

Independent Review of the Innovation Centres Programme

Chaired by Professor Graeme Reid



Source: Scotland's Innovation Centres: Driving Demand Led Innovation, November 2015

29 September 2016



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Summary of findings

Recommendations

1. I recommend that the Scottish Funding Council and the enterprise agencies (Scottish Enterprise and Highlands and Islands Enterprise) should assess periodically whether additional Innovation Centres should be created and, if so, whether they should follow the good practice and management models already developed. The first such exercise should be complete within nine months of this review's publication and should be repeated at intervals of no more than four years thereafter. The creation of any new Centres will be conditional on the availability of resources from public, private and charitable sectors.
2. My review identified the need to balance stability and dynamism for Innovation Centres while maintaining appropriate oversight of public spending. I recommend that the SFC and its partners should assess, without prejudice one way or another, whether to continue financial support for each Innovation Centre 10 years after its creation and at 10-yearly intervals thereafter. During the first 10-year period of their existence, I would expect most Innovation Centres to emphasise economic impact and 10 year strategic thinking over income generation. Two light-touch reviews during each 10 year interval should be used to assess the effectiveness of public spending to identify opportunities for further strengthening the Centres.
3. I recommend that the Scottish Funding Council and enterprise agencies review the Monitoring and Evaluation Framework (MEF) for Innovation Centres to reduce its administrative burden and strike an explicit balance between incentives for Innovation Centres to generate income and the incentives for them to deliver impact for the Scottish economy.
4. I recommend that the IC Boards review the rigour of management information and report to SFC within six months of this review's publication on their plans to improve this where necessary.
5. The creation of Innovation Centres changed the landscape for innovation support in Scotland. Public sector support for innovation should evolve to keep pace with the new landscape. I recommend that the enterprise agencies (Scottish Enterprise and Highlands and Islands Enterprise) identify and assess opportunities for new approaches to their funding support for Innovation Centres to increase business engagement and enhance the Innovation Centres programme. These new approaches may well reach beyond the existing scope of funding from enterprise agencies. Enterprise agencies should publish the results of their assessments within nine months of this review's publication.

6. I recommend that every university and each Innovation Centre should make renewed efforts to involve as much of Scotland's excellent research base as possible with the programme. Innovation Centres should each publish a brief assessment of the breadth and depth of this engagement by 31 March 2017 and should refresh that assessment for each of the light-touch reviews at recommendation 2.
7. I recommend that the Scottish Funding Council (SFC) explores Further Education (FE) college participation in Innovation Centres programme. SFC should challenge FE colleges and their representatives to enhance their involvement in the IC programme and work with ICs to support innovation in local businesses, for example responding to business demands for skilled people. SFC should consider how best to overcome any administrative boundary between FE college and university funding that currently exists. SFC should publish the outcome of this consideration within nine months of the publication of this report.
8. If individual Innovation Centres have robust evidence, now or in the future, that their ownership and governance is inhibiting their contribution to the Scottish economy, I recommend that the Scottish Funding Council and the enterprise agencies should be open to proposals for changes in ownership and governance of Innovation Centres. The Scottish Funding Council and, if appropriate, the enterprise agencies, will then decide whether to accept these proposals.
9. Innovation Centres have already published case studies about their own success. This is welcome. I recommend that the Scottish Funding Council and the enterprise agencies work with Interface, the Innovation Centres and others to create and promote a centralised body of data and case studies about individual businesses – rather than innovation support bodies - in Scotland that have benefitted from working with universities and colleges. Those success stories need not be confined to technological innovation and product development: business successes may also come from innovation in management processes; marketing; or investor relations. Innovation Centres, enterprise agencies and others should use that material to promote nationally and internationally the attractions of Scotland as a location for innovative businesses. The new body of material should be launched on 31 March 2017 and could feed in to the Scotland CAN DO Assembly in Spring 2017.
10. Innovation Centres are operating in a crowded landscape of public sector initiatives for supporting businesses in Scotland. I recommend that the Scottish Government – perhaps within its Skills and Enterprise Review - should simplify the outward appearance of arrangements for business support and better define and explain its specific benefits to individual businesses. The body of case study material proposed at recommendation 9 should help. I recommend that support for the business community be articulated consistently in business-friendly language rather than the language of the public sector.

Introduction – by Professor Graeme Reid



I was delighted to be asked by Professor Alice Brown (Chair of the Scottish Funding Council [SFC]) to lead this Independent Review of the Innovation Centres Programme. SFC have committed £120m to this programme over six years and this review comes around the mid-point of that commitment. It is rather early in the life of the Innovation Centres to assess their long-term impact but it is a good time to help the partners (Scottish Funding Council, Scottish Enterprise and Highlands and Islands Enterprise) understand whether the bold vision set out nearly four years ago is standing up to the test of time and whether the eight Innovation Centres remain on trajectories towards achieving that vision.

My review builds on earlier studies on the relationship between business and universities in Scotland, notably the Growing Value Scotland project led by the National Centres for Universities and Business.¹ It also draws on work by the Royal Society of Edinburgh² and Dame Ann Dowling's recent review of university-business relations.³

My remit was to review the Innovation Centres programme against its original vision rather than to assess the Scottish innovation ecosystem as a whole. However, in examining the Innovation Centres, I found it helpful to understand the landscape of innovation initiatives into which they emerged. That landscape is crowded and must appear complicated to the business community. For example, during my background reading, I searched for 'Innovation Centres Scotland' on Google. It pointed me to an organisation called 'Innovation Centres Scotland Ltd', sponsored by Scottish Enterprise and Innovate UK but unrelated to the Innovation Centres I was asked to review. This highlighted the experience firms will have if they seek support without knowing in advance the detailed structure and terminology of the services on offer.

¹ *The Step Change: Business-University Collaboration Powering Scottish Innovation*, NCUB, May 2016

² *Innovation Centres: Connecting the Future*, Science Scotland Issue 19, RSE, Summer 2016

³ *The Dowling Review of Business-Universities Research Collaborations*, July 2015

Changes in terminology or public sector structure would make that task even more difficult so I start with a prejudice against structural change and a preference for improving the operation of existing structures. But I recognise the limitations of this approach.

The evidence shows that the Innovation Centres programme is on the right track and that they have emerged from any initial teething troubles and tensions associated with the start-up phase and are now entering a more mature operational phase. It will take time for a wider range of businesses in Scotland to build familiarity and trust in the Innovation Centres programme and discover how best to gain advantage from the services they offer. Some things can be improved further and I have tried to define a realistic framework for these future developments, bearing in mind that my review is set against the backdrop of the Scottish Government's much larger enterprise and skills review.⁴

I am very grateful to every member of my Advisory Committee for their guidance and support. They have brought high levels of experience and expertise to this review and their careful analysis and wise observations throughout have been invaluable. My thanks also go to Gary Bannon of SFC for acting as secretariat for the review and for providing drafting assistance. While secretariat and Advisory Committee support is necessary in a review of this scale, the recommendations are mine alone.

I am also very grateful to those who contributed to the review through written evidence, attendance at Advisory Committee meetings and as part of the economic impact assessment consultation. EKOS Ltd provided a depth of analysis which would have been impossible without their expert contribution. Their report forms a key part of the overall evidence base from which our conclusions have been drawn.



Professor Graeme Reid

⁴ <http://www.gov.scot/Topics/Economy/Publications/econdevskillsreview>

The process

This review focused on the delivery of the original vision, aims and objectives of the Innovation Centres programme.⁵ Professor Reid was supported by an Advisory Committee and an economic impact analysis study produced by EKOS Ltd.⁶ The review considered the role of the public sector partners (SFC, Scottish Enterprise and Highlands & Islands Enterprise) as well as the progress and potential of the Innovation Centres programme.

Professor Reid invited written evidence from key stakeholders by 20 June and invited groups and individuals to attend an Advisory Committee session to offer further oral evidence thereafter. Oral evidence sessions were recorded and [transcribed](#). A call for evidence was also open from 19 May to 20 June posing the same questions (see Annex D) as Professor Reid's invitations to ensure that as wide a range of views as possible were received.

- Principals and Vice Principals/Directors of Research and Enterprise at all 19 HEIs
- All Research Pool Directors
- Universities Scotland's Convener and Universities Scotland's Research & Knowledge Exchange Committee Convener
- Chair of Colleges Scotland
- College Principals Group
- Innovate UK
- The Royal Society of Edinburgh
- Innovation Centres CEOs and Chairs (encouraging Board members also)
- Innovation Centre Administration Hub Group
- All Industry Leadership Groups (Chairs and members)
- CBI Scotland
- Interface
- Scottish Government
- Scottish Enterprise
- Highlands and Islands Enterprise
- Scottish Funding Council

The Advisory Committee met on five occasions in Edinburgh. Interim findings were taken to SFC's Research and Knowledge Exchange Committee on 8 September and a meeting was hosted in the Royal Society of Edinburgh on 13 September, Chaired by RSE Vice-President, Prof Iain Gray, to act as 'critical sounding board' ahead of final reporting to SFC board on 23 September.

⁵ The [Innovation Centres Challenge Fund](#) had not progressed far enough to be included in this review.

⁶ *Business Engagement and Economic Impact Evaluation of the Innovation Centres Programme*, EKOS, Sept 2016

List of contributors

Written and oral evidence

- Scottish Government, Roddy Macdonald (Head of Innovation, Investment and Industries Division) [at time of contribution] and Dr Rebekah Widdowfield (Deputy Director, Higher Education & Learner Support Division) [at time of contribution]
- Scottish Funding Council, Director of Research and Innovation, Dr Stuart Fancey
- Scottish Enterprise, Dr Eleanor Mitchell (High Growth Ventures Director) and Jim Watson (Innovation & Enterprise Services Director)
- Highlands and Islands Enterprise, Charlotte Wright (Director of Business and Sector Development [at time of contribution])
- Interface, Director, Dr Siobhan Jordan
- Universities Scotland Convener (at time of contribution), Prof Sir Pete Downes
- Innovation Centres Admin Hub Group, Dr John Rogers
- University of Strathclyde, Prof David Littlejohn
- University of Glasgow, Prof Neal Juster
- University of Edinburgh, Prof Dave Robertson
- University of Heriot Watt, Prof Julian Jones
- University of Stirling, Dr John Rogers
- University of Aberdeen, Dr Liz Rattray
- Robert Gordon University, Prof Paul Hagan
- University of Dundee, Prof Tim Newman
- Queen Margaret University, Kim Gilchrist
- University of St Andrews, Prof Derek Woollins
- Scotland's Rural University College, Prof Geoff Simm
- Innovation Centres CEO Forum (all IC CEOs)
- Scottish Aquaculture IC CEO, Heather Jones
- Construction Scotland IC CEO, Stephen Good
- Stratified Medicine Scotland IC, Carol Clugston
- Industrial Biotechnology IC (IBioIC) CEO, Roger Kilburn
- CENSIS IC CEO, Ian Reid
- DataLab IC CEO, Gillian Docherty
- Digital Health and Care Institute IC CEO, Justene Ewing
- Oil and Gas IC Chair, Prof Paul de Leeuw
- Scottish Aquaculture IC, Stephen Cameron (SAIC Board member)
- Construction Scotland IC Chair, William McBride
- Stratified Medicine Scotland IC Chair, Dr David Sibbald
- IBioIC Chair, Ian Shott
- CENSIS Chair, Bob Downes

- DataLab Chair, Neil Logan
- Industry Leadership Group, Oil and Gas Chair, Melfort Campbell
- Industry Leadership Group, Chemical Sciences Scotland, Bob Tooze
- Macphie's of Glenbervie, Paul McKnight
- The Weir Group, Alan Bickley
- Xanthella, Douglas McKenzie
- Alan Sutherland, formerly of Marine Harvest

Written evidence only

- Universities Scotland
- SFC's Research and Knowledge Exchange Committee Chair, Prof Albert Rodger
- Glasgow School of Art
- Edinburgh Napier University
- Scottish Research Partnership in Engineering (Research Pool)
- Energy Technology Partnership (Research Pool)
- Glasgow Research Partnership in Engineering (Research Pool)
- Marine Alliance for Science and Technology for Scotland (MASTS, Research Pool)
- Scottish Imaging Network: A Platform for Scientific Excellence (SINAPSE, Research Pool)
- Scottish Universities Physics Alliance (SUPA, Research Pool)
- Knowledge Transfer Partnership, West of Scotland
- Oil and Gas IC CEO, Ian Phillips
- Scottish Aquaculture IC Chair, Jack Perry
- Digital Health and Care Institute Chair, George Crooks
- Scottish Lifesciences Association
- Tourism Leadership Group, Scottish Tourism Alliance Chair, Stephen Leckie
- Industry Leadership Group, Construction Scotland, Ed Monaghan
- Scottish Sea Farms, Jim Gallagher
- Scottish Salmon Producers' Organisation, Dr John Webster
- Scottish Shellfish Marketing Organisation, Stephen Cameron
- The Royal Society of Edinburgh
- Innovate UK
- National Centre for Universities and Business, Growing Value Scotland Task Force Final Report.

A number of contributions were received after the closing date for evidence, these were used where possible but inevitably they were not given same weight as evidence received by the deadline (20 June).

