

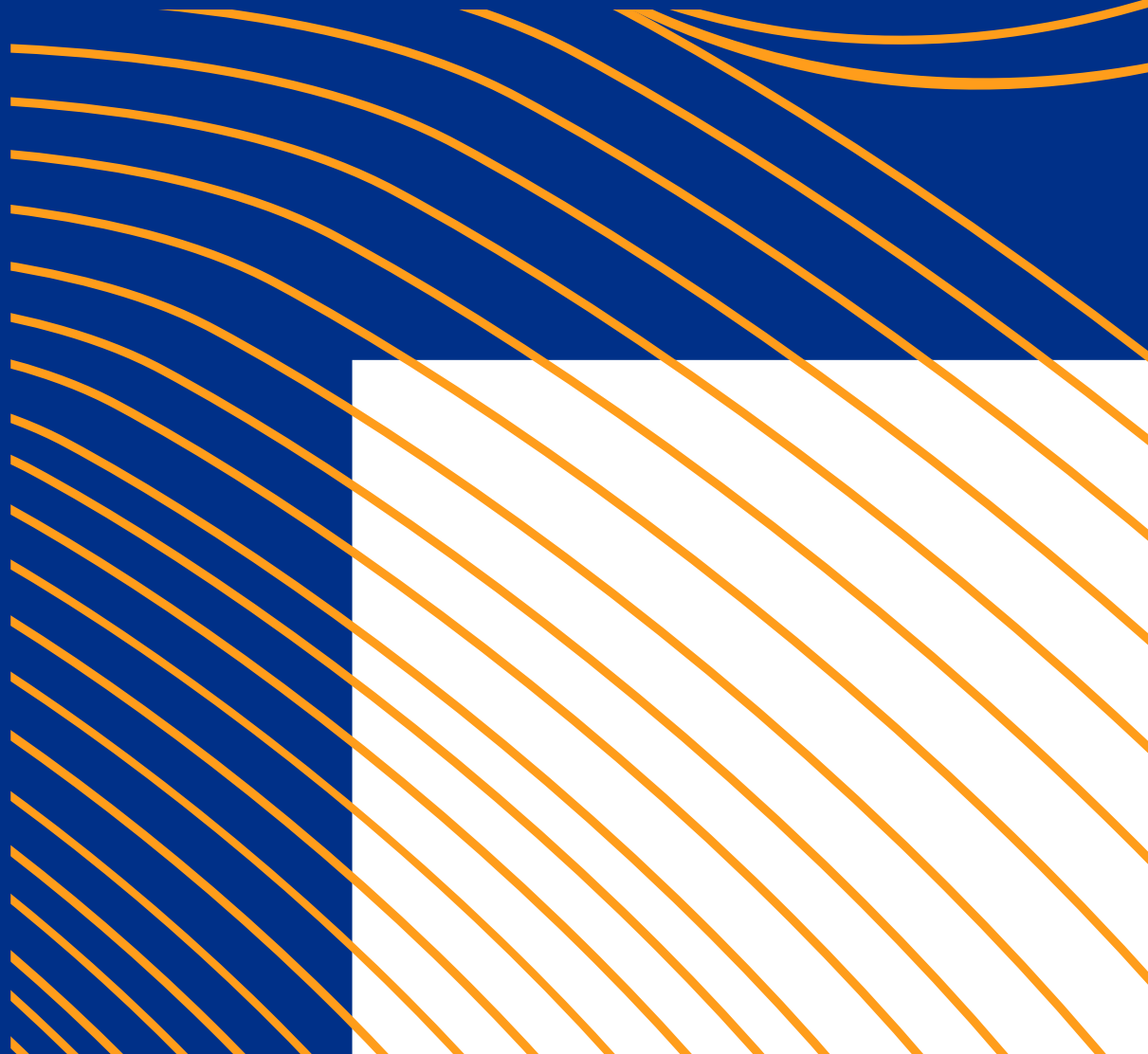


Engineering and
Physical Sciences
Research Council

Biotechnology and
Biological Sciences
Research Council

Innovate
UK

Innovation and Knowledge Centre Programme Review



Introduction

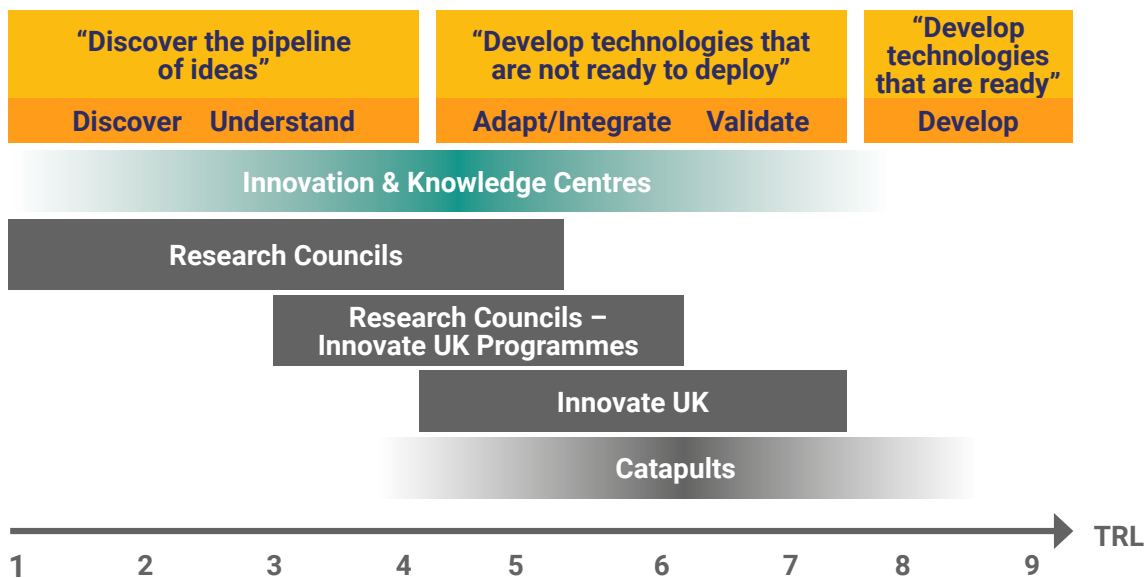
Innovation and Knowledge Centres (IKCs) form part of UKRI's approach to commercialisation. They enhance the academic push behind the drive to commercialisation and are able to work across the whole range of technology readiness levels (TRLs), pushing emergent technology and services towards industry and nucleating the market (Figure 1). As a number of the IKCs are approaching the end of their second phase of funding (see Annex 1), UKRI commissioned an independent review into the IKC programme¹. The objectives of this were to gain an understanding of the programme's impact to date, feedback on the scheme and recommendations for future evolution.

The independent expert panel², consisted of representatives from across the international research and innovation, development and demonstration (RD&D) landscape. The panel were informed through a number of routes:

- Submission of evidence gathered by UKRI from a range of sources
- Submission of an externally commissioned economic evaluation report, delivered by Belmana
- Meetings with representatives from the IKCs, such as Directors and academic Principal Investigators (PIs)
- Data covering UKRI's level of support and future funding strategies
- Background papers, minutes from IKC meetings and reports
- Panel members' own knowledge and experiences.

The panel were asked to focus on the Impact of the Programme, analysis of the scheme and recommendations for future evolution and are grateful to the six IKCs for all their inputs and contributions to the review. The outputs of this review will form part of the evidence that UKRI will use when considering the future direction of the programme.

Figure 1 | A schematic representation illustrating how the IKC programme sits within the funding landscape, in terms of TRL. It also demonstrates how an IKC, uniquely, cuts across the Research Council – Innovate UK remit.



1 This review was concluded in March 2022, and information included in this report is relevant to this date.

2 Panel membership: Malcolm Skingle, Director of Academic Liaison, GSK (Panel Chair); Dr nafeesa Dajda, Head of regional Growth, Satellite Applications Catapult; Dr Jen Vanderhoven, Vice-Principal of Engagement, University of the Highlands and Islands; Professor Michael Bradshaw, Professor of Global Energy, Warwick Business School; Dr Alexandra Bush, Managing Consultant, Oxentia; Professor Philip Shapira, Professor of Innovation, Management and Policy, University of Manchester.

