

Innovation in the Space Sector

Space-Themed Knowledge Transfer Partnerships Call

www.ktn-uk.org

Connecting

- Bringing people together to innovate
 - _connect networks
 - Networking Events
 - Building Community

Communicating

- Broadcasting to keep people informed
 - _connect Articles
 - Event Diary
 - Funding Calls

Knowledge
Transfer
Network

Collaborating

- Bringing Government, Academia and Industry together
 - Conduit of information
 - Listen to All, Speak for All

Changing

- Breaking barriers between sectors
- Leading the Innovation Discussion
- Accelerating Innovation for Economic Growth

InnovateUK – Who?

- A brief history
 - The original DTI Innovation Unit and advisory “Technology Strategy Board” was set up in 2004
 - It was spun out of government as a “non-departmental public body” in July 2007, relocated to Swindon and staffed with people from business
 - Since then our budget has increased from £250m to £440m a year
 - Independent evaluation suggests that we have increased the return on that investment from £4 to over £20 for every £1 used by focussing on challenges and building the community
 - August 2014 change of [brand] name to InnovateUK

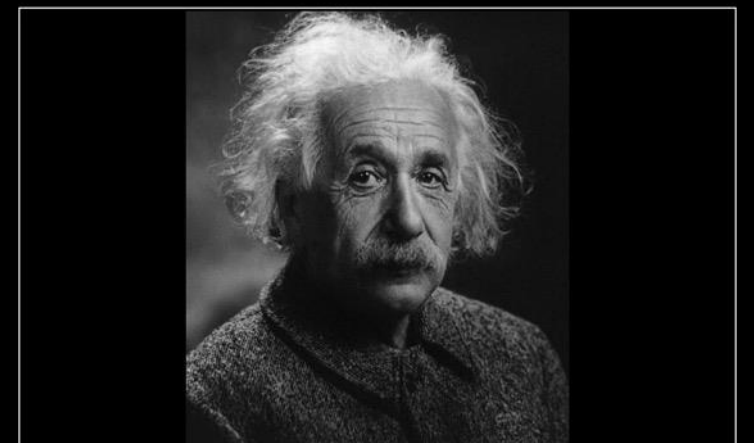


What problems are we trying to solve?

- **Business investment is too low and too late**
 - Technical and financial risks need to be mitigated
 - The time for financial return is too long for many players
- **Innovation disrupts value chains and business models**
 - New partnerships are required to build new supply chains
 - Investment and innovation is required at multiple points
- **Longer term trends not visible to all players**
 - Impact and opportunities from emerging technologies & policies
- **Innovation infrastructure complex and inefficient**
 - Fragmented and difficult to navigate
- **Government does not make best use of its levers**
 - Procurement, regulation, standardisation, fiscal incentives

What are we doing about it?

- Accelerating the journey between concept and commercialisation
 - Understand the business journey and accelerate it
 - Provide a coherent package of support – matched to needs
 - Specific SME package – but recognise role of larger companies
 - Promote knowledge exchange
- Connecting the innovation landscape
- Turning government action into business opportunity
- Investing in priority areas based on potential
- Continuously improving our capability



Problem Solving Requires New Approaches

"We can't solve problems by using the same kind of thinking we used when we created them." – Albert Einstein

Why a Space Themed KTP call?

- Space Technology (upstream) has been under represented in the KTP responsive call(s)
- The Space sector has committed to a significant growth agenda (target)
 - 10% of global Space market by 2030
 - Recognising the need to exploit the UK research base better
- A themed call focuses attention and has already stimulated renewed interest in KTP
 - From the Space sector
- **And why not.....? 😊**

What are we looking for?

- Primarily looking to fund in the “upstream” domain
 - Satellite & satellite instrument manufacture
 - Infrastructure
 - Mission design
- Not excluding “downstream”
 - Applications, use of space data
- Projects that contribute to the wider space economy
 - Pulling tech from other areas perhaps?
- Also innovative projects in space
 - i.e. things we have not thought of!
- Projects between 6 months and 36 months duration

How are we doing this?