- Email exchange with Scottish Lifesciences Alliance
- Scottish Enterprise additional information (July)
- Highlands and Islands additional information (July)

Letters/emails in support for future 'Sustainable Energy IC' – these were not reviewed by Professor Reid or Advisory Committee as outwith call for evidence timeframe.

- Letter from Scottish Renewables
- Letter from Claudia Beamish MSP
- Email from office of Alexander Burnett MSP
- Email from Ronnie Cowan MP
- Letter from Riverside Inverclyde
- Letter from Maree Todd MSP
- Letter from Matthew Crighton, LINK'S Economics Group

The Royal Society of Edinburgh hosted an event chaired by Prof Iain Gray on 13 September. This was to enable Prof Reid to present his findings to an informed audience and allow him to offer further context to SFC Board in September. This event did not contribute to the evidence received as part of the review process.

The attendees were:

- Professor Iain Gray, RSE Vice President (Business)
- Dr William Duncan, RSE, Chief Executive
- Dr John R Brown, RSE Business Innovation Forum
- Ms Shonaig Macpherson, RSE Business Innovation Forum
- Dr Jano Van Hemert, RSE Business Innovation Forum
- Mr Peter Barr, Barr Communications
- Professor Elise Cartmell, Scottish Water
- Mr Giles Huby, Copernicus Technology
- Mr Paul McGinness, Storm ID
- Mr Andrew Milligan, Standard Life Investments
- Professor Ian Underwood, University of Edinburgh
- Mr Geoff Wilcock, Openbrolly

Summary of Evidence

1 – Context for the Review.....	11-14
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1. Context for the Review

This review draws on the significant number of reports into business and university collaboration which have come before it particularly the recent National Centre of Universities and Business's Growing Value Scotland Taskforce report, 'The Step Change: Business-University Collaboration Powering Scottish Innovation'⁷ and 'The Dowling Review of Business-Universities Research Collaborations'.⁸

It is well documented that Scotland's productivity levels could be improved with Scotland ranking 19th out of 35 countries at the top of the OECD's⁹ third quartile. The Scottish Government has set a target for Scotland to rank in the top quartile for productivity against its key trading partners in the OECD by 2017.¹⁰

There is wide ranging evidence to support the proposition that a strong science base is valuable to a nation's economy. This is set out in 'The Economic Significance of the UK Science Base',¹¹ 'Why Should the Taxpayer Fund Science and Research?',¹² and 'Fixing the Foundations: Creating a More Prosperous Nation'.¹³ Scottish universities are high performers therefore there is a very good case for building stronger relationships between universities and businesses to increase productivity and bring about economic impact for Scotland and it is against this background that the Innovation Centres Programme was launched.

NCUB's 'The Step Change' sets out how Scotland's total research and development (R&D) spend as a percentage of GDP compares to the UK and to other countries (Fig. 1). The report further breaks this down to show spend across regions of the UK (Fig. 2) which also highlights how each R&D total is made up and what percentage is Business Enterprise R&D (BERD) and what percentage is Higher Education R&D (HERD).

⁷ *The Step Change: Business-University Collaboration Powering Scottish Innovation*, NCUB, May 2016

⁸ *The Dowling Review of Business-Universities Research Collaborations* (July 2015)

⁹ Organisation for Economic Co-operation and Development

¹⁰ <http://www.gov.scot/About/Performance/scotPerforms/purposetargets/productivity>

¹¹ *The Economic Significance of the UK Science Base*, Campaign for Science and Engineering, April 2014

¹² *Why Should the Taxpayer Fund Science and Research?*, NCUB, Prof Graeme Reid, December 2014

¹³ *Fixing the Foundations: Creating a More Prosperous Nation*, Presented to Parliament by the Chancellor of the Exchequer by Command of Her Majesty, July 2015

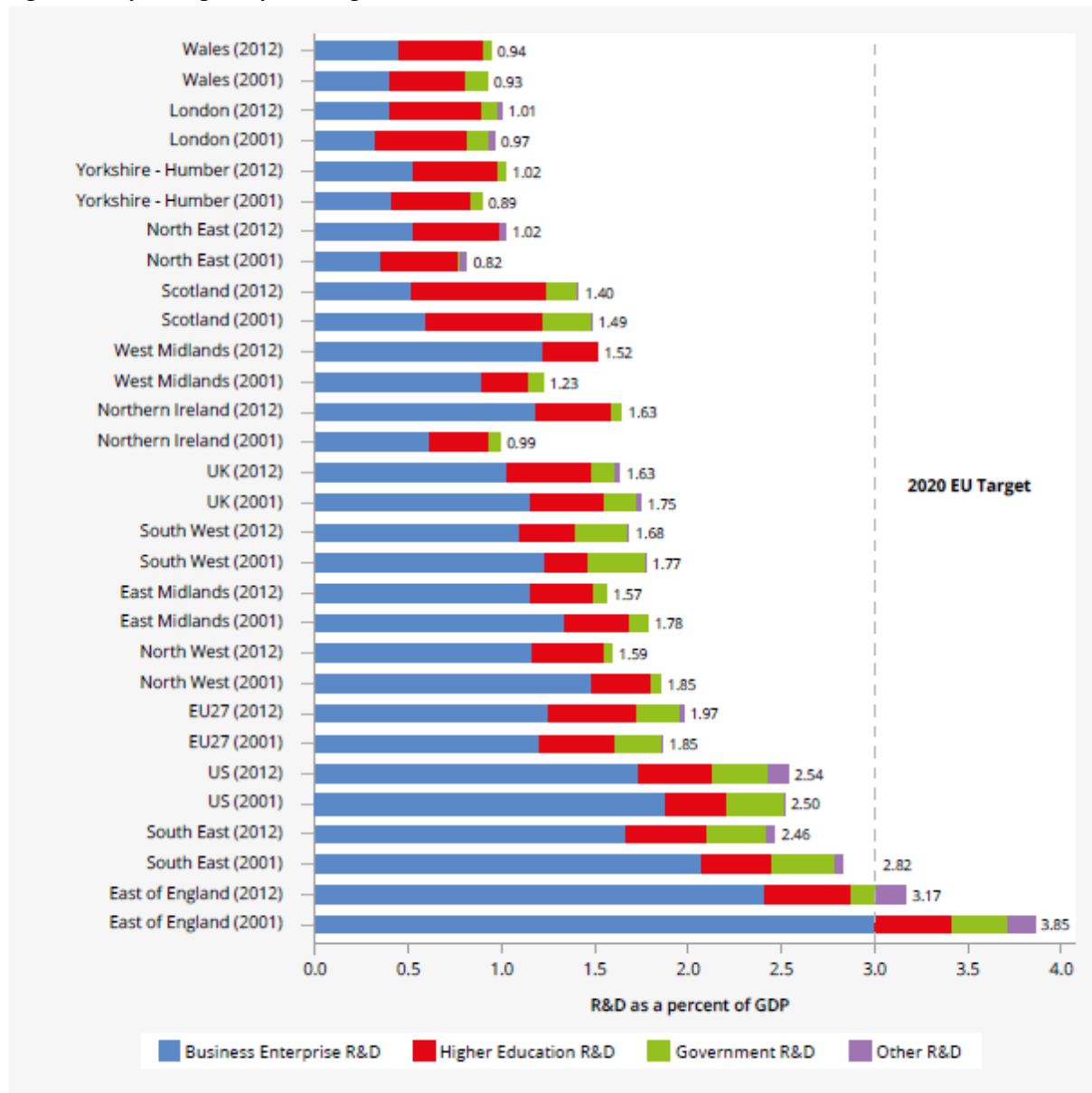
Fig.1: Total R&D (BERD + HERD + GovERD + other) as percentage of GDP

Country	1997	2012	% change
 Finland	2.71	3.55	31.0
 Sweden	3.47	3.41	-1.7
 Denmark	1.92	2.98	55.2
 Germany	2.24	2.98	33.0
 Slovenia	1.27	2.80	120.5
 France	2.19	2.29	4.6
 Belgium	1.83	2.24	22.4
 Estonia	0.57	2.18	282.5
 Netherlands	1.99	2.16	8.5
 EU27	1.77	2.08	17.5
 Czech Republic	1.03	1.88	82.5
 Ireland	1.27	1.72	35.4
 United Kingdom	1.73	1.72	-0.6
 Norway	1.63	1.65	1.2
 Scotland		1.59	
 Portugal	0.57	1.50	163.2
 Luxembourg		1.46	
 Hungary	0.71	1.30	83.1
 Spain	0.80	1.30	62.5
 Italy	1.02	1.27	24.5
 Serbia		0.97	
 Lithuania	0.54	0.90	66.7
 Poland	0.65	0.90	38.5
 Turkey	0.49	0.86	75.5
 Malta		0.84	
 Slovakia	1.08	0.82	-24.1

Source: Eurostat and GERD (2012).

The Step Change: Business-University Collaboration Powering Scottish Innovation, NCUB, May 2016 p.23

Fig.2: R&D spending as a percentage of GDP, 2001 and 2012



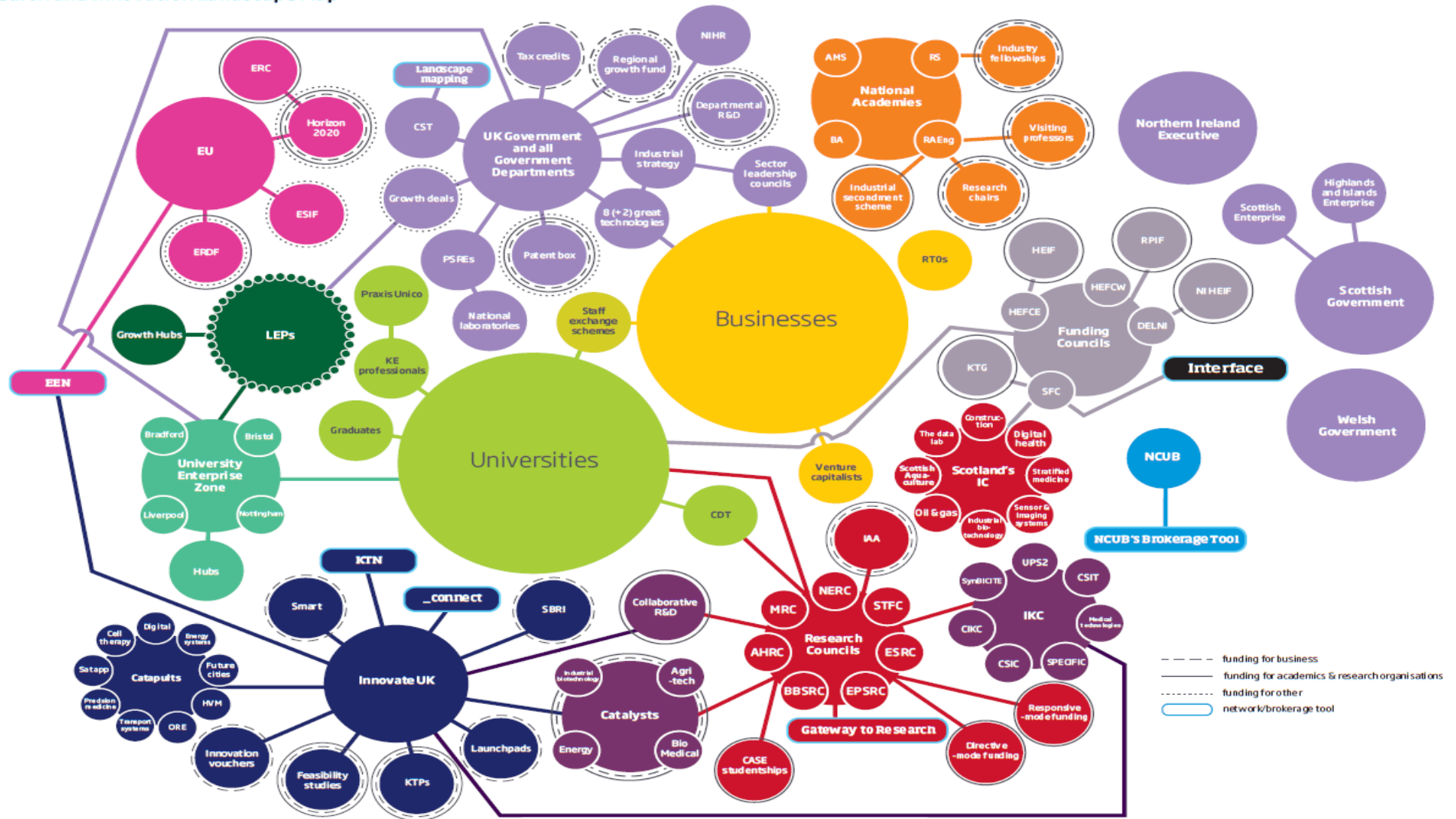
Source: Data from UK GERD and Eurostat. GDP revised to 2013. US/EU estimates revised to be consistent.

The Step Change: Business-University Collaboration Powering Scottish Innovation, NCUB, May 2016 p.24

These graphs highlight some issues for Scotland and the UK and offer context for many of the initiatives that exist to address these problems and improve business and university collaborations. Together these initiatives form a complicated and busy landscape which is captured well by Dame Anne Dowling (Fig.3).¹⁴ National innovation ecosystems tend to be complicated as they address complicated issues. These graphs and figures help to explain the context in which Innovation Centres were created and the landscape in which they operate.

