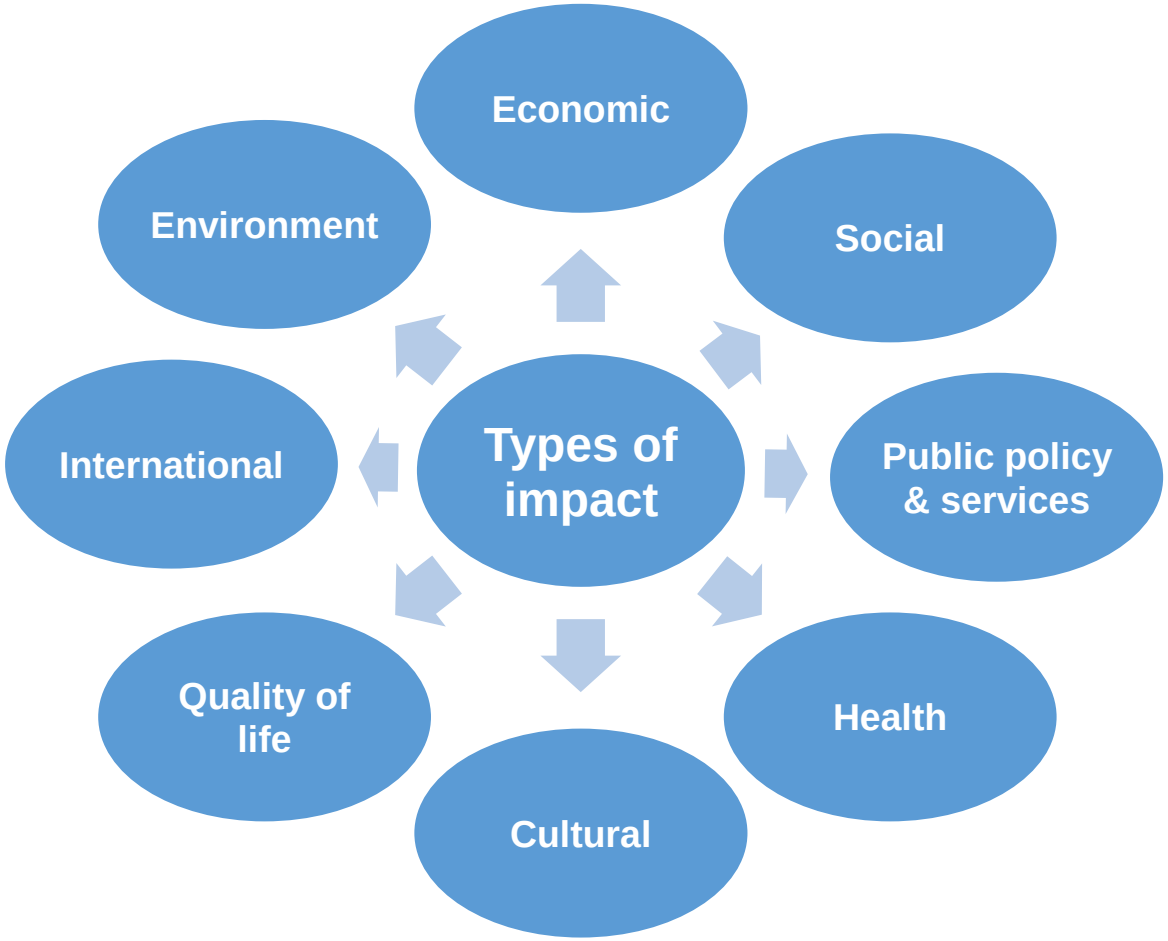
A wide view of impact



Challenges of assessment

- ***Time lags*** –looks at impacts that are evident during from REF period (2015-2020), underpinned by research over a longer timeframe
- ***Attribution*** – case studies to tease out how the research *contributed* to the impacts
- ***Limitations of metrics*** – expert panels *assess* rather than *measure* impact; indicators to be used as supporting evidence
- ***Corroboration*** – scope for third party verification, and expert panels to judge credibility of the evidence

Assessment criteria

- Expert panels assess benefit in terms of their ‘reach’ and ‘significance’
- All panels include substantial user representation – we suggest user members focus on the impact element, with reviewing outputs as ’optional’
- The UK higher education bodies have developed and now published the final guidance and criteria for REF2021 following consultation on the implementation in early 2017.