Panel Outcomes

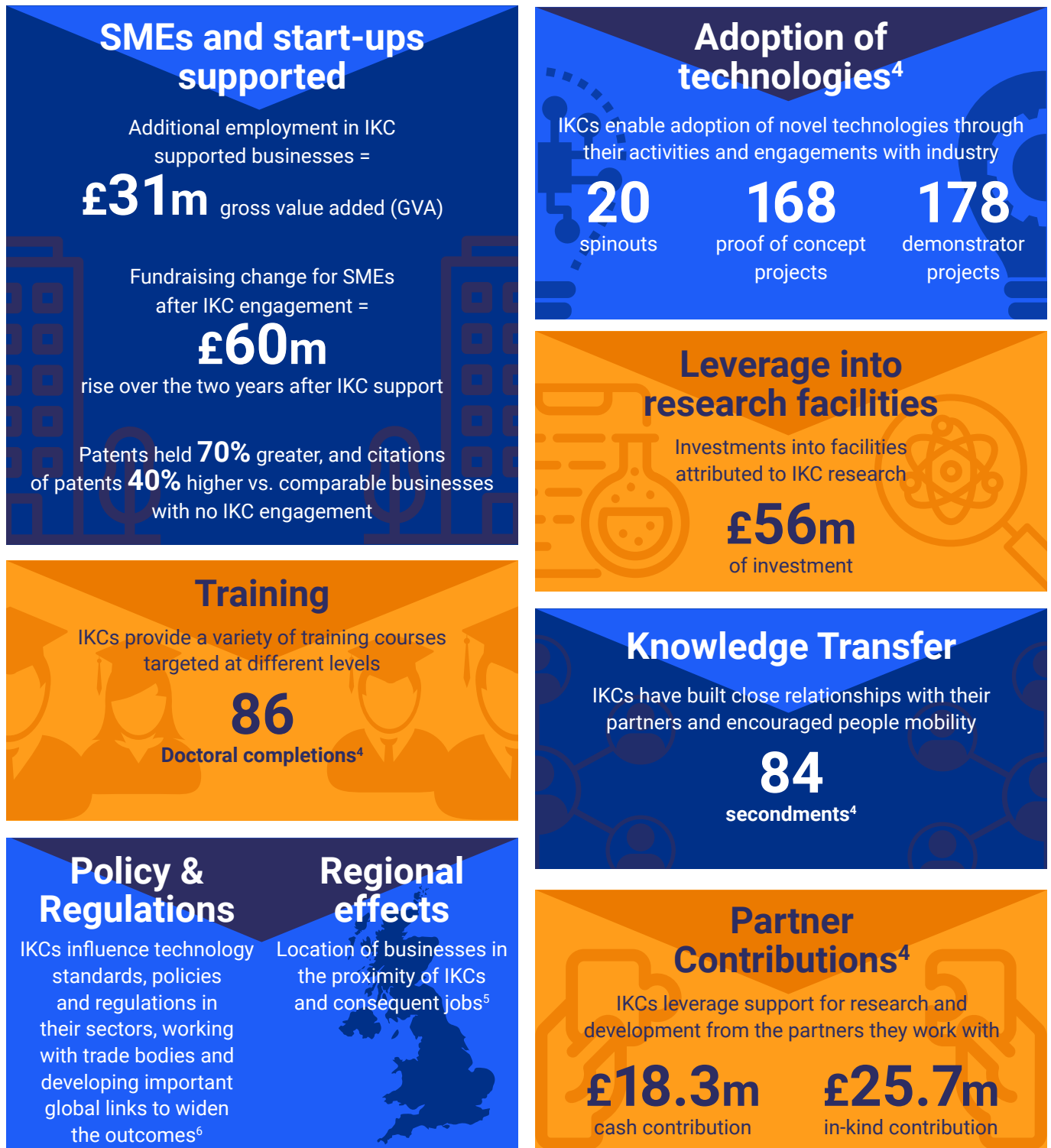
This section summarises the key conclusions and recommendations of the panel.