¹⁴ *The Dowling Review of Business-Universities Research Collaborations* (July 2015) Figure 10

Fig. 3: The Dowling Review of Business-Universities Research Collaborations (July 2015)
Research and Innovation Landscape Map³⁷



2. Evidence Received

The review received 55 written submissions and interviewed 41 witnesses in oral sessions. An economic impact assessment¹⁵ was also undertaken by EKOS consultants (executive summary p29-32). This section provides a summary of some of the themes from that evidence.

The National Centre for Universities and Business's (NCUB) final Growing Value Scotland Task Force report, sets out the importance of university research in the context of economic growth observing that;

'The healthy research base of Scottish higher education means that there is a potential platform upon which to expand Scottish innovation. However, this new knowledge is not being absorbed by businesses in sufficient quantity or intensity'.¹⁶

The NCUB report goes on to conclude that while Scottish universities are 'highly successful' in attracting research grants and producing research outputs, more must be done to 'scale up and speed up' the ways in which this knowledge is leveraged into the Scottish economy.¹⁷

Is the original vision for the Innovation Centres programme current and correct?

"Using the Scottish university infrastructure, human resources and research excellence as a platform for collaborations across the whole of Scotland, Innovation Centres will create sustainable and internationally ambitious open communities of university staff, research institutes, businesses and others to deliver economic growth and wider benefits for Scotland."¹⁸

The evidence received was highly supportive of the Innovation Centres (ICs) as a concept. Nearly all contributors agreed that the vision was still current and correct with many emphasising that it was even more important now than at its inception. Many commented that the vision must continue to allow the ICs to be flexible and agile in order to respond to industry needs and priorities. The Innovation Centres CEO Forum's joint submission 'strongly commended the Scottish Funding Council for the vision' and for allowing a 'stratified' approach to innovation which allows 'distinctive needs to be met in a customised way'.¹⁹ Some argued that the vision could be better articulated and could go further in describing where we expect to see

¹⁵ [Business Engagement and Economic Impact Evaluation of the Innovation Centres Programme](#), EKOS, September 2016

¹⁶ *The Step Change: Business-University Collaboration Powering Scottish Innovation*, NCUB, May 2016, p.28

¹⁷ *The Step Change*, NCUB, May 2016, p.8

¹⁸ [Innovation Centres: Call for Proposals](#)

¹⁹ Written Evidence submitted by IC CEO Forum, June 2016

ICs delivering added value compared with other mechanisms for supporting innovation based on industry-academic interaction.

Professor Sir Pete Downes stressed that it was ‘vital’ that we understand how ‘open communities’ will deliver economic growth and wider benefits for Scotland. This understanding is needed in order to facilitate knowledge exchange mechanisms within collaborative communities which in turn ‘help to unlock IP generated in Scotland into Scottish economic outcomes, optimising industry pull vs research push through iterative virtuous circles’.²⁰

The Co-Chair of the Innovation Scotland Forum, Melfort Campbell, described Scottish Government policy as ‘very focused on innovation without articulating what is meant’. He suggests greater understanding of what needs to be achieved in different areas and that the IC’s role ‘needs consideration and clear articulation’ as they need to know which part of the policy landscape they have a responsibility for and what contribution they are expected to make. He suggests that the vision could help to describe the ways which ICs could make Scotland’s businesses more ambitious and more likely to seek new opportunities which in turn will make them ‘more demanding of and dependent on our academic base’.²¹

Calls for clarity and clear distinction of roles were suggested by quite a few contributors while pointing out that ICs were not attempting to solve innovation in Scotland which is a complex issue with no simple fix.

Are ICs delivering against the vision?

Most contributors acknowledged the relative infancy of the programme and the difficulties in assessing delivery against the vision at this stage. Universities Scotland called for the review to undertaken in the spirit of ‘continuous improvement’.²²

Contributors frequently referenced the diversity of the ICs in terms of priorities, successes and maturity. The ICs are part of a programme, but the nature of each IC is quite distinct in a number of ways. Such as:

- The sector(s) they face – whether focussed on one sector, emerging sectors or on multiple sectors;
- The degree to which public sector organisations are key “beneficiaries” and so there may be societal as well as economic benefits;

²⁰ Written evidence submitted by Universities Scotland Convener, June 2016

²¹ Written evidence submitted by Melfort Campbell, Oil and Gas ILG Chair, June 2016

²² Written evidence submitted by Universities Scotland, June 2016

- The extent to which they support the widespread adoption of new platform technologies or are focussed on a specific niche in which there is or could be “smart specialisation” within the Scottish economy; and
- The degree to which they build on the existing Scottish company base and/or provide opportunities to seek new foreign direct investment (FDI).

The potential for operational diversity of ICs was built into the IC programme from the start, with SFC asking that each define its own internal governance and ways of interacting with industry, acting with the support and guidance of the administrative hub university and with the intent of meeting the SFC objectives for the overall programme. The operational diversity is therefore both a natural consequence of the way the Centres were established, and a reasonable approach to the problem of accelerating innovation in diverse sectors.

The NCUB Growing Value Scotland final report concluded that ‘the Centres should reflect the very different innovation styles of each sector. Otherwise they risk using inappropriate models and leveraging unsuitable resources, including expertise, and the wrong kinds of financial support’.²³

This diversity is a clear strength of the programme and much of the evidence suggests that while young, the ICs are beginning to deliver against the vision with one or two areas suggested for improvement. It is widely acknowledged that ICs linking multiple universities to industry in an effective way is a very difficult and complex task but one in which Professor Albert Roger, Chair of SFC’s Research and Knowledge Exchange Committee, believes they are achieving by building on the success of Scotland’s research pools. He states that they are already ‘proving their worth and collaborating across ICs in vibrant ways’.²⁴

It was also widely acknowledged that culture change takes time and that it is too early to determine how well the programme is delivering in that respect although there are encouraging signs. Vice Principal (VP) of Research at Robert Gordon University (RGU), Professor Paul Hagan described some ICs as still being ‘academically driven’ but that this had been partly expected and welcomed in order to illicit the ‘change in culture of the interactions between business and universities’ and that industry was not necessarily ‘up to driving the programme at the beginning’ with some industry people needing to be convinced that they could.²⁵

Some highlight the long recognised problem of low Business Expenditure in R&D (BERD) in Scotland and the role ICs have in helping improve this. Professor Steve Beaumont, Director of Glasgow Research Partnership for Engineering (GRPE)

²³ *The Step Change*, NCUB, May 2016 p.15

²⁴ Written evidence submitted by Prof Rodger, Chair of SFC’s RKEC, June 2016

²⁵ Oral evidence to Advisory Committee, 29 June 2016

research pool described the market-failure in research-led innovation as ‘endemic’. He described the role of ICs as ‘vital’ because ‘research funders do not operate outside low ‘Technology Readiness Levels’ (TRL) and companies generally will not invest in unproven technologies’. He highlighted the importance of the ICs as they ‘operate in the gap which is unlikely to be closed by the private sector’.²⁶

The IC programme aims to be pan-Scotland. Charlotte Wright, Director of Business and Sector Development at Highlands and Islands Enterprise described ‘the better engagement of UHI (University of the Highlands and Islands) in relation to ICs’ as an area she would like to see improved. She described how current engagement levels were ‘more a function of geography rather than the model of UHI’ and that there was a lot of potential to be explored. She acknowledged that ‘the challenge of not seeing as much involvement of UHI in ICs has to do with them building their own academic research and model’ as well as geography.²⁷

In terms of businesses in the region having involvement with the programme it was acknowledged that this is largely driven by industry demand but Highlands and Islands companies may find it easier to engage with the programme if engagement events took place outwith the central belt. There may also be a further role for the region if the IC programme reached further into Further Education (FE) colleges and skills provision as 9 out of the 13 University of Highlands and Islands’ partners are FE colleges.

Geographical issues were cited as a reason for lack of engagement with some universities. Professor Derek Woollins from the University of St Andrews said that companies would not travel extra distances unless for ‘outstanding expertise’. He said that the ICs had ‘largely passed them by’ and that he not seen a ‘reduction in the activation barrier’ between academic staff and industry as a result of the ICs. He felt this was down to geographic disadvantage not helped by the eight ICs not ‘matching up’ with the particular expertise of their academics.²⁸ Other Higher Education Institutions (HEIs) had a different experience: Robert Gordon University highlighted several interactions with at least four ICs and their VP of Research, Professor Paul Hagan, described geography as ‘not an issue’.²⁹ Dr John Rogers, Director of Research and Enterprise at University of Stirling argued that we must be ‘very careful about segmenting this (IC programme) endeavour’ and that ‘integration and coherence is key in getting reach right across the country’.³⁰

Some of the non-administrative hub institutions found ICs difficult to engage with. Kim Gilchrist, Head of Research and Knowledge Exchange Development at Queen

²⁶ Written evidence submitted by Prof Beaumont, Director of GRPE, June 2016

²⁷ Oral evidence to Advisory Committee, 1 June 2016

²⁸ Oral evidence to Advisory Committee, 1 June 2016

²⁹ Oral evidence to Advisory Committee, 29 June 2016

³⁰ Oral evidence to Advisory Committee, 29 June 2016

Margaret University (QMU) suggested that there was a ‘lack of visibility around the achievements of the ICs’ and that the programme had ‘too narrow a definition of innovation based around technology’ with opportunities around ‘service innovation’ as yet unexplored. She went on to say that QMU’s ‘research tends to be very applied and not routed in areas they (ICs) operate in’.³¹

Simon Bright, Head of Research Services at the University of Abertay highlighted his disappointment in the lost opportunities for ICs to bring along businesses to events to learn more around what academics were doing in order for them to better understand the university’s offering.³²

Professor Tim Newman, VP of Research at University of Dundee outlined the resources issue around collaboration and the need for university researchers to prioritise their work and collaborations with REF impact in mind which does not always marry up with shorter term industry needs.³³ Professor Paul Hagan (RGU) acknowledged that RGU were not a research-intensive institution but said they were actively ‘looking for opportunities in areas where they had ‘something to offer’ and have been ‘reasonably effective’ so far.³⁴

The admin hub institutions had a more positive experience of the IC programme and described greater engagement. Dr John Rogers (University of Stirling) stated that the ICs ‘enabled (universities and businesses) to accelerate, broaden and deepen existing lines of R&D’. He welcomed the ‘greater pace and scale’ and described the ‘acceleration of existing relationships (at the outset) as inevitable’ as they could not start with ‘a blank sheet of paper’. Dr Rogers called for ICs to ‘stimulate more of that enquiry from business on longer time scales that starts to ask new and interesting questions of researchers’.³⁵ Dr Liz Rattray from University of Aberdeen agreed that ICs could and should start to ‘inform research strategies’ of universities.³⁶

Both admin hub and non admin hub HEIs hoped for bigger scale, open innovation projects in the future as the ICs mature. It was suggested by Simon Bright (University of Abertay) that ICs respond effectively to specific industry needs for immediate technical solutions and are less effective in engaging with business to develop long term priorities to help key sectors of the Scottish economy to adapt to major structural changes. He suggested that HEIs could play a prominent role in facilitating such a strategic discussion between universities and business.³⁷

³¹ Oral evidence to Advisory Committee, 29 June 2016

³² Oral evidence to Advisory Committee, 29 June 2016

³³ Oral evidence to Advisory Committee, 29 June 2016

³⁴ Oral evidence to Advisory Committee, 29 June 2016

³⁵ Oral evidence to Advisory Committee, 29 June 2016

³⁶ Oral evidence to Advisory Committee, 29 June 2016

³⁷ Oral evidence to Advisory Committee, 29 June 2016

The Royal Society of Edinburgh (RSE) highlighted the perception that industry engagement with ICs was not at the level envisaged and that several ICs can appear to be dominated by an academic research culture. They argued that the ‘overall business drive and support for ICs was not seen as being as strong as it is in Catapult centres’.³⁸ However, Professor Steve Beaumont, Director of Glasgow Research Partnership for Engineering, stressed that ICs have ‘the capability to shape research outputs to better match the needs of industry and in the long term provide an informed steer to the research community’. He went on to argue that ICs are doing a better job than Catapults of linking back to academia and cautioned against independent organisations following the Fraunhofer model as this may undermine the objective of connecting industry to the research base.³⁹

Evidence suggests that many industry led projects are indeed challenging and stimulating as intended in the vision for the programme and there are many individual case studies highlighting the value and potential of these projects. Questions were raised around whether impact and income were fitting together well and whether chasing income happens at the expense of impact.

Chief Executive Officer of Scottish Universities Physics Alliance (research pool) Professor Alan Millar, argued that there are opportunities for ICs to work more closely with research pools, as ‘the international reach of research within pools could be exploited such that pools and ICs working in unison could deliver the internationally ambitious communities called for in the vision’.⁴⁰ The ICs have put resources into internationalisation – both on their own behalf and more widely on behalf of SFC in improving the reputation of the Scottish Innovation ecosystem abroad. There is much to be gained from understanding what innovation is taking place elsewhere and then adapting it for implementation in Scotland. Alongside this, there is also an important goal in supporting Scottish Development International in opportunities for foreign direct investment, which could attract companies with knowledge-based innovation activities. Bob Tooze, Chair of Chemical Sciences Scotland Industry Leadership Group (ILG) believes we as a country are ‘missing a trick’ in not using our ‘strong science base’ in a ‘more focused way’ to act as a better magnet for inward investment.⁴¹

To what extent do the priorities of Innovation Centres reflect those determined by industry?

