Business Engagement and Economic Impact Evaluation of the Innovation Centres Programme

Final Report to the Scottish Funding Council
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Executive Summary

The 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 study combined analysis of background documentation and performance data with primary research with supported businesses, Innovation Centre staff, universities and a range of other stakeholders.

General Findings

In relation to the IC Programme, the main findings are as follows:

- 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 financial plans;
- 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:

- most of the engaged firms 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;
- most of the businesses involved in projects are based in Scotland (77%) but the Programme has engaged across the UK and even internationally. Company participation is clustered around Glasgow and Edinburgh and the other population centres, reflecting both the concentration of HEIs and of businesses in Scotland;
- 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.

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.

Recommendations

While it may seem early in the life of the Programme both to be evaluating its impacts and also to be making recommendations, some areas are worth consideration. In many respects, the recommendations that follow reflect the direction of travel within most of the ICs, but reinforce these emphases.

Recommendation 1: the SFC and its partners should confirm their longer term funding commitment to the ICs as soon as possible. All of the ICs are considering their future sustainability, and greater clarity around future funding is an important input to this process, as well as helping to manage the risks for host HEIs, and supporting continuity of investment.

Recommendation 2: the SFC and its partners should clarify expectations regarding the extent to which ICs should develop beyond their original remit into wider areas of innovation support (i.e. not involving academic collaboration). This may vary according to the characteristics of each IC and their relevant marketplaces.

Within this, there is merit in considering mechanisms through which the ICs can support business innovation were the solution does not depend on academic collaboration.

Recommendation 3: there is a case to be made for reviewing the governance arrangements for the ICs, but this should not presume that greater independence from universities will be the most appropriate solution in all (or any) cases.

Recommendation 4: the SFC and its partners may wish to examine more closely the balance of resources within each of the ICs between core/overhead costs and project investment. This does not mean that smaller in-house teams are necessarily better (and it is too early to form a judgement on this), however, this was raised as an issue through the evaluation and should be examined.

Recommendation 5: ICs' business engagement processes need to continue to broaden and reach beyond the initial focus on those businesses that were involved at the outset in the business planning process and with those businesses where universities had established relationships. However, clarity is needed on the extent to which the Centres should be involved in developing innovative capacity within businesses that are not yet innovation ready.

Recommendation 6: the ICs and the universities should do more to ensure a broader range of engagement, particularly between ICs and non-host/non-partner universities.

Recommendation 7: the SFC and its partners, working with the ICs and their partners, should do more to reduce confusion and overlap in the innovation support landscape. This will require clear lines of communication and effective referral mechanisms, and the relationship between each IC and Interface needs to be clarified and agreed.

Recommendation 8: the ICs' project portfolios should continue to shift towards projects with clear intention to commercialise as a means of generating greater impacts and securing more funding from the Enterprise Agencies into business innovation activity. For some of the Centres, a balance will be required with their role in defining and supporting long term innovation challenges in their respective industry segments.

Recommendation 9: in addition to the existing high level aims and objectives, the SFC and its partners should consider setting targets and/or outcomes for the Programme as a whole to enable informed judgements about the extent to which it is meeting expectations. These will be necessarily retrospective, but will benefit from the experience of the Centres to date. Further thinking is needed on how best to achieve this.

Recommendation 10: the MEF should be reviewed as part of a forward business planning process with two main aims in mind. First, it needs to be a useful mechanism for tracking performance and progress against targets both for the SFC, its partners, and for the ICs themselves. Therefore, the measures should be appropriate and agreed, realistic targets need to be set and progress should be captured and reported. Secondly, the MEF should incentivise the right kinds of behaviours, striking a balance between the need to generate income, and the fundamental purpose of the ICs to create impact.

Recommendation 11: the ICs should each develop a stronger suite of case study materials to communicate their value to businesses as part of their wider marketing effort, and to make better use of these (e.g. promoted and disseminated widely).

Recommendation 12: in addition to regular review of the Programme as a whole each of the ICs should be subject to independent evaluation, at the five year stage in their life. This should be sufficient time to assess their impact to the Scottish economy.

1. Introduction

This report presents the findings of a study which examined the:

- effectiveness of the business engagement mechanisms of the Innovation Centres (IC) Programme; and
- early and likely economic impacts of academia-industry projects supported by the IC Programme.

Innovation Centres

The term is used to describe collaborations among universities, businesses and others to enhance innovation in Scotland, and particularly across Scotland's key economic sectors.

Source: Partners Memorandum of Understanding

The study was commissioned by the Scottish Funding Council (SFC) and its partners Scottish Enterprise (SE) and Highlands and Islands Enterprise (HIE).

It is important the findings of the study be viewed in the context that the eight ICs are still in their relative infancy in Scotland[1]. Further, while the ICs have been established with shared aims, objectives and high level principles, each IC is bespoke to the sector/area involved.

1.1 Study Aims and Objectives

The study was framed as a qualitative and quantitative assessment of the IC Programme, in particular it has sought to take stock of its effectiveness, its achievements and impacts. Our study focussed on two aspects:

1. An examination of the effectiveness of the ICs in building engagement with industry on innovation demand-led projects, and establishing the economic impact of each IC to date, and the likely future economic impact of each IC based on projects that are either in progress or completed.

[1] All ICs received their initial letter of award by Spring 2014.

The first strand included consideration of the following issues:

- are the routes to market clear;
- are the next steps beyond the current project understood to ensure scale-up is achieved;
- how do the businesses value the support offered by ICs;
- what timescales are anticipated for projects delivering business impacts;
- what are the lessons learned and/or opportunities for improvement;
- what has been the impact (economic and wider) of each IC to date;
- what is the likely future impact (particularly economic) of each IC based on current projects underway or completed;
- what wider insights can businesses engaged with ICs provide in terms of industry expectations, experience so far, potential routes to market, etc;
- what further funding or other support might ICs need (from any source) to continue to deliver and move closer to sustainable funding/income models; and
- through analysis of original business plans and revised plans what can we learn about the direction of travel of each IC – for example, effectiveness of forecasting, delivery against expectations and ambitions, etc.

2. An intellectual analysis of the interview data, including observations and opinions on the economic success of the IC Programme.

1.2 Independent Review of the Innovation Centres Programme

Our study into the business engagement and economic impact assessment of the ICs was part of the broader evidence base that fed into an Independent Review of the Innovation Centres Programme, Chaired by Professor Graeme Reid, Strategic Advisor to the National Centre for Universities and Business (NCUB).

The Independent Review of the Innovation Centres Programme, which took place between May and September 2016, focussed on the delivery of the original vision, aims and objectives of the IC Programme. Professor Reid, supported by an Advisory Committee, also took on board evidence to the review through written evidence, and from individuals invited to attend Advisory Committee meetings. While the remits and objectives of the two exercises were complementary, they were co-ordinated so as to avoid duplication and unnecessary burden on the ICs and their partners. To this end, there was dialogue between Professor Graeme Reid and EKOS at the outset, and the fieldwork programme was designed in full consultation with SFC, its partners and with Professor Reid such that overlap was minimised and there was full transparency around the data collection process. EKOS attended the five Advisory Committee meetings to provide updates and input findings (as observers).

1.3 Study Method

The study was undertaken between April and August 2016 and comprised six elements, culminating in the preparation of Draft and Final Reports.

Figure 1.1: Study Method

Note: Engaged Business Surveys – this included 81 telephone interviews with businesses and organisations engaged in an IC supported project and 124 responses to a wider online survey of businesses engaged with ICs in other ways (**Chapter 6**).

2. Setting the Scene

This Chapter sets the scene for, and provides a brief contextual overview of, the development of the IC Programme in Scotland.

2.1 Innovation Centres Programme

The SFC established the IC Programme in 2012, and committed up to £120 million in core funding for the eight ICs for the period 2013 to 2018. The SFC, in partnership with SE and HIE, aims to support transformational collaboration between universities and businesses, to enhance innovation and entrepreneurship, and to support economic growth, particularly, but not exclusively in Scotland's priority sectors.

Vision for Innovation Centres

"Using the Scottish university infrastructure, human resources and research excellence as a platform for collaborations across the whole of Scotland, ICs 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."

Source: Partners Memorandum of Understanding

The partners agreed the scope of the strategic ICs, including that they should[2]:

1. Be demand-led.
2. Address opportunities across national and international markets.
3. At a Scotland-wide level engage effectively with large companies and SMEs as appropriate to the sector.
4. Be internationally ambitious and exploit, as far as possible, opportunities for economic benefit to Scotland through export-led growth.

[2] Memorandum of Understanding between SFC, HIE and SE Concerning Collaborative and Governance Arrangements for Proposed (Scottish) Innovation Centres (April 2012 to July 2015).

5. Be bespoke to the sector/area involved. Centres may involve physical co-location of expertise and activity. Alternatively, they may have multiple locations (e.g. in the form of a distributed network). Ease of access to business and other collaboration partners should, however, be a key consideration.

The following high level aims and objectives for ICs were agreed.

Figure 2.1: IC Programme High Level Aims and Objectives

Source: Memorandum of Understanding between SFC, HIE and SE Concerning Collaborative and Governance Arrangements for Proposed (Scottish) Innovation Centres (April 2012 to July 2015).

Further, while each IC is bespoke to the sector/area involved, and the need for flexibility was recognised at the outset, a number of high level principles were agreed. ICs should[3]:

- provide clear benefits for business and university partners;

[3] Memorandum of Understanding between SFC, HIE and SE Concerning Collaborative and Governance Arrangements for Proposed (Scottish) Innovation Centres (April 2012 to July 2015).

- create impact for the Scottish economy and society – delivery of benefits to business and industry to support economic growth and wider impacts (e.g. public engagement);
- support transition to a low carbon economy – how ICs will directly or indirectly contribute to Scotland's transition to a low carbon economy;
- develop strong plans for leadership and governance – to ensure that the priorities of industry and other end-user stakeholders guide the ICs knowledge exchange, research, applied research, technology/product development and other programmes;
- have strong commitment from industry – as evidenced by a core membership of, and investment by, key businesses from the outset;
- ensure that ICs and their associated activities are accessible to any relevant business interests in any sector in Scotland; and
- have openness to participation by businesses from outside Scotland where such participation brings value to the IC and to Scotland.

The strategy, as set out in the original call for proposals for business plans for ICs, stated "…*that in order to create sustainable communities, core funding for successful ICs may need to be of longer duration – potentially five to ten 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*."

2.2 Open-Calls and Assessment

An open-call for proposals for ICs was announced by the SFC and partners in April 2012. Thirty proposals were received and six were asked to submit a full business plan by October 2012. The five-year business plans were to be developed in collaboration with industry and other partners, setting out how the step-change for the sector/area would be achieved. An external consultant undertook due diligence of the submitted business plans.

Assessment criteria centred on the following aspects: potential for impact, leadership and management, strength of industry collaboration, developing the innovation landscape in Scotland and UK, skills and training, and value for money.

Three ICs were approved towards the end of October 2012, with funding and activity to commence during 2013, **Table 2.1**.

A second targeted call for ICs was agreed in December 2012. At this time, partners agreed to develop ICs in the nine sectors/areas where proposals submitted to the initial open-call had demonstrated potential for an IC, but had not fully met the assessment criteria. The potential ICs in the second call included: creative industries, oil and gas, financial and business services, tourism, construction and building technologies, software intensive systems, industrial biotechnology, fashion and textiles, and aquaculture.

The process changed for the second targeted call which was initiated in February 2013 – it included a series of industry demand workshops, expressions of interest, identification of preferred bidders to submit detailed proposals (business plan), and assessment process.

Seven full proposals were received by May 2013, and five were recommended for funding in September 2013, **Table 2.1**. Each IC was then required to produce business and implementation plans by November 2013, with funding confirmed the following month.

Over and above the core SFC award, ICs have submitted investment proposals for additional funding for capital equipment (CapEx).

All ICs received their initial letter of award by Spring 2014.

Taken together, the SFC has approved the following funding for the IC Programme to date:

- **Core funding awards totalling £78.5 million.**
- **Additional funding for capital equipment of £14.2 million.**
- **Total funding for the IC Programme of £92.7 million.**

Table 2.1: SFC Funding Approved To Date (Core and CapEx Only)

Admin Hub University	IC	Sector/Area	Core Funding	CapEx	Total Funding
First Phase ICs Approved					
University of Glasgow	Centre for Sensor and Imaging Systems (CENSIS)	Cross-cutting	£10m	£2.07m	£12.07m
University of Edinburgh *	Digital Health and Care Institute (DHI)	Health	£10m	£1.2m	£11.2m
University of Glasgow	Stratified Medicine Scotland (SMS-IC)	Life Sciences	£8m	£4m	£12m
University of Stirling	Scottish Aquaculture (SAIC)	Food & Drink	£11.1m	£1.7	£12.8m
Heriot-Watt University	Oil & Gas (OGIC)	Energy	£10.6m	£1.6m	£12.2m
University of Strathclyde	Industrial Biotechnology (IBioIC)	Cross-cutting	£10m	£1.8m	£11.8m
University of Edinburgh	The Data Lab	Cross-cutting	£11.3m	-	£11.3m
Edinburgh Napier University	Construction Scotland (CSIC)	Construction	£7.5m	£1.8m	£9.3m
Total			**£78.5m**	**£14.2m**	**£92.7m**

Source: Data provided directly by the SFC

* **The Admin Hub University for DHI has changed to the University of Strathclyde from July 2016**.

In addition to the funding streams noted above, an additional £2 million per annum was set aside for taught Postgraduate places to address skills issues in the different sectors/areas.

2.3 Programme Governance

Ultimate oversight of the IC Programme is the responsibility of the SFC Board, supported by SFC Research and Knowledge Exchange Committee (RKEC). Officers within SFC provide regular updates to both RKEC and the Board based on:

- regular formal review meetings with the ICs to review progress and address any issues arising through the Innovation Centres Steering Group;
- review of monitoring reports and performance indicators provided on a quarterly basis by the ICs to the SFC using an agreed Monitoring and Evaluation Framework (MEF); and
- ongoing formal and informal contact with all eight ICs.

Oversight of each of the individual ICs is also the responsibility of the university acting as the Admin Hub University for the IC, working in partnership with the SFC and other partner Higher Education Institutions (HEIs).

Collaboration and knowledge sharing across the ICs at a strategic level is also facilitated through regular meetings of the Chief Executives of all of the ICs, the Chairs of the IC Boards, and the Admin Hub Group comprising representatives of each of the Admin Hub Universities. The SFC and Enterprise Agencies regularly attend these meetings, providing another means of ensuring sufficient oversight and engagement.

SFC and Enterprise Agencies are also observers on IC Boards.

2.4 IC Structures

SFC and partners did not prescribe a template for how ICs should be set up. Rather, flexibility was inbuilt from the outset to encourage and enable ICs to develop governance and operating models that best meet the needs of the sector/area in which they operate. As might be expected, this flexible approach has resulted in considerable variation across the individual ICs.

Each IC has an Admin Hub University – a 'host' university. ICs are not legal entities, rather they are embedded within the Admin Hub University's infrastructure.

IC core staff are employed by the Admin Hub University and adhere to their financial and operational structures and procedures. Some, but not all, ICs are physically co-located with their Admin Hub University. Others have, for example, developed "hub and spoke" models.

Some ICs have formal partnerships with other HEIs in addition to the Admin Hub University. For example, SMS-IC's Admin Hub University is the University of Glasgow, however, SMS-IC operates a 10-member consortium involving three other HEIs (Aberdeen, Dundee, Edinburgh), NHS Boards and the private sector.

Some ICs have significant in-house technical capability and expertise. For example:

- CENSIS - has developed the Connected Devices Development Centre (CDDC) which provides companies with project support in the adoption or development of new technologies (mainly in areas relating to the Internet of Things);
- IBioIC - has developed two Equipment Centres to support its industry members to have access to the necessary pilot and demonstration scale-up facilities within Scotland. This includes the Rapid Bioprocess Prototyping Centre (at University of Strathclyde) and Flexible Downstream Bioprocessing Centre (at Heriot-Watt University). Two more are under discussion;
- SMS-IC – is based at Queen Elizabeth University Hospital in Glasgow. Considerable investment has, and continues to be made to ensure that there is strong industry and academic presence embedded at the core of the hospital site. SMS-IC is based within the Teaching and Learning Centre which includes office space for industry, and capital funding secured from SFC and private sector partners has resulted in the development of in-house sequencing and informatics equipment infrastructure and capability; and
- The Data Lab - has a team of in-house data scientists that can work with companies on innovation projects. This was considered important in helping to build the IC's credibility with industry and provide short term solutions to companies.

2.5 IC Activities

ICs are typically involved in a wide range of activities, which can be categorised as follows, **Table 2.2**.

Table 2.2: IC Activities

Awareness and Profile Raising (Community Building)	Supporting Industry-Academic Collaborations	Skills and Training
• Host own IC events and conferences. • 'Piggy-back' on to other organisations' events. • Learning journeys and international engagement. • Websites for each IC and a shared ICs website[4]. • Social media. • Blogs. • Case studies. • Newsletters.	• Providing opportunities for industry, academics and others to come together to discuss sector/industry challenges and potential solutions. • Support to scope project ideas. • Application support and guidance. • IC match-making service, as well as linking with Interface and with Business Development teams within HEIs. • Grant funding to support collaborative R&D projects.	• MSc programmes and places. • Internships. • Industry placements and secondments. • Online learning and CPD.

2.6 Business Engagement

The ICs have developed a wide range of techniques and mechanisms as a means to engage with businesses. These mechanisms continue to evolve, and can vary depending on the sectors/markets the ICs operate in.

The mechanisms which have been developed by ICs are what we might expect for a programme of this nature. Mechanisms for business engagement typically include:

- Membership (e.g. DHI – free, IBioIC – paid);
- Industry or Consortium Forums (e.g. SMS-IC, SAIC);
- Open calls for projects;
- Thematic calls for projects;

[4] http://www.innovationcentres.scot/

- Business Development teams (e.g. DHI, The Data Lab);
- Organise their own events, conferences, and networking opportunities;
- Engagement with the Enterprise Agencies to assist with identifying and engaging businesses;
- Engagement with Scottish HEIs;
- Piggy-back onto other organisations' events and conferences; and
- Engagement with Industry Groups, Bodies, and Associations, etc.

This is a broad mix of approaches and, as described later in **Section 2.8** and in **Chapter 3**, the ICs have made good progress in increasing awareness of the IC service offering.

It is important to note that some ICs have been fully operational for a shorter period of time than others. However, a fair assessment is that engagement is broadening, and is moving in the right direction.

As highlighted later, ICs have engaged with[5]:

- a mix of SMEs and large companies;
- predominantly Scottish companies, with a smaller proportion of international engagements and projects; and
- Scottish companies based in 22 of the 32 Local Authority areas - with clear clusters around Glasgow and Edinburgh, and to a lesser extent, Stirling, Aberdeen and Inverness.

An important starting point for ICs has been to engage with those businesses that were involved at the outset (e.g. providing industry input to Outline Proposals and Business Plans, etc). Engaging with these businesses and with wider existing contacts (e.g. identified through HEI partners) was a sensible approach.

Over time, most of the ICs have developed a much broader range of business engagement activities, including the mechanisms outlined earlier, to reach out to, and engage with a wider audience.

[5] Based on data from KPIs: Number of Engagements with Companies and Number of Projects with Companies, and assessment of Project Log information. This does not include, for example, memberships (if applicable), attendance at events, etc.

2.7 IC Programme Level Targets

As noted above, the development of the IC Programme articulated a vision, high level aims and objectives and a set of principles for the Programme. However, these were not translated into quantified targets at the Programme level.

The individual IC Business Plans do, however, articulate ambitions, targets and impacts – at an IC level. The targets in the Business Plans are expressed in different ways, making simple aggregation problematic. Some are presented as targets at different levels of ambition, while others are more straightforward.

It is therefore difficult to assess the performance of the IC Programme as a whole in the absence of clearly articulated Programme level targets. This is a gap in the Programme development and appraisal process, and one which makes it more difficult to assess the *relative* contribution proposed by individual ICs in their Outline Proposals and Business Plans.

The range of measures within each IC Business Plan varies, but they generally cover areas such as:

- income generation/leverage from public and industry sources;
- the volume of companies to be supported and the volume of projects funded and delivered;
- outcomes from those activities including measures such as increased R&D expenditure; IP generated/registered/licensed; new products/services developed/launched;
- economic outcomes including new start-ups; increased sales; exports; and
- economic impacts typically expressed as jobs, and in some cases, Gross Value Added (GVA).