Impacts

- The IKC scheme is valuable and should be maintained. The IKC model is cited in the UK Innovation Strategy as an initiative that can “*convene industry and academia to co-design, develop and drive the adoption of transformative tech*”³. The panel recommended that the IKCs should build on this recognition and increase engagement further through profile raising and networking activities. For example, IKCs should ensure that their websites are a tool for engagement and a ‘go to’ place for information, providing a resource for those with interests in the area and ensuring that other relevant UK stakeholders have access and can fully utilise the IKCs offerings.
- The full impacts, however, have been difficult to quantify. Many of the important benefits are complex and intangible due to the space the centres occupy as a bridging function across the research and innovation ecosystem. The current Key Performance Indicators (KPIs) do not capture all the successes and positive returns to the UK research & innovation ecosystem. The panel recommended UKRI review the KPIs captured to ensure that they fully capture the IKC impacts.
- Consequently, case studies are the most powerful piece of evidence to capture the success of IKCs, and the panel recommended that these should continue to be used in IKC communications to promote the value of the centres. In addition, outward facing highlight reports and video clips to provide an update of the activities and successes of the IKCs are a useful way to complement the detailed annual reports and KPI metrics to funders and other more formal/rigorous reporting.
- The panel concluded that IKCs have created ecosystems around themselves, acting as anchor institutes to enable knowledge exchange (KE), and this should be continued, ensuring that KE happens at all levels and is multi-directional. IKCs have successfully created clusters of activity around them. The panel recommended that the flexibility in the model should be retained as it has allowed some IKCs to have a regional focus and some a national focus.
- The panel concluded that IKCs have been successful in developing ecosystems and are now contributing to the levelling up agenda, through maximising the benefits of local positioning while ensuring national availability, accessibility, and international linkages.
- The panel concluded that IKCs perform an important translational and intermediary role in the system between academia and industry in terms of community building. For example, the existence of IKCs enables smaller companies to develop at an accelerated pace with access to infrastructure and facilities that SMEs would not otherwise be able to afford.

³ UK Innovation Strategy: leading the future by creating it - GOV.UK (www.gov.uk)

Table 1 | Assessing value for money of IKC investment (from 2009 to March 2020)



⁴ Impact metrics taken from IKC annual KPI reporting up to 2019.