Each IC has distinct relationships with industry, determined by the sector(s) they support, how cross-cutting they are and how established the sector itself is. As

³⁸ Written evidence submitted by the Royal Society of Edinburgh, June 2016

³⁹ Written evidence submitted by Prof Beaumont, GRPE, June 2016

⁴⁰ Written evidence submitted by Prof Millar, SUPA, June 2016

⁴¹ Oral evidence to Advisory Committee, 11 August 2016

diverse as each IC is, it is clear from the evidence received that the priorities of each IC are determined by industry and the pace of activity is determined by the readiness of industry to adopt new technologies and different ways of working. The Advisory Committee was impressed by the strength of industry leadership evident from witnesses at oral evidence sessions. Some ICs face industry directly and their “priorities mirror industry’s”.⁴² One IC was described by a business person as having emerged as the “go-to place for industry and is industry responsive and efficient at getting things done”.⁴³ The NCUB’s Growing Value Scotland final report states that the ICs should be capable of “evolving and developing as the sectors themselves morph under the influence of markets”.⁴⁴

The Scottish Lifesciences Association argued that ICs were ‘too academically orientated in organisation and operation’ and that some had become large organisations without the agility industry requires.⁴⁵ Melfort Campbell, Co-Chair of Innovation Scotland Forum and Chair of Oil and Gas Industry Leadership Group (ILG) described the key strength of ICs as being their ‘business engagement and drive’ as it was not enough to fill order books with companies already active in innovation and technology development as ‘those who do not see themselves as innovators will not feel they are constituents’.⁴⁶ He and others highlight that stimulating the business base to be more innovative is really difficult but perhaps terms such as ‘innovation’ are disenfranchising in themselves and more business friendly definitions should be used.

This review received evidence that Interface was an underutilised resource by the ICs, largely because the ICs have wanted to establish their own capacity and capability. Some contributors highlighted the risks of duplication if ICs and Interface are not closely aligned as some ICs feel they have a role in stimulating initial short term collaborations in order to develop longer-term strategic partnerships between researchers and companies. Professor Paul Hagan (RGU), pointed out that ‘ICs can do the same thing as Interface (early brokerage) but that the key difference is they are looking at the bigger picture rather than the specific problem, they need to be concerned with the industry challenges and look through that lens’.⁴⁷ The EKOS report argues that as ICs mature there will be less risk of duplication in brokering short term collaborations.⁴⁸ However, it recommends clearer methods of referrals (both ways) and transparency should be sought.⁴⁹ The Innovation Centres Admin

⁴² Written evidence submitted by Dr John Webster, Scottish Salmon Producer’s Association, June 2016

⁴³ Written evidence submitted by Jim Gallagher, Sea Life Farms, June 2016

⁴⁴ *The Step Change*, NCUB, May 2016 p.15

⁴⁵ Written evidence submitted by Scottish Lifesciences Association, June 2016

⁴⁶ Written evidence submitted by Melfort Campbell, June 2016

⁴⁷ Oral evidence to Advisory Committee, 29 June 2016

⁴⁸ *Business Engagement and Economic Impact Evaluation of the Innovation Centres Programme*, EKOS, September 2016, p.ii

⁴⁹ *Business Engagement and Economic Impact Evaluation of the Innovation Centres Programme*, EKOS, September 2016, p.121

Hub Group argued that the complicated innovation landscape in Scotland would be improved if remits were more distinct and more clearly defined.⁵⁰

One IC Chair stressed that the community of Innovation Centres in themselves has allowed CEOs and Chairs to hear from colleagues across different sectors and that this has been ‘hugely powerful’ and allowed them to learn and ‘adapt and adopt from each other straightaway’.⁵¹ Douglas McKenzie, of Xanthella Ltd, described ‘meeting other companies’ as ‘one of the most useful things’ Innovation Centres engagement has brought his company.⁵²

It was noted by the Advisory Committee that there was little reference in written or oral evidence to whether ICs were contributing to Scotland transitioning to a low carbon economy. This was one of six high level principles used to assess bids in the original call for proposals. The Committee has made no assessment against this aim.

How has the relationship between business and academia evolved since the creation of Innovation Centres Programme?

The NCUB’s Growing Value Scotland Taskforce’s final report recommended that ‘universities should be explicit about how they incentivise academics to engage with industry and should develop a culture in which many more academics are prepared to work with business’. The report also recommends that ‘businesses must communicate more clearly with universities and scientific institutions about their market opportunities and challenges, and highlight the ways in which universities could enable them to compete more effectively, both locally and globally’.⁵³

SFC’s Director of Research and Innovation, Dr Stuart Fancey, described the IC programme as being primarily focused on economic and social impacts, with the secondary impact of ‘trying to help the academic research community to be given challenges, goals, interactions and partnerships from the commercial world to maintain (our) world leading research base’.⁵⁴

It was acknowledged that changes in culture can take a very long time to be realised. Professor Sir Pete Downes highlighted the ‘fundamental issue’ of the ‘need for mutual understanding and respect for the differing cultures and business models which industry and Higher Education (HE) operate under’.⁵⁵ Bringing an industry-led programme into universities with well-established practices was always going to bring challenges and possibly culture clashes which could lead to positive change.

⁵⁰ Written evidence submitted by IC Admin Hub Group, June 2016

⁵¹ Oral evidence to Advisory Committee, 27 July 2016

⁵² Oral evidence to Advisory Committee, 11 August 2016

⁵³ *The Step Change*, NCUB, May 2016 p.14

⁵⁴ Oral evidence to Advisory Committee, 1 June 2016

⁵⁵ Oral evidence to Advisory Committee, 29 June 2016

Innovation Centres CEOs highlighted the importance of the skills programme and the growing cohort of business literate graduates who ‘one by one help to create step-change in innovation culture in Scotland’ through ‘specific projects, greater visibility of applied research and through communicating the advantage of collaborative innovation to the wider academic and business communities’. IC CEOs see this as contributing to an important generational change.⁵⁶

One IC CEO described ‘attitudinal hurdles’ at the outset of the programme based around ‘industry’s perception and awareness of what Higher Education (HE) can do for them’ and equally ‘HE’s perception on why they would put priority on applied research rather than purest’ research funded by Research Councils. They described the role of ICs as ‘catalytic in improving the conversation’ between universities and industry and bringing about positive culture change.⁵⁷

One IC Chair described how the Innovation Centres programme provides industry with “thinking outside their usual paradigm” and said that the ability to leverage expertise from our universities was a huge advantage to Scottish businesses. He stressed that the “benefit (of the IC programme) is that universities are different from industry” and that their “culture is different from industry’s”. He argued that these differences were a major benefit and making the “relationships between universities and businesses more cohesive was almost a project in itself” and something that will keep improving the more they collaborate.⁵⁸

Dr John Webster, Technical Director at Scottish Salmon Producer’s Organisation called for ‘renewed energy to be devoted to broadening the number of Scottish academics actively involved in developing new ideas and in conducting innovative research designed to improve industry performance and support economic development’. He was concerned that ‘many players with potential to contribute have been slow to acknowledge and take up the opportunities created’.⁵⁹

Some institutions and the Knowledge Transfer Partnership network said that ICs must have clear channels to communicate intelligence they gather from businesses back to their university stakeholders in order to ‘identify potential research areas of interest or future skills required’.⁶⁰ Professor Sir Pete Downes said that some ICs do not want to share information but want access to details of academic expertise so they can match up university and industrial partners themselves which seems at odds with the aim of creating ‘open communities’ and ignores two aspects of existing resource – that being the university’s own innovation services who know their own academic communities well and Interface who broker relationships between

⁵⁶ Written evidence submitted by IC CEO Forum, June 2016

⁵⁷ Oral evidence to Advisory Committee, 27 July 2016

⁵⁸ Oral evidence to Advisory Committee, 27 July 2016

⁵⁹ Written evidence submitted by Dr John Webster, Scottish Salmon Producer’s Organisation, June 2016

⁶⁰ Written evidence submitted by Dr Alasdair Cameron, KTP West of Scotland, June 2016

universities and businesses.⁶¹ It was suggested by some that ICs are explicitly charged with communicating intelligence they have gathered back to universities.⁶²

Some in industry still get a sense of many academics wishing to pursue research where they have an established track record in areas that are of interest to them, rather than their research following the need to address practical challenges and solve real industry problems. This may not be an easy transition as according to Operations Director of Marine Alliance for Science and Technology for Scotland (MASTS research pool) Dr Mark James, 'most of what industry wants and needs is relatively short term and highly applied' so we need ICs 'for both economic benefit and academic pooling for long term development of knowledge and skills'.⁶³

Dr John Rogers highlighted that the 'vast opportunity was as yet undiscovered – true innovation, true growth, is found in those things we do not currently do' and that 'future business can be developed collectively rather than solely on challenges known'. IC engagement events have been well received and valuable in helping work towards 'open communities' as this has allowed HEIs to offer Industry the longer term view with potentially substantial rewards.⁶⁴

Melfort Campbell stressed that ICs have an important 'role in helping companies to expand their horizons'. He calls for efforts 'to re-inject original clarity' around this being industry-led and that this message must get out to academics as currently 'our research agenda has absolutely no real, sensible links to our industry agenda'.⁶⁵

Douglas McKenzie, of Xanthella Ltd., highlighted the lack of an 'industry strategy' and argued that the 'cohesion of industry thinking' could then allow our academic base to be mapped on to these priorities.⁶⁶ Bob Tooze, Chair of Chemical Sciences Scotland, Industry Leadership Group, argued that there was no such thing as 'industry' and that this simply refers to groups of companies all with 'needs at different levels'.⁶⁷ He argues that when academics asked what industry needs or wants no one can say. Alan Sutherland, formerly of Marine Harvest described the original misconception from some in industry around ICs being just project funding but that many now were beginning to see them as a 'catalyst' for industry and offering an 'enabling process to collaboration'.⁶⁸ Some industry representatives argued that the role of ICs were still not fully understood by many but that there was a role for industry in helping ICs find their USP (unique selling point). Alan Bickley of

⁶¹ Written evidence submitted by Universities Scotland Convener, June 2016

⁶² Written evidence submitted by the University of Strathclyde, June 2016

⁶³ Written evidence submitted by Dr James, MASTS, June 2016

⁶⁴ Oral evidence to Advisory Committee, 29 June 2016

⁶⁵ Oral evidence to Advisory Committee, 11 August 2016

⁶⁶ Oral evidence to Advisory Committee, 11 August 2016

⁶⁷ Oral evidence to Advisory Committee, 11 August 2016

⁶⁸ Oral evidence to Advisory Committee, 11 August 2016

the Weir Group said ‘more publicity on what the ICs could do (for industry) would be very welcome’.⁶⁹

How effective and proportionate has the oversight of Innovation Centres been?

From the evidence received by this review, oversight of the programme from the partners (SFC, SE and HIE) is mainly considered appropriate and effective. This oversight was described as being flexible enough so as not to stifle or interfere with industry-led IC boards and CEOs in the delivery of their strategy. One IC CEO described this as ‘an appropriate balance of freedom to operate and accountability’.⁷⁰ Vice Principal for Research at Scotland’s Rural University College, Professor Geoff Simm described the IC he has sight of as having ‘very strong governance’ and as showing ‘very strong industry leadership’.⁷¹

Jim Gallagher, Managing Director of Scottish Sea Farms, described the current governance arrangements as ‘unsatisfactory and confusing’ as some industry members do not always understand why the ICs are not legal entities but rather ‘projects hosted by universities’.⁷² It has been argued by some that this limits agility and significant delays can be caused by university processes, which is detrimental to innovation. One IC Chair described current governance arrangement as ‘appropriate’ but there may be a ‘need to evolve in the next phase of development’.⁷³

Scottish Funding Council’s Director of Research and Innovation, Dr Stuart Fancey, described the policy and practical reasons for the current governance arrangements in his submission. He highlighted that SFC exists to fund universities and colleges so being able to fund ICs through the university that hosts them was pragmatic and necessary. He goes on to describe the more important policy reason for positioning ICs inside admin hub universities as this placed “industrially-led culture foursquare into the university setting” and set “universities involved (not just the admin hub universities) a challenge to adapt practices, assumptions and behaviour to suit these new ‘alien’ entities”. He stressed that “this unsatisfactory governance arrangement is highly satisfactory”, for many practical and policy reasons. He argued that nearly all problems which arise are within the capacity of the IC Board and management to solve and that when problems arise which expose the limits of the power of the Board then SFC and the admin hub university need to address those challenges which they have in the past and will again in the future.⁷⁴

⁶⁹ Oral evidence to Advisory Committee, 11 August 2016

⁷⁰ Written evidence submitted by The DataLab, June 2016

⁷¹ Oral evidence to Advisory Committee, 29 June 2016

⁷² Written evidence submitted by Jim Gallagher, Scottish Sea Farms, June 2016

⁷³ Oral evidence to Advisory Committee, 27 July 2016

⁷⁴ Written evidence submitted by Dr Stuart Fancey, SFC, May 2016

Innovation Centres do not currently have a distinct legal identity: they are – from a legal perspective - part of their hub university. In their evidence to the review, some ICs reported a desire to review other forms of organisation that would give them a distinct legal identity. Catapult centres have a variety of models, with some based at a university and others being independent organisations. As expressed to the review, the main reasons for considering a separate legal status are related to their ability to access funding for innovation activities that do not (necessarily) involve Scottish universities or the college sector, and to be able to speed up procurement and other administrative activities.