In many cases, IC indicators and targets have been revised, based on a number of factors, including timescales taken for ICs to become operational and based on their experience of operation in the first year or so.

In some cases, targets were revised to reflect a shift in strategic approach (e.g. CENSIS proposed a shift from a large number of small projects to a smaller number of larger projects as a means of generating greater impacts).

The basis on which the targets have been developed is not always articulated within the Business Plans (although it is in some cases) and impact targets vary considerably in their scale. For example, from £67m+ in GVA for SMS-IC to between £374m and £596m for CENSIS. CENSIS has since revised its GVA target downwards to between £110m and £385m).

2.8 Monitoring and Evaluation Framework

Following the approval of the funded ICs, a Monitoring and Evaluation Framework (MEF) was developed to enable SFC and its partners to track progress. SE and HIE played a key role in the development of a MEF for the IC Programme to:

- provide confidence that ICs are on track to deliver value for money for the public purse and significant economic and wider impacts; and
- provide accurate information, captured on an ongoing basis, which can be used as input into future evaluations of the ICs.

Specific targets have therefore only been applied through the MEF by individual ICs (rather than also at a Programme level). SE and HIE helped sense check the targets which vary between ICs.

The MEF, which was introduced in 2014/15, consists of five components: quarterly reporting to IC Boards and SFC, baselining, reporting on strategic investments online operating system, annual formal reviews, and interim and full independent evaluations. Associated guidance was provided to the ICs.

A logic model approach was adopted - covering Inputs, Activities, Outputs, and Outcomes/Impacts - to track progress against a range of indicators, in particular given that the full economic (and wider) impacts will not be known for many years. ICs are required to provide progress against a core set of measures, and some have also developed additional measures specific to their sector/area.

Appendix B presents a series of tables by IC that sets out progress to date (to April 2016) against 2014/2016 targets and against the five-year targets.

We have made no attempt to combine the targets and actuals achieved to date across all of the core set of measures for the IC Programme. In the main this is because there are:

- many indicators against which no targets have been set; and
- some indicators where progress does not yet appear to be routinely captured and reported.

While it might be expected that ICs would not yet be reporting on outcomes/impacts, some of these gaps exist at the level of activity measures. 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.

As such, there are gaps which make it difficult to provide a consistent or meaningful assessment at an IC Programme level, and in some cases at the individual IC level.

As discussed in **Chapter 5**, the consultations identified issues with the MEF and there is a need to review this process to ensure that:

- measures and targets are clear and agreed across ALL eight ICs such that they provide a meaningful mechanism for the ICs themselves to assess their progress and a clear tool for oversight at a Programme level;
- targets are defined for each year, ideally broken down quarterly, and actual performance is reported in a consistent way; and
- target setting takes full account of realistic timescales for achievement, and reflects the operating conditions for the ICs and their different stages of development.

We have, however, presented some combined KPI tables for the IC Programme in **Appendix C**, with the caveat above regarding missing values. Some key points on actuals achieved to date (April 2016) for the IC Programme are outlined on Page 17.

Firstly, we present data on inputs to the IC Programme (cash and in-kind contributions) achieved to date, **Table 2.3**. This shows that, to date, there is an 86% (cash) and 14% (in-kind) contribution to the IC Programme.

Table 2.3: Inputs to the IC Programme (to April 2016)

Funder	Amount	% of Total
SFC	£32,245,877	71%
In-Kind	£7,405,477	16%
Industry	£2,791,957	6%
Other *	£2,079,629	5%
Enterprise Agencies	£598,300	1%
Total	**£45,121,240**	**100%**

Source: EKOS Analysis of ICs MEF Quarterly Reports.
* **Other** cash funding includes funding from other public sector sources, FE/HE, etc

Funding has come from a range of sources, predominantly SFC, followed but to a lesser extent from in-kind contributions. 29% of total IC Programme inputs received to date have come from sources other than SFC (both cash and in-kind).

Key Deliverables for the IC Programme:

- 1**,391 engagements with companies**. Engagement is defined as a minimum of four hours of one-to-one contact between IC and company. This ranges from 49 engagements (SMS-IC) to a high of 310 (CENSIS). The average number of engagements for the IC Programme is 174.
- Total company engagement includes **801 instances of SME engagement.** This represents 58% of total company engagement. CENSIS and CSIC have had particularly high levels of SME engagement (77% and 83% of their total company engagement respectively).
- Total company engagement includes **238 instances of international engagement** (headquartered outside Scotland). This represents 17% of total company engagement. SMS-IC, followed by The Data Lab and SAIC have had higher levels of international engagement than other ICs.
- **149 (176)* projects with companies supported**. A project is defined as a defined work stream with associated activities. Some ICs have supported a higher volume of small-medium sized projects, while others have supported a smaller number of large projects.
- Depending on the total project figure used (see above), the proportion of **projects with SMEs is between 48% and 56%** of all projects supported.
- Circa **10% of projects supported have been international**, with much of this associated with The Data Lab, SMS-IC, and SAIC.
- **16 new products, processes, services and business models have been delivered to market**. This includes products, processes, services, business models that are new or substantially revised. Delivered to market means development project is complete. The low number reflects the fact that projects are ongoing, some are longer term, and not all are close to market/commercialisation. The products delivered to date are almost all attributable to DHI and IBioIC.
- **152 academic to business collaborations** have been made.
- **53 jobs have been created in companies attributable to ICs**, which are largely attributable to IBioIC, followed by The Data Lab.
- **£4,660,000 revenue (turnover) has been recorded by companies**, and is revenue that is attributable to the introduction of new products, processes, services, business models. This is all attributable to IBioIC.

Note: Figure for Projects in DHI MEF Reports has two figures. A figure of 21 (number of contracted pieces of work with an existing business), and 48 (total number of projects with at least one business partner with most at scoping, exploratory or contracting stages).

3. The Eight Innovation Centres

This Chapter provides a summary overview of the eight ICs in Scotland, covering aspects such as the market, issues/challenges, aims, business engagement, and project activities.

The information and data presented on the following pages draws on a review of various background information and data. This includes a review of outline proposals, business plans, implementation/operational plans, and monitoring reports.

More detailed Tables for each IC are presented in **Appendix B**, covering:

- financial plans and expenditure to date;
- progress against core KPIs submitted by all ICs on a quarterly basis to SFC; and
- progress against ICs own KPIs (where applicable).

Note: Information on the following pages relating to SFC funding is based on the Core award and any CapEx funding only. It should, however, be noted that ICs have also secured additional funding for taught Postgraduate places. As highlighted earlier, an additional £2 million per annum was set aside for taught Postgraduate places to address skills issues in the different sectors/areas.

Digital Health & Care Institute (DHI)	
Launched	October 2013
Admin Hub University	Originally University of Edinburgh University of Strathclyde since July 2016
Based	Originally based within University of Edinburgh (Appleton Tower). The "Hub" Head Office is now based at Eurocentral, North Lanarkshire "Spoke" Office in Forres, Moray
SFC Funding (Core and CapEx)	£11.2 million
Number of Staff	18 FTEs based at Eurocentral (employed by Admin Hub University) 16 FTEs based in Forres (employed by Glasgow School of Art)
Membership	Yes – Free to join (Scotland, UK, and International)
	A total of **1,001 members**: • Business members: 288 • Civic members: 475 • Academic/other members: 238
Market: The global Digital Health market was worth over 60 billion USD in 2013 and is projected to grow to over 233 billion USD by 2020. This is a compound annual growth rate (CAGR) of 21%, with the largest growth rates in telehealth and mobile health. The US is expected to remain the dominant market - with some suggestions that 60% of the market will be within Europe. It is difficult to estimate the scale of the UK and Scottish opportunity as it is not segmented by geographic boundaries, and is also dependent on how different nations adopt digital health. Deloitte estimates that by 2018 Europe will account for 33% of the global m-health market. If this percentage share is applied to the Statista data, DHI estimate a European market of $77 billion in 2020, UK market (based on relative GDP) of $14 billion, and a Scottish market of $1.2 billion.	
Issue/Challenge: Global trend of public sector reform. Within health and social care this has been driven by: reduced public spending (providing better quality, more efficient, and more cost-effective services), changing demographics (people are living longer placing increased pressure/demands on services), increasing expectations of what health and social care services should deliver (people want more choice and control, technological change), and rebalancing health and care provision away from hospitals and institutions (facilitating independent living). Health and social care expenditure in Scotland has been on an upwards trend and reached over £12bn in 2015/16. There is a growing need to radically transform the way health and social care services are delivered – finding smarter, more effective ways of managing and delivering health and care services. Advances in technology and digital health interventions are an important part of the solution.	
Aim: The DHI vision is to be recognised as "*international leaders in digital health and care innovation*", and aims to help address modern health and care challenges through the development of new ideas for cutting-edge digital health technology and information services. DHI seeks to develop new ideas for digital technology and information services that will ultimately improve the delivery of health and care services for Scotland's communities.	

Digital Health and Care Institute (DHI)

Impact Targets: The Operational Plan (2013) reports that by 2018 DHI will generate: economic value up to £1bn per annum, increase sales and new product revenues up to £208m, create the potential for up to 725 new jobs in Scotland, and create the potential for as many as 30 new Scottish companies. In the MEF, the impact targets are now reported as at the end of the initial term (as per the SE economist modelling) to be 638 jobs and £91.5m revenues. The reality is, however, that the civic and economic outcomes will take longer to come to fruition.

Business Engagement: DHI initially ran Open Calls for proposals. Over time this has evolved to include specific call topics which have been defined in partnership with NHS Boards to address health and social care priorities in Scotland (e.g. Diabetes, Outpatients Redesign, Dementia). DHI has moved towards a "dual system" for supported projects: Strategic Challenges (65%) – work organised by identified strategic theme/challenge, and Sandpit (35%) – a smaller stream of organic project intake, as per the original model. DHI has a Business Development team that engages with industry, HEIs and civic partners. DHI has also been involved in a wide range of events and conferences held in Scotland, UK and Internationally – attending, speaking and exhibiting.

Projects: All DHI supported projects are required to demonstrate academic, business, and civic value. The ideal is for each project to have an academic, industry and civic partner – bringing together people and organisations in the health and social care, charity, technology, design and academic sectors to develop new ideas for digital technology and information services that will improve the delivery of health and care services. Each project is different and project proposals range from very early to late stages of development. There are three main components of the activity pipeline, and depending on the project's maturity it is allocated in the Exploratory, Laboratory or Factory team:

- Exploratory - explore ideas and challenges for the health and care industry.
- Laboratory - explore the user experience of a product/service delivery for its use in the health and care community.
- Factory - develop and validate a product/service as the result of a collaboration between academic, business and civic partners.

A project could start as Exploratory and progress through Laboratory and Factory, while another could be further advanced (e.g. completed research studies and pilots) and go straight to Factory. DHI has supported 80+ projects to date, with a pipeline of a further c. 50 projects.

DHI is working with a number of universities to deliver the SFC Highly Skilled Workforce Scholarship programme in the 2015/16 academic year. All 20 scholarship places have now been awarded within the University of Strathclyde, University of Edinburgh, Glasgow School of Art, Robert Gordon University, and University of the Highlands and Islands.

KPIs from SFC MEF: Progress against the Exploratory, Laboratory and Factory output targets is positive, albeit with some delays due to the change in Admin Hub University. Progress against the outcome targets is difficult to evidence in the MEF reporting as they take longer to come to fruition. Initial income targets have also been revised downwards. There are various gaps in the quarterly MEF reports, including a number of KPIs which have no targets set and where actual achieved to date values have To Be Confirmed, To Be Reviewed, or are Not Quantified. As such, it is extremely difficult to provide an overall assessment on progress to date. There has been recent changes in the Admin Hub University - this took longer than originally envisaged to finalise, during which time DHI has not been able to approve new projects. This has also impacted on performance. Performance to date against 2014/16 targets has been strong in terms of, for example, In-kind Contributions and Number of Engagements with Companies. There has been slower performance, for example, in terms of Industry Funding, Number of New Products, Processes, Services, Business Models Delivered to Market – although much of the latter will not be achieved until into 2018.

Stratified Medicine Scotland	
Approval Date	October 2013
Admin Hub University	University of Glasgow
Based	Originally based at Inchinnan within the offices of Thermo Fisher Scientific. SMS-IC has been based at the Queen Elizabeth University Hospital in Glasgow since August 2015
SFC Funding (Core and CapEx)	£12 million
Number of Staff	9 FTEs which includes 4 Sequencing Team Leaders/Assistants. Recruitment is underway for replacement/additional staff
Membership	No. A Precision Medicine Industry Forum has been set up as a Special Interest Group of the Scottish Lifesciences Association (SLA). It is open to all 125 members of the SLA.

Market: Stratified medicine research is mostly driven and financed by major pharmaceutical companies. There is growing awareness that newly launched drugs and to a large extent existing ones are not uniformly effective. Payers are increasingly unwilling to bear the cost where novel agents do not generate a clear benefit of sufficient scale to be of value.

The need for stratified medicine is clear - global spend on pharmaceuticals in 2011 was $900 billion, with an estimated $594 billion for therapies that were not effective, and of the $88 billon being spent on open interventional clinical trials worldwide, up to $43 billion will be wasted due to trial failure. In the UK - of the £124 billion per annum spent on health care, medicines account for £12 billion or 10% of the NHS budget.

The success of stratified medicine lies in controlling the future level of spending on medicines that are likely with an increasingly ageing population, and value to Pharma in repurposing existing/failed drugs and/or companion diagnostics. The immediate need and greatest current commercial opportunity for stratified medicine is in adding value to existing clinical trials programmes, specifically developing new approaches to the conduct of both early and late phase trials, including the development of diagnostic tools. Implementation of a stratified approach will reduce development times, lower failure rates and significantly decrease development costs.

Issue/Challenge: Outline Proposals for the SMS-IC emphasises that the traditional “one size fits all” approach for the diagnosis and treatment of disease is no longer efficient and is becoming increasing unaffordable. The main drivers have been increased healthcare costs and drugs bill, increasing R&D costs, and increasing chronic disease burden.

The ability to tailor treatment to those who will benefit the most is considered a more cost effective approach – and selecting out those who will in all likelihood experience adverse reactions promotes safety of interventions. Precision Medicine or Stratified Medicine involves examining the genetic makeup of patients and their differing responses to drugs designed to treat specific diseases. This then allows medical researchers to create more precise and effective forms of treatment for groups of patients most likely to benefit.

It is a medical model using clinical information and advanced new molecular profiling technologies to tailor therapeutic strategies and to determine the predisposition to disease at the population level. It enables the delivery of timely and stratified care pathways, monitoring, treatment and prevention.

Stratified Medicine Scotland

Aim: The overall ambition of SMS is to transform management of chronic disease globally by accelerating biomedical research, high quality health care provision and economic growth. Its mission is "*the right drug for the right patient at the right time*", and its overall aim is to create a unique and sustainable capability in stratified medicine to serve the health needs of the Scottish population. SMS-IC's vision is that "*stratified medicine is recognised as the future for the diagnosis and treatment of disease*". In pursuit of its mission and vision, SMS-IC seeks to: improve the treatment of acute and chronic disease in patients and provide new tools to enable health care providers to diagnose and treat; and support the development of new and better targeted medicines by pharmaceutical and biotech companies.

Impact Targets: It is forecast that SMS-IC will generate over 306 new jobs and £67+ million in GVA impact over the five-year funding horizon. The MEF has no Outcome targets quantified, including jobs and revenue.

Business Engagement: A Precision Medicine Industry Forum has been set up as a Special Interest Group of the Scottish Lifesciences Association (SLA), and is Chaired by the CEO of Biopta (member of SMS-IC Board). It is used as a mechanism to share information about SMS-IC and stratified medicine more generally.

Projects: SMS-IC has supported a portfolio of five large Exemplar Projects, and works with clinicians, academics groups and industry partners to deliver the 2-3 year projects. The total project cost is £5.403m of which £3.059m is SFC funding (57%). The remainder is made up of in-kind contributions from HEI partners and industry and an industry cash contribution. The five exemplar projects are:

- Ovarian Cancer – University of Edinburgh (lead).
- Oesophageal Cancer – University of Aberdeen (lead).
- Rheumatoid Arthritis – University of Glasgow (lead).
- Irritable Bowel Disease/Chronic Obstructive Pulmonary Disease – Biopta (SME lead).
- FutureMS - University of Edinburgh (lead).

The aspiration is that the Exemplar Projects will provide clinicians with the ability to better treat their patients with the drugs that work for them, and to better understand the development of chronic diseases. At the same time, SMS-IC links in with drug companies and biotechnology firms about how they can better understand differences in patient populations and develop more effective treatments. Importantly, the Exemplar Projects will also provide evidence of Scotland's capability in precision medicine to allow it to compete in a global marketplace.

A Stratified Medicine and Pharmacological Innovation MSc is offered by the Universities of Aberdeen, Dundee, Edinburgh, Glasgow and Strathclyde.

SMS-IC is based at Queen Elizabeth University Hospital, and the site is a hub for industry and academics. Capital funding including from SFC and SMS's private sector partners has resulted in the development of in-house sequencing and informatics equipment infrastructure and capability. Most recently, SMS-IC has become the focal point of the Scottish Ecosystem for Precision Medicine, which provides an interface to incorporate other providers, including the Catapult for Precision Medicine.

KPIs from SFC MEF: There are no targets set in the MEF Reports for any of the Activity, Output or Outcome measures. Details on targets are expected in the Q4 2015/16 MEF report. It is our understanding that this might in part be due to the lengthy discussions about developing the Scottish Precision Medicine Ecosystem, the commercial model, and the interface with the Precision Medicine Catapult. The focus for SMS-IC was on setting up the specialised laboratories and complex data processes/workflow and achieving the detailed milestones for each Exemplar Project. As such, it is extremely difficult to provide an assessment of progress against the MEF at this early stage.

Centre of Excellence for Sensor and Imaging Systems (CENSIS)	
Launched	January 2014 (Grant awarded April 2013)
Admin Hub University	University of Glasgow
Based	Based at the Inovo Building, George Street, Glasgow
SFC Funding (Core and CapEX)	£12.07 million
Number of Staff	17 (April 2016)
Membership	No

Market: Sensor and Imaging Systems (SIS) is an enabling technology across many Scottish industrial sectors, including transport, defence, natural and built environment, health, manufacturing, precision agriculture, offshore and subsea, and energy (including renewables and oil and gas). Increasingly, sensor systems and their underpinning device, signal processing, networking, information dissemination and diagnostics technologies, are being integrated within the products and services of a wide range of Scottish businesses.

Scotland has a strong advanced engineering and high-technology industrial sector, spanning aerospace through energy to biotechnology. Underpinning these industries is the need for SIS, which drive quality, efficiency and performance, providing not only a driver for growth, but the foundation for a diverse range of products and services. Scotland is a global leader in SIS technologies and investment to exploit our capabilities is a national priority.

There are over 170 companies working directly in sensor system technologies in Scotland, generating over £2.5 billion per year to the economy and underpinning wider end markets. These companies, and their wider supply chain will benefit from R&D, to extend existing products and develop new markets. The industry sector and its supply chain has considerable expansion potential to grow. Scotland is recognised as a global leader in SIS due to the broad research base residing in its universities.

Issue/Challenge: Used correctly SIS technologies can provide a wealth of information which can result in economic benefits for a range of sectors through improved customer relations, increased productivity and efficiencies, reduced operating costs, and management information. That being said, most companies do not have the technical expertise to fully exploit SIS technologies in-house, and often do not know where to access the expertise. CENSIS's role therefore is to bridge the gap between academia and industry to enable innovation in this area.

Aim: CENSIS's vision (stated in the original proposal) is to be "*an internationally renowned, business-driven centre for SIS innovation, recognised for the economic impact achieved by creative partnerships between industry, universities, and user community members.*"

CENSIS aims to become the predominant source of expertise in the industrial exploitation of SIS R&D in Scotland, able to develop into the UK's premier centre of excellence with a strong presence in international programmes. Through academic and industrial partnerships, CENSIS will create opportunities for the exchange of talent and market growth, stimulating inward investment and showcasing Scotland's SIS capabilities.

Impact Targets: The original forecast based on the initial SFC funding of £12m and combined with funding from SE/HIE, Innovate UK, EU H2020 and industry, was that it will generate between £374m and £596m in GVA.

