

Post UKMF 2019- Review of Academia/Catapult Funding Landscape

Alice Porter - Deputy Director Commercialisation (UKRI)

Mike Hinton - R&T Partnerships (HVM Catapult)

December 16th 2020 v1.0

Context:

This study draws on information gained through the following:

- UKMF workshop summer 2019 – round tables
- UKMF academic engagement event Dec 2019 – detailed workshop survey of participants
 - 77 academic
 - 72 catapult/RTO
 - 15 others
- HVM Catapult experience of academic engagement (multiple centres)
- Industrial experience of academic engagement (large and small organisations)

These insights have been analysed and summarised, resulting in a statement of 4 key challenges.

- As a result 5 key recommendations for ecosystem improvement are proposed.
- ...and 4 scheme-specific adjustments are suggested.

UK Manufacturing Forum Dec 2019

Outputs from Academic Engagement Workshop:

“What are the barriers to more effective Catapult/RTO and Academic collaboration?”

| | |
|-------------------------------|---|
| Communication & Understanding | There is often a lack of understanding in both universities and RTO on what is required to achieve successful translation. Some of this lack of understanding is due to poor communication. |
| Compete/Collaborate | There is very limited funding available to support translation through collaboration between universities and RTOs. |
| Timescales | Different timescales and ‘clock periods’ across industry, RTOs and universities present coordination and prioritisation challenges. |
| Culture | There are significant differences in the cultures of universities and RTOs. These differences often lead to different views and behaviours. |
| Human Resources | There is a lack of people with the appropriate skills and expertise to (1) facilitate successful translation and (2) help raise awareness of what is required for successful translation. |

Culture & Communications

| | |
|------------------------------------|---|
| Legal/Contractual | Given the different priorities and cultures it can be difficult to agree on the terms of NDAs and Collaboration Agreements |
| Intellectual Property (IP) | There is often conflict of interests between universities, RTOs and companies on the ownership and exploitation of IP. |
| Framework/Process | There does not appear to be a widely accepted framework or process that can be used to help achieve successful translation through collaboration. |
| Funding | There is very limited funding available to support translation through collaboration between universities and RTOs. |
| Key Performance Indicators (KPI's) | The current university and RTO KPIs do not encourage collaboration to achieve more successful translation. |

Mechanisms & Frameworks

Academic Engagement with Catapults Vision for Success

| | |
|-------------------------------|---|
| Communication & Understanding | There is often a lack of understanding in both universities and RTO on what is required to achieve successful translation. Some of this lack of understanding is due to poor communication. |
| Compete/Collaborate | There is very limited funding available to support translation through collaboration between universities and RTOs. |
| Timescales | Different timescales and 'clock periods' across industry, RTOs and universities present coordination and prioritisation challenges. |
| Culture | There are significant differences in the cultures of universities and RTOs. These differences often lead to different views and behaviours. |
| Human Resources | There is a lack of people with the appropriate skills and expertise to (1) facilitate successful translation and (2) help raise awareness of what is required for successful translation. |

Culture & Communications

**Trusting relationships based on mutual understanding and benefits.
Working together on commonly agreed causes.**

| | |
|------------------------------------|---|
| Legal/Contractual | Given the different priorities and cultures it can be difficult to agree on the terms of NDAs and Collaboration Agreements |
| Intellectual Property (IP) | There is often conflict of interests between universities, RTOs and companies on the ownership and exploitation of IP. |
| Framework/Process | There does not appear to be a widely accepted framework or process that can be used to help achieve successful translation through collaboration. |
| Funding | There is very limited funding available to support translation through collaboration between universities and RTOs. |
| Key Performance Indicators (KPI's) | The current university and RTO KPIs do not encourage collaboration to achieve more successful translation. |

Mechanisms & Frameworks

Facilitated by dedicated funding mechanisms crafted to respect and leverage the contributions of all participants.

Key Recommendations:

1. Simplify and standardise rules for all IUK projects

Modify standard IUK rules, removing default limits to overall project funding rate and research org participation share. Allow limits to be added in competitions where needed to achieve certain outcomes e.g. to encourage strong industrial contribution. Adopt the most appropriate funding ratios for translation in more cases than is done currently.

2. Create a Research Translation Acceleration fund for Catapults and Universities to work together

A fund to enable translation of early stage discoveries from universities, through the innovation / scale-up network of the Catapults. The fund would cover further University work and Catapult work – creating partnerships and new technologies ready for market.