Vice Principal of Research at Heriot Watt University, Professor Julian Jones, commented that ‘we have seen much more of SFC in this (IC programme) than of the partners, certainly in terms of the operations which at times poses difficulties’. He described the relationship between SFC and the universities as ‘well-established and understood’ but at times ‘quite bureaucratic’ due to SFC’s responsibilities to Scottish Government and the universities which do not ‘exactly resonate with the mission of the ICs’ and that it would become ‘more resonate if relationship with other bodies (SE and HIE) was more symmetrical’.⁷⁵

Executive Dean of Science at the University of Strathclyde, Professor David Littlejohn, described the levels of support from SFC and universities at the lower end of technology readiness levels as ‘perfectly reasonable’ and welcomed the Innovation Centres’ aim of assisting in the mid-range of that scale. However, he highlighted that the top level of that scale needs thought as we ‘haven’t embraced enough of how enterprise agencies can support companies when trying to make transition up the scale’ which has resulted in nearly all IC project funding being university-based and supporting academic activities. He called for a ‘parallel programme available at the right time for companies, particularly SMEs so that there is an integrated approach of funding of good ideas that have been developed through ICs to help companies then make use of those’. He suggested that this is an area we should consider when thinking about ‘where each agency comes in as partners’.⁷⁶

Douglas McKenzie, of Xanthella Ltd. and member of an IC Board commented that ‘there is clearly a limitation that ICs can only fund research in universities’ and that there ‘needs to be a mechanism that would allow these organisations (SE and HIE) to co-fund’.⁷⁷

On the Monitoring and Evaluation Framework (MEF) some industry voices felt the reporting requirements were a little excessive with quarterly reports being too frequent and potentially getting in the way of core business. Some argued that the

⁷⁵ Oral evidence to Advisory Committee, 29 June 2016

⁷⁶ Oral evidence to Advisory Committee, 29 June 2016

⁷⁷ Oral evidence to Advisory Committee, 11 August 2016

‘metrics-based approach to reporting’ had ‘pushed ICs towards project activity and further away from the wider vision’.⁷⁸ The EKOS study found that ‘consistency of reporting is patchy and targets set within the MEF do not always match back to those articulated in Business Plans either because they are expressed in different ways or because they have changed’.⁷⁹

EKOS concluded that the general oversight of the Programme appeared to be ‘thorough’ but that there ‘are issues with the MEF and the extent to which it is fulfilling its purpose as a means of tracking performance’.⁸⁰ EKOS found that ‘target setting and reporting is inconsistent and patchy across the Programme’ and that their review of the MEF data ‘found errors and inconsistency between different sets of targets as well as large areas of the Framework that remain unpopulated’. They stressed that while they might expect less in the way of data on outcomes and impacts at this stage, these issues were not restricted to those parts of the MEF.⁸¹

Suggestions for the evolution or future direction of the Innovation Centres Programme

The most consistent message from nearly all contributors was that it was imperative for a clear, detailed commitment of long running public support to be given to the programme to allow it the space to continue to mature and to fully realise opportunities.

Some felt that the current funding arrangements needed to be addressed as having only one principal funder weakened the programme and did not allow flexibility. Dr John Webster from Scottish Salmon Producer’s Organisation thought this ‘may prevent other willing players from entering the arena’.⁸² Innovation Centres CEOs and Chairs expressed a wish for greater access to enterprise agency funding and ‘a deeper financial partnership through explicit enterprise agency commitments to core and project funding with each IC and with the programme as a whole’.⁸³ Improved integration of ICs with research base and other support agencies would also be welcomed.

Scottish Government’s Deputy Director for Higher Education, Dr Rebekah Widdowfield, described how the Scottish Government appreciates that initiatives like Innovation Centres ‘are not going to deliver change overnight’ and that they must be

⁷⁸ Written evidence, Heriot Watt University, June 2016

⁷⁹ *Business Engagement and Economic Impact Evaluation of the Innovation Centres Programme*, EKOS, September 2016, p.15

⁸⁰ *Business Engagement and Economic Impact Evaluation of the Innovation Centres Programme*, EKOS, September 201, p.108

⁸¹ *Business Engagement and Economic Impact Evaluation of the Innovation Centres Programme*, EKOS, September 201, p.108

⁸² Written evidence submitted by Dr John Webster, Scottish Salmon Producer’s Association, June 2016

⁸³ Written evidence submitted by IC CEO Forum, June 2016

given time. However, she highlighted that we cannot ‘assume that the state will continue to fund (ICs) forever and at the same level’. She described how this is actually ‘quite risky’ if the main funder is and remains the Scottish Government as ICs should start to be ‘seen as something of value to the business community’ and hopefully over time they could ‘diversify their sources of income’.⁸⁴

One IC Chair raised a concern around where the next Innovation Centres were coming from and stressed that the ‘innovation piece is too important’ not to have ‘systematic rigour’. He described how the goodwill of individuals played a key role in the creation of ICs and that this was ‘lucky’ in many respects. He stressed that we (in Scotland) need to consider more generally what else we are trying or doing and not leave progress down to luck or goodwill. He argued that if we are not doing these things then we should ‘fear for the long term competitiveness of the country’.⁸⁵

Greater clarity on roles of organisations would be well received. The IC Admin Hub Group suggested ICs should have an explicit role in deploying their collaborative funding to escalate innovation activity towards larger sources of funding and that they should be differentiated from other players in Scotland’s innovation landscape.⁸⁶ Initial fears of overlap with Catapult Centres have proven to be unfounded as described by Ruth McKernan, Chief Executive of Innovate UK, as ‘ICs have a stronger academic focus and emphasis on encouraging and forming business-university links and collaborations’. Dr McKernan also attributed this lack of overlap as a result of discussion and consultation between partners (SFC, SE and HIE) and Innovate UK at the outset of the programme.⁸⁷

Some have asked whether the balance between infrastructure and project funding is correct and whether money can be saved on back office costs perhaps by ICs sharing this resource where possible.⁸⁸ The EKOS study calls for closer examination of the ‘balance of resources between core/overhead costs and projects investment’.⁸⁹

The role of Further Education (FE) colleges in the IC programme needs to be explored and well defined as there is clear potential in not just skills but also with the strong links many colleges have with their local business community. The Advisory Committee was disappointed not to receive any direct evidence from the FE college sector.

⁸⁴ Oral evidence to Advisory Committee, 11 August 2016

⁸⁵ Oral evidence to Advisory Committee, 27 July 2016

⁸⁶ Written evidence submitted by IC Admin Hub Group, June 2016

⁸⁷ Written evidence submitted by Dr Ruth McKernan, Innovate UK, June 2016

⁸⁸ Written evidence submitted by Heriot Watt University, June 2016

⁸⁹ *Business Engagement and Economic Impact Evaluation of the Innovation Centres Programme*, EKOS, September 2016, p.120

3. Business Engagement and Economic Impact Evaluation of the Innovation Centres Programme by EKOS Ltd

Executive Summary

An evaluation of the Innovation Centres (IC) Programme was conducted by EKOS, and was aimed at assessing the effectiveness of the business engagement methods developed by the Centres and the potential economic impacts achieved to date and forecast for the future. The evaluation combined analysis of background documentation and performance data with primary research supported by businesses, Innovation Centre staff, universities and a range of other stakeholders.

General Findings:

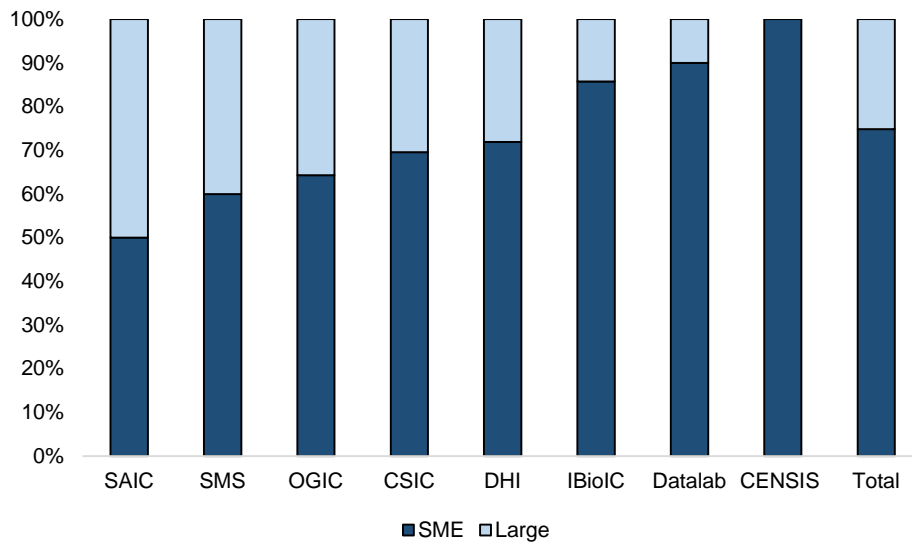
- There is a clear rationale for the IC Programme, and the ICs are addressing known market failures and barriers to effective business and university collaboration;
- The absence of targets for the Programme as a whole is a gap, and should be addressed such that overall performance can be assessed against expectations;
- Performance as measured by the Monitoring and Evaluation Framework (MEF) suggests good progress on business engagement with project pipelines developing, but little in the way of outcomes or impacts have been reported as yet. More consistent application of the MEF is required;
- Levels of income into the ICs are lower than originally forecast, both in terms of industry income (cash) and support from the Enterprise Agencies. Most of the ICs have now revised their budgets;
- There have been issues arising as a result of the governance structure for the ICs (hosted within universities and funded mainly by SFC monies). While most issues have been resolved, there may be a rationale for changes in the governance models for some ICs in the longer term; and
- The innovation support landscape remains complex and, despite some good practice, the ICs and their partners could do more to ensure effective communications and referrals across the system.

Business Engagement

The ICs have each articulated a bespoke model to suit the industry sectors and technology areas with which they are concerned, and progress on engagement appears to be generally good:

- As Fig.4 shows most of the engaged firms so far are SMEs (75%), and collaborative projects are perhaps smaller (average scale of £94K) and shorter than originally envisaged (average length of 9 months). The expectation is that larger projects, and more multi-partner collaborations, will come through in time;

Fig. 4: Business Size of those engaged in IC projects so far



90

Source: Innovation Centres

- Most of the businesses involved in projects are based in Scotland (77%) but the Programme has engaged across the UK and even internationally. Fig 5 shows the locations of businesses engaged in IC projects so far.

Fig. 5: World-wide Company Engagement



91

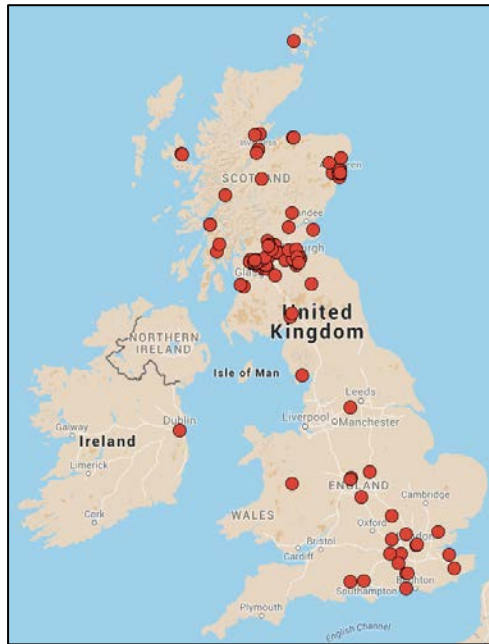
Source: Google Maps, Note: Companies in Scotland, England and Wales represented by single dot.

Fig. 6 shows the location of companies engaged in IC projects across the UK and Ireland. Fig. 7 shows the location of companies engaged in Scotland. Company participation in IC projects is clustered around Glasgow and Edinburgh and the other population centres, reflecting both the concentration of HEIs and of businesses in Scotland.