CENSIS has since revised its target downwards – it will catalyse project activity of £40 million between industry, CENSIS and academia. This is forecast to generate between £110 million and £385 million in GVA.

Centre for Sensor and Imaging Systems (CENSIS)

Business Engagement: CENSIS has a Business Engagement team including a Business Development Director, Business Development Managers and a Marketing and Outreach staff that play an important role in raising awareness, building collaborative partnerships and relationships and shaping projects. CENSIS has developed relationships with industry groups and bodies, trade associations and others which have been important outreach channels along with the Spokes and also through other ICs (e.g. OGIC, SAIC and CSIC). CENSIS does not generally have open calls for project proposals, focusing rather on identifying key players and challenges in target sectors in dialogue with the industrial base.

Projects: CENSIS supports shorter and longer-term partnerships between industry and universities. It operates a Hub and Spoke model with the Hub providing management and overall Centre leadership along with project management and in-house engineering support. The Spokes facilitate access to wider technical capability, specialist assets and access to the HEI research base. The Spoke themes emerged in areas where there was potentially good industry engagement, a strong academic base and clear challenges/opportunities. CENSIS has focused on five thematic Spokes – covering end-to-end system requirements of SIS and each Spoke is led by an Interim Chair(s) from one or more university/company: Advanced Devices and Fabrication: Interim Chairs: University of Glasgow and GSS Ltd; Advanced Data Analysis and Visualisation: Interim Chair: University of Glasgow; Signal Processing, Communications and Networking: Interim Chair: Heriot-Watt University; Remote and Distributed Systems: Interim Chairs: University of the Highlands and Islands (Scottish Association for Marine Science – SAMS) and University of Strathclyde; and Imaging and Optics: Interim Chairs: Leonardo (formerly SELEX ES) and Optos Plc. Specialist expertise for projects is drawn from the wider HEI research base. The number and remit of Spokes will evolve to reflect industry demand and they are currently under review. CENSIS's delivery mechanisms include:

- Strategic Research – longer term projects (2-3 years) tackling knowledge gaps identified by the market. The purpose of the research is to encourage industry to highlight gaps in key technology areas and for HEIs to address these requirements. Typically Technology Readiness Level (TRL) 1 to 3 – identify a technology development need that requires significant research base input and aim to produce technology in a few years' time that may in turn serve as input to future collaborative R&D project (only has funds to support a few such projects, with investments c. £250K).
- CENSIS Funded Projects - Collaborative R&D projects led by industry - research projects typically span 6-18 months, are led by industry in partnership with one or more HEIs. The purpose of the collaborative approach is to solve specific industry challenges and accelerate research outcomes into new products or services (funding in region of £15K-£50K).
- Larger projects – in partnership with SE/Innovate UK/Horizon 2020 funding, etc.

CENSIS is supporting an MSc in Sensor and Imaging Systems delivered jointly by the University of Edinburgh and the University of Glasgow. Three students completed in 2014/15, 11 are studying in 2015/16, and 20 full-time funded places are available for 2016/17 for Scottish and/or EU students. CENSIS hosted an MSc summer project placement (June-August 2016) and will support up to five studentships for the degree of Engineering Doctorate (EngD) in Sensor and Imaging Systems (2014/15-2017/18) offered by the Universities of Glasgow, Edinburgh, Heriot-Watt, and Strathclyde.

KPIs from SFC MEF: There has been an agreed re-profiling and a move to a smaller number of larger projects than originally envisaged, which impacts on target setting. Data for 2014/16 shows that CENSIS has had 310 engagements with companies, the majority of which are Scottish SMEs. It has supported 34 projects with companies and 31 academic to business collaborations.

Oil and Gas Innovation Centre (OGIC)	
Launched	March 2014
Admin Hub University	Heriot-Watt University
Based	Aberdeen Innovation Park
SFC Funding (Core and CapEx)	£12.2 million
Number of Staff	7 FTEs and 2 Interns
Membership	No

Market: Oil and gas is a global industry and in the UK, the market has two areas of focus:

- Oil and gas production – the direct production of oil and gas from under the North Sea. To date the UK has produced 43 billion barrels of oil equivalent (boe). There is an estimated 22 billion boe yet to be produced - including oil and gas in current fields, in discovered-but-undeveloped accumulations and in yet-to-find resources. The market has, however, suffered a significant downturn, with oil prices falling from ~US$110 to below US$50 per barrel. This has led to job losses, salary reductions, operating and maintenance programme reductions, and projects being postponed. Many companies have delayed, cut back or stopped R&D activity and are more focussed on the short-term.
- Oil and gas supply chain – the fall in commodity prices has had a significant effect on the industry supply chain. Employment in the sector was estimated at 440,000 highly skilled jobs (January 2014) and has declined to 375,000 (Q3 2015). In addition, staff have experienced salary reductions, contractors have seen significant rate cuts, and some major capital programmes have been cancelled or deferred. Worldwide drilling activity has significantly reduced, with the number of new wells being drilled in 2015 significantly lower than the previous year.

At the heart of the supportive policy environment for the industry at a UK and Scottish level is maximising oil and gas recovery though industry-led innovation. This includes improving and accelerating the application of new ideas and technology.

Issue/Challenge: There are approximately 12 to 24 billion barrels of oil equivalent remaining in the UK sector of the North Sea. However, much of this lies in more marginal fields where extraction is more difficult and costly, and exploitation will rely on the development of new and innovative technologies. In the past, innovation in the oil and gas industry has been ad-hoc when specific technical problems arise, and have tended to be localised on a specific field or within a specific company. There have been few cases of innovative collaboration between operators to address wider issues. Further, such innovations have tended to come from multi-national operators that have innovative capacity (both staff and budgets). In recent years, operators in the North Sea have become smaller and have less innovative capacity and no R&D budget.

The recent fall in the oil price has reinforced the need for innovation in the industry, including to help increase exploration recovery rates, to increase production efficiency, and to lower costs to make production more economically viable.

Aim: OGIC's mission is to "*create transformational change in the way industry and academia work together collaboratively to create innovative solutions to solve industry problems and create economic benefit for companies and for Scotland/UK*".

It aims to become a "*world class centre that involves true and meaningful collaboration*" - creating a visible and recognised front-door to OGIC and its activities.

Oil and Gas Innovation Centre (OGIC)

Impact Targets: The Business Plan sets a job target for OGIC of 150 jobs and the MEF also sets out a target of £3.5m revenues to companies by 2018. OGIC is currently looking at revised metrics.

Business Engagement: OGIC promotes awareness of OGIC in the oil and gas industry supply chain, including through: one-to-one client meetings and application support, press and media activity, website, social media, a programme of "value adding" information seminars (e.g. R&D Funding, Intellectual Property), supporting events and conferences organised by others through sponsorship and providing speakers, participating in joint industry workshops, exhibiting and attending relevant trade fairs and exhibitions, engaging with industry technology forums (e.g. industry's Technology Leadership Board) and trade associations, and signposting.

Going forward OGIC will also undertake more activity to generate additional projects, in particular using a "research workshop" approach to generate new, larger and more sophisticated demand-led projects. It is developing an enhanced website and plans to offer a technology "market place" where university staff can propose projects for funding and industry can find projects that are of interest to them. OGIC is in discussion with Innovate UK with a view to undertaking a joint call for projects.

Projects: OGIC supports any innovation that may be useful to the oil and gas industry - as such, the criteria for projects are broad. Those that can apply for project funding through OGIC are companies where projects will demonstrate benefits to the Scottish economy and companies whose projects require innovative solutions to industry problems within eight technology areas: Asset Integrity and Life Extension; Decommissioning; Enhanced Recovery; Improving Exploration Outcomes; Production Optimisation; Shale Gas Exploration; Subsea; and Well Construction, Drilling and Completions.

The OGIC funding support is used to either develop completely new technologies, improve existing equipment/services, or to import and adapt proven innovations from other industries. In the original Business Plan it was anticipated that OGIC would fund 10-12 projects per year, with an average value of c. £100,000 gross (c. £50,000 OGIC net) each. To date projects have ranged between £10,000 and £66,000 OGIC contribution. To date OGIC has funded smaller projects, in the main because:

- a "project" often has several logical phases, and each phase becomes an OGIC "project". Whilst the overall programme may have a value of ~£100,000, the individual component "projects" are smaller.
- budgetary constraints within companies are causing projects to be scaled back.
- most engaged companies are SMEs and investment of £100,000 is often unrealistic.

All Scottish HEIs are invited to be involved in projects through an open Expression of Interest (EOI) process. A total of 14 Scottish HEIs have responded to EOI requests, albeit to varying degrees. The most active HEIs responding to EOIs are University of Aberdeen, University of Strathclyde, Heriot-Watt University (Admin Hub University for OGIC), and Robert Gordon University.

OGIC is supporting an MSc in Oil and Gas Innovation at the University of Aberdeen, with the first intake of students due in September 2016.

KPIs from SFC MEF: Change in market conditions has resulted in a change of approach – supporting smaller companies and projects than originally envisaged. This will impact on target setting. Performance to date against 2014/16 targets has been strong in a number of areas, including: In-kind Contributions, Number of Engagements with Companies, Number of Academic to Business Collaborations, and IP Secured. Performance to date has been less strong for: Industry Funding, Number of Projects with Companies, and Number of New Products, Processes, Services and Business Models Delivered to Market, as would be expected for ICs at an early stage.

Scottish Aquaculture Innovation Centre (SAIC)	
Launched	February 2014 (first member of staff September 2014)
Admin Hub University	University of Stirling
Based	Stirling University Innovation Park. One member of staff (on secondment from HIE) is based in Lochgilphead and deals with the Highlands and Islands region
SFC Funding (Core and CapEx)	£12.8 million
Number of Staff	8 FTEs
Membership	Yes – free. SAIC Consortium - 75 members (53 companies, 16 HEIs and research bodies, and 6 stakeholders)

Market: Scotland's aquaculture industry spans the whole supply chain and the whole country. Salmon production dominates the sector and Scottish salmon is the UK's largest single food export. Aquaculture generates £1.86bn for the Scottish economy and supports over 8,300 jobs. The achievement of government production targets for 2020 and industry production targets for 2030 could raise this substantially. It has been conservatively estimated that every 1,500 additional tonnes of salmon produced would contribute an additional £10.5m per annum to the Scottish economy. Achieving the industry's 2030 target of 320,000 tonnes of salmon per annum would add over £1bn annually to the Scottish economy. Growth in other areas of the aquaculture sector (e.g. shellfish) would add to this. The current shellfish target is to grow from a baseline of 7,600 tonnes to 13,000 tonnes per year by 2020 and 20,000 tonnes by 2025. The salmon producing sector has experienced significant consolidation to half a dozen major global players in 2015. The upstream and downstream supply chain supporting the industry in Scotland, however, has a considerable number of players. By driving innovation in the Scottish supply chain, this could position SMEs in the sector for strong export growth.

Issue/Challenge: For the Scottish aquaculture industry to meet production targets requires both technological and regulatory innovation to drive growth. The key challenges are:

- a lack of suitable sites – expansion has proved difficult in recent years as a number of suitable sites are reaching capacity, and consent for new sites is slow and uncertain.
- regulatory burden – in comparison with competitor countries and other industries, it is considered that the legislative and planning burdens put upon animal production in the marine environment are excessively precautionary, inhibit economic growth and limit local benefits from increased coastal jobs.
- government support – although there is felt to be a degree of political support for the aquaculture industry, there has been less direct financial support, and no explicit strategy to grow the sector compared to other key priority Scottish sectors.

Aim: SAIC's aim is to "*drive commercial success and economic growth, with long-term success measured in terms of aquaculture's contribution to Scotland's economy and reputation".* The organisation's purpose is therefore "*industry success through research partnerships*". SAIC seeks to transform the relationship between the aquaculture industry and research communities by connecting people and providing funding to support commercial-academic collaborations which deliver applied solutions to industry challenges. SAIC's strategic vision is to contribute significantly to aquaculture growth in Scotland by working with all stakeholders to provide evidence-based decision-making, to drive technological innovation and solutions for key challenges, and to de-risk large-scale projects that the sector needs to remain competitive and profitable in the long term. Scotland has the opportunity to reverse the long term decline in its global market share in salmon production (which has halved in the past 10 years) against a backdrop of resolutely rising demand from world markets (when worldwide demand has increased 180% in the past 10 years).

Scottish Aquaculture Innovation Centre (SAIC)

Impact Targets: From its initial core investment of £11.1 million it is projected that over the five-year time horizon £24.725 million in investment will have been committed to the Scottish aquaculture sector, with a net additional Gross Value Added to the Scottish economy of £74 million. Net additional revenues of £215.9 million and Net additional jobs - 952 (FTEs).

Business Engagement: SAIC operates open rolling calls for project proposals as well as facilitated workshops with industry and academia which align with the key Priority Innovation Areas (PIAs) of interest to SAIC. Wider business engagement activities include: support to applicants for projects (industry and academics), co-financing of projects, project management, translation of knowledge, signposting to other public sector sources of funding, business development through one-to-one meetings, workshop events to identify industry-wide challenges and possible solutions, skills development (SAIC Scholars/internships/training programme), brokering service with funding, connecting/supporting and driving innovation in aquaculture, and wider promotion of the sector. Engagement activity includes one-to-one meetings, workshops and outreach activities with industry and academic partners involved across non-traditional aquaculture disciplines and industries to identify cross-over opportunities to drive innovation in the sector.

Projects: To be eligible for project support, companies and research organisations must be a member of the SAIC Consortium – which currently has 75 members. Projects must fit with the areas of strategic focus identified by SAIC: fish and shellfish health and welfare; breeding and stock improvement; feeding, quality and nutrition; and engineering solutions. SAIC targets a minimum project size of around £60,000 to £80,000 and a contribution from industry is required (typically no less than 50%; best case industry contributes 80%).

SAIC has co-funded a small number of high value, high impact projects in its four PIAs identified in the original Business Plan to address persistent, prevalent, long-standing challenges, and in the demonstration project and innovation projects:

- Improved sea lice control in Scottish aquaculture.
- Alternative sustainable feeds for finfish.
- Rapid detection methods for viral pathogens and disease.
- Development of secure health-certified Scottish mollusc spat production systems.
- Plus a large-scale demonstration project (more than 5,000 tonne) farm site, with innovative regulation using a deploy and monitor approach.

Another aspect of SAIC activity is developing the talent on which the Scottish aquaculture industry depends. For the 2015/16 academic year, the SAIC Scholars Connect Plus Programme has secured SFC funding for 25 additional places on Aquaculture and Marine Engineering taught Masters courses at the University of Dundee and University of Stirling.

KPIs from SFC MEF: Broadly on track, even if initial project activity and output forecasts may have been over ambitious. SAIC has had 262 Engagements with companies, including a mix of SMEs and large companies. Around one-fifth of its engagements have been with international companies with headquarters outwith Scotland. SAIC has achieved a pipeline of over 100 potential projects – many have been at early stage of development and not all have aligned with the four PIAs. SAIC has funded nine projects with companies (mainly SMEs) worth £9.3 million - with £2.3 million of SAIC funding which has levered in funding from other public sources (EMFF, HIE) and significant industry contributions (on average £2.70 from industry for every £1 of SAIC investment).

Construction Scotland Innovation Centre (CSIC)	
Launched	October 2014
Admin Hub University	Edinburgh Napier University
Based	Based in Rankine House in Glasgow. Moving to Hamilton International Technology Park (ITP) in Q4 2016 and supported by a virtual hub (www.cs-ic.org)
SFC Funding (Core and CapEx)	£9.3 million
Number of Staff	9
Membership	No – but is developing a membership model for industry to access the prototyping and training facility being developed at CSIC's new ITP base

Market: Globally, construction is forecast to grow by more than 70% to $15 trillion by 2025, when construction will account for 13.5% of the World's GDP (much of the activity focuses on Asia, Latin America, the Middle East, Africa and Eastern Europe). This provides substantial opportunities for Scottish construction companies with ambitions to exploit international markets. The Scottish construction industry underpins and supports almost every other sector of the economy. The sector employs 176,000 people -10% of all Scottish jobs - across 45,000 businesses, with a GVA of £8.7 billion. More than 90% of Scottish construction businesses are SMEs or micro businesses. The 2020 Vision Report on the Future of UK Construction identified key areas of growth as offsite construction, energy efficiency measures, infrastructure and ICT. The Scottish Government's low carbon strategy further identifies construction alongside building technologies, energy retrofit, environmental and waste measures as market opportunities to achieve a low carbon Scotland. The Construction Scotland strategy also aims to grow GVA by £800m by 2016.

Issue/Challenge: In order to achieve the Government set agenda and targets of the industry body it was agreed the businesses themselves would need to be more "*strategic, opportunity focused, collaborative; and globally competitive*". Although the construction sector is well established a number of challenges were highlighted to realise the emerging opportunities:

- the Scottish Government identified a range of climate-related targets in which Scottish construction companies may benefit from competitive advantage in terms of competing with companies from elsewhere. The sector, however, is faced with responding to the regulatory changes resulting from the new strategy and requires support to do so.
- it is a fragmented and diversifying sector that is not known for innovation – seen as very traditional and often not aware of their own innovation activity. Construction businesses are also known for a lack of engagement and uptake of support, and the scale of the sector is such that communicating with businesses can be challenging.

There was an identified need for support to enable businesses to take advantage of market opportunities. Previous interventions were found to be short term and fragmented. More specifically, innovation support was reported by industry as being too generic and not meeting their needs.

Aim: The CSIC vision is to "*create a networked community of industry, academic and public sector talent, channelled towards providing necessary, effective and appropriate innovation support to industry in order to deliver a paradigm shift in the sector's approach to innovation and drive transformational change within the industry*." It seeks to create transformational change in the industry in terms of innovative products, whole systems thinking, collaborative research practices, open standard solutions, new training provisions, and task sharing approaches to marketing and commercialisation – and seeks to establish a "*single-point-of-entry*" for accessing innovation support.

Construction Scotland Innovation Centre (CSIC)

Impact Targets: The original Business Plan (2014) has KPI impact targets, for example: 200 New Jobs within Companies, Company Exports (outside UK) increase by £10m, Company Exports (within UK) increase by £100m, and Increase Company Portfolio Turnover and Profitability by 20% and 5% respectively.

The latest Operating Plan (2015/17) re-calibrated many of the Business Plan targets and the new KPI framework CSIC is working to is the one contained in the SFC MEF. The latest MEF report specifies that outcome measures including jobs and revenues targets to 2018 have yet to be confirmed.

Business Engagement: CSIC has a team of three (soon to be four) Business Relationship Managers distributed across Scotland – the team are a key delivery mechanism to help stimulate demand, build partnerships, facilitate and manage project delivery. CSIC also runs calls/bids for project proposals, organises its own events and attends other organisations' events. CSIC also hosts exploratory workshops, networking events between industry and academia, conferences, CPD sessions, international opportunities and one-to-one project support, engagement with trade and professional bodies and with Construction Scotland Industry Leadership Group. Wider activity includes press coverage, trade articles, international learning journeys, attending industry events (including keynote speakers), exhibitions, engagement with industry through speaking opportunities at high profile events with, for example RICS, NHS, SBCC, RIAS, ICE, Venturefest, Scotland Build, ETP and BRE, and growing CSIC's digital, social media and PR profile.

Projects: CSIC has identified four areas of innovation support:

- Business Innovation – talent and leadership development, business models, etc.
- Product Innovation – new or improved component products and technologies.
- Process Innovation – Improved construction methods and productivity, offsite construction.
- Service Innovation – exploring new markets, services to clients and marketing.

Five specialism themes were identified that take into account the extent and level of expertise within the academic and private sectors in order to provide the necessary support to businesses operating in the construction sector. The five themes are: Design and Performance, Infrastructure, Advanced Construction and Fabric Building Technologies, Energy/ ICT, and Environment.

CSIC is developing a refreshed approach to business relationship activity in order to achieve key ambitions of increasing the total number of projects under development and focusing on those with greatest transformative impact potential for the industry, and a wider offer beyond core academic technical support in response to industry demand. CSIC's new facility will provide unique prototyping and training capacity for the construction sector.

CSIC part funds a one year Postgraduate Programme with 13 universities throughout Scotland. A total of 30 students are anticipated to undertake the course in the academic year 2016/17, double that of the first year.