3. Invest in people to build “bridges” between Catapults and Universities

Enhance knowledge exchange and understanding through the funded exchange of staff AND support the development & execution of Translation projects by the appointment of Translation Managers.

4. Allow RC-funded academic projects to include Catapults and/or RTOs as collaborators

Enable RTOs to partner and contribute to academic projects, directly claiming their costs – whilst ensuring leadership of the project remains with the academic

5. Provide funding for larger scale CR&D projects, covering broad tech & without geographical limit

The number of opportunities for larger scale demonstration projects with multiple partners is decreasing, this should be addressed within future calls

Recommendation 2: Create a Translation Acceleration Fund for Catapults and Universities

Funding Routes

Scenario A: An academic has a good idea and wishes to take it from idea all the way to a product/service

There are limited funding mechanisms to bridge this gap, and those that exist are currently under threat.

Catapults operate in this space but lack of funding mechanisms for academics means that engagement is not practical.



Academic 'Valley of Death'

Researchers in Residence or UKRI Fellowships

Horizon 2020

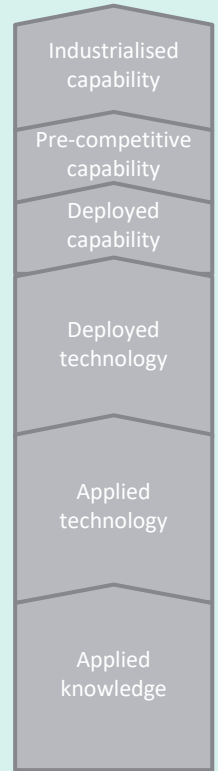
EPSRC Programmes

MSc or PhD Projects

Innovate UK Funded Collaborative R&D

Innovate UK Feasibility/SMART

Private Venture Funding



Industrialised capability

Pre-competitive capability

Deployed capability

Deployed technology

Applied technology

Applied knowledge



TRL1

TRL2

TRL3

TRL4

TRL5

TRL6

TRL7

TRL8

TRL9

Recommendation 2:

Create a Translation Acceleration Fund for Catapults and Universities

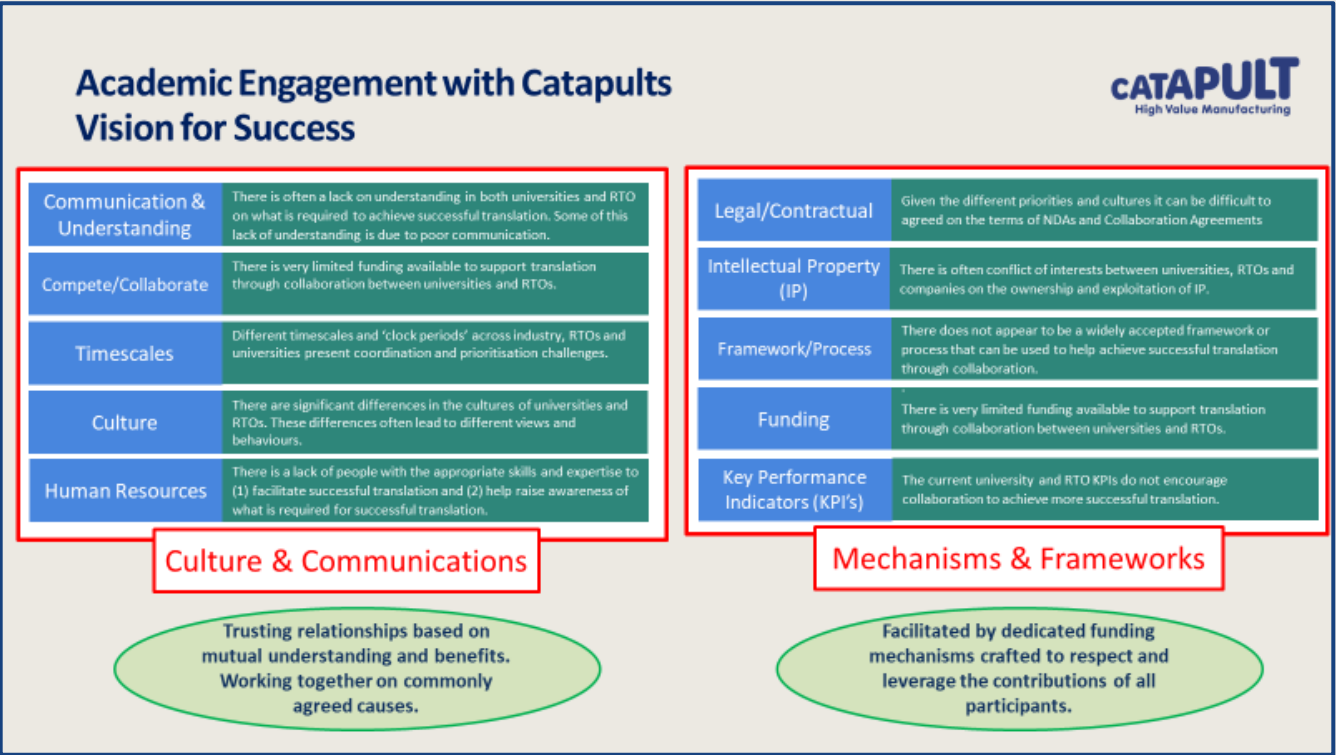


OUTCOME: bridge the funding gap which exists between Universities and Catapults – encouraging partnership, and de-risking research so that industry can invest

- *A new fund for Universities and Catapults to work in partnership, filling a gap in the current ecosystem*
- *Enable translation of early stage discoveries from universities, for example translating existing research proofs of concept from TRL3 to TRL5/6.*
 - *Direct, bi-lateral collaboration between Catapults and Academics*
 - *Exploiting the innovation / scale-up network of the Catapults*
 - *Direct industrial involvement is not expected, although indirect engagement may be facilitated*
 - *Target industrial exploitation either for sector(s) generally or for specific organisations*
 - *Might also seed engagement in the development of larger CR&D proposals e.g. through InnovateUK.*
- *Create partnerships and new technologies ready for market*
- *Enable the best research to be developed and de-risked increasing IP value before sale to industry, and allowing more risky research - where industry engagement is difficult - to have a better chance of commercialisation*

How do the Recommendations achieve the Vision for Academic engagement with Catapults?

| R1 | R2 | R3 | R4 | R5 | IAA | PP | RinR | Catalyst |
|----|----|----|----|----|-----|----|------|----------|
| | ◆ | ◆ | ◆ | | | | ◆ | ◆ |
| ◆ | ◆ | | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ |
| | ◆ | ◆ | | ◆ | ◆ | ◆ | ◆ | ◆ |
| | ◆ | ◆ | ◆ | | ◆ | | ◆ | |
| | | ◆ | | | ◆ | ◆ | ◆ | ◆ |



| R1 | R2 | R3 | R4 | R5 | IAA | PP | RinR | Catalyst |
|----|----|----|----|----|-----|----|------|----------|
| | ◆ | ◆ | ◆ | | ◆ | ◆ | | ◆ |
| | | ◆ | | | | | | |
| ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ |
| ◆ | ◆ | | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ |
| | ◆ | ◆ | ◆ | ◆ | | ◆ | ◆ | |

- Recommendations**
- R1:** Standardise rules for IUK projects and adopt translation-appropriate funding ratios more than is currently the case
 - R2:** Create a Research Translation Acceleration fund for Catapults and Universities to work together
 - R3:** Invest in people to build bridges and to enhance knowledge exchange between Catapults/Universities
 - R4:** Allow RC-funded academic projects to include Catapults and/or RTOs as collaborators
 - R5:** Provide funding for larger scale CR&D projects, covering broad tech & without geographical limit

- Scheme-specific Changes**
- IAA:** Increase scale + Catapult eligibility
 - PP:** Catapult eligibility
 - RinR:** Increase numbers + wider eligibility
 - Catalyst:** Build on success + deliver more of them

UK commercial impact of academic discovery could be enhanced through more coordinated use of existing assets – both research and translational.



- ***This can be achieved by more effectively incentivising stakeholders to work collaboratively across TRLs.***
 - 5 key recommendations are proposed for a more coherent ecosystem
 - 4 scheme-specific improvements are identified to build on existing mechanisms



To create “A continuum of funding for end to end translation and commercialisation from research to market”
[UKRI ExCo]



.....Thereby Maximising the Impact of Investment in the UK’s Research and Innovation Ecosystem

Proposed Next Steps:

- Develop these ideas together with UKRI Commercialisation Team, IUK and Research Councils (EPSRC, BBSRC)
- Engage academics and pro-VCs (post UKMF 2020 action) to further develop the thinking
- Consider the changes needed within HVMC and wider Catapult network to implement the improvements.