⁹⁰ *Business Engagement and Economic Impact Evaluation of the Innovation Centres Programme*, EKOS, September 2016, p.46

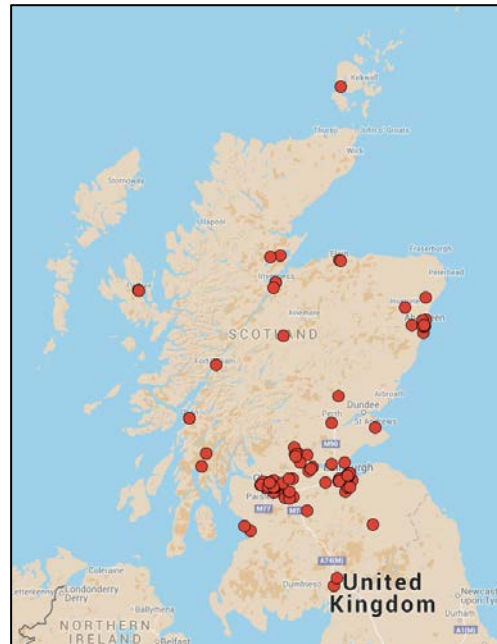
⁹¹ *Business Engagement and Economic Impact Evaluation of the Innovation Centres Programme*, EKOS, September 2016, p.43

Fig. 6: Companies engaged in UK and Ireland
(EKOS, p.44)



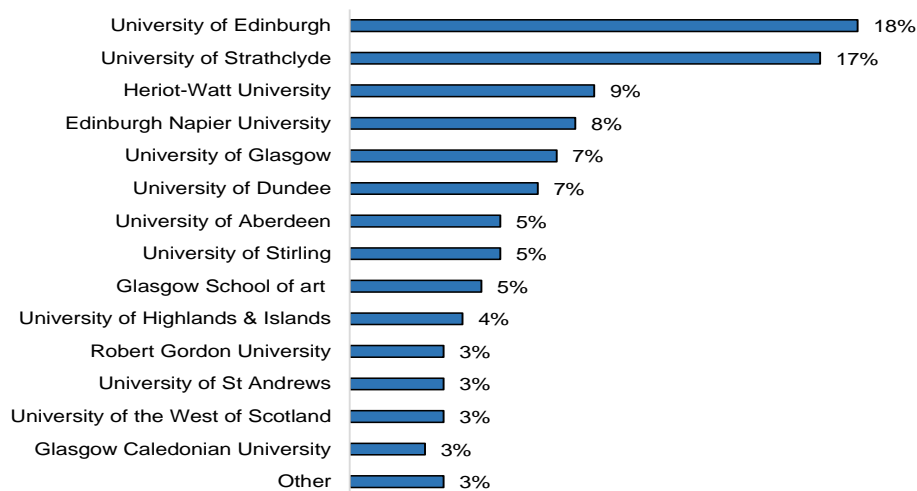
Source: Google Maps, Innovation Centres

Fig. 7: Companies engaged in Scotland
(EKOS, p.44)



- Many of the projects are still in their early stages - 39% have clear plans for commercialisation or are well advanced in the commercialisation process. This is broadly consistent with ICs' feedback that projects typically target technology readiness levels (TRLs) of 4-7, but also suggests that some remain fairly speculative; and
- Feedback from participating companies was positive, and suggests that the Centres are providing valued support in line with company objectives. There was strong praise for the expertise and professionalism of IC staff, and the Centres have done much to build credibility with industry within a relatively short period of time.

Fig. 8: HEI Partners involved in IC projects (shows percentage of projects that each HEI has been involved in)



Impacts

Even though the ICs are still in the early stages of development and delivery, the study found evidence of benefits and impacts for participating companies, and clear signs of the potential for future impacts. While most of the companies reported benefits in networking and knowledge gains, and many reported improvements in their innovation, economic impacts vis a vis commercialisation of new/improved products, processes, and services were reported by relatively few due to the early stage of many projects.

Of those companies involved in projects at a later stage of development, 90% reported current and/or future impacts. These related mainly to a direct increase in revenues and employment, with cost savings less evident, and a higher proportion reported future impact than that accrued to date.

Using a number of scenarios, the study calculated both the potential economic impacts to date and in the future and assessed the value of money in terms of return on public investment and cost per net additional job. The results suggest that the IC Programme is not yet delivering economic impacts on a scale that might be expected of innovation support programmes. However, the ICs are young and are still developing their support models and approach. Some are investing in longer term projects, a proportion of which will deliver economic impacts that are not possible to capture at this time. While some of the future impacts will not materialise at the scale forecast, the fact that more than half of the projects surveyed are at too early a stage to identify potential impacts must be taken into account. Therefore, the conclusion must be that while it is too early to form a clear assessment of the economic impacts of the Programme, there are positive indications of its potential to deliver future impacts.⁹²

⁹² *Business Engagement and Economic Impact Evaluation of the Innovation Centres Programme*, EKOS, September 2016 (pp. i-iii)

Recommendations and Observations

1. I recommend that the Scottish Funding Council and the enterprise agencies (Scottish Enterprise and Highlands and Islands Enterprise) should assess periodically whether additional Innovation Centres should be created and, if so, whether they should follow the good practice and management models already developed. The first such exercise should be complete within nine months of this review's publication and should be repeated at intervals of no more than four years thereafter. The creation of any new Centres will be conditional on the availability of resources from public, private and charitable sectors.

Currently there is no systematic process for deciding whether new Innovation Centres should be created or support for existing Innovation Centres should be discontinued.

There is a risk of Innovation Centres being inadvertently treated by public funders as a homogeneous population. The diversity and flexibility of Innovation Centres reflects the distinctive business sectors with which they work and should be recognised and valued as important to the future success of Innovation Centres.

2. My review identified the need to balance stability and dynamism for Innovation Centres while maintaining appropriate oversight of public spending. I recommend that the SFC and its partners should assess, without prejudice one way or another, whether to continue financial support for each Innovation Centre 10 years after its creation and at 10-yearly intervals thereafter. During the first 10-year period of their existence, I would expect most Innovation Centres to emphasise economic impact and 10 year strategic thinking rather than income generation. Two light-touch reviews during each 10 year interval should be used to assess the effectiveness of public spending to identify opportunities for further strengthening the Centres.

There is an inevitable tension between the ambition of autonomous business-led Innovation Centres and the realities of being accountable for substantial sums of public money. The Scottish Funding Council and the Enterprise Agencies have vital roles in supporting the Innovation Centres as they learn to manage that tension.

The original objectives for the IC programme said:
'...in order to create sustainable communities, core funding for successful ICs may need to be of longer duration – potentially 5-10 years. However, we

envisage that the level of support required from public funding should decrease over this timescale as successful ICs establish sustainable business and funding models. We also appreciate that the required profile for support and its duration may vary from sector to sector.’⁹³

This review has found that key stakeholders, including the ICs, have either interpreted this original objective incorrectly or not been aware of it all. In some cases ICs have taken their first five year funding (being the contract duration with SFC of each IC currently) as conditional on being self-sustaining thereafter. It would of course be laudable should any IC manage to achieve this after such a short time in operation but we would be surprised if no public support, particularly for core funding, would not be required after only five years.

This review has also found that some ICs see a future beyond the original vision set by SFC by supporting innovation wherever and whatever it is. In such cases ICs would support activity beyond, but not to the exclusion of, the university/business piece. SFC and its partners must consider carefully such future plans and ensure any further support is compatible with their respective remits and complementary with the wider Scottish innovation landscape.

Innovation Centres are beginning to leave the start-up phase and with it some of the operational challenges associated with new endeavours. They will likely face new challenges as they mature. It would be helpful to clarify for them what the partners mean by ‘sustainability’ as they move towards developing different models. A multiplicity of models is likely to exist as each looks to establish what is best for their sector and what will ensure greatest return for the Scottish economy. SFC will need to think about how it will respond to different funding models and what a reduction of their funds will mean for the programme and the priority of university-business collaboration.

3. I recommend that the Scottish Funding Council and the enterprise agencies review the Monitoring and Evaluation Framework (MEF) for Innovation Centres to reduce its administrative burden and strike an explicit balance between incentives for Innovation Centres to generate income and the incentives for them to deliver impact for the Scottish economy.

There is a risk with publicly funded innovation initiatives such as the IC programme that too much emphasis is inadvertently placed on generating

⁹³ [Innovation Centres: Call for Proposals](#)

income or surpluses to become financially self-sustaining in the long-term. This can be to the detriment of supporting innovative activity with good potential for impact but with little or no short-term income. In other words, the bodies such as ICs can find themselves pursuing their own sustainability rather than their outcomes and impacts. The Hauser review of the Catapult network⁹⁴ argued that impacts take time to occur and be recognised. Dr Hauser argued that 'long term commitment to funding' had been critical in 'providing the confidence needed to attract the right talent and to ensure businesses invest themselves through their engagement in projects'.⁹⁵

The MEF should incentivise a balance between the need to generate income, and the fundamental purpose of the ICs to create impact for the economy of Scotland. Improving the MEF and the robustness of reporting will help each IC demonstrate the basis for long term public sector support. It will also help public funders assess the appropriate level of support over the longer term.

Compared to other countries, ICs occupy a unique position in terms of being primarily funded by the university and college funding agency. However, their focus in promoting innovation has some elements in common with intermediary innovation organisations as seen in other countries: [TNO](#), [Tekes](#), [Fraunhofer](#), etc., and of course with the Innovate UK Catapults. These organisations have core funding to specifically support business R&D without the involvement of university or college staff. It was a clear wish of the ICs, as expressed through their Chairs and CEOs, that they should be able to access this kind of support. In fact such support would be available now, albeit not as core funding, through the use of existing programmes of Scottish Enterprise, Highlands and Islands Enterprise and Innovate UK. However it is available on a project-by-project basis and not on a structural basis as is the case for the institutions mentioned above, and this provides the opportunity for a stronger alignment which could be considered in the context of the current Scottish Government Enterprise and Skills Review.

The overall aim of the Innovation Centres programme is to bring about economic impact for Scotland. The balance of emphasis is unclear between supporting existing Scottish businesses and boosting the economy by attracting foreign direct investment.

4. I recommend that the IC Boards review the rigour of management information and report to SFC within six months of this review's publication on their plans to improve this where necessary.

⁹⁴ *Review of the Catapult network*, Dr Hermann Hauser, November 2014

⁹⁵ *Review of Catapult network*, Dr Hauser. p.3

The EKOS evaluation makes it clear that the application of the Monitoring and Evaluation Framework (MEF) needs to be improved by some of the ICs. They recommend that the MEF be better applied and revised in order to be a useful mechanism for tracking performance and progress against targets both for the partners (SFC, SE and HIE) and for the ICs themselves. Therefore, the measures should be appropriate and agreed by the partners and the IC Boards. EKOS found that ‘target setting and reporting is inconsistent and patchy across the Programme’ and that their review of the MEF data ‘found errors and inconsistency between different sets of targets as well as large areas of the Framework that remain unpopulated’.⁹⁶ The quality of information being put into the MEF as it currently stands needs to improve and IC Boards should ensure this happens as failure to do so would put an IC at a disadvantage when the time comes to assessing long term funding.

5. The creation of Innovation Centres changed the landscape for innovation support in Scotland. Public sector support for innovation should evolve to keep pace with the new landscape. I recommend that the enterprise agencies (Scottish Enterprise and Highlands and Islands Enterprise) identify and assess opportunities for new approaches to their funding support for Innovation Centres to increase business engagement and enhance the Innovation Centres programme. These new approaches may well reach beyond the existing scope of funding from enterprise agencies. Enterprise agencies should publish the results of their assessments within nine months of this review’s publication.

This review has found that the original vision for the programme needs the space to evolve to match the appetite of business sectors supported by the Innovation Centres. While the vision makes clear the role of Scottish universities in the programme it should welcome and encourage business-to-business activities. Enterprise agency funding should be better utilised to support this wider agenda so long as it is addressing an unmet need and contributing to the impact of ICs on the Scottish economy.

The Scottish Funding Council used the full scope of its remit to reach into the innovation agenda and fund the Innovation Centres programme. This has been a welcome move and the SFC should be commended for their willingness to go beyond their normal business practices to achieve transformational change for Scotland.

⁹⁶ *Business Engagement and Economic Impact Evaluation of the Innovation Centres Programme*, EKOS, September 2016

Scottish Enterprise (SE) and Highlands and Islands Enterprise (HIE) are partners alongside SFC in this programme. Scottish Enterprise told the review that 'to date SE has committed significant staff resources to the programme, although as yet there have been few projects where industry has sought to access SE/HIE business support mechanisms to help the companies collaborate with Innovation Centres'.⁹⁷ Innovation Centres appear to have reached the stage where financial support from enterprise agencies could accelerate their work and progress yet they are unable to offer this support because it does not fit into existing support mechanisms. The creation of the IC programme changed the landscape in Scotland and it would seem reasonable to expect key players to change in response to that rather than continuing to operate existing business models. SE and HIE should explore new approaches to financial participation in the Innovation Centres programme.

6. I recommend that every university and each Innovation Centre should make renewed efforts to involve as much of Scotland's excellent research base as possible with the programme. Innovation Centres should each publish a brief assessment of the breadth and depth of this engagement by 31 March 2017 and should refresh that assessment for each of the light-touch reviews at recommendation 2.

There is a perception amongst some businesses and universities that many academics in Scotland have not yet engaged or have decided not to engage with the IC programme. It is important to understand and to assess the reach of ICs into the research base in Scotland and elsewhere. This should be captured as part of an improved Monitoring and Evaluation Framework (MEF).

The perception and value of the IC programme may be viewed differently depending on direct involvement in projects and in particular in administrative hub and non-administrative hub institutions. There is a risk that two communities could exist along these lines and ICs and all universities could be doing more to broaden the range of those involved in order to fully understand opportunities. There is perhaps scope to connect ICs better with non-admin hub HEIs.

⁹⁷ Written evidence submitted by Scottish Enterprise, July 2016

7. I recommend that the Scottish Funding Council (SFC) and the Innovation Centres explore Further Education (FE) college participation in Innovation Centres programme. SFC should challenge FE colleges and their representatives to enhance their involvement in the IC programme and work with ICs to support innovation in local businesses, for example responding to business demands for skilled people. SFC should consider how best to overcome any administrative boundary between FE college and university funding that currently exists. SFC should publish the outcome of this consideration within nine months of the publication of this report.