The REF impact case studies are not about…

- Quantifying impact
- Focusing narrowly on economic impact
- Assessing impact of every researcher or output
- Trying to predict future impact
- Discouraging curiosity-driven research
- Trading-off impact and excellence

UK Research and Innovation

Culture and society

A Impacts on society, culture and creativity: Impacts where the beneficiaries are individuals, groups of individuals, organisations or communities whose knowledge, behaviours or practices have been influenced	**B Impacts on society, culture and creativity** Impacts where the beneficiaries may include individuals, groups of individuals, organisations or communities whose knowledge, behaviours, creative practices and other activity have been influenced	**C Impacts on creativity, culture and society:** Impacts where the beneficiaries are individuals, groups of individuals, organisations or communities whose knowledge, behaviours, practices, rights or duties have been influenced
D Civil society Influencing the form and content of associations between people or groups to illuminate and challenge cultural values and social assumptions.	**D Public discourse** Extending the range and improving the quality of evidence, argument and expression to enhance public understanding of the major issues and challenges faced by individuals and society.	**D Cultural life** Creating and interpreting cultural capital in all of its forms to enrich and expand the lives, imaginations and sensibilities of individuals and groups.

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Public policies and services

A Impacts on public policy and services: Impacts where the beneficiaries are usually government, public sector, and charity organisations and societies, either as a whole or groups of individuals in society, through the implementation of policies

B Impacts on public policy and services Impacts where the beneficiaries may include government, non-governmental organisations (NGOs), charities and public sector organisations and society, either as a whole or groups of individuals in society

C Impacts on public policy, law and services: Impacts where the beneficiaries are usually government, public sector and charity organisations and societies, either as a whole or groups of individuals in society through the implementation or non-implementation of policies, systems or reforms

D Education Influencing the form or the content of the education of any age group in any part of the world where they extend significantly beyond the submitting HEI.

D Public services Contributing to the development and delivery of public services or legislation to support the welfare, education, understanding or empowerment of diverse individuals and groups in society, including the disadvantaged or marginalised.

D Policy making Influencing policy debate and practice through informed interventions relating to any aspect of human or animal well-being

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Environment

A Impacts on the environment:
Impacts where the key beneficiary is the natural or built environment

B Impacts on the environment
Impacts where the key beneficiaries are the natural environment and/or the built environment, together with societies, individuals or groups of individuals who benefit as a result

C Impacts on the environment:
Impacts where the key beneficiaries are the natural, historic and/or built environment, together with societies, individuals or groups of individuals who benefit as a result

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Practitioners and services

A Impacts on practitioners and services:
Impacts where beneficiaries are organisations or individuals, including service users involved in the development of and delivery of professional services

A Production impacts:
Impacts where the beneficiaries are individuals (including groups of individuals) whose production has been enhanced

B Impacts on practitioners and professional services
Impacts where beneficiaries may include organisations or individuals involved in the development of and delivery of professional services

C Impacts on practitioners and professional services:
Impacts where the beneficiaries may include organisations or individuals involved in the development and/or delivery of professional services and ethics

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What about Metrics

- http://www.kcl.ac.uk/sspp/policy-institute/publications/Analysis-of-REF-impact.pdf
- ‘The quantitative evidence supporting claims for impact was diverse and inconsistent, suggesting that the development of robust impact metrics is unlikely’