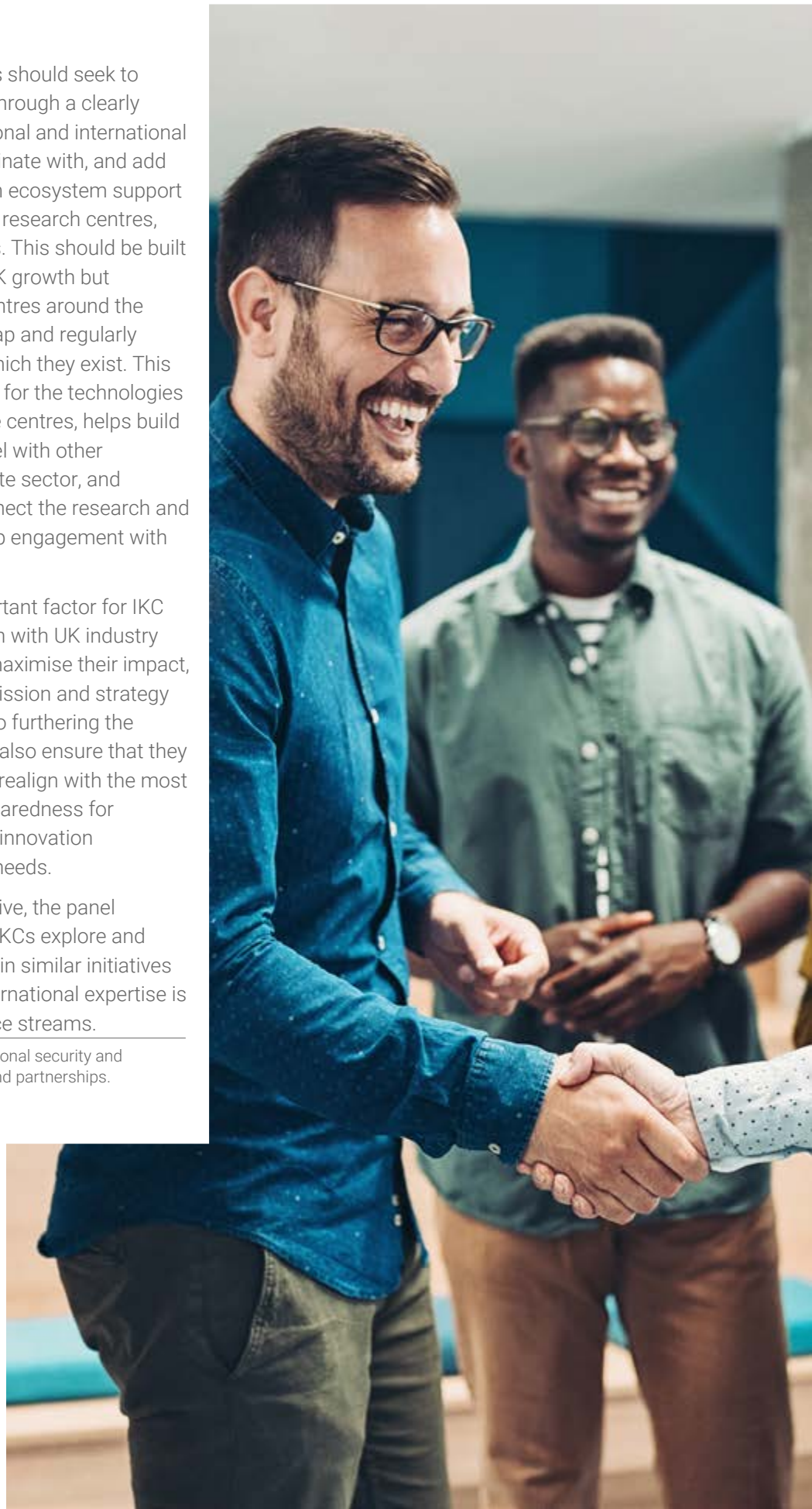
⁵ For example: CSIT has incubated a cyber security ecosystem in Northern Ireland from a standing start in 2009 to one that now employs 2300+ professionals contributing over £120m in salaries to the local economy as well as being the #1 location for US sourced cyber security R&D Foreign Direct Investment projects globally.

⁶ For example; CSIT staff have advised government departments including the Foreign Commonwealth & Development Office, the Department for Digital, Culture, Media and Sport (DCMS), Department for International Trade, and the Cabinet Office on a variety of strategic initiatives and policies in relation to UK national cyber security policy; NBIC, along with the USA Centre for Biofilm Engineering, the Singapore based SCELSE Centre and an EU Cooperation in Science and Technology (COST) action group, formed an International Biofilms Standards Task Group (IBSTG) to drive the international development and acceptance of standardised biofilm test methods in health care, the built environment and industrial systems; CSIC has input to standards and guidance, including Construction Industry Research and Information Association (CIRIA) guides on structural health monitoring, the Institution of Civil Engineers (ICE) Specification for piling and embedded retaining walls, and ASTM standards.

Impacts continued

- The panel recommended that IKCs should seek to maximise their impact and reach through a clearly defined strategic approach to national and international engagement, to ensure they coordinate with, and add value to, the broader UK innovation ecosystem support infrastructure, including with other research centres, Catapults and tech transfer offices. This should be built in from the outset, focussing on UK growth but connecting with the knowledge centres around the world⁷. It is important that IKCs map and regularly review the funding landscape in which they exist. This provides a clear view of next steps for the technologies that come from or engage with the centres, helps build appropriate links at a strategic level with other technology institutes and the private sector, and ensures that IKCs continue to connect the research and innovation landscape through deep engagement with other relevant stakeholders.
- The panel concluded that an important factor for IKC success is to ensure that they align with UK industry and sector relevant strategies to maximise their impact, as well as their host universities mission and strategy where appropriate and beneficial to furthering the objectives of the IKC. They should also ensure that they review their strategies regularly to realign with the most recent UK policies and enable preparedness for developments in the research and innovation landscape and changes to sector needs.
- To remain internationally competitive, the panel concluded that it's important that IKCs explore and benchmark against best practices in similar initiatives internationally and ensure that international expertise is integrated into their strategic advice streams.