The ICs were created to help bring academic expertise to business-led challenges that would have an economic impact for Scotland. The success of the college sector in Scotland can be through innovation of business products, but is more often about delivering skills, and through those enhanced skills, improved productivity and efficiency. The delivery of skills is not some sort of “secondary” innovation – developing new skills and techniques to apply alongside new technological innovation is vital if such developments are to be embedded and made truly a commercial success. Having the college sector work more closely than is currently happening with both the ICs and the university sector should strengthen the performance of the ICs.

It is important to the success of the ICs that existing structures work better in order to collaborate across administrative boundaries. The IC programme can be broadened to ensure colleges are not excluded and they must be encouraged to play a more active role. SFC’s Research and Knowledge Exchange Committee’s College Innovation Working Group is considering how to enhance the innovation agenda within colleges and their detailed findings should be considered alongside this review.

The Advisory Committee was surprised that no contribution to this review came from the FE college sector. The review heard evidence that FE colleges could bring even more value to the work of several Innovation Centres in areas where local access to FE skills and facilities could support business innovation. The Committee was unable to compare these views with any direct input from the FE college sector.

8. If individual Innovation Centres have robust evidence, now or in the future, that their ownership and governance is inhibiting their contribution to the Scottish economy, we recommend that the Scottish Funding Council (and the enterprise agencies) should be open to receiving proposals for changes in ownership and governance. Scottish Funding Council and, if appropriate, the enterprise agencies, will then decide whether to accept these proposals.

The ICs should recognise that their current governance and funding arrangements do already allow for activity beyond the pure university-business interface, and some have embarked on such work. Indeed, given their important role as innovation leaders for their sector it is essential that they should develop this kind of activity, in a form appropriate to their sector and where appropriate in collaboration with industry groups and other organisations. Innovation Centre support for business-to-business innovation, for example, might be a high priority for some business sectors and Innovation Centres may wish to evolve to serve unmet demand in that or other areas.

The evidence submitted to this review was almost entirely supportive of Innovation Centres. That support, was both for the concept of Innovation Centres and for the way in which they have been created. As the Centres continue to evolve then the current forms of governance and operation may need to change, and should not form a constraint to higher levels of business participation: form should follow function.

Some ICs may wish to continue under the current structure and others may welcome a change in ownership and legal definition. There must be compelling and robust evidence to demonstrate why any change would be necessary and how current arrangements were restricting a particular IC in the delivery of economic impact for Scotland. Any proposals towards 'independence' must recognise and understand the full burden of accountability which comes with public funding. The slow procurement processes of universities are partly or mainly due to the requirements of public sector procurement processes, which is likely to be applied to any recipient of public funding. Similarly, the ability to access different forms of funding is largely independent of their legal status.

The deployment of public funds for ICs depends also on them playing their particular role in the innovation ecosystem and addressing different forms of market failure to accelerate the innovation readiness of business and public sector delivery organisations. It would not be appropriate for the ICs to evolve into a position of competing directly with private sector companies, that is, into areas where there is no market failure to be addressed.

9. Innovation Centres have already published case studies about their own success. This is welcome. I recommend that the Scottish Funding Council and the enterprise agencies work with Interface, the Innovation Centres and others to create and promote a centralised body of data and case studies about individual businesses – rather than innovation support bodies - in Scotland that have benefitted from working with universities and colleges. Those success stories need not be confined to technological innovation and product development: business successes may also come from innovation in management processes; marketing; or investor relations. Innovation Centres, enterprise agencies and others should use that material to promote nationally and internationally the attractions of Scotland as a location for innovative businesses. The new body of material should be launched on 31 March 2017 and could feed in to the Scotland CAN DO Assembly in Spring 2017.

These will be explicitly business success stories rather than accounts of the work of Innovation Centres, Interface or other public bodies. The Innovation Centres should in the first instance provide the material for this body of evidence which can then be used to promote success nationally and internationally and encourage innovation inactive businesses to do more. The Innovation Centres will lead this work recognising the different levels of progress with businesses they are engaged with. This collaborative exercise must lead to a meaningful and manageable tool which will help stimulate industry demand and will be measurable in the Monitoring and Evaluation Framework against the long term impact of the ICs and the programme.

The Innovation Centres have the potential to drive high quality demand from business for funding, linking together the funding available from other partners such as Scottish Enterprise, Highlands and Islands Enterprise and Innovate UK. Enabling business to tap into these funding streams, including raising awareness of what is available, will be a key task. Creating a centralised body of evidence, demonstrating the success of the Scottish innovation system and sharing best practice on how businesses can utilise what is available would be a key step forward in promoting nationally and internationally Scotland as a location for innovative businesses. This could draw on NCUB's Growing Value Scotland Taskforce final report, 'The Step Change: Business-University Collaboration Powering Scottish Innovation'.⁹⁸

Public endorsements of the Innovation Centres programme are welcome. Scottish Government Ministers, including the First Minister in her 'Taking Scotland Forward'⁹⁹ speech as well as the regular promotion of the IC

⁹⁸ *The Step Change: Business-University Collaboration Powering Scottish Innovation*, NCUB, May 2016,

⁹⁹ <http://news.scotland.gov.uk/Speeches-Briefings/Priorities-speech-Taking-Scotland-Forward-24f8.aspx>

programme by Scottish Funding Council, send consistent signals to the business community. Similar public statements of support from enterprise agencies would be welcome to reassure business that public bodies are working to a single agenda in this area.

It is clear that both industry and universities have been learning from the development of the programme and have overcome many of the early challenges associated with a start-up phase and as the ICs are moving into a more operational phase, examples of successes are starting to emerge.

10. Innovation Centres are operating in a crowded landscape of public sector initiatives for supporting businesses in Scotland. I recommend that the Scottish Government – perhaps within its Skills and Enterprise Review - should simplify the outward appearance of arrangements for business support and better define and explain its specific benefits to individual businesses. The body of case study material proposed at recommendation 9 should help. I recommend that support for the business community be articulated consistently in business-friendly language rather than the language of the public sector.

The Innovation Centres emerged onto an already busy landscape. It is essential that they collaborate and fit in with it and respect existing players. Overlapping can be necessary in ensuring there are no gaps in support available but it is hoped the Scottish Government's review of Enterprise and Skills can go some way in improving awareness and effectiveness of innovation support.

The ICs and their partners could do more to reduce confusion and overlap in the innovation support landscape. This means clearer lines of communications and effective referral mechanisms, and the relationship between each IC and Interface needs to be clarified and agreed. The crowded landscape of innovation initiatives adds needless complexity. Individual businesses seeking innovation support for the first time must peer through a fog of jargon and public-sector initiatives. Ultimately it is the responsibility of businesses to seek their own support for innovation but the Scottish Government's Enterprise and Skills Review has much potential to improve access to innovation support.¹⁰⁰

¹⁰⁰ <http://www.gov.scot/Topics/Economy/Publications/econdevskillsreview>

Final Observations

Some of the challenges faced by Innovation Centres are similar to those faced previously in Scotland and elsewhere. These perennial features of public sector innovation support have been examined widely but – to the best of my and the Advisory Committee’s knowledge – never fully resolved. I record them here in recognition that ICs may need to accommodate these challenges rather than resolve them. Of course, if they find ways of resolving the challenges then they are to be congratulated.

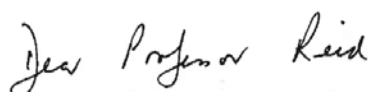
1. Finding the optimum balance between an Innovation Centre generating income for itself from external sources and delivering economic impact as a public good.
2. Balancing the ambition to maximise economic performance at a national level with the ambition to provide innovation support across every geographic region and a wide range of business sectors.
3. Aligning the legitimate demands for transparency and accountability that come with substantial levels of public funding with the ambition to be led by the needs of a business community that may set expectations and take decisions in equally legitimate but somewhat different frameworks.
4. National innovation systems are complicated as expressed in the Dowling Review.¹⁰¹ These systems or landscapes tend to be complicated because they address complicated problems.

¹⁰¹ *The Dowling Review* (July 2015) Figure 10.



11 March 2016

Professor Graeme Reid
Strategic Advisor
National Centre for Universities and Business (NCUB)
graeme.reid@ncub.co.uk



Independent Review of Innovation Centres Programme

I am writing on behalf of my Board to invite you, in your capacity as Strategic Advisor to the NCUB, to lead an independent review of Scotland's Innovation Centres (IC) programme.

The Innovation Centres (IC) programme was launched by SFC, Scottish Enterprise and Highlands and Islands Enterprise (the partners) in April 2012 and since then eight ICs have been funded at various starting points. The vision for the IC programme is:

“Using the Scottish university infrastructure, human resources and research excellence as a platform for collaborations across the whole of Scotland, Innovation Centres will create sustainable and internationally ambitious open communities of university staff, research institutes, businesses and others to deliver economic growth and wider benefits for Scotland.”

Our monitoring and evaluation framework indicates that the ICs are making good progress but we are now at a point in which we need to form an independent evidence base for SFC and its partners to make judgements on the economic viability of the programme and inform future funding and other decisions.

It is the view of my Board that this review must be independent and be as much a review of the programme, including the partners, as well as the progress and likely success of the individual ICs. The output of the review should be a report to my

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97 Haymarket Terrace
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EH12 5HD
T 0131 313 6500
F 0131 313 6501
www.sfc.ac.uk

Board in September 2016, and to our partners, to support the development of our strategy.

Following careful consultation with the Chair of our Research and Knowledge Exchange Committee (RKEC), partners and stakeholders, we feel that you would deliver the intelligent and thoughtful approach that this review will demand and would be privileged if you felt able to assist us in this way.

The review, should you agree to take this on, would be led by you and supported by an advisory group/committee (which you would Chair), and an appropriately procured consultancy which will produce an economic impact analysis as part of the review's evidence base.

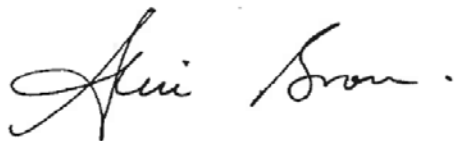
In terms of resources we will of course cover all appropriate expenses directly incurred and it is our intention to provide you with policy officer and administrative support from existing staff within SFC.

We would wish to discuss the review schedule and terms of reference with you. It is hoped that the review can be conducted between April and July, the report drafted over August, and presentation of findings and recommendations to SFC's RKEC and Board on 8 September and 23 September 2016 respectively.

My colleague Dr Stuart Fancey, interim-Director of Research and Innovation, and his team are ready to discuss this with you further - Stuart can be contacted on sfancey@sfc.ac.uk; or 0131 313 6559.

I sincerely hope you will be able to assist us by leading this important review and I am very grateful for your time in considering this invitation.

Yours sincerely,



Professor Alice Brown
Chair – Scottish Funding Council

CC: Professor Albert A. Rodger FEng DSc BSc Eng PhD CEng FICE FGS FRSE, Chair of SFC RKEC

Dr Eleanor Mitchell, Scottish Enterprise
Charlotte Wright, Highlands and Islands Enterprise

Terms of Reference

Independent Review of Innovation Centres Programme - led by Professor Graeme Reid

[The Innovation Centre \(IC\) programme](#) was established by Scottish Funding Council, in partnership with Scottish Enterprise and Highlands and Islands Enterprise, in April 2012 and to date eight ICs have been funded. The vision for the programme is:

“Using the Scottish university infrastructure, human resources and research excellence as a platform for collaborations across the whole of Scotland, Innovation Centres will create sustainable and internationally ambitious open communities of university staff, research institutes, businesses and others to deliver economic growth and wider benefits for Scotland.”

The IC programme has a central place in Scotland Can Do, the Scottish Government’s framework for innovation and entrepreneurship. In ‘Scotland’s Spending Plans and Draft Budget 2016-17’ (announced 16 December 2015) the Scottish Government included the ICs in its ambitions for ‘supporting innovation-led economic growth’.

Our strategy, as set out in the original call for proposals, indicated that in order to create sustainable communities, core funding for successful ICs may need to be of longer duration – potentially 5-10 years. We also envisaged that the level of support required from public funding should decrease over this timescale as successful ICs establish sustainable business and funding models.

Our monitoring and evaluation framework indicates that the ICs are making good progress but we are now at a point in which we need to form an independent evidence base for SFC and its partners to make judgements on the economic viability of the programme and inform future funding decisions.

Terms of reference

This review will focus on the delivery of the original vision, aims and objectives of the programme as a whole as set out in Annex A. The review will be independent – led by Professor Graeme Reid, supported by an Advisory Committee and an appropriately procured consultancy which will produce an economic impact analysis as part of the review’s evidence base. This approach has been chosen to ensure transparency of the review and the credibility of its recommendations.

This review will be independent and be as much a review of the programme – its structure, drivers and oversight - including the role of the partners (Scottish Funding Council, Scottish Enterprise and Highlands and Islands Enterprise) and the innovation centres themselves. The review will look at progress and likely success of individual ICs while recognising that the review comes relatively early in the programme when

considering its long term aims. The output of the review will be a report from Professor Reid to SFC's Board in September 2016. The final report will support SFC and its partners (both Scottish Enterprise and Highlands and Islands Enterprise will also make appropriate use of the final report) in their strategic development of the programme¹⁰².