KPIs from SFC MEF: CSIC is revising targets that were set in the original Business Plan, including outcome targets which have to be confirmed. In particular, as there has been a time lag in project development which has impacted on some outputs. Data shows that there have been 138 Engagements with Companies, most of which have been with Scottish SMEs. A total of 29 Projects have been delivered or are live. Performance to date is less strong in terms of Academic to Business Collaborations and New Products and Processes Delivered to Market.

Industrial Biotechnology Innovation Centre (IBioIC)	
Launched	January 2014
Admin Hub University	University of Strathclyde
Based	Inovo Building in Glasgow Two Equipment Centre Projects at Heriot-Watt University and University of Strathclyde
SFC Funding (Core and CapEx)	£11.8 million
Number of Staff	15.4 FTE (August 2016), plus two summer interns
Membership	Yes – Fee paying. Current membership of 63. **Leading Member**: £50,000 per year. Involved in the direction of IBioIC and IB development within Scotland and Core member benefits (2 members) **Core Member**: £5,000 per year. Full access to the expertise, funding mechanisms and student projects (27 members) **Associate Member**: £500 per year to be part of, and look to sell to, a network of individuals spanning multinational companies to micro/SMEs also taking advantage of IBioIC's growing reputation and national and global presence (18 members) **Network Member**: invitation only. A mix of agencies/bodies with an interest in IB and other centres of IB expertise (16 members)
Market: The Scottish IB Market was estimated to be £189 million (SE commissioned analysis, 2012). In June 2015 the BBSRC published a report "Biotech Britain" which quoted the UK IB market to be £2.9 billion. This would make Scotland's contribution around 7%. The BIOTIC report (2015) quoted the European IB market at €28 billion (£16.5 billion) making Scotland just over 1% of the European IB market. The market compound annual growth rates is quoted at around 6% - with growth driven by biological processes replacing existing higher cost chemical processes and lower cost renewable sources of carbon replacing fossil fuels. IBioIC has undertaken a sector analysis to determine where IB will have the biggest impact in Scotland and how it should deliver on this. Market opportunities are identified - with the chemical and renewable energy sectors, high value products from low value feedstocks available within Scotland, identified as having the potential to make the most impact.	
Issue/Challenge: IB is the process of harnessing biological systems, processes and substances to produce chemicals, materials and energy. If achieved cost effectively and while minimising environmental impacts, IB can provide an effective alternative to diminishing petrochemical stocks. There are four main strands of IB activity: Health: the discovery of new pharmaceuticals and clinical technology; Industrial: the use of enzymes and micro-organisms in manufacturing and energy production; Agriculture: the discovery and use of novel genes, processes and materials in land, plants, agricultural crops and forestry; Marine: the use of novel genes, processes and materials in freshwater and marine organisms. The IBioIC's capability to handle projects and research across all four areas makes it unique in the UK and well positioned to act as a single portal between industry and the emerging science behind IB. The IC is designed to capitalise on Scotland's established chemicals industry, an increasingly important life sciences sector, and the wealth of academic expertise available within Scottish HEIs.	

Industrial Biotechnology Innovation Centre (IBioIC)

Aim: IBioIC's vision is to accelerate and de-risk the development of commercially viable, sustainable solutions for high-value manufacturing in chemistry-using and life science sectors. Efforts are directed at scaling up current activities and adding further capabilities to enhance Scotland's reputation in IB and support the delivery of the National Plan for IB (target - a £400 million industry by 2020 and £900 million by 2025).

Key Targets: Generate £1 billion to £1.5 billion GVA contribution annually to the Scottish economy by 2030 – a growth of revenue from £189 million (2012) to £2 billion to £3 billion.

Business Engagement: IBioIC engages with industry in a range of ways. It helps companies develop their IB strategies, supports companies by mapping potential solutions that will deliver their strategic aims, and provides tools/resources that allow the best solutions to be found (e.g. project support, access to scale-up facilities, building networks, training a skilled workforce).

Project competitions to support collaborations that address a defined market need/commercial opportunity through the innovative application of biotechnology. Projects are led by an IBioIC industry member in collaboration with at least one partner HEI. Open calls (linked to five themes) and thematic calls (to help direct areas of IB growth). Developing joint project competition calls with HIE/SE to allow smaller industry members to receive support for some of the associated project costs. Wider engagement activities include: trade delegations to other countries, student placements with industry, its website, social media channels and email newsletter, networking events and workshops, and attendance at industry events and conferences (Scotland and internationally). IBioIC has engaged the services of specialist science and technology PR consultancy Proof Communications to boost its marketing efforts.

An extensive skills programme takes in PhD, MSc, HND and MBA courses.

Projects: Five themes: Sustainable Feedstocks (including unconventional gases); Enzymes and Biocatalysis/Biotransformation; Cell Factory Construction and Process Physiology; Downstream Processing; and Integrated Bioprocessing. IBioIC has four project types:

- **Equipment Centre Projects** – IBioIC has developed two pilot centres to support members to have access to the necessary pilot and demonstration scale-up facilities within Scotland. This includes Rapid Bioprocess Prototyping Centre (at University of Strathclyde) and Flexible Downstream Bioprocessing Centre (Heriot-Watt University). Two more are under discussion.
- **Industry Led Projects** - Project competitions designed to support industry-academia collaborations that address a market need or commercial opportunity through the innovative application of biotechnology.
- **Feasibility Projects** – Co-funding two feasibility projects per year, with most targeted towards supporting the case for a Scottish biorefinery. Typical projects include investigations in feedstock quality and quantity.
- **Core Projects** - Projects that spin out from the feasibility studies. IBioIC's role is to help develop and support proposals to funding agencies (e.g. UK Research Councils, European Commission) and form key strategic relationships.

IBioIC can call on the expertise of 159 identified IB related research teams within the 14 Scottish HEI partners.

KPIs from SFC MEF: IBioIC is already reporting Impacts in terms of Products and Processes Delivered to Market, Jobs Created, and Revenues to Companies from New Products/Services.

The Data Lab	
Launched	October 2014
Admin Hub University	University of Edinburgh
Based	Acts as a single centre and operates a three-hub model with staff based in: Edinburgh (University of Edinburgh), Aberdeen (Robert Gordon University), and Glasgow (University of Glasgow)
SFC Funding (Core and CapEx)	£11.3 million
Number of Staff	15
Membership	No

Market: The UK Government identified Big Data as one of the 'Eight Great Technologies' that will drive future growth. The Scottish Government's Digital Strategy and Digital Economy Review highlights Big Data as an emerging opportunity for Scotland. The Centre for Economics and Business Research estimates that the Big Data marketplace could see 58,000 net new jobs created in the UK, with cumulative benefits to the economy estimated of up to £216 billion (2012-2017). Analysis commissioned by SE (carried out by Optimat) indicates the adoption of 'Big Data' technology solutions has the potential to positively impact the Scottish economy - Scotland could accrue benefits of £17.8 billion over the period 2012-2017 and 5,000 new jobs.

Issue/Challenge: The growth of information technology over recent decades has made the collection, storage and analysis of data an increasingly important part of business operations and the economy. Known as "Big Data" – both due to its scale and the complexities involved with analysing it – it is generated across many aspects of everyday life, from phone calls to shop purchases to online social interactions. The rapid growth of big data is shown by an estimate that by 2020, the world will have 44 times as much data as it did in 2009.

The sheer scale of the ever expanding volume of data presents some challenges:

- the vast majority of data is unstructured and more difficult to analyse – it is highly variable.
- the huge volume of data generated can be overwhelming.
- the speed or velocity at which new data is generated can be challenging to keep pace with and process.

Many organisations are struggling to cope with data growth and are finding it difficult to recruit staff with the appropriate skills.

Aim: The Data Lab's mission is to create a world class data science innovation centre generating significant economic, social and scientific value to Scotland from Big Data. It aims to support the development of Scotland's data science ecosystem, through promoting, resourcing and funding collaborative activity between industry, the public sector and HEIs.

Impact Targets: The aim is to create over 248 new jobs and £104.5m turnover.

The Data Lab

Business Engagement: Applications for Collaborative Innovation projects can be received at any time. Open calls for projects are advertised via The Data Lab website and through marketing channels and through Business Development Executives within The Data Lab hubs – to build a pipeline of project proposals.

The Data Lab delivers a programme of workshops and sandpits to support the development of industry led proposals - these bring together industry and potential academic research partners, and funds academic consultancy to support the development of larger funding applications. The Data Lab also has a programme of themed calls for projects (e.g. Finance) which are defined by industry through collaborative workshops and sandpit events. Thematic calls focus on key identified market sectors and themes.

Wider engagement activities include: press, ongoing work to develop strategic agreements with key industry partners, organises its own programme of events and networking opportunities, involvement, partnering, and sponsoring other organisations' events/conferences, and working with SDI on International Trips for Scottish companies.

Projects: Key themes identified: Energy and Utilities, Financial Services, Healthcare, Digital Technology, and Public Services.

The Data Lab activities span three main areas:

- **Collaborative Innovation Funding** – the main vehicle for delivering near to market technology and mature research into local industry is through a series of industry-led collaborative innovation projects; Consultancy services through The Data Lab - in-house team of data scientists can work directly with companies on projects on a commercial basis; and Co-ordination of Strategic Bids - securing further sources of funding from external sources (e.g. Innovate UK, EU, UK Research Councils, etc).
- **Skills and Training** - supporting skills and talent development in Scotland. This includes working with seven HEIs to develop and deliver MSc Programmes (Glasgow Caledonian University, University of Dundee, University of Glasgow, University of Stirling, University of Strathclyde, University of the West of Scotland, Robert Gordon University); EngD in Computer Science at the University of St Andrews: The Data Lab Prize Studentships, placement and secondments; online learning and Continued Professional Development; summer schools; data science boot camps; Massive Open Online Courses.
- **Community Building** - supporting the development of the big data community in Scotland. Improving the interconnectivity of the data science community across industry, the public sector and academia (e.g. Scottish HEI engagement programme, Hackathons and Sandpits), conferences, guest lectures, present and support relevant events.

KPIs from SFC MEF: The Data Lab has had strong performance against 2014/2016 targets in a number of areas, for example, Number Engaged through Events, Projects with Companies, and In-kind Contributions. Performance is, however behind in areas such as Industry Funding, Enterprise Agency Funding, Number of New Products, Processes, Services Delivered to Market, and other Outcome measures. However, it should be noted that the full staff team was not in place until September 2015, with resulting delays in starting project activity reflected in limited progress against some targets.

4. Engagement in IC Supported Projects

This Chapter provides an overview of the range of collaborative project activity supported by the IC Programme.

Summary

Information provided by ICs within Project Logs provides a useful snapshot of supported project activity to date. It is, however, important to note that projects are one of a number of areas of activity/focus across the IC Programme. As such, projects are not the only mechanism through which ICs engage with businesses and other organisations.

There are a total of 203 projects at various stages of development and delivery across the IC Programme, and the majority are either live or complete.

Projects have come on stream since 2014 and continue to be approved into 2016. This reflects the different start dates for the ICs, and the time lag resulting from the recruitment of core staff and putting in place the necessary systems and processes.

The ICs have different operating models and have adopted various approaches to supporting projects. Some have supported a large number of smaller and medium sized projects, while a few have supported a small number of large, longer-term collaborations. Some 60% of projects supported are short-term, lasting less than one year. The average duration of projects is nine months.

The project portfolio (i.e. number and size) is likely to be reflective of a number of factors, including, the original intention of the ICs from the outset and industry demand.

Much of the collaborative activity has involved businesses based in Scotland, and almost half of Scottish businesses are based in Glasgow and Edinburgh. Businesses engaged in IC projects are in the main SMEs, which is perhaps not surprising given that SMEs make up the vast majority of the total business base in Scotland.

Almost all HEIs involved in collaborative projects are based in Scotland, and reflects the eligible use of SFC monies. Where projects have attracted funding from other sources, this has, in a small number of cases, been used to engage the research base outwith Scotland.

HEI engagement in collaborative projects is varied. The University of Edinburgh and the University of Strathclyde have been involved in the most projects, and the five HEIs most involved are Admin Hub Universities for one or more IC.

The IC Programme has been successful in leveraging in monies and in-kind contributions for projects from sources over and above SFC funding, although industry (cash) contributions are still at a modest level.

4.1 Background

ICs were asked to populate a Project Log to provide information on: project status, start and end dates, partners involved, and funding. The information provided in the Project Logs was also used to develop a sample for the telephone survey of businesses supported (**Chapter 6**).

The information provided in this Chapter is a snapshot of project activity at a point in time, and has been presented in aggregate form for the IC Programme, and where relevant provides a breakdown by IC.

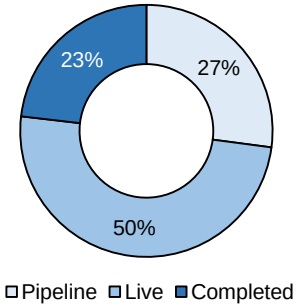
It should be noted that the information presented here may differ in places from the MEF reporting, for a variety of reasons.

4.2 Projects Supported

The completed Project Logs contained information on 203 projects.

As is to be expected, the projects are at various stages of delivery:

Figure 4.1: Project Status



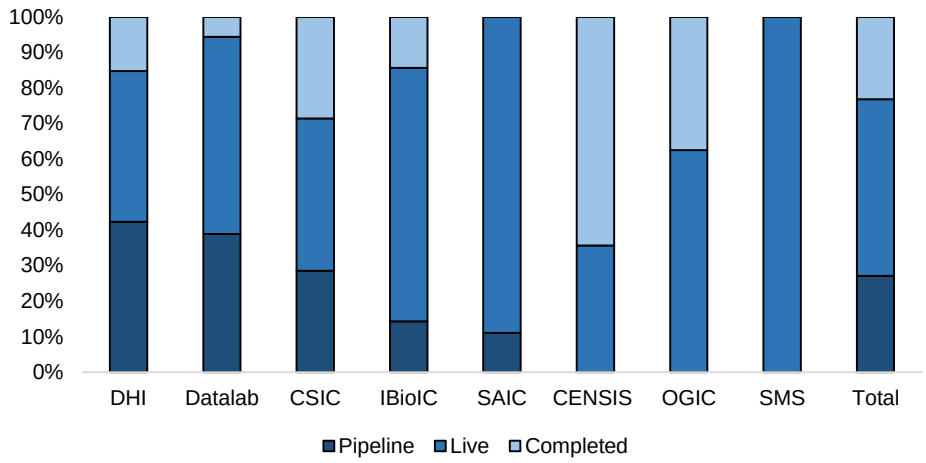
N=203, Source: Innovation Centres

- just over one-quarter are pipeline projects i.e. projects that have not formally started[6] (27%, 55); and
- the majority of projects are either live or completed (73%, 148), most of which are live.

The proportion split between pipeline and live/completed projects varies by IC, and reflects that the ICs were established at different points in time, **Figure 4.2**, over.

[6] Coded as Approved, Contracting, Not Started and Pre-Approval in the Project Logs.

Figure 4.2: Project Status by IC



N=203, Source: Innovation Centres

4.3 Live and Completed Projects

The analysis on the following pages focusses on the 148 live and completed projects, summarised in **Table 4.1**.

Table 4.1: Live and Completed Projects by IC

IC	Live	Completed	Total
DHI	39	14	53
CENSIS	10	18	28
OGIC	10	6	16
CSIC	9	6	15
IBioIC	10	2	12
The Data Lab	10	1	11
SAIC	8	0	8
SMS	5	0	5
Total	**101**	**47**	**148**

Source: Innovation Centres

4.4 Project Start and End Dates

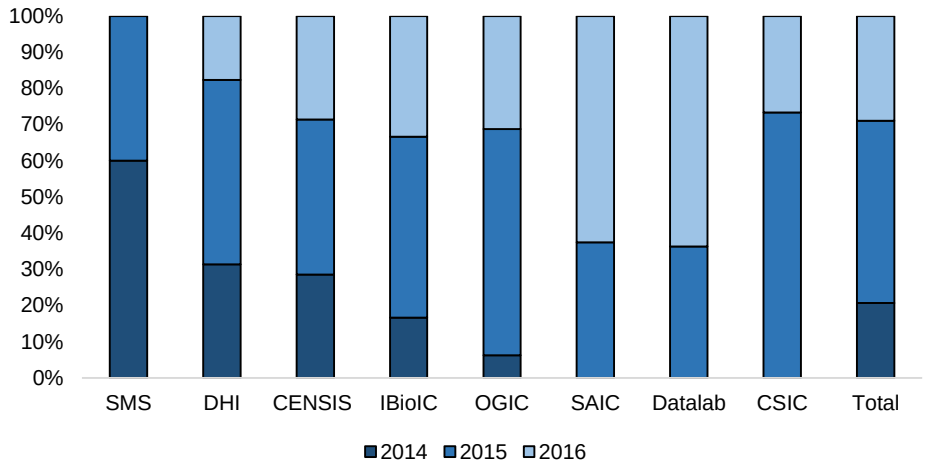
For most ICs project activity first came on stream in 2014 – in particular, for the three ICs funded through the first phase (i.e. DHI, SMS, CENSIS), **Figure 4.3**, below.

This gathered momentum during 2015, and projects continue to be approved into 2016. This reflects the different start dates for the ICs, and the time lag resulting from the recruitment of core staff and establishment of the necessary systems and processes to allow project activity to begin.

In terms of live/completed projects:

- 21% started in 2014;
- 50% started in 2015; and
- 29% started in 2016;

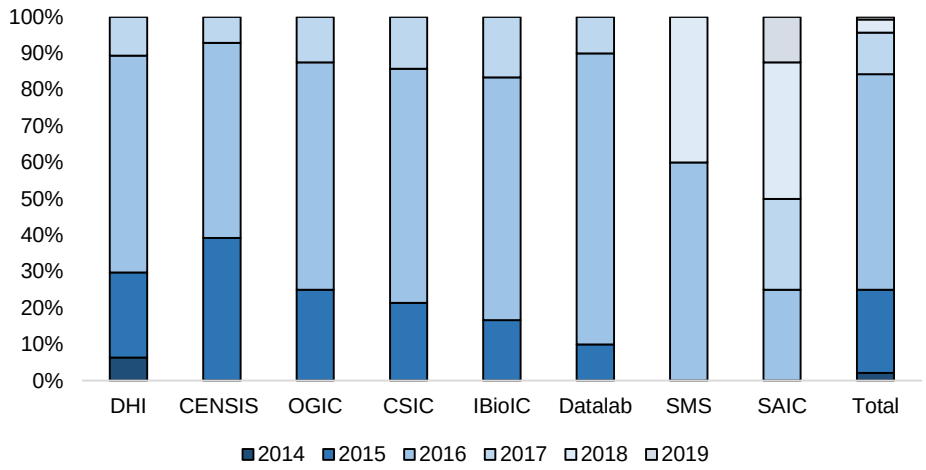
Figure 4.3: Project Start Date



Source: Innovation Centres, Note: Two projects had no Start Date Listed

A total of 84% of projects are complete or are scheduled to complete later this year. Much of the remaining project activity is due to complete by 2017, with 5% to complete later than this (in the main SMS and SAIC projects), **Figure 4.4**, over.

Figure 4.4: Project End Date

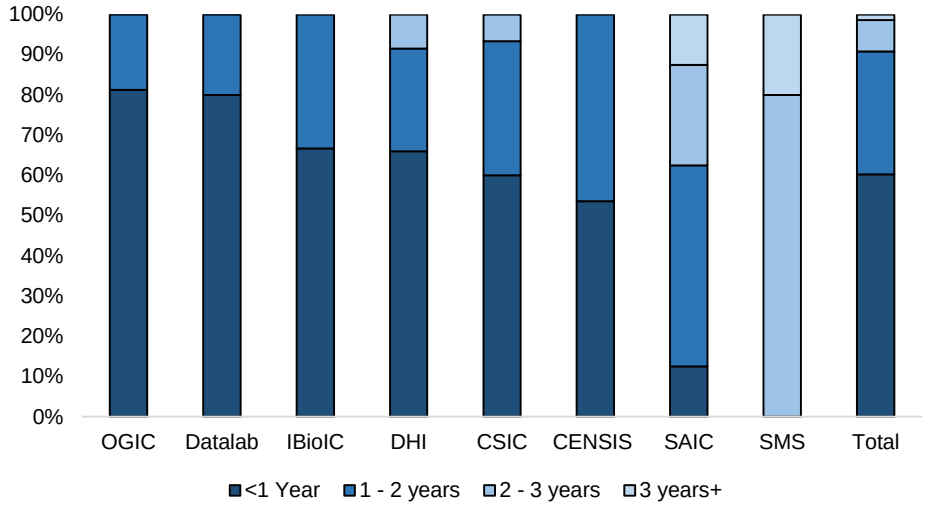


Source: Innovations Centre, Note: Seven projects had no End Date Listed

4.5 Project Duration

A relatively large proportion of projects are short-term, lasting less than one year (60%, 85), with a further 30% lasting between one and two years (43 projects). There have been few longer-term projects, with the exception of SAIC and SMS, **Figure 4.5**.