Research Contribution

- Our starting point is that an optimal submission should include a portfolio of excellent research **and** build on that excellent research to deliver benefits which contribute to society.
- Contribution must be linked to high quality research
- Assessed at the level of whole units (not individual outputs or researchers)
- Equally demanding standards to the assessment of outputs

Myths and Anxieties

- Some impact is negative (Yes, but Panels can handle).
- All research must have impact (No).
- Only economic impact counts (No).
- The best impact does not come from the best research (Perhaps but we need to know that).
- Arts and Humanities cannot demonstrate impact (No).
- Impact cannot be ‘measured’ (Yes, but it can be assessed)
- It takes time for happen (Yes, so allow for it).
- The expectation of impact is a threat to academic freedom (No).
- Impact will become an industry (Only if you let it be so).
- Measures will become targets (Depends if you own the agenda),

Challenges

- Assessing impact isn’t perfect – but we can learn and make it better
- There will be opposition from vested interests - uncomfortable change for university leaders and for acdemics
- We don’t have enough to offer to make it worthwhile
- Our traditional purposes will be eroded and …..
- Our research policies are already optimal – perhaps we will indeed discover that
- We can do the same thing with a few simple metrics

What have we learnt….

- Case studies are a lot of work – but why?
- The attitude to impact has been transformed in universities
- The understanding of impact is much great and – by analysing the case studies as whole – will be even greater – we are doing that.
- It was costly

This is not about

- Quantifying impact or measuring
- Focusing narrowly on economic impact
- Assessing impact of every researcher or output
- Trying to predict future impact
- Discouraging curiosity-driven research
- Trading-off impact and excellence

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REF Case Studies: Outcomes

- Universities and academics galvanized due to the importance of REF
- 6975 case studies
- Many focused on the long-term contribution of research to society
- Teasing out the way in which impact arises
- Offering every discipline the opportunity to make its case in its own terms
- Stunning opportunity to build multi-disciplinary work into an exercise based around disciplines – although you may be doing that better
- Evaluation by Rand Europe

Capturing Impact

- Internal vs external
- Education/Research vs Impact (or ‘and Impact’)
- ‘The impact of Universities (on the UK economy)’ - https://www.universitiesuk.ac.uk/policy-and-analysis/reports/Documents/2014/the-impact-of-universities-on-the-uk-economy.pdf
- https://www.universitiesuk.ac.uk/facts-and-stats/Pages/impact-of-higher-education.aspx

Capturing Impact

- ‘Health of the Nation’ - https://www.medschools.ac.uk/media/1902/health-of-the-nation-the-impact-of-uk-medical-schools-research.pdf

Capturing Impact

- Oxford Economics: ‘The Impact of the University of Birmingham’ - http://www.birmingham.ac.uk/Documents/university/economic-impact-of-university-of-birmingham-full-report.pdf
- Southampton and Lloyds: http://www.ncub.co.uk/sor14/southampton-lloyds.html
- NCUB: ‘Why Should the Taxpayer Fund Science and Research’ - http://www.ncub.co.uk/reports/why-science.html
- SFI Ireland: ‘Broadening the Scope of Impact’ – http://www.sfi.ie/resources/SAEI_Impact-Framework_Feb_2015_Issue2.pdf
- RAND ‘Capturing Research Impacts: A review of International Practice’ - http://www.rand.org/pubs/documented_briefings/DB578.html
- Australian Technology Network of Universities ‘50 Solutions that Count’- https://www.atn.edu.au/publications/
- The Economic Impact of Universities from Across the Globe - https://www.sciencedirect.com/science/article/pii/S0272775718300414

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- https://academic.oup.com/rev/article/23/1/21/2889056 (key text)
- https://www.innovation.gov.au/page/measuring-impact-and-engagement-university-research (Australia)
- http://www.sv.uio.no/tik/english/research/projects/osiris/news/dokumenter/sweden-presentation-impact-nos-hs-170327_ss.pdf (Sweden)
- http://www.aalto.fi/en/research/research_assessment/ (Finland, a university approach)