Advisory Committee

The Advisory Committee, chaired by Professor Reid will meet for 5 full days in Edinburgh over the summer months. Its role will be to support the review leader, request and review documentation, and interview key groups/cohorts of people. Its membership will be drawn from Industry/business representation, research academic representation, expertise from other UK funding bodies and those with knowledge and experience of Scottish KE landscape including representation from SFC's RKEC. SFC, SE and HIE cannot be included within membership as their role in development and ongoing delivery of programme could be subject to review. Observers from SFC, SE, HIE and Scottish Government will be invited to attend Committee meetings. The other members of the Advisory Committee are;

- Professor Tim Bedford, Professor of Risk and Decision Analysis, University of Strathclyde, SFC RKEC member
- William Findlay, GlobalScot Network, former president of Cameron International.
- Alex Herbert, Head of Research Funding, Research Policy Team, HEFCE
- Douglas S. Mundie, Saltire Business Solutions, SFC Board and RKEC member
- Alex Saxon, Associate Director, Research Councils UK

Confidentiality and data protection

Information provided in response to this review (consultation, responses to written requests, evidence given at Advisory Committee meetings, formal conversations with Professor Reid) including personal information, may be subject to publication or release to other parties or to disclosure in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004). If individuals want information, including personal data that they provide to be treated as confidential, they need to be aware that, under the FOIA, there is a statutory Code

¹⁰² SFC would envisage, should its Board agree to continue to support the programme in the future that the Chief Executive would seek delegated authority to consider any proposals for future SFC core funding from the first eight ICs – partly informed by the review's findings – on an individual basis, as and when ICs are ready to discuss future business plans, and with appropriate due-diligence. *It should be noted that, as with all SFC strategic investments, current and future funding are subject to availability of funds.*

of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

In view of this it would be helpful if they could explain to review why they regard the information they have provided as confidential. If the review receives a request for disclosure of the information it will take full account of their explanation, but the review cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by IT system will not, of itself, be regarded as binding on this review.

Annex A

As detailed in the original call for proposals (www.sfc.ac.uk/innovationcentres), the vision for the IC programme is:

“Using the Scottish university infrastructure, human resources and research excellence as a platform for collaborations across the whole of Scotland, Innovation Centres will create sustainable and internationally ambitious open communities of university staff, research institutes, businesses and others to deliver economic growth and wider benefits for Scotland.”

And the **aims and objectives** are:

- To offer collaborative knowledge exchange and research activities to help solve industry defined problems and co-create innovative opportunities for growth;
- To enhance two way knowledge exchange between universities, industry and others towards realising tangible benefits for businesses while also stimulating and challenging the Scottish research base;
- To provide an environment that supports the development of the next generation of business innovators, academics and entrepreneurs in Scotland and a culture change towards greater and more effective university/industry collaboration;
- And to simplify the innovation landscape in Scotland through creating conduits to the university knowledge and expertise for all businesses in Scotland and being complementary to and exploit existing initiatives such as Interface and the Innovation Scotland Forum.

Also in the original call for proposals we said we would use following **high level principles** as the basis for assessment:

- **Impact for the Scottish economy and society** - ICs must deliver benefits to businesses, universities and other partners to deliver sustainable economic growth and wider impacts such as public policy. Proposals should provide an evidence base that demonstrates market demand – either existing or new;
- plans for **strong leadership and governance** – to ensure that ICs are managed effectively and the priorities of businesses and other end-user stakeholders will guide the Centres’ research, applied research, technology/product development and other programmes;
- **strong commitment from industry** – evidenced by a core membership of, and investment by, key businesses at the outset and robust plans for fast expansion;
- how the IC will address a strategic opportunity to **develop the innovation landscape in Scotland** – including how the proposed Centre will complement existing capabilities;
- how the Centre and its associated project activities will be made **accessible to any relevant business interests**, including SMEs, in any sector in Scotland and internationally where such participation will bring benefits to the IC and Scotland; and
- **transition to a low carbon economy** – ICs (directly or indirectly in their operations) should contribute to Scotland’s transition to a low carbon economy.

Advisory Committee

The Advisory Committee, chaired by Professor Reid met for five full days in Edinburgh over the summer months. They had sight of necessary background materials and documents and reviewed all written evidence (55 submissions) and received all oral evidence as part of the five Advisory Committee meetings (18 May, 1 June, 29 June, 27 July, 11 August).

The members of the Advisory Committee are;

- Professor Graeme Reid, Strategic Advisor to NCUB, Chair of Review.
- Professor Tim Bedford, Professor of Risk and Decision Analysis, University of Strathclyde, SFC RKEC member
- William Findlay, GlobalScot Network, former president of Cameron International Ltd.
- Alex Herbert, Head of Research Funding, Research Policy Team, HEFCE
- Douglas S. Mundie, Saltire Business Solutions, SFC Board and RKEC member
- Alex Saxon, Associate Director, Research Councils UK

Secretariat;

- Gary Bannon, Senior Policy/Analysis Officer, SFC

Observers;

- Keith McDonald, Ass. Director of Research and Innovation, SFC
- Sophie Lowry, Senior Policy/Analysis Officer, SFC
- Morven Cameron, Head of Academic Relationships, HIE
- Dr Clive Reeves, Innovation and Commercialisation, SE
- Carolyn Fishman, Higher Education and Science Division, SG
- Brian McLaren, Director, EKOS Ltd
- Nicola Graham, Project Manager, EKOS Ltd

Call for Evidence

Submissions of evidence addressing some or all of the following questions are invited from organisations and individuals with expertise and interest in this area:

1. Is the original vision for the Innovation Centres programme current and correct?

2. From your experience so far, are the Innovation Centres delivering against this vision?

Areas you might like to consider: How well are the Innovation Centres working across the whole of Scotland? How appropriately are the Innovation Centres collaborating with relevant stakeholders? Are the Innovation Centres offering collaborative knowledge exchange and research activities to help solve industry defined problems and co-create innovation opportunities for growth? How are the Innovation Centres helping to create a culture change towards greater and more effective academia/business collaboration? Are there examples of good practice across the programme?

3. To what extent do the priorities of Innovation Centres reflect those determined by industry?

Areas you might like to consider: Is industry appropriately engaged in the relevant Innovation Centres? How are (or should) Innovation Centres respond to the skills needs of the industry sectors represented? Are the industry-led projects 'stimulating and challenging' the Scottish research base in the most effective way? Are there examples of good practice across the programme?

4. How has the relationship between business and academia evolved since the creation of Innovation Centres Programme?

Areas you might like to consider: Do the Innovation Centres complement and exploit existing initiatives (e.g. Interface, the Knowledge Transfer Partnership programme et al) in the academia/business collaboration space? Are there specific Innovation Centre activities, which have helped to simplify routes to innovation for business? Are there examples of good practice across the programme?

5. How effective and proportionate has the oversight of Innovation Centres been?

Areas you might like to consider: Are governance arrangements suitable for the programme as a whole and/or each Innovation Centre? How much clarity exists around how the performance of Innovation Centres will be assessed against the objectives of the programme? Is there an appropriate balance between an Innovation Centre's freedom to operate and the accountability necessary for a public sector initiative? Are there examples of good practice across the programme?

6. Do you have any other views such as suggestions for the evolution or future direction of the Innovation Centre programme?

Submissions should clearly state who the evidence is being submitted by and include a brief introduction about the individual or organisation. In order to be considered,

submissions should be no longer than 3,000 words and need to be sent to innovationcentresrev@sfc.ac.uk before close of business on 20 June 2016.

The final report will be presented to Scottish Funding Council's Board on 23 September 2016.

Confidentiality and data protection

Information provided in response to this review (consultation, responses to written requests, evidence given at Advisory Committee meetings, formal conversations with Professor Reid) including personal information, may be subject to publication or release to other parties or to disclosure in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004). If you want information, including personal data that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on this.

Further information: please contact Gary Bannon, Policy/Analysis Officer at SFC, gbannon@sfc.ac.uk or 0131 313 6518

Public sector initiatives for supporting businesses in Scotland 2016

This annex is an attempt to capture the innovation initiatives, funding schemes and support services which are available to businesses in Scotland and which are publicly financed (in whole or in part) at the time of this review. This should not be considered a full and complete listing of all types of support available to businesses in Scotland.

Funding for businesses

Scottish Funding Council

(Channelled through HEIs to support university-business collaborations/activity)

- Innovation Centres Programme – 8 distinct Centres each with project funds.
- Innovation Vouchers Programme (Standard, Follow On, Student Placement, College and H2020 SME Engagement vouchers – all £5k of academic time, Follow On up to £20k if matched by cash from business).
- University Innovation Fund (formerly Knowledge Transfer Grant)
- Industry/Academia Links Fund (formerly SEEKIT) [SG ring-fenced funding]
- Entrepreneurial support for students starting a business – Enterprise Campus, Scottish Institute for Enterprise, Converge Challenge, SCALE programme with Massachusetts Institute for Technology.

Scottish Enterprise *and* Highlands and Islands Enterprise

(Direct support to businesses to support growth)

- R&D/Innovation Grants
- SMART:Scotland
- Innovate Your Business
- Make it to Market
- By Design
- Seek and Solve Grant
- DigitalScotland Voucher
- Wave and Tidal Energy R&D Scheme (WATERS)
- High Growth Spin-Out Support

Scottish Government

- European Maritime and Fisheries Fund
- Food Processing Marketing and Co-operation Grants
- Rural Affairs, Food and the Environment Strategic Research (RAFE formerly RESAS) funding

Innovate UK

- Knowledge Transfer Network
- Knowledge Transfer Partnerships
- Innovation Vouchers
- Feasibility Studies
- Smart
- Launchpads
- _connect
- Small Business Research Initiative (SBRI)
- Catapults

Research Councils UK

- Joint calls with InnovateUK
- Gateway to Research

European Funding

- Regional Selective Assistance Grant (managed by SE/HIE)
- Horizon2020
- European Regional Development Funding
- European Structural Funding

Advice/Services/Support for businesses

Scottish Enterprise, Highlands and Islands Enterprise and Scottish Development International.

SE/HIE use a direct relationship management approach to support businesses in realising growth. SE/HIE staff work 1-to-1 with businesses to understand their development needs and, then, to help the businesses identify the most appropriate public support mechanism. This approach helps businesses navigate the complexities of the support landscape. SE/HIE advisory support is summarised below under five headings.

Leadership:

- Leadership/Management Support
- Business Mentoring
- Organisational Development (Review and Support)

Innovation:

- Wider Innovation Service
- Deeper Innovation Specialists
- ICT Support

- Enterprise Europe Network
- Intellectual Asset Specialist Support
- Go Global Innovation Support

International:

- GlobalScot Network
- Smart Exporter
- International Manager for Hire
- Access to Markets
- Scottish Development International Specialist support
- MIT industrial Liaison Programme

Investment:

- Investment Specialist
- Scottish Investment Bank

Growth:

- Scottish Manufacturing Advisory Service
- Business Development Management Support
- Business Improvement Expert Support

Interface

- Brokerage service between businesses and Scottish universities
- Facilities Platform marketing tool
- Market-led events, annual showcase awards, promotion and case studies.

Business Gateway

- Free business support services. Assistance and impartial advice to people starting or growing their business
- Online support
- Local workshops and events held throughout Scotland.
- Business Advisor advice
- Business information

Bright Ideas Scotland

- Guidance and advice to Scotland based individuals/business with idea for new product or service

Zero Waste Scotland

- Circular Economy Innovation Fund

Examples of centres in Scotland with technical/R&D capabilities to support business innovation

- Advance Forming Research Centre (AFRC)
- Edinburgh BioQuarter
- Centre for Health Sciences
- Power Networks Demonstration Centre(PNDC)
- International Technology and Renewable Energy Zone (ITREZ)
- Fraunhofer Centre for Applied Photonics
- Offshore Renewable Energy Catapult
- European Marine Energy Centre (EMEC)
- The Underwater Centre
- Edinburgh Parallel Computing Centre

Biography - Professor Graeme Reid

Graeme Reid has spent much of his career at the interface between science and government. He is Professor of Science and Research Policy at UCL. He was specialist advisor to the House of Lords Science and Technology Committee for their inquiry into Science and the EU in advance of the 2016 referendum on UK membership of the EU.

Graeme is also Chairman of the Campaign for Science and Engineering, a Trustee of the Association of Medical Research Charities and Strategic Advisor to the National Centre for Universities and Business. Until March 2014, he was Head of Research Funding in the Department of Business Innovation and Skills, where he had oversight of around £5 billion per annum of research spending through Research Councils and the Higher Education Funding Council for England. He coordinated the bid for the science budget in the coalition Government's 2010 spending review.

Graeme spent the first ten years of his career at the National Engineering Laboratory, near Glasgow. He then moved to Central Government where he held positions in the Treasury, the Cabinet Office, and the DTI before the formation of BIS in 2009.

Graeme has a BSc in Physics and a PhD in Mechanical Engineering. He is a Chartered Engineer, a Fellow of the Institute of Physics and a Fellow of the Institution of Engineering and Technology. He has served on Boards and advisory Committees in a range of organisations including CERN, the Scottish Funding Council, Cardiff University and the Institute of Physics.