- Up to £1.3m, funded by Innovate UK and Natural Environment Research Council, NERC.
 - Science and Technology Facilities Council will also consider funding projects on an individual basis
- Projects must be business led
 - Looking to fund 10-12 projects
 - A cohort approach for Associates
- We will set aside a bursary fund for Associate to attend the International Space University (ISU) summer school
 - Space Studies course

Natural Environment Research Council



UK
Universities



Centre for Ecology & Hydrology
NATURAL ENVIRONMENT RESEARCH COUNCIL



British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL



NERC National Centre for Earth Observation
NATURAL ENVIRONMENT RESEARCH COUNCIL



British Antarctic Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL



National Oceanography Centre
NATURAL ENVIRONMENT RESEARCH COUNCIL

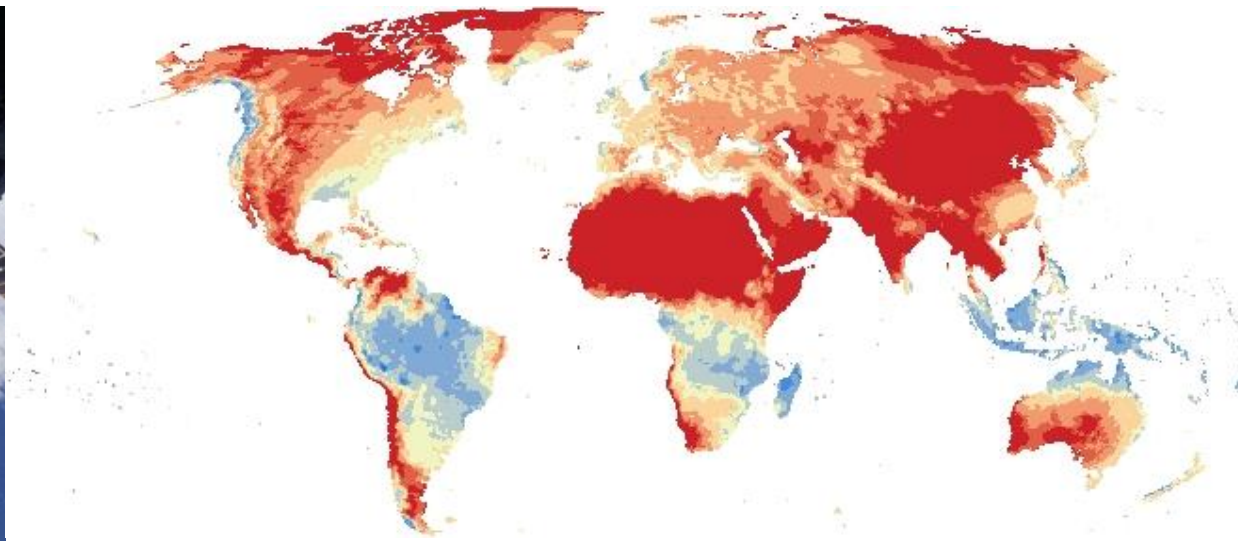


National Centre for Atmospheric Science
NATURAL ENVIRONMENT RESEARCH COUNCIL



Aim of KTP for NERC

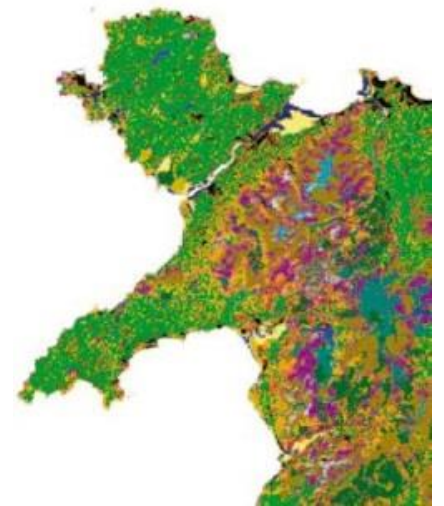
- Establish long-term links with expertise in research base
- Pull through of Science to Industry
- Sharing knowledge (flow both ways)
- Career development for associate (early career scientist)