More Bibliography

- https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/regional-innovation-impact-assessment-framework-universities (European Commission)
- http://blogs.lse.ac.uk/impactofsocialsciences/2018/01/10/approaches-to-assessing-impacts-in-the-humanities-and-social-sciences-recommendations-from-the-canadian-research-community/ (Canada, Social Science)
- http://www.uottawa.ca/institutional-research-planning/sites/www.uottawa.ca.institutional-research-planning/files/7500_uoo-impactstudy_rpt.pdf (Canada, University Study)
- http://russellgroup.ac.uk/news/economic-impact-of-russell-group-universities/ (Economic Impact, UK University Group)
- https://pure.knaw.nl/portal/files/472346/ERiC_guide.pdf (Evaluating the Societal Relevance of Academic Research)

What it was & what it wasn't

- Demonstrating the contribution to society
  - Not about conceding the authority to dictate research directions
  - Not about moving to lots more applied research but about validating the contribution of 'fundamental' research – although equally about recognizing and rewarding applied work equally
  - Not about favouring one discipline over another – equality of opportunity on this
  - Not about replacing academic excellence by societal impact, but complementary and an opportunity to demonstrate the impact of academically excellent work
  - Equally not about pretending that academic impact is societal impact

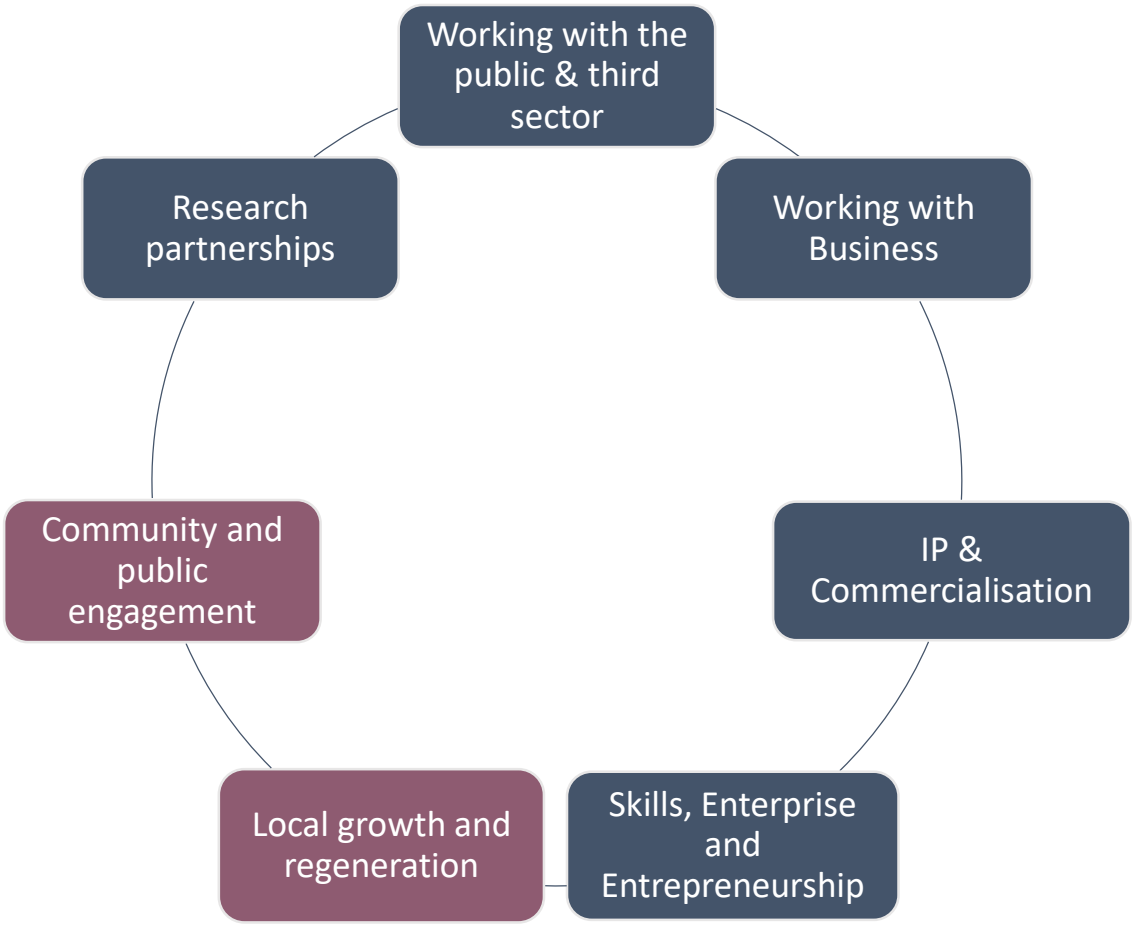
Knowledge Exchange Framework - Engagement