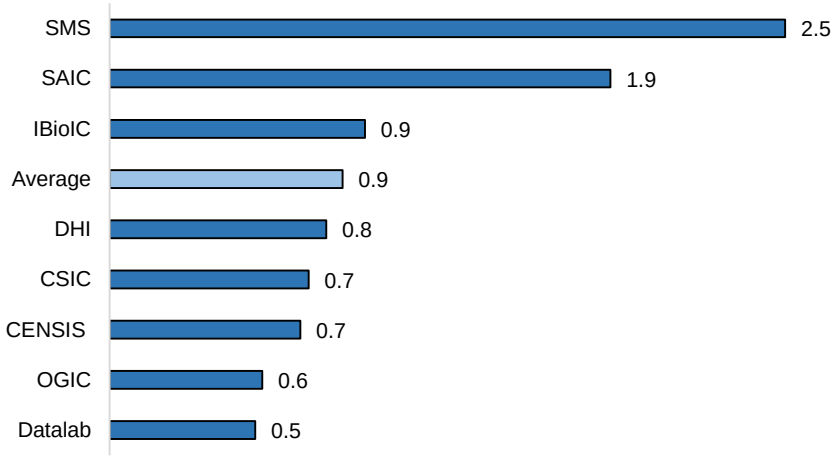
Figure 4.5: Project Duration



Source: Innovation Centres

The average project duration for the IC Programme is nine months, with many ICs on average funding projects of a shorter duration than this. As above, the exception is SMS and SAIC which have both funded longer-term projects, **Figure 4.6**.

Figure 4.6: Average Length of Project (Years)



Source: Innovation Centres

4.6 Business and Public/Third Sector Engagement

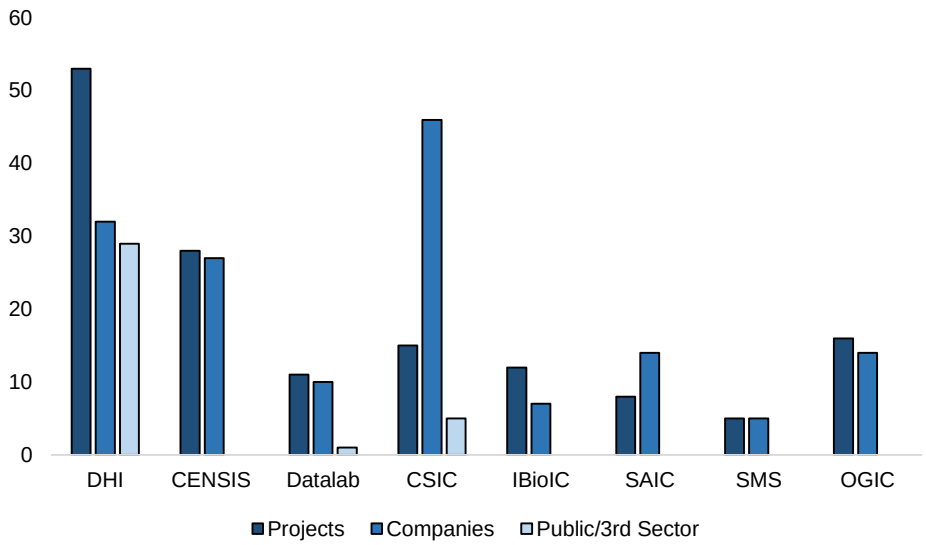
Engagement in projects has in the main been from private sector businesses. Some ICs, for example DHI and SMS, have also had much broader engagement in projects from the public and/or third sectors (e.g. NHS Boards, Local Authorities, Voluntary Organisations and Charities) – which reflects the nature of these two ICs.

Based on information provided in the Project Logs, a total of 155 businesses and 30 public/third sector organisations have participated in the live/completed projects, **Figure 4.7**, over. Wider points to note include that:

- some ICs have been more likely to support multi-partner collaborations (i.e. not the traditional one business to one academic) – this includes SAIC, SMS and CSIC in particular, and to a certain extent DHI;
- other ICs have adopted a more traditional approach connecting one business with one HEI partner – this includes CENSIS, The Data Lab and OGIC; and

- almost all but one of the five SMS exemplar projects are academic led, and have involved more limited business engagement. This reflects the fact that the research projects are proof of concept, with deeper levels of business engagement anticipated to take place in the future.

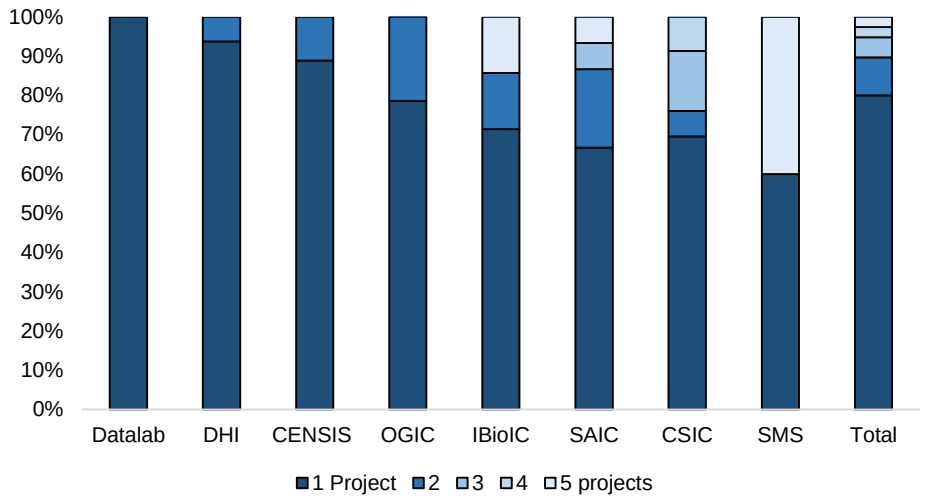
Figure 4.7 Numbers of Companies and Public/Third Sector Involved in Projects



Source: Innovation Centres,
Note: SMS Project Log did not provide information on public/third sector partners, of which there are a number.

The majority of businesses have engaged with ICs on a single project (80%, 124). There has, however, been some repeat engagement, as 20% have engaged in multiple projects. SAIC, CSIC and SMS have had the most repeat engagement from businesses, **Figure 4.8**, over.

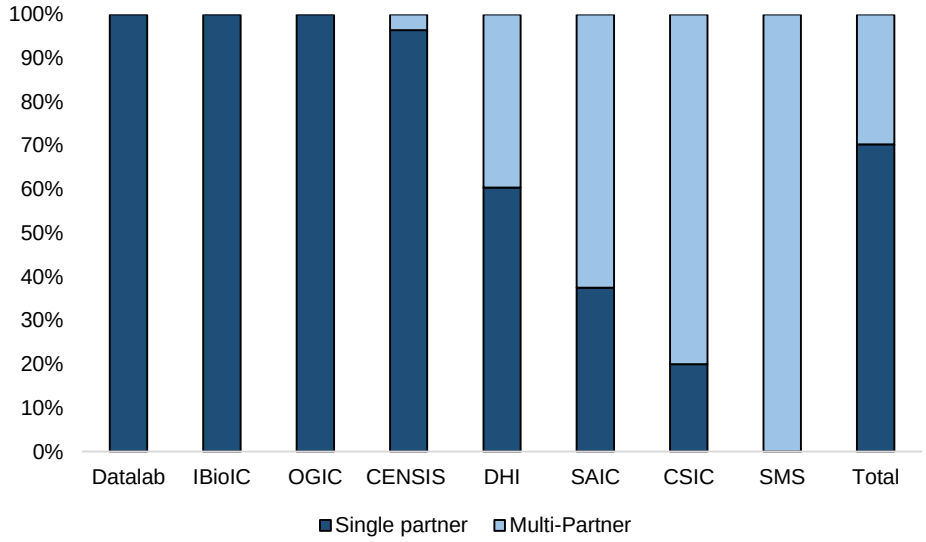
Figure 4.8: Number of Engagements by Company



Source: Innovation Centres

The majority of projects involved a single company or public/third sector partner (70%). DHI, SAIC, CSIC and SMS have a large proportion of multi-partner projects, whilst the remainder have few, if any, **Figure 4.9**.

Figure 4.9: Number of Multi-Partner Projects

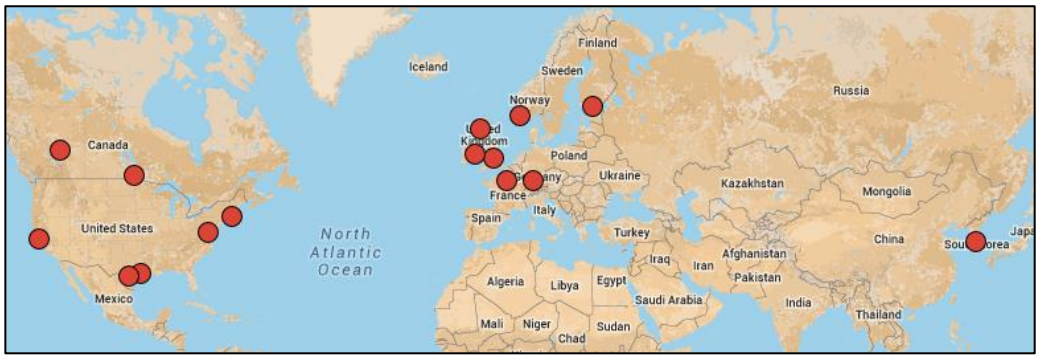


Source: Innovation Centres

4.7 Business Location

Engagement in live/completed projects has in the main been with companies based in Scotland (77%, 120). The remainder of businesses are based elsewhere in the UK and Ireland (mainly England), or further afield (e.g. North America, Mainland Europe, and South Korea), (23%, 35), **Figure 4.10 and 4.11**.

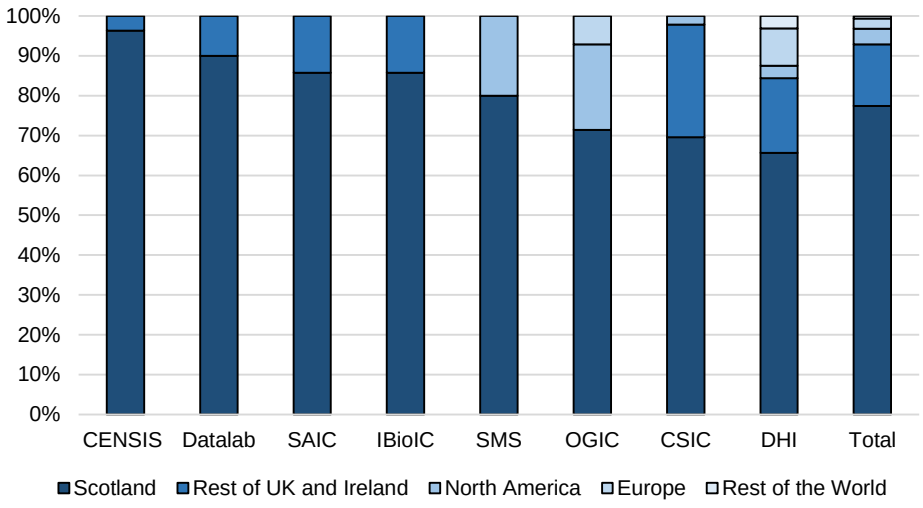
Figure 4.10: Company Engagement



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

Looking by IC, there are a number of businesses engaging with CSIC and DHI from the rest of the UK and Ireland, whilst SMS and OGIC have also engaged with companies from North America, **Figure 4.11**.

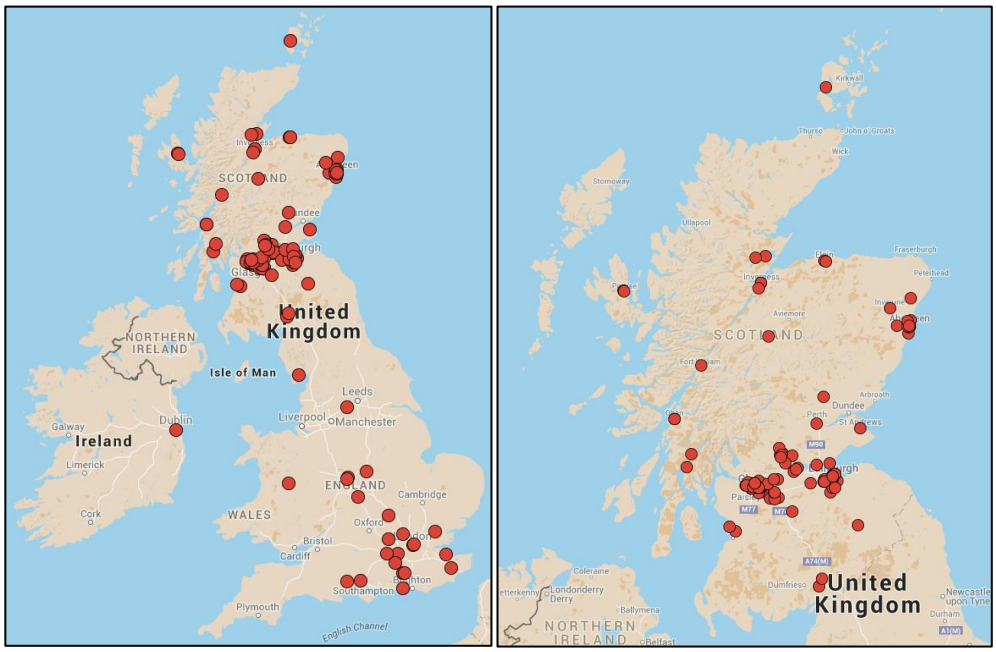
Figure 4.11 Engaged Companies by Country/Region



Source: Innovation Centres

Figure 4.12 outlines the location of engaged businesses in Scotland and the rest of the UK and Ireland, with clear clusters around Glasgow, Edinburgh and to a lesser extent, Stirling, Aberdeen and Inverness. In the rest of the UK, the main concentration is in the South East of England.

Figure 4.12 Companies in UK and Ireland, and Scotland

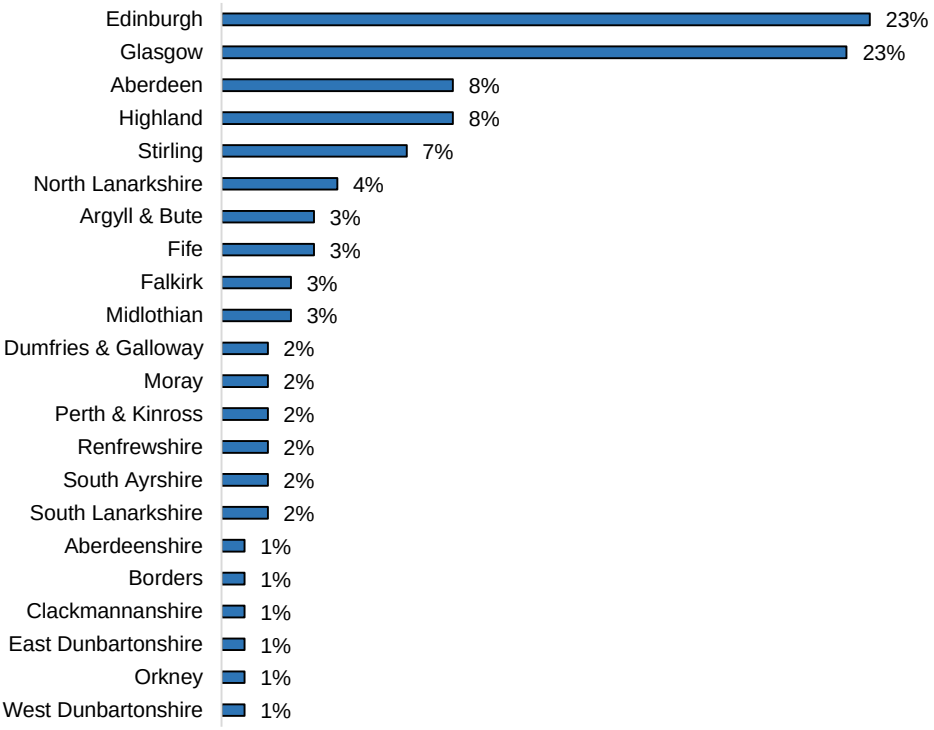


Source: Google Maps, Innovation Centres

Figure 4.13, over, shows the location of Scottish companies engaged in projects. Some points to note include that businesses engaged in live/completed IC projects are located in 22 of Scotland's 32 Local Authority areas.

Businesses are typically located in more central, urban areas, with almost half from Glasgow or Edinburgh.

Figure 4.13: Engaged Companies in Scotland by Local Authority



N=120, Source: Innovation Centres

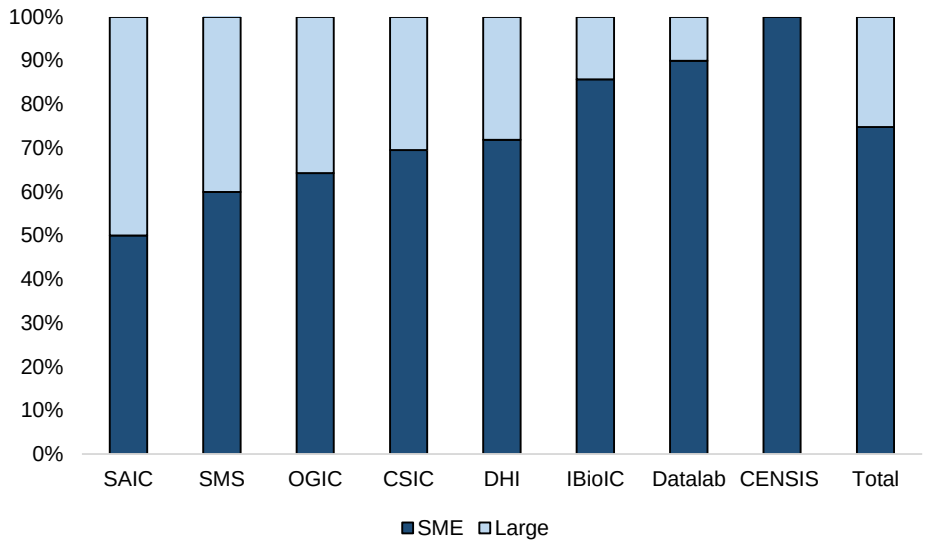
4.8 Business Size

The majority of engagement in live/completed projects has been with SMEs (75%), **Figure 4.14**. This is perhaps as to be expected, given that 99.5% of the Scottish business base are SMEs[7].

There has been some engagement with large companies (25%). Almost all ICs have engaged with large companies (albeit to varying degrees). Engagement with large companies will, however, also be reflective of the make-up of particular sectors in which the ICs are engaged.