⁷ This will need to be done in line with the national security and investment act with appropriate caution around partnerships.





Scheme

- The panel concluded that public sector support to commercialise technologies in SMEs works well and should be retained in further IKC investments. One of the most valuable parts of the IKC offer is the de-risking of translation activities for business, particularly for SMEs. IKCs should continue to de-risk translation and provide funding for initiatives such as Proof-of-Concept and Kickstarter activities which spur early relationships.
- It has been noted that although IKC Directors' meetings to date have been valuable, they need to allow for the differences between the individual IKCs. Directors' meetings should take advantage of opportunities arising from virtual working and consider meeting more frequently. The panel recommended adopting a model of having subgroups with representatives from each of the centres to discuss and share best practice on different cross-cutting areas e.g. networking, sustainability planning, fundraising and communications.
- The panel agreed that UKRI reporting needed to be streamlined to reduce reporting burden and increase usefulness of metrics. This should consider that reporting can also be required from other funders concurrently. The panel recommended having fewer KPIs overall, that better capture the impacts of the programme, with only a select few being standardised across the IKC programme, and additional KPIs tailored to the individual IKC's goals.
- The panel recommended that involvement of both Innovate UK (IUK) and the Research Councils in the IKC scheme is essential. Research Council and IUK involvement bridged the gap between remits which is valued by the community.

Future evolution

- There is a distinct need in the research and innovation landscape for translational funding. The IKC programme covers a unique space in the landscape, bridging the gap across TRLs and creating an ecosystem for innovation. IKCs encourage inward investment, co-location of industry and allow the co-design, development and adoption of transformative technologies. The panel recommended retaining the flexibility of the scheme to develop a customised model is important as different areas of emerging technologies have different needs, requirements and characteristics.
- The panel recommended that IKCs are funded at a sufficient level to achieve the desired impact, and to ensure that there are a sufficient number of centres to provide their value across multiple sectors. It was suggested that UKRI consider investing in more centres in order to make a difference to the economy as a whole. However, it's recognised that turnover is also needed with some IKCs coming to an end and new ones arising, dependent on evolution of the sectoral landscape.
- The panel recommended that UKRI encourage IKCs to engage with social scientists. This could be by embedding social scientists within the research on issues such as behaviour and/or by engaging with social science's understanding of the innovation process interacting with the IKC's expertise.
- The panel agreed that there is a need for sustained core funding for IKCs, (e.g., to retain staff continuity and leadership). UKRI investment was seen as a badge of quality that can attract other sources of funding for additional translational activities. However, if the current phased model is continued, with decreasing funding amounts for each phase, IKCs should have a clear plan for sustainability after the initial phase of funding.
- The panel recommended that UKRI may consider making flexible funding available that the centres could bid into to top up their core activities. A cautious approach would be needed however, to seek a sustainable funding model that does not drive competition between IKCs but rather sustains a focus on UK benefit.
- The panel concluded that IKCs can benefit from diversifying their funding base not only to benefit from the new connections, networks and routes to impact, but also to ensure sustainability and build resilience in a rapidly changing funding landscape. For instance, centres should maximise the benefits of local provisioning, encouraging accessibility and building international linkages. IKCs have shown some success attracting funding through paid membership schemes, continuing professional development (CPD) offerings and by increasing focus on pursuing other sources of funding. However, it was recognised that through external funding the centres' missions may become externally influenced.





Engineering and
Physical Sciences
Research Council

Biotechnology and
Biological Sciences
Research Council

Innovate
UK