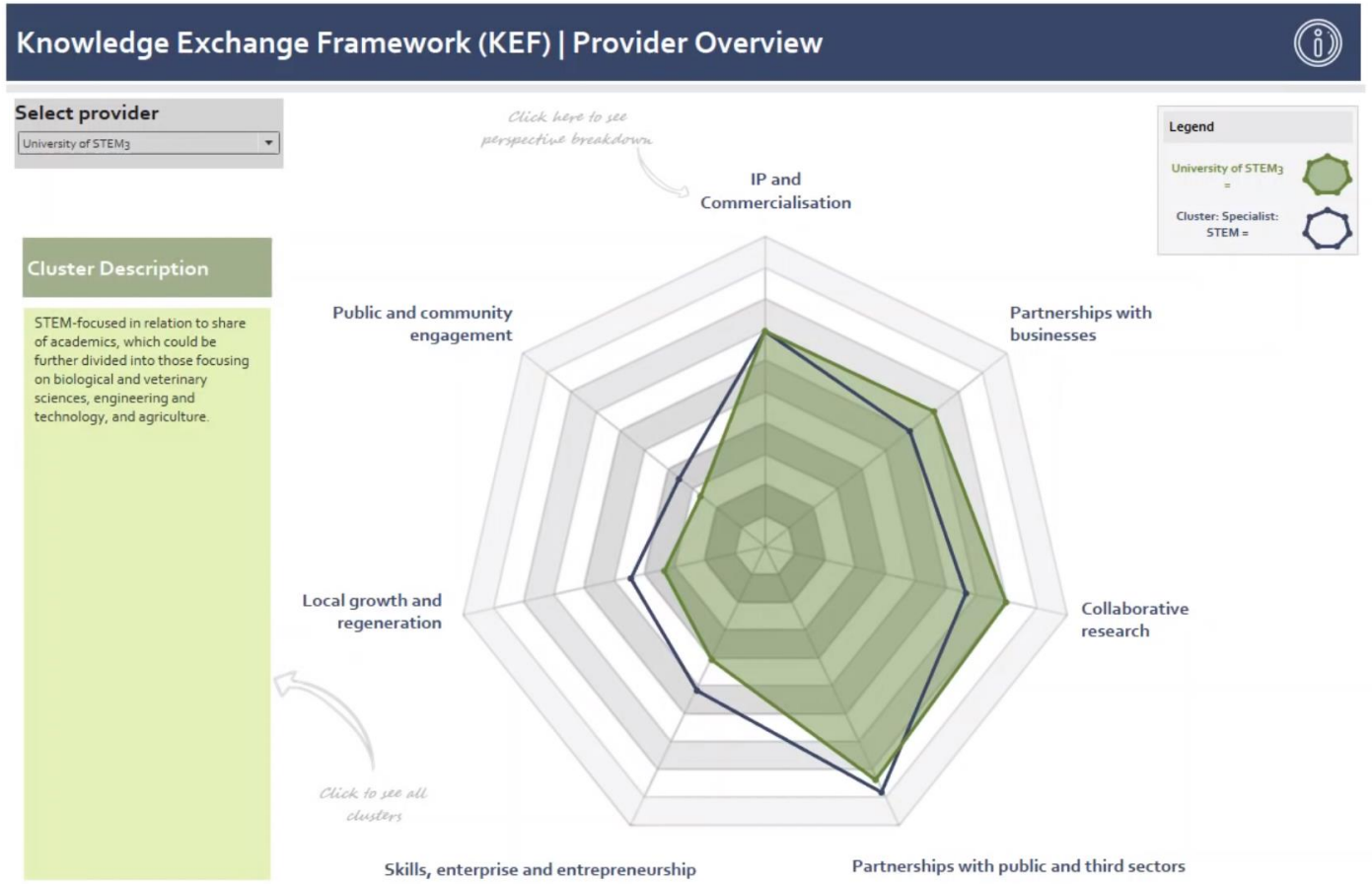
1. More accessible information and data for institutions to understand and improve their own performance.
2. More information for businesses and other users of university knowledge and resources
3. Increased public visibility and accountability for £250m