[7] Source: Inter-Departmental Business Register 2015

Figure 4.14: Business Size



Source: Innovation Centres

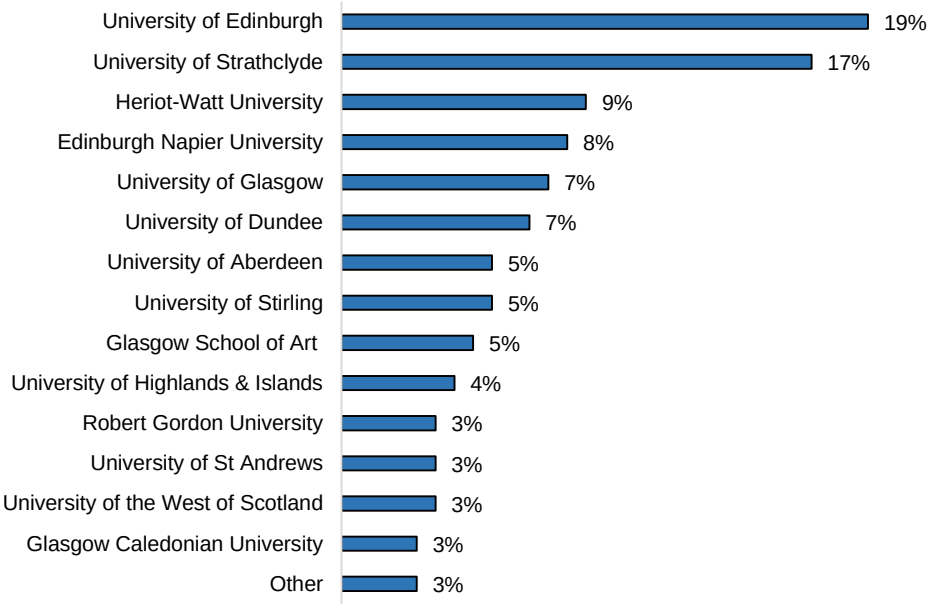
4.9 Engagement of HEIs

A total of 19 university/research institutes in Scotland (and further afield) have been involved in projects. This does not include all Scottish HEIs, as Queen Margaret University, University of Abertay Dundee, the Royal Conservatoire of Scotland, the Open University, and Scotland's Rural College (SRUC) have not yet been involved in an IC funded project, **Figure 4.15**, over.

Information from the Project Logs shows that 20 projects did not involve a HEI partner, and the HEI partner was yet to be confirmed in a further five projects. Therefore, HEIs have been involved in 123 projects. Including projects which involved multiple HEI partners, there were 151 separate instances of HEI project involvement.

The University of Edinburgh (19%) and University of Strathclyde (17%) have been involved in the most projects. Similar to business engagement, there has been a concentration of HEI engagement among universities based in the Central Belt.

Figure 4.15: HEI Involvement in Projects



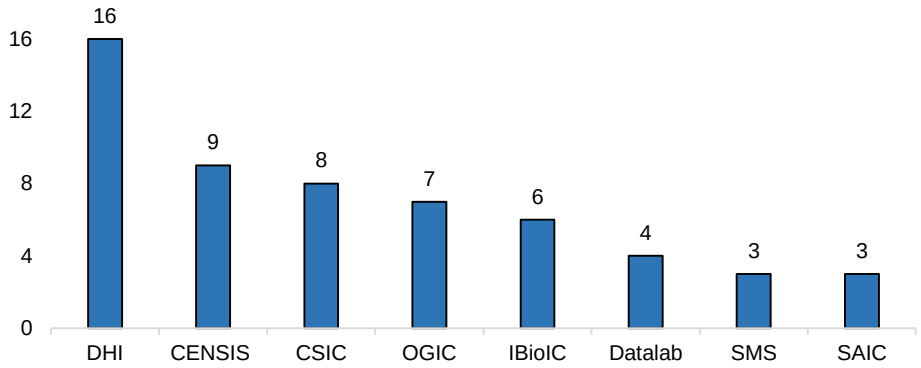
N=151, Source: Innovation Centres
Other partners were: The Scottish Association for Marine Science, The Offshore Renewable Energy Catapult, The UK Astronomy Technology Centre and University College London.

Wider points to note are that:

- just over two-thirds of project involvement involved universities located in Glasgow and Edinburgh (68%); and
- the most active universities have been the Admin Hub Universities – the top five HEIs listed in **Figure 4.15** fulfil this function. These HEIs have been involved in more than half of live/completed projects (60%).

Figure 4.16, over, provides a further breakdown of the number of different HEI partners that have been involved in projects by IC. As might be expected, those ICs with a larger number of projects have engaged a larger number of HEIs. However, for some, the expertise required might lie in a smaller number of HEIs.

Figure 4.16: Number of HEIs involved in Projects



Source: Innovation Centres. Note: SMS – Project Log provided information on Lead Partner, however, their Exemplar Projects typically involve other consortium HEI partners.

Each IC has an Admin Hub University. Some also have wider HEIs as, for example, formal consortium partners. **Table 4.2** outlines the extent to which ICs have engaged the Admin Hub University in project activity. The notable exception is SAIC which has engaged its Admin Hub University – University of Stirling – in 67% of projects. This is likely to reflect a concentration of expertise within the Admin Hub University.

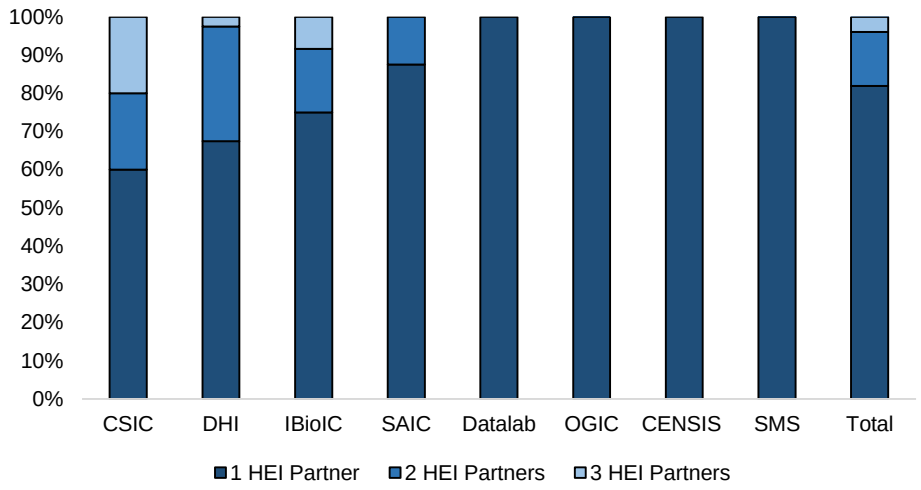
Table 4.2: Extent of Admin Hub University Engagement in Projects

IC	Total HEI Partner-ships	Nos. with Admin Hub University	% with Admin Hub University
SMS	4	1	25%
SAIC	9	6	67%
CENSIS	20	4	20%
The Data Lab	11	4	36%
DHI	54	12	22%
CSIC	21	5	24%
OGIC	16	3	19%
IBioIC	16	2	13%
Total	**151**	**37**	**25%**

Source: Innovation Centres. DHI is likely to have had greater GSA involvement than is covered here.

The vast majority of projects involved a single HEI partner (82%), while the remainder involved multiple HEI partners. CSIC, DHI and IBioIC have been more likely to support multi-HEI collaborations, **Figure 4.17**.

Figure 4.17: Projects with Multiple HEI Partners



Source: Innovation Centres

4.10 Project Funding

Information provided in the Project Logs shows that (**Table 4.3**, over):

- total costs of projects are £30.7m - with the largest proportion of funding coming from industry cash and in-kind contributions (45%) and from the SFC (32%). 'Other' contributions are generally from public sector partners;
- total project costs vary by IC – this ranges from less than/or £1m for OGIC and The Data Lab to a high of £8.6m for SAIC; and
- average project costs ranged from in excess of £1m (SAIC and SMS) to under £100,000 (The Data Lab, DHI and OGIC).

Table 4.3 Total Cost of Projects (cash and in-kind contributions)

IC	Total Cost	Average Cost	No. of Projects	Industry	SFC	HEI	Other
SAIC	£8.6m	£1.1m	8	£5.3m	£2.2m	£442k	£700k
CENSIS	£7.5m	£470k	28	£3.8m	£945k	£209k	£2.6m
SMS	£5.4m	£1.1m	5	£981k	£3.1m	£1.4m	£0k
DHI	£2.6m	£48k	53	£813k	£1.2m	£185k	£374k
IBioIC	£2.5m	£206k	12	£902k	£1.2m	£340k	£31k
CSIC	£2.1m	£154k	15	£1m	£333k	£72k	£723k
The Data Lab	£1m	£93k	11	£393k	£418k	£133k	£77k
OGIC	£960k	£61k	16	£490k	£470k	£0	£0
Total	**£30.7m**	**£293k**	**148**	**£13.7m**	**£9.8m**	**£2.7m**	**£4.5m**

Source: Innovation Centres

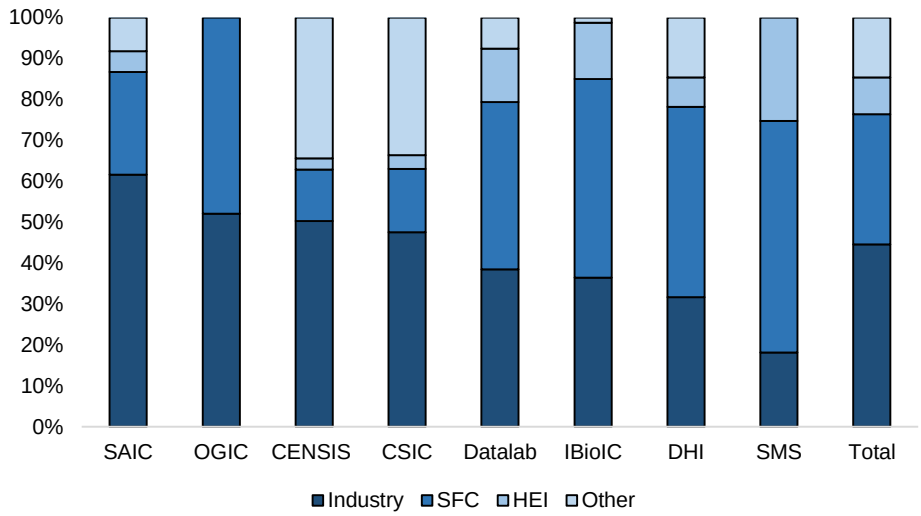
Note: It should be noted that the Table above relates to funding for Projects only. Figures differ from that reported elsewhere in the report (e.g. Tables 2.1 and 2.3 and Appendix B) which reflect the wider range of IC activities and staff costs, and reporting on Inputs as provided by SFC and within MEF reports.

"Other" cash and in-kind contributions are in the main from other public funding sources, including NHS, Enterprise Agencies, Innovate UK, Interface, European funding, etc. Data in the Project Logs does not allow for this information to be analysed in more detail (i.e. disaggregated by funder).

Please refer to **Table 2.3 and Appendix B** for more detail on, for example, contributions from the Enterprise Agencies (as reported in MEF reports).

Figure 4.18 provides a breakdown of funding secured by funding source for project activity. Industry contributions (cash and in-kind) make up the largest portion of funding at 45%, with SFC contributions at 32%. SAIC and OGIC have leveraged in the largest amount of industry contribution - both have achieved more than 50% of project funding from industry.

Figure 4.18: Breakdown of Project Funding (cash and in-kind contributions)



Source: Innovation Centres
Other sources include for example public sector organisations.

For the Programme as a whole, some three-fifths of industry funding for projects came from in-kind contributions (59%), with the remainder industry cash contributions (41%). This varies by IC, with OGIC and SMS securing significant proportions of industry contributions in cash, while some other ICs have relied more heavily on in-kind contributions, **Table 4.4 and Figure 4.19**.

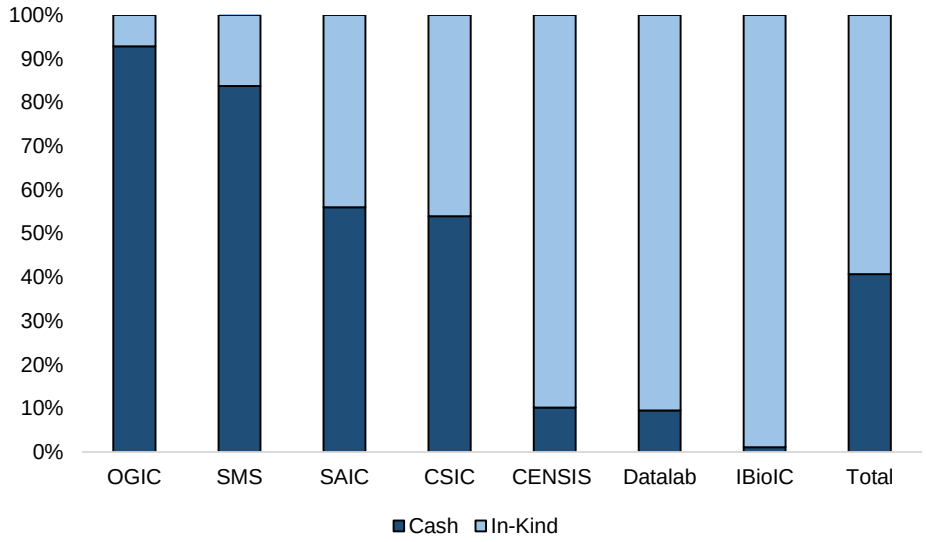
SAIC, followed by SMS, have levered in the greatest amount of industry cash to date (c. £3m and £822,000 respectively).

Table 4.4: Industry Project Contributions by Cash or In-Kind

	Cash	In-Kind	% Cash	% In-kind
SAIC	£2,964,375	£2,326,665	56%	44%
The Data Lab	£37,400	£355,679	10%	90%
IBioIC	£10,000	£891,880	1%	99%
OGIC	£453,571	£36,454	93%	7%
CENSIS	£385,600	£3,394,700	10%	90%
CSIC	£553,188	£471,281	54%	46%
SMS	£821,918	£159,000	84%	16%
Total	**£5,246,052**	**£7,635,659**	**41%**	**59%**

Source: Innovation Centres,
Note: DHI excluded as contributions not broken down by Cash/In-Kind in Project Log. However, MEF Reports shows that all industry contributions to date have been in-kind.

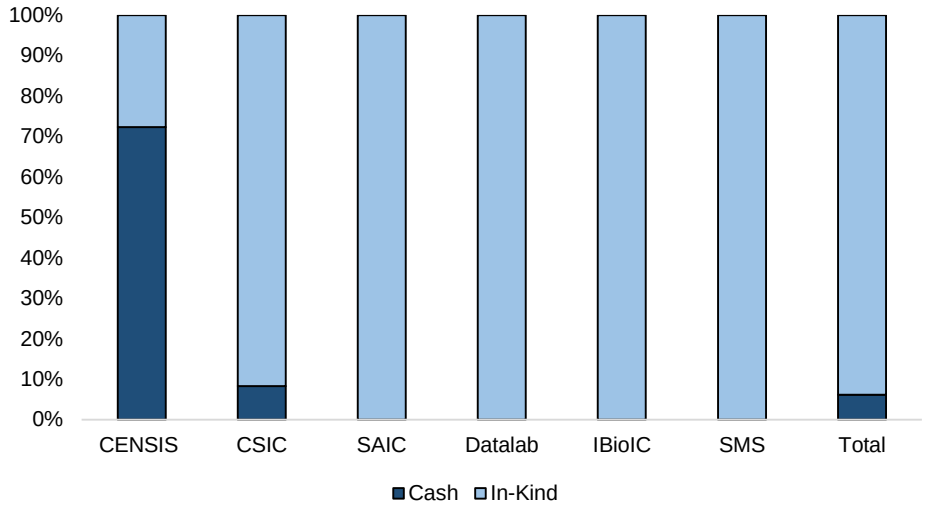
Figure 4.19: Industry Contribution by Cash or In-Kind



Source: Innovation Centres, Note: DHI excluded as contributions not broken down by Cash/In-Kind in Project Log.

HEI contributions were almost exclusively in-kind, with the exception of CENSIS, where most HEI contributions have been cash, **Figure 4.20**.

Figure 4.20: HEI Contribution by Cash or In-Kind



Source: Innovation Centres, Note: DHI excluded as contributions not broken down by Cash/In-Kind in Project Log, and no HEI contributions for OGIC.

5. Stakeholders' Perspectives

5.1 Introduction

In addition to the surveys of engaged and non-engaged businesses, the study also sought feedback and input from a range of stakeholders involved with the IC Programme. These included representatives from the SFC, the Enterprise Agencies, the ICs, Scottish Government, HEIs (Admin Hub Universities and Non Hubs), and other relevant partners (e.g. Interface).

This feedback is discussed below in aggregate form, and is structured under five main headings:

- rationale and fit;
- management and governance;
- business engagement;
- impacts; and
- future development.

A summary overview is provided at the end of the Chapter.

5.2 Rationale and Fit

Stakeholders consistently identified a clear and ongoing rationale for the IC Programme based on three main factors:

- Scotland's persistent under-investment in innovation (e.g. as measured by business expenditure on R&D);
- the lower proportion of innovation active businesses in Scotland relative to its competitors; and
- well known barriers to effective collaboration between industry and the academic knowledge base as a means of growing innovation performance.

Many recognised that the IC Programme is not the first attempt to address these issues, highlighting both the crowded landscape of support for knowledge exchange, and the long history of previous interventions.

Those consulted were also aware of the (industry) demand-led approach of the IC Programme, and the primary focus on delivering economic development gain for Scotland, measured in jobs and GVA. However, many also commented on the complementary roles for the ICs in relation to:

- delivering social/civic benefit, for example by supporting improvements in public service delivery (e.g. healthcare);
- helping to promote 'culture change' within universities regarding engagement with industry and other external partners; and
- simplifying the landscape of support for innovation and knowledge exchange in Scotland.

There was also a general awareness that the IC Programme is intended to support 'substantial' or 'transformational' change in Scotland's innovation performance, but some questions about what this means in practice were raised.

In relation to the ICs fit with the wider landscape for innovation support in Scotland, views were more mixed. All acknowledged a degree of complexity in the wider landscape, and many identified areas of duplication (real or perceived) between the ICs and other provision, including:

- the work of Interface in connecting SMEs to academics, often for the first time;
- universities' own commercialisation offices; and
- some overlaps between the ICs themselves (due to some having a sectoral and others a technology focus).

Indeed, the landscape continues to evolve with, for example, the development of the Oil and Gas Technology Centre.

While none felt that the ICs had (yet) had the effect of simplifying this landscape, some did express the view that these areas of overlap can be managed with effective communication and cross-referrals between organisations and appropriate focus on respective organisational purposes and activities.

Many of the external stakeholders called for more in the way of collaboration between the ICs, but the evidence provided by the IC staff would suggest that considerable emphasis is already placed on this, particularly by some of the Centres. Establishing the true extent of collaboration and duplication of effort is therefore not straightforward.

The degree of fit with the wider landscape is also, to a large extent, about the targeting of IC activity, and some contrasted the work of some of the Centres on small projects with SMEs and micro-businesses (e.g. DHI, The Data Lab, OGIC) with that of others on larger projects (e.g. SMS). Indeed, one of the ICs noted their shift from the original business plan intention of undertaking a large number of small projects towards a focus on a smaller number of larger projects on the basis that this would be more likely to deliver impacts.

Most stakeholders considered this diversity of approach appropriate, and rightly based on industry and/or market demand. For some ICs, such as DHI and The Data Lab, a large number of small projects was considered appropriate, and therefore a degree of potential overlap with existing provision (such as Interface) could be expected and would thus require some management.

The other relevant issue in this respect is the Technology Readiness Level (TRL) of projects. Most of the ICs reported operating at TRLs 4 – 7, an area considered appropriate by most stakeholders. Too strong a focus on the early stages risks duplication with academic research funding, and moving up the TRL could take the ICs into areas served by the Enterprise Agencies and the private sector.

There was also some concern expressed about those ICs with in-house specialists duplicating the role of academic partners in the model. It is not clear to what extent this is a perception rather than a reality, and was not a widely held position. Nonetheless, there was also some comment (mainly but not exclusively from the university community) on the extent to which some of the ICs were perceived to be building large teams and infrastructure, and questions about the balance of resources going to fund collaborative projects.

There was also some evidence of disquiet in parts of the academic community regarding the use of education budget money to fund the ICs, and more generally a feeling that government was asking HEIs to 'do more for less'.

Finally, views were mixed on the role of the ICs in skills – currently delivered through the MSc Programme places that ICs have. This has been an area of great success for some of the Centres, while others have found it more challenging. The Centres defended their role in this area pointing to the key role of skills as a driver of wider innovation, while some other stakeholders wondered if this might start to overlap with other organisations, not least of all the colleges.

5.3 Management and Governance

Stakeholders were aware of the open nature of the initial call for proposals for ICs issued by the SFC and supported the decision to resist a template approach, giving the ICs freedom to define a model best suited to their sectors/technologies. A small minority (mainly university stakeholders) did suggest that greater standardisation might aid engagement with the ICs, but this was not a widely held view.