NERC Science: Translation

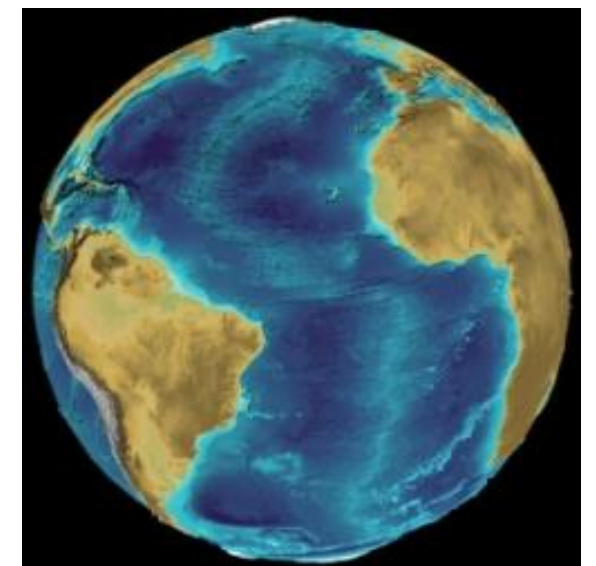
Upstream applications

- Expertise in instrumentation (developed for Science missions)
- KTP could provide expertise in understanding the scientific principles of instruments & potential applications.
- Centre for Earth Observation and Instrumentation (<http://www.ceoi.ac.uk/>)



Downstream Applications

- Expertise in Data Assimilation, Modelling, Understanding Data & Processing
- Infrastructure – processing satellite information



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Get Involved

Contact your local KTP Adviser

- Gerry Black
- www.ktponline.org.uk

Contact the KTN

- Andy Powell
- andy.powell@ktn-uk.org



Knowledge Transfer Partnerships

28th October 2014

Facilitating Innovation Through Collaboration



Dr Gerry Black
KTP Adviser





Dr Vince Cable MP, Secretary of State for Business, Innovation and Skills, presenting the Overall Winning Partnership Award to Cherry Pipes Limited at Innovate '11

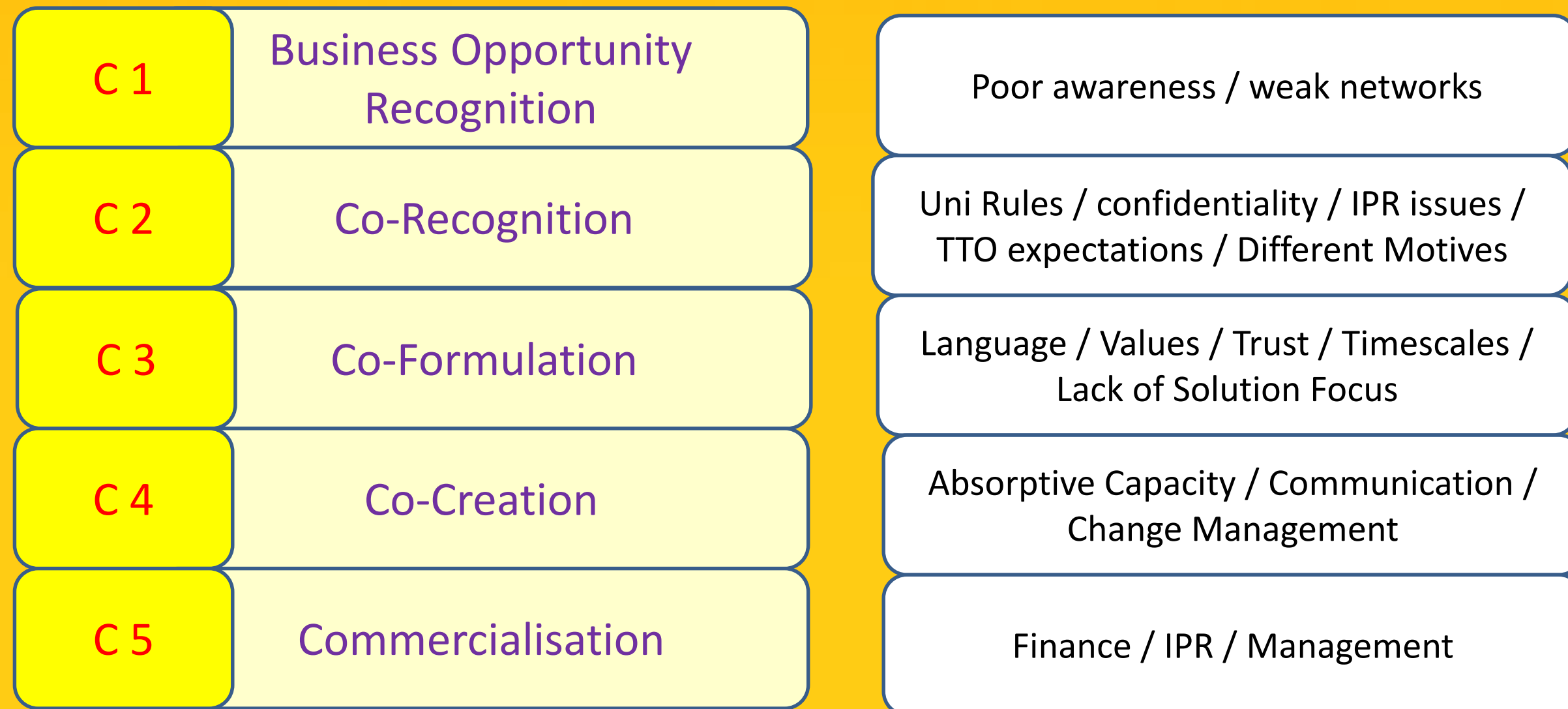
Knowledge Transfer Partnerships is Europe's leading programme helping businesses to improve their competitiveness, productivity and performance through the better use of knowledge, technology and skills that reside within the UK knowledge base.