KEF

1. The KEF needs to be understood in its ***wider policy and funding context***
2. It aims to be a ***low-burden, largely metrics driven*** exercise to provide useful information for Universities and users of university knowledge
3. We are proposing a ***novel statistical clustering*** of universities to aid fair comparison
4. Metrics are mostly very low-burden trajectory measures
5. ***This is iteration 1*** – *new metrics and data linking will allow us to do more*
6. Directly incorporating the '***voice of the customer***' is worth exploring, but a non-trivial problem

Perspectives





https://www.youtube.com/watch?v=Icq_B7DeLwY&t=4s

Engagement and Impact Assessment

- how well researchers in Australian universities engage with end users **beyond academia**
- how well Australian universities support their researchers to deliver research which has an impact **beyond academia**
- What kinds of impacts are occurring **outside of academia** as result of research undertaken by Australian universities

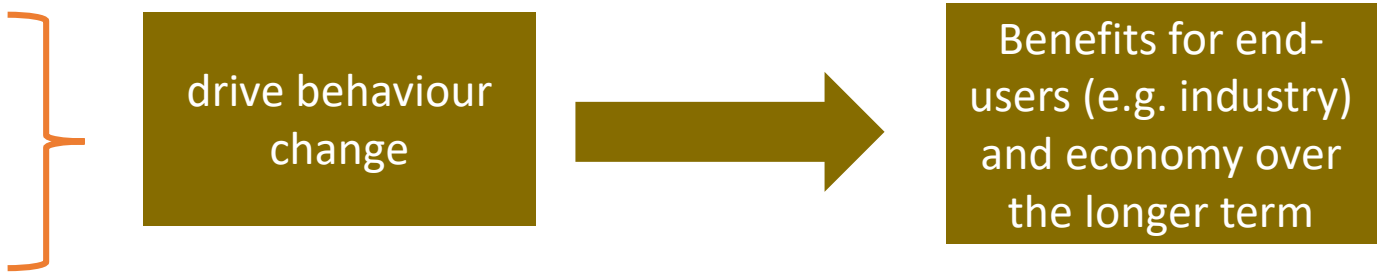
Thereby **encouraging collaboration** by university researchers with end-users, driving **innovation** and **entrepreneurship……**

Currently without ties to funding

Views

- A number of countries are assessing impact, but not engagement

- Australia is implementing engagement because—
-
    - metrics available
    - more immediate
    - more tangible



EI 2018 Impact Methodology

- Impact and approach to impact rated separately
- Impact studies must have a plain English summary to help public understand impact
- No more than 25 impact studies per university—1 impact study per broad discipline meeting the threshold