The main governance issues that arose in the consultation relate to the source of the funding for the IC Programme. SFC can only provide funding to universities (and colleges) and thus the ICs are all structured as projects hosted within a university (the Admin Hub University). Some tensions and issues were identified with this model:

- reported constraints for the ICs in working within the administrative structures of universities, with issues relating to pay scales and salaries (when seeking to attract candidates from industry), perceived bureaucracy, and issues with procurement and finance processes;
- reported tensions between ICs appetite for risk, and universities' attitudes to risk; and
- constraints on the ICs ability to fund businesses (as SFC monies cannot be used to do so).

While these issues were routinely raised in the consultation, there is some evidence to suggest that they are largely being addressed as they arise. For example, the ICs have been able to attract and employ suitable industry expertise within the HE structures, and none reported major issues with procurement practices.

There have been issues with Admin Hub Universities committing to projects and other financial arrangements (e.g. premises leases) beyond the current funding period for the Centres, but these are being dealt with by the partners and with SFC support.

Some of the ICs did report that the conditions around SFC funding were a constraint insofar as they were not able to offer financial support to businesses. This is more likely to be addressed as and when the ICs diversify further their income streams, as discussed below.

The location of the ICs within universities also has implications for the role of the IC Boards. Ultimate responsibility (and decision making) for each Centre arguably lies with the Admin Hub University and with the SFC, thus providing IC Boards with less control than they would have in an independent organisation. While some felt that this was constraining for the ICs, others were more sanguine, feeling instead that this was less of an issue in practice. Again, we return to this issue below.

We would also note that a small number of consultees did raise concerns with the representation of universities on the IC Boards, expressing a wish for greater industry involvement.

Regular meetings of the Chief Executive Officers of the ICs and of the IC Chairs were positively viewed, but few consultees provided feedback or input on the degree of oversight of the Programme by the SFC. Instead, the ICs themselves tended to focus their comments on the MEF, highlighting issues with the suitability of identified measures and the practicality of collecting the relevant monitoring data. As we have noted earlier, the extent to which the MEF is providing useful data to track the progress of the ICs is not clear, and both target setting and reporting are patchy. In light of this, some ICs have developed a suite of measures over and above those reported in the MEF.

5.4 Business Engagement

Consultees were generally positive about the progress of the ICs in engaging businesses, noting the different approaches taken. Some highlighted the different communities within which different ICs are working, and the ways in which that has influenced the approaches taken to business engagement.

For example, some have quite tightly defined communities in Scotland (e.g. SAIC, SMS) and have thus taken a focused approach to business engagement and project development. Others are working in more diffuse markets, particularly those dealing with enabling technologies (e. g. CENSIS, The Data Lab) and as a result have had to engage more widely to raise awareness.

Some of the Centres have (or are in the process of recruiting) business development teams, actively pursuing new opportunities and developing connections, and some but not all have used open calls for projects as a means of building interest and engagement. Similarly, some have membership structures (paid or otherwise) and others are considering this for the future.

Most consultees did not express strong views on the relative effectiveness of these different approaches, highlighting instead the need for the ICs to develop services and models of engagement that best suit their target industries and markets. There was also a recognition that some of the Centres are still in the early stages of their establishment and, as such, are still developing their approach(es), while for others, business engagement mechanisms continue to evolve. Some highlighted IC events as being generally high quality, and noted some progress in building communities of interest within industry and the academic sector.

However, a number of issues did arise, including:

- the need for better co-ordination and collaboration with other business and innovation support mechanisms to raise awareness and understanding of the ICs and their role and to reduce duplication of effort;
- some noted that some of the ICs had a strong initial focus on businesses with existing connections to HEIs, and the wider innovation support system in Scotland – picking 'easy targets' – and wished to see this broaden out further in time;

- views on the emphasis on SMEs and large companies were somewhat split. Some consultees wanted to see the ICs engage more with SMEs while others felt the opposite, considering the appropriate focus for the ICs to be on large companies and large projects as a means of achieving 'transformational change'. A third view was that a balance is required, and small projects are a useful way of building relationships with companies that can build over time into larger and longer-term initiatives;
- some of the ICs have had to revise their approaches in light of changing market conditions. For example, the original business plan for OGIC targeted large scale projects, but was developed prior to the oil price crash. Since, the Centre has found that demand is for smaller projects, prompting some revision in their model, and raising issues of potential overlap with other providers;
- the innovation solutions required by firms are not always best served by academic involvement and there are instances on which business to business partnerships will be more appropriate. Under the current funding structure, this is more difficult for the ICs to support;
- ICs have been engaging overseas firms on the basis that there are economic benefits to Scotland in doing so. While none of the consultees perceived issues with this in principle, some questioned the basis on which these decisions were being made, and others noted that this may be a reflection of the relative lack of large corporate clients in Scotland that can support larger scale research projects; and
- some of the ICs reported issues with company (cash) contributions to projects, and one had asked its Board to revise this requirement from 50% of project costs to 30% to facilitate participation from smaller companies.

Most stakeholders also felt that the ICs should continue to evolve their models for business engagement as their industry contact deepens. Open project calls were popular as they offer a 'level playing field' for SMEs to engage, and more cross-IC collaboration was also identified as an opportunity. It is clear that this is already underway.

There is also an interesting issue relating to industry demand. The Centres are intended to be industry-led and some of the stakeholders noted that this would, in many areas, translate into a demand for shorter term, smaller scale projects.

Academic demand, on the other hand, was felt to be more likely focussed on larger projects at the lower end of the TRL scale – a classic knowledge exchange challenge.

It was also noted that for some of the Centres in particular, part of the business engagement role is actually in stimulating demand as much as meeting existing requirements, and achieving this balance is a difficult but necessary objective.

The issue of geographic coverage was also raised, with a couple of the consultees reporting an impression of some concentration of activity within the Central Belt and main cities. Our own analysis bears this out, but the distribution of companies participating in projects also reflects the concentration of industry in Scotland, the location of universities, and the universities participating in IC projects.

ICs are also required to engage within the academic community, and here some issues were identified, including the ease with which universities can engage with ICs in which they are not a partner.

Many reported that it was difficult to keep informed about all of the ICs unless they were directly involved as an Admin Hub University or partner university. This was not made easier by the diversity of the models and arrangements for interaction, which some felt were confusing.

5.5 Impacts

The very clear message from the consultees was that, despite some positive early indications, it is still too early to form firm judgements about the impacts of the IC Programme for two main reasons:

- the Centres are still in their infancy, and some have been operating for less than a full year. Although the first round of approved Centres have been in place for longer, initial delays in their set up has meant that full operations took longer to be established (although the subsequent Centres did benefit from this early experience); and
- the nature of innovation support is such that the economic benefits to participating companies can take some time to materialise, particularly as the Centres are operating in areas that are still quite far from market.

In addition, the diversity of the Centres and the number of projects that have been supported meant that none of the consultees had a full picture of the likely impacts. However, there was some input on the kinds of impacts that would be expected, and how these should be measured.

The consistent view was that the primary impacts will be economic, and should be evident in the following:

- more innovation active firms in Scotland;
- increased investment in innovation by firms in Scotland;
- increase in new products and services developed and launched by firms in Scotland;
- growth in jobs (and high value jobs); and
- increase in exports, turnover, profitability, and GVA.

There was also some recognition of the wider role of the IC Programme in delivering societal benefits, particularly in areas such as improved healthcare and better public services, although few had any clear ideas about how best to measure such effects. The work of SMS and DHI was identified as important in this respect, although other Centres would also have an important role (e.g. The Data Lab).

There was also an expectation that the IC Programme would lead to a step change in Scotland's innovation performance, although few were able to articulate what this might mean in practice. The most widely held view was that this scale of effect would take some years to realise, and that long term commitment would be needed. We return to this issue below.

Despite the general view that it was too early, and that the Centres are broadly on the right track, there were a couple of consultees who disagreed, and felt that three years was time enough to judge the potential value of the Centres. Some also raised questions about the kinds of projects being supported and the extent to which these were truly industry led (as opposed to academic) and their commercial potential.

It is difficult to assess this across the full portfolio, but all of the Centres noted that the commercial potential of a project is a key criteria in the project assessment process.

The ICs have all established project approval processes with defined levels of delegated authority and, where relevant, assessment panels and committees that include industry and academic expertise.

Some also raised questions about the additionality of support, feeling that due to existing industry and academic relationships, some of the projects that were being funded would have happened without the ICs. That being said, in some cases, it was reported that the ICs had accelerated progress by supporting bigger projects in areas where there was already existing research. This requires further testing and is considered as part of the economic impact assessment reported later.

In the preceding sections we have commented on the MEF and its utility as a means of tracking progress. This was also raised in the course of the consultations, mainly by the ICs themselves, but also by some of the wider partners. As noted, the MEF is not being completed in full by all of the ICs and target setting is patchy. Some of the Centres noted that the measures could be improved, and that resourcing effective data collection and reporting was a challenge. There is therefore an open question as to the extent to which the MEF is incentivising appropriate actions, and about its utility as a mechanism for assessing performance.

As a final comment, a number of the consultees expressed some disappointment (or surprise) that they had not seen more in the way of communications from the ICs about their impacts to date, whether in the form of public reports or case study examples of positive achievements. Some of the Centres did report that they were in the process of compiling some case studies for this purpose, but it was felt that this would be a useful means of driving further business engagement.

5.6 Future Development

From discussion with the ICs, it is clear that all are actively considering their options for the future. There is a clear awareness of the expectation, explicitly stated by the SFC, that the level of public funding into the IC Programme would decrease over time, and Centres are planning accordingly. However, few of the consultees expected a future for the ICs that was free altogether of public funding requirements. Instead, a more diversified income structure was envisaged, and many talked of the Fraunhofer model of equal shares from government, industry and competitive contracts (often public sector).

Many also expressed a hope that the Enterprise Agencies might become more involved in a financial sense. Currently both SE and HIE have invested in specific projects, and have communicated with the ICs about the main innovation support mechanisms available to companies. However, many of the stakeholders reported a lack of clarity over the role of these bodies in the IC Programme, and some had expected greater involvement.

As with impacts, most felt that it was too early to be definitive about future business models, but many of the Centres have already been dipping their toes into the water of earned income, as well as looking to wider sources of innovation funding at UK and EU levels (although the latter will obviously be affected by the Referendum result). The general view was that some of the ICs would offer better potential for commercial business models than others, and that the need for public funding would likely remain, even if at a reduced level.

The changing financial models raises a challenge for the Centres in how to balance the need to create impact for Scotland with the need to generate income. While not always mutually exclusive goals, there may be times when these do compete (e.g. doing more business internationally) and some felt that clearer guidance would be required on this balance.

Discussions on future development also picked up on the governance issues and questions about whether or not some or all of the ICs should seek to become more independent (of universities), and how best to manage public accountability in such cases. Again, there was no clear consensus on this question, but more of a general awareness of this as an issue for consideration.

Finally, many of the consultees also raised questions about how and when decisions might be made regarding the success or otherwise of individual ICs. Many felt that the SFC (and its partners) should have the courage to close those not deemed to be working, but there was less clarity as to how and when such decisions should be made and on what basis. Few thought that all of the ICs would survive into the longer term.

5.7 Summary

A summary of the main points arising from the partner and stakeholder consultations is provided below:

- Rationale and Fit – a clear and ongoing rationale for the IC Programme, with a continued focus on being demand-led and on developing economic gain for Scotland considered the right approach. ICs operate in a complex wider landscape with areas of potential overlap/duplication, which requires effective communication and cross-referrals between all players that operate in this space.
- Management and Governance – giving ICs the freedom to define a model best suited to their sectors/technologies was in the main considered the right approach. The funding for the IC Programme from SFC has, however, resulted in some tensions and constraints (e.g. working within the administrative structures of universities, appetite for and attitudes towards risk, constraints on the ICs ability to fund businesses, IC Boards having less control than they would have in an independent organisation).
- Business Engagement – the general view is that business engagement is broadening, but that there is more to do (e.g. geographically, reaching beyond the initial focus on those businesses that were involved at the outset in the business planning process and with those businesses where universities had established relationships, engaging SMEs/large companies, etc). This largely reflects the different stages at which ICs are at and the different communities within which different ICs are working. A variety of approaches have been developed and should continue to evolve to best suit their target industries and markets.
- Impacts – overall, a common view is that it is too early to form a firm judgement about the impacts of the IC Programme (e.g. the Centres are still in their infancy, the nature of innovation support means that economic benefits to participating companies can take a long time to accrue). The main impacts expected to be achieved are economic, although there is recognition of wider societal benefits in some cases. The importance of ICs communicating achievements and impacts more widely was identified.

- Future Development – the ICs are considering their options for the future, including future business models. With public funding decreasing over time, a more diversified income structure is envisaged. Some issues which are likely to emerge from the future development of ICs will be how they balance the need to create impact for Scotland with the need to generate income, and whether or not some or all of the ICs should seek to become more independent (of universities), and how best to manage public accountability in such cases.

The consultation work raises many issues and questions of critical importance to the development of the IC Programme. Questions relating to governance, financial and business models, business engagement and project activity are all central concerns. However, the diversity of the Centres themselves, and the areas in which they operate, is such that a single solution to each is unlikely.

It is also worth noting that the consultation responses themselves displayed a broad diversity of views, sometimes conflicting, and largely reflecting the differing perspectives and interests of industry, higher education and public policy. These are all subject to different pressures and influences and are not always aligned. Indeed, one of the more challenging objectives of the IC Programme is to find a balance between these priorities to the mutual benefit of all parties and of the Scottish economy.

6. Feedback from Engaged Businesses

This Chapter presents the main findings arising from our engagement with businesses and organisations directly involved in projects, and in the much wider range of IC activities.

Summary

Businesses found out about ICs through a number of channels and touchpoints, including IC staff, Enterprise Agencies, and existing academic contacts. This suggests that efforts have been directed at proactively raising awareness of the IC Programme among the business base.

A large proportion of businesses had prior experience of engaging with the research base, suggesting that the IC Programme has engaged largely with businesses that are already innovation active. Most had a positive attitude towards industry-academia collaboration, with this becoming more positive following engagement with ICs.

Key reasons for engagement with ICs have been to test/develop a new technology or idea and to access specialist academic expertise. This has been with a view to developing/improving products, services and processes, to expand operations in existing markets and develop new markets, and to improve business competitiveness.

The main ways businesses have engaged with ICs have been attendance at events, seminars and conferences, discussions about potential project ideas, and collaborative projects. Overall, satisfaction with IC engagement has been relatively high - including with their initial engagement, IC staff, and by type of engagement. Indeed, expectations from engagement with ICs have largely been met or exceeded.

It is, however, important to note that many of the collaborative projects are still in early stages of delivery. As such, the main benefits reported by those engaged with ICs were networking and knowledge-related benefits.

Where projects were fairly well or well advanced, almost all businesses reported business performance impacts achieved to date and/or projected future impacts. In the main these centred on turnover and employment impacts. There is a relatively high level of additionality, with 64% of those reporting impacts indicating that none or less than half would/will arise in the absence of IC support.

The high levels of satisfaction are further reflected in the high incidence of actual and likely repeat engagement with ICs. The main future support need identified was funding. This was followed by continued support to access specialist and technical academic expertise and networking opportunities.

6.1 Background

A three-pronged approach was undertaken to gain feedback from businesses and organisations, as described below.

Telephone Survey

It was agreed that 80 telephone interviews would be completed with businesses/organisations that have engaged in IC projects. This was a more in-depth survey, and businesses engaged in projects have been the sole focus for informing the Economic Impact Assessment (EIA) in **Chapter 7**.

In order to develop a sample, ICs were asked to populate a Project Log to provide information on projects supported to date. As described in **Chapter 4**, this covered aspects such as project status, start and end dates, and partners involved.

From the information provided, we identified 148 live or completed projects across the eight ICs, and all businesses/organisations that have been involved in projects were included in the sample.

The original intention was to achieve ten interviews per IC. However, as highlighted in **Chapter 4**, the number of live/completed projects varied considerably by IC (e.g. not all had ten live/completed projects). Further, some businesses and organisations have been involved in multiple projects with the same IC. Where this was the case, and where we were restricted by the number of projects for a particular IC, we asked respondents whether they would be willing to speak with the study team about other projects in which they were involved.

A total of 81 telephone interviews were completed (**Table 6.1**).

Online Survey

A 'lighter touch' online survey was designed as a means to secure wider feedback from the host of businesses/organisations that have engaged with ICs in other ways (e.g. membership, attending events and conferences, etc). An email introduction with a link to the online survey was issued by the ICs to their wider distribution lists.

A total of 124 responses were received to the online survey.

In total, our survey engagement with businesses/organisations resulted in 205 responses. It should be noted that response numbers vary by IC, and the purpose of the study is not to compare individual ICs, but rather to examine the IC Programme as a whole.

Table 6.1: Response to Surveys

IC	Telephone Survey	Online Survey	Total
CSIC	14	38	52
CENSIS	8	26	34
IBioIC	7	19	26
OGIC	14	10	24
SAIC	12	10	22
DHI	14	6	20
The Data Lab	9	11	20
SMS	3	4	7
Total	**81**	**124**	**205**

Both survey questionnaires included a core set of questions that were common to both, with the telephone survey including a number of additional questions that have been used to inform the EIA.

The analysis of the telephone and online surveys have been combined and are presented in aggregate form.

Case Studies

The third strand of engagement involved the development of 16 case studies. ICs were asked to suggest potential case study examples for the study team to follow up. The case studies involved telephone interviews with businesses, other organisations, and academic researchers to provide a more rounded perspective on IC projects or activities. The case studies are provided in **Appendix E**.

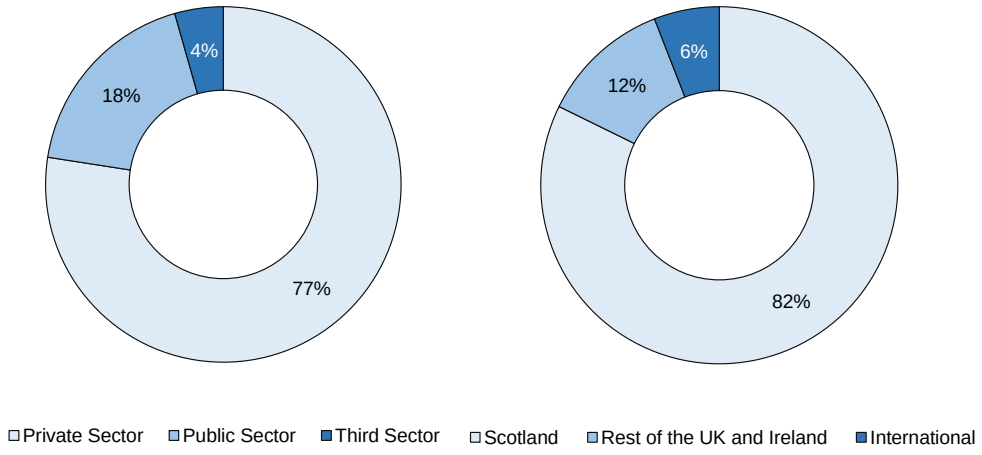
The remainder of this Chapter presents the findings from the telephone and online surveys[8].

[8] A small-scale telephone survey was also undertaken with non-engaged businesses – the findings are presented in **Appendix F**.

6.2 Business/Organisation Profile

The majority of businesses/organisations operate in the private sector (77%), and are based in Scotland (82%). The survey also gathered feedback from businesses outwith Scotland, including those based in England, Europe, USA, and United Arab Emirates (UAE).

Figure 6.1: Business Type



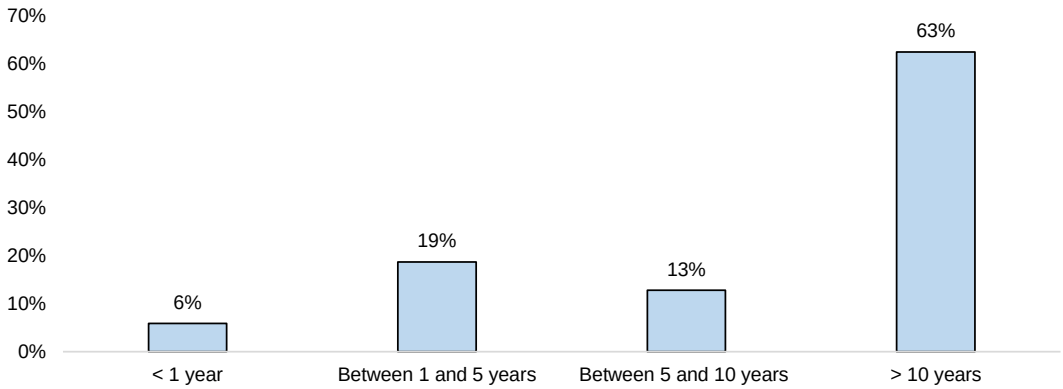
N=204

Figure 6.2: HQ Location

N=203

Almost two-thirds of businesses/organisations that have engaged with ICs are established businesses that have operated for over ten years (63%, 127).