Embedding a **NEW capability**, demonstrating innovation, impact and challenge

Partnership Structure

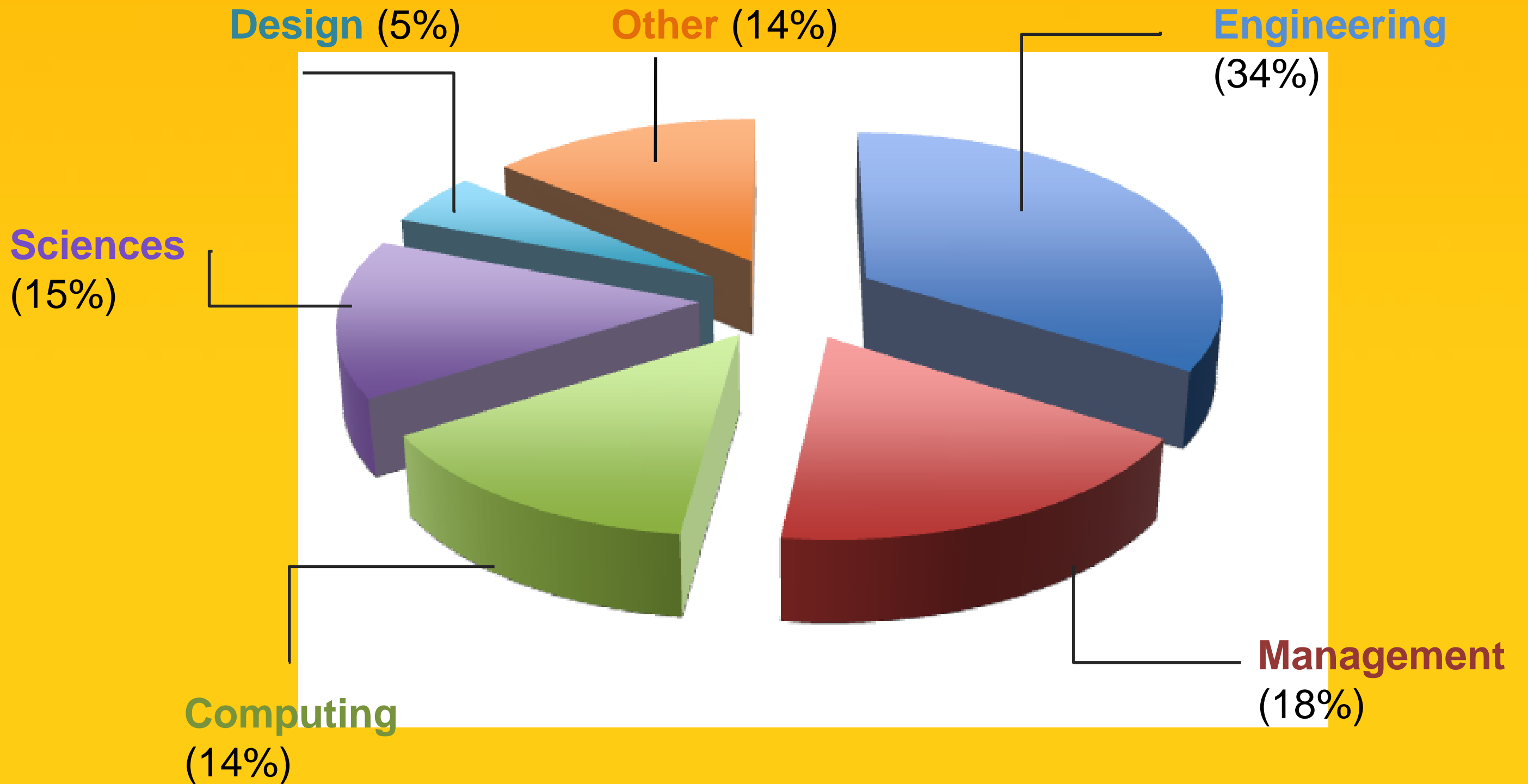


Generic 5 C Model



Acknowledge CIHE

Academic Departments



Budgets , Grant Rates and Timescales

- ✓ Average project budget ~£65kpa / per associate;
- ✓ £27k-£35k (employment budget) + £6k (T&S, Cons., Training);
- ✓ SMEs up to 67% grant (~£22kpa cash contribution)
- ✓ Large companies up to 50% grant (~£33kpa)
- ✓ Project duration 6 – 36 months
- ✓ Submission windows every 2 months
- ✓ Decision within 4-weeks and free to appoint / recruit thereafter;