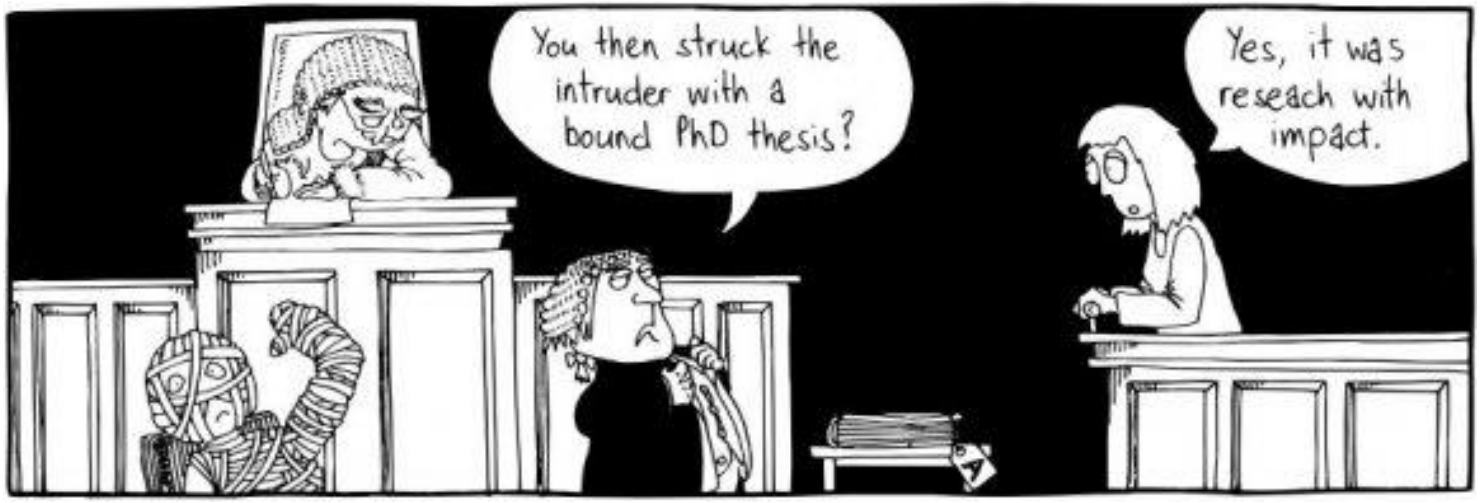
optional

institutional interdisciplinary impact study

Aboriginal and Torres Strait Islander research impact study

EI 2018—Impact

- Definition of Impact—
- *Research impact is the contribution that research makes to the economy, society, environment or culture, beyond the contribution to academic research.*