- ✓ 80% application success rate

Benefits per Associate project*



- | | |
|--|-----------------|
| • Increase in annual profit before tax | £366,000 |
| • Investment in plant and machinery | £117,000 |
| • New jobs created | 3 |
| • Business staff trained | 21 |
| • Plans for further collaboration | 78% |

**(2011/12 Annual Review)*

Personal and Professional Development :

- *Opportunity to apply research outputs and expertise in a real-world environment;*
- *ADR and career progression*
- *REF - publications and IMPACT case studies*

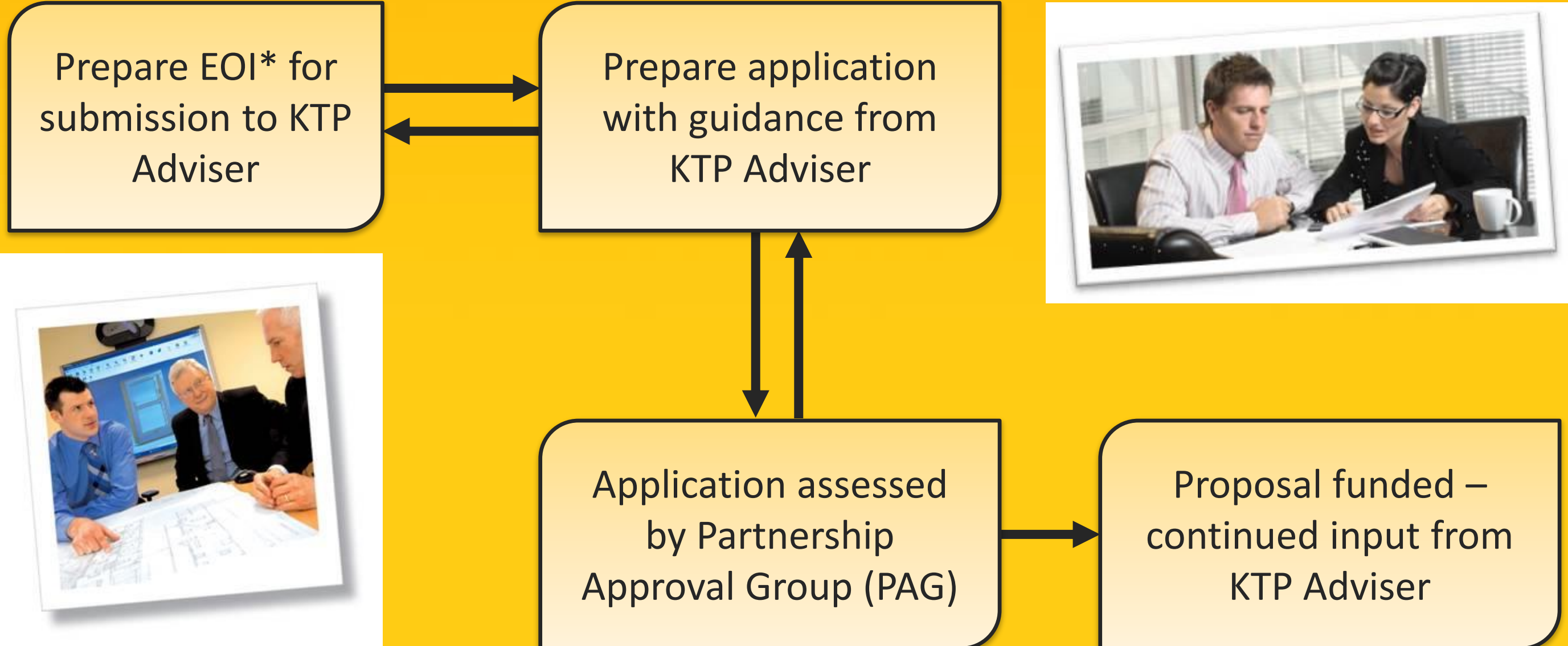
Income Generation:

- *During project -Typical one associate, 24m project ~ 130k income (scope for larger projects)*
- *Post project - relationship with company (consultancy, CPD, sponsored research, student projects)*

Support and Success RATE:

- *Local KTP Centre ;*
- ***National HIT RATE OF ~80%***

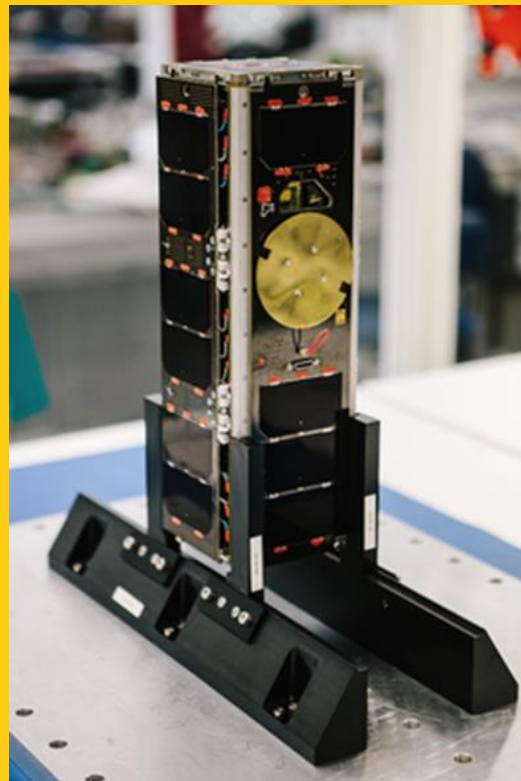
- Glasgow University is a member of the West of Scotland KTP Centre.
- Contact Dr Alison Reith - alison.reith@ktpws.org.uk
- [www. http://www.ktpws.org.uk/](http://www.ktpws.org.uk/)



* EOI – Expression of Interest

Clyde Space Ltd and The University of Strathclyde

KTP 6714 - To develop an integrated nano-satellite platform that customers can produce as a kit; fully assembled spacecraft; or send their payload for integration and test before launch.



“This project has been one of our most exciting projects to date. Not only is it one of the most advanced Nano-satellite ever made, it is also the first satellite to be designed and built in Scotland.”

“The payloads flying on UKube-1 were selected following a competition run by the UK Space Agency to find the most innovative and creative payloads in the UK for a CubeSat. The competition received more than 20 payload submissions.”

Thankyou



Dr Gerry Black
KTP Adviser

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