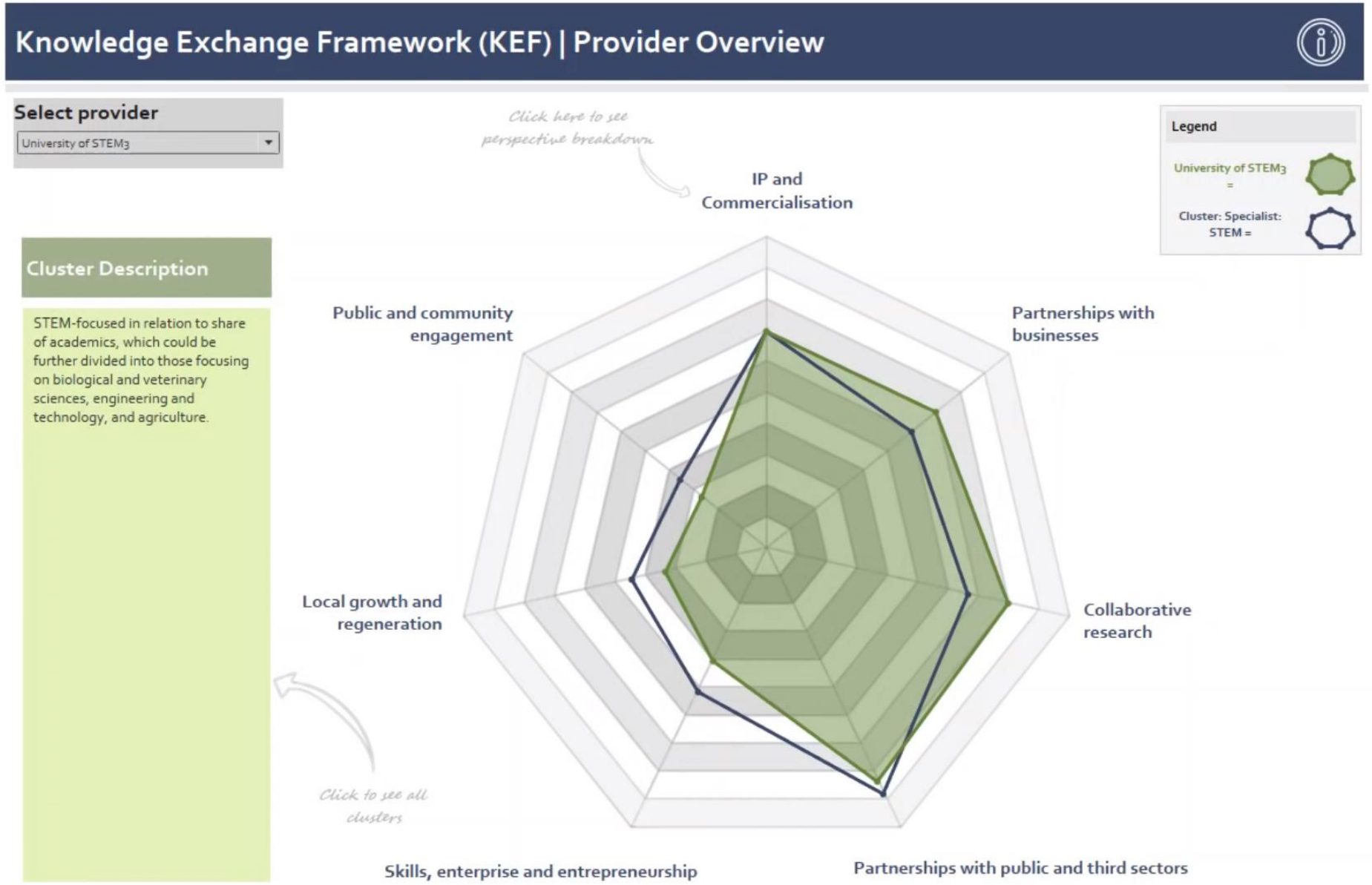
Source: http://blog.efpsa.org/2012/06/20/maximizing-research-impact/

Proposed metrics

- Metrics are mostly ***trajectory measures***, with the majority using ***income measures as a proxy for impact.***

- Some ***non-monetised*** measures such as ***co-authorship*** with non-academic partners and ***academic time*** spent delivering activities.

- Mostly drawn from the ***Higher Education Business & Community Interaction (HE-BCI) survey*** – the longest running longitudinal dataset on KE in the world: https://re.ukri.org/knowledge-exchange/the-he-bci-survey/



https://www.youtube.com/watch?v=Icq_B7DeLwY&t=4s

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Consultation

https://re.ukri.org/knowledge-exchange/knowledge-exchange-framework/

Potential new metrics

1. Measures of ultimate economic or societal impact
2. Impact on public policy
3. The nature of strategic relationships
4. Levels of ‘repeat business’
5. Engagement of universities in their local area
6. …

Summary

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2. It aims to be a ***low-burden, largely metrics driven*** exercise to provide useful information for Universities and users of university knowledge
3. We are proposing a ***novel statistical clustering*** of universities to aid fair comparison
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