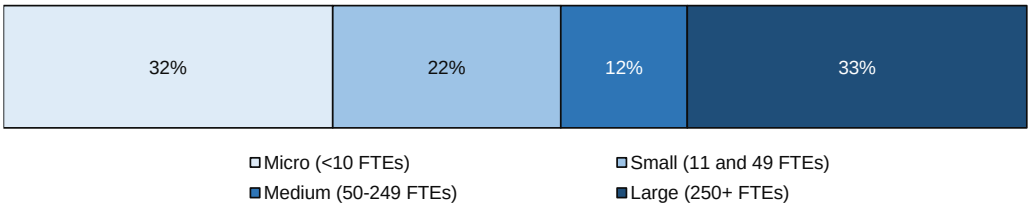
Figure 6.3: Length of Time Trading



N=203

As for size, there was a relatively even spread of responses from micro, SMEs, and large companies.

Figure 6.4: Business/ Organisation Size

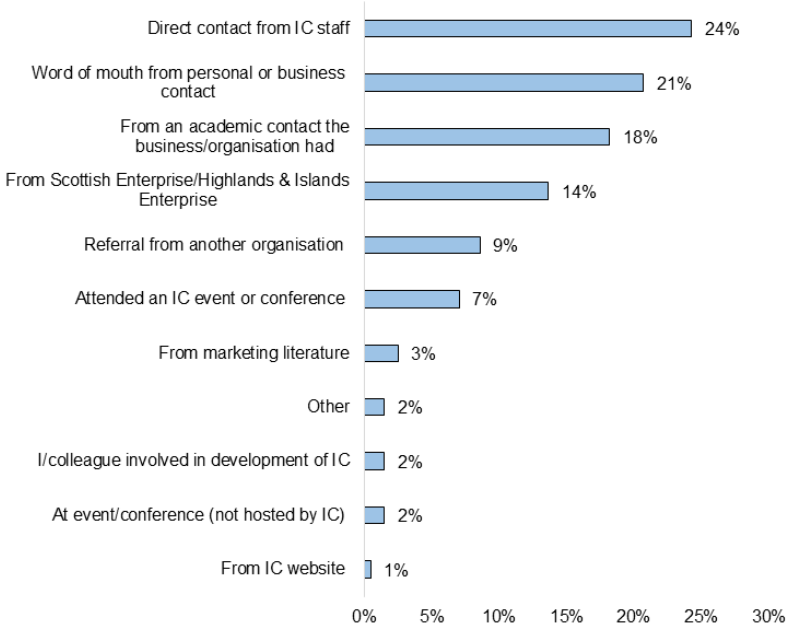


N=202

6.3 Awareness of ICs

The main ways in which businesses/organisations first became aware of ICs was through direct contact from IC staff (24%, 48) or through word of mouth from either a personal or business contact (21%, 41). Hearing about ICs from academic contacts and from Enterprise Agencies were also common ways of finding out about ICs.

Figure 6.5: Finding Out About ICs

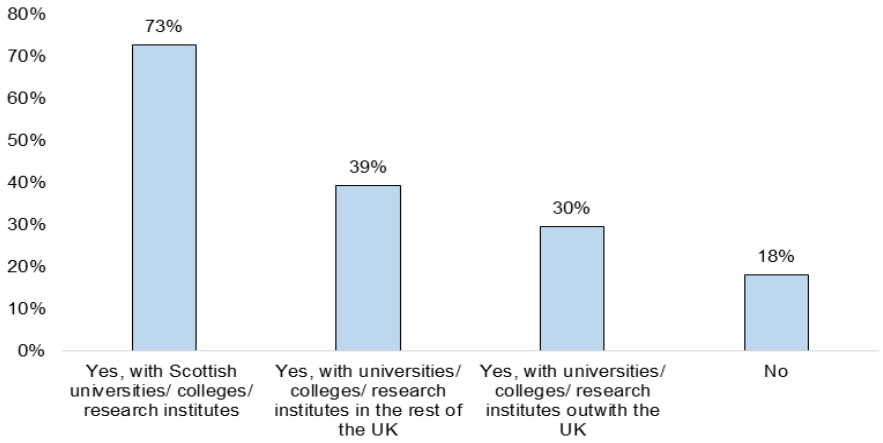


N=203

6.4 Prior Engagement with Academia

The majority of businesses/organisations had engaged in collaborative activities with academia prior to their engagement with ICs (82%, 174), **Figure 6.6**.

Figure 6.6: Previous Engagement with the Research Base



N= 203, Multiple responses possible

There has been greater levels of engagement with the research base in Scotland than those based further afield (73%, 148).

Some 70% (140) of businesses have experienced barriers in their engagement with the research base. The most common barriers were not knowing who best to speak with and the different interests of industry and academia. From our experience of undertaking similar studies, these are typical barriers often reported by the business base.

Table 6.2: Barriers to Engagement with Academia

Barrier	Number	%
We didn't know who the best people to talk to were	67	48%
The interests of businesses and universities are too different	43	31%
Not aware of the technical capabilities available within universities	37	26%
We felt it was too expensive to access university expertise	35	25%
We didn't know where to access the support	33	24%
We didn't see the value in accessing university expertise	9	6%
Constraints with ownership of Intellectual Property (IP)	7	5%
Other	7	5%
Differing academic and business timescales	3	2%
Felt needed the process facilitated	2	1%
Restricted business resource to engage	2	1%

N=140, multiples responses allowed

6.5 Reasons for Engagement with ICs

Businesses/organisations provided a wide range of reasons as to why they engaged with ICs. This section is separated into those that participated in a project and those engaged in wider IC activities.

Supported Projects

The top three technical objectives identified by businesses/organisations that participated in a project were to test a new technology or idea (63%, 51), to develop a new technology or idea (60%, 49), and to access specialist academic expertise (56%, 45).

Table 6.3: Technical Objectives (Supported Projects)

Technical Objective	Number	%
To test a new technology/idea	51	63%
To develop a new technology/idea	49	60%
To access specialist academic expertise	45	56%
To develop new IP	25	31%
To better exploit the opportunities in the sector/area	24	30%
To understand the potential opportunities in the sector/area	20	25%
To understand the sector/area operated in better	10	12%
Other	6	7%
To access public and/or third sector expertise	6	7%
To ensure credibility of findings	4	5%
To access funding to undertake research	2	2%
To access IP owned by the university partner	1	1%

N=80, Multiple responses possible

The main business or organisational objectives focused on developing or improving products, services and processes, expansion in existing markets or entry into new markets, and improving bushiness/organisation competitiveness, **Table 6.4**.

Table 6.4: Business Objectives (Supported Projects)

Business Objective	Number	%
To develop new products	35	44%
To develop international markets	35	44%
To grow sales in Scottish markets	27	34%
To develop new processes	24	30%
To develop UK market	21	26%
To improve products	20	25%
To improve processes	18	23%
To improve business competitiveness	18	23%
To generate new contacts, networks, collaborations with other businesses	18	23%
To develop new services	14	18%
To improve services	12	15%
To reduce our costs/make efficiency savings	12	15%
To grow sales in UK market	8	10%
To grow sales in international markets	8	10%
To develop a new spin-out	3	4%
To support emerging talent	2	3%
To develop opportunities (growth, sales, etc) for the whole sector	1	1%
To be compliant with regulations	1	1%

N=80, Multiple responses possible

Businesses engaged in wider IC activities reported similar reasons for engagement with ICs. The top three business objectives were to: develop new business ideas/opportunities (65%, 80), understand potential opportunities in the sector/area (52%, 65), and develop a new idea/technology and make industry contacts (both 48%, 60), **Table 6.5**.

Table 6.5: Reasons for Engagement with IC (Non-Project Responses)

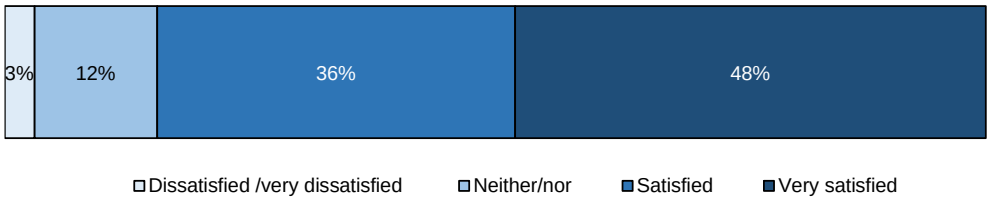
Reasons for Engagement	Number	%
Develop new business ideas/opportunities	80	65%
Understand the potential opportunities in the sector/area	65	52%
Develop a new idea/technology	60	48%
Make industry contacts	60	48%
Access specialist academic expertise	49	40%
Develop/improve products, processes, systems	48	39%
Test a new idea/technology	46	37%
Understand the sector/area operated in better	42	34%
Access business development support and advice	28	23%
Access public and/or third sector expertise	17	14%
Other	7	6%

N=124, Multiple responses possible

6.6 Initial Engagement with ICs

There was a high level of satisfaction with businesses/organisations' initial contact with ICs. Eighty-four percent (169) were either satisfied or very satisfied with their initial engagement, **Figure 6.7**.

Figure 6.7: Satisfaction with Initial Engagement



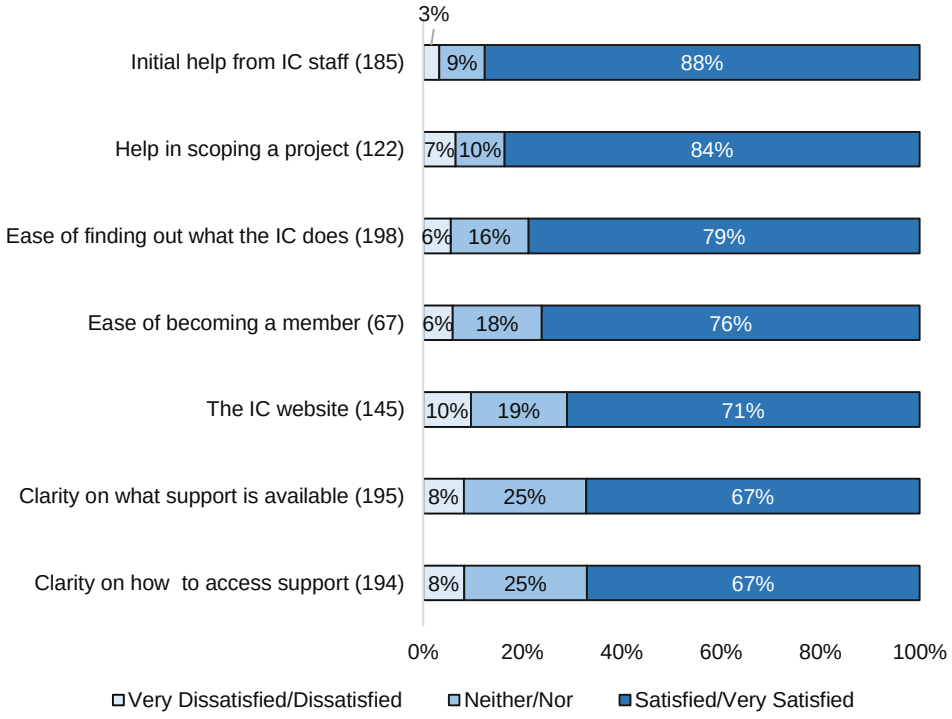
N=202

Further feedback from respondents highlighted that positive engagement with ICs was in the main due to IC staff being knowledgeable about the sector/area, responsive to business needs, and supportive and enthusiastic at the initial project development stage. Wider feedback was that IC staff had invaluable contacts, were proactive, open-minded, and professional.

Where feedback was more mixed, issues centred on levels of communication and information provided – there was a sense from some respondents that this could be improved. A handful reported a lack of clarity on the funding process and considered operating models not appropriate.

Generally, however, levels of satisfaction remained high for a range of aspects relating to businesses/organisations' initial engagement. This did, however, range from a low of 67% for clarity on what support is available and for how to access support (these aspects also received the highest neutral and dissatisfaction ratings), to a high of 88% satisfaction for initial help from IC staff, **Figure 6.8**.

Figure 6.8: Wider Satisfaction with Initial Engagement



One-fifth of businesses/organisations (21%, 44) suggested improvements. The most common responses were:

- greater clarity on what support is available (nine);
- the need to improve IC websites – e.g. blogs/case studies (six);
- review the funding model to include funding for the private sector (four);

- review application forms (four);
- greater clarity and flexibility with project timescales (three);
- greater clarity on the funding process (three); and
- options for pre-project meetings (two).

6.7 Engagement with ICs

Businesses/organisations have engaged with ICs in a wide range of ways. The most common type of engagement was attendance at seminars, events and conferences. This was followed by conversations with IC staff about potential project ideas, and engagement in projects, **Table 6.6**.

Table 6.6: Engagement with ICs

Type of Engagement	Number	%
Seminars, events, conferences	127	73%
Discussions about a potential project	91	52%
Involved in a project(s)	81	47%
Membership	49	28%
Postgraduate placements/secondments	40	23%
Signposting to other support	30	17%
Business development support and advice	28	16%
Support to access other sources of funding	27	15%
Took part in a competition(s)	21	12%
Technical input/support	20	11%
Training and development workshops	17	10%
Consultancy support	16	9%
Other	9	5%
Online learning and CPD	1	1%

N=174, Multiple responses possible

“Other” responses included: providing technical support to the IC (three); active members of other groups as a result of the IC (two); attended a learning journey, was given an opportunity to present to the media, given a tour of the IC office, and promoted the IC to other businesses (each one).

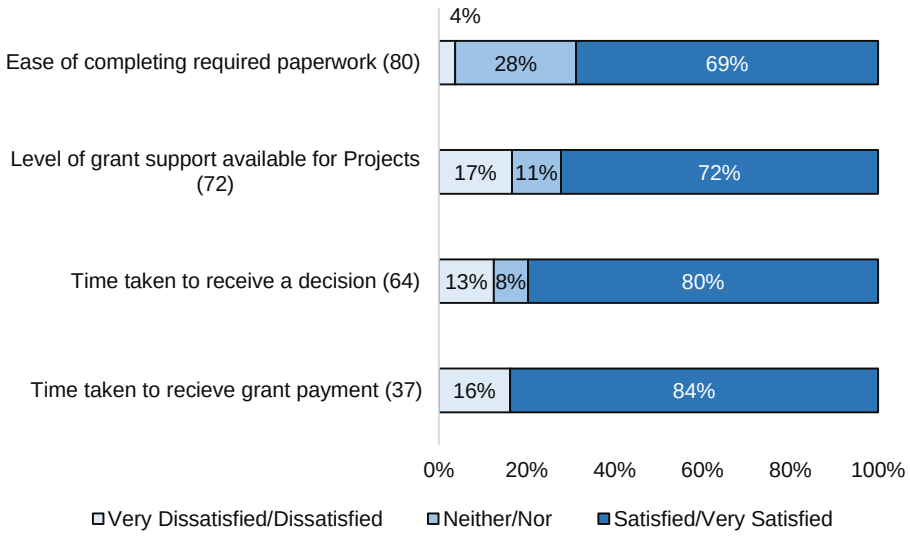
6.8 Projects

Over half of businesses/organisations (53%, 108) have either applied for, or are currently in the process of applying for, an IC supported project.

Application Process

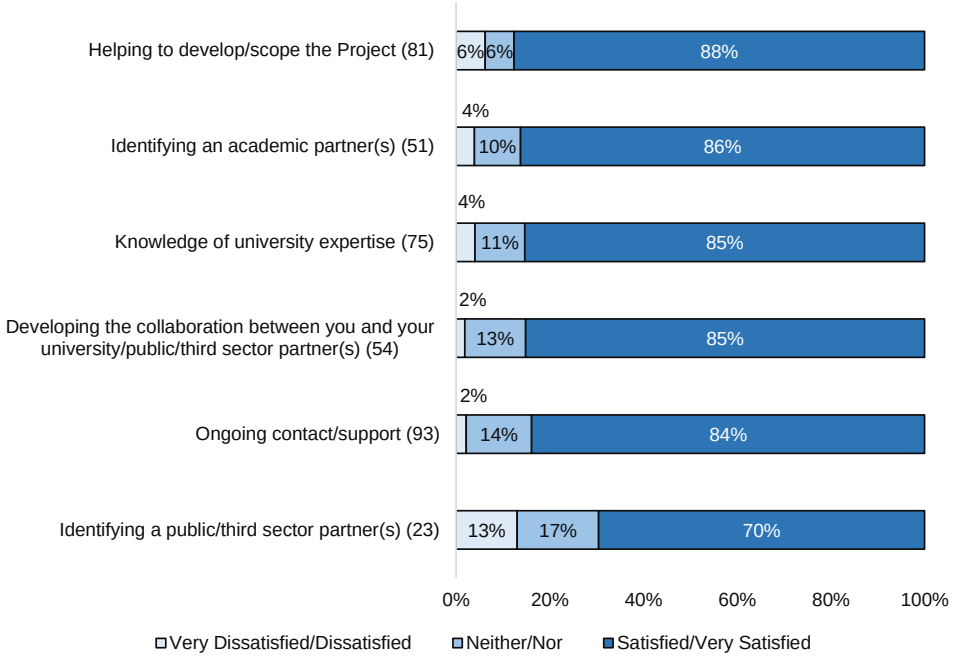
Generally speaking, the majority of businesses/organisations were either satisfied or very satisfied with various aspects of the application process. Each aspect received a rating of at least 69% satisfied or very satisfied.

Figure 6.9: Satisfaction with the Application Process



Overall, satisfaction with IC staff was high. This ranged from a high of 88% for help to scope out the project to 70% for support in helping to identify a public/third sector partner.

Figure 6.10: Satisfaction with IC Staff



Approved Projects

Through the telephone survey we undertook 81 interviews with businesses and organisations involved in 78 approved projects (51% of live/completed projects), **Table 6.7.**

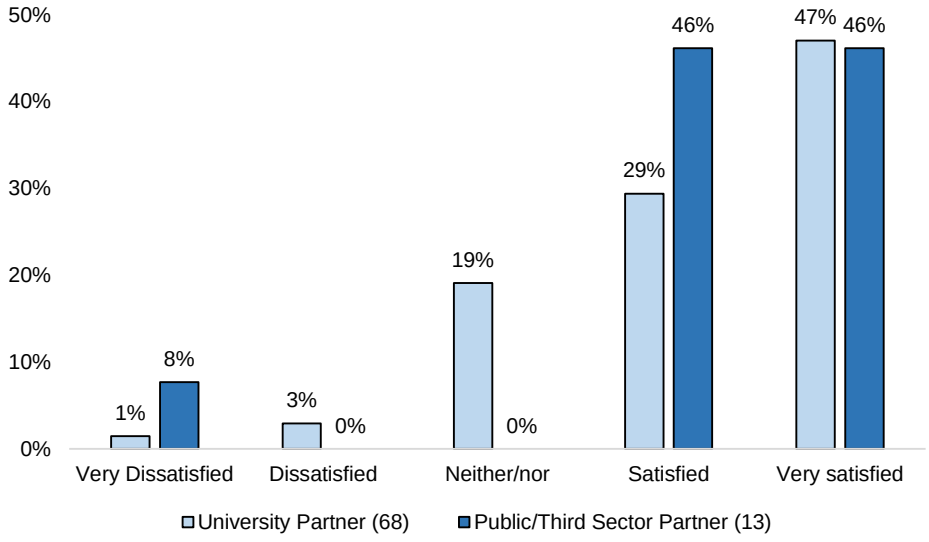
Table 6.7: Supported Projects

IC	Number of Projects
CENSIS	9
CSIC	13
DHI	14
IBioIC	7
OGIC	16
SAIC	7
SMS	3
The Data Lab	9
Total	**78**

Three-quarters of businesses/organisations reported that the project was live (59) and the remainder were complete.

The majority of businesses/organisations were satisfied or very satisfied with the academic (66%) and/or public/third sector (92%) partners involved in their project, **Figure 6.11**.

Figure 6.11: Satisfaction with Involvement of Partners



In most cases businesses/organisations had a pre-existing relationship with the academic partner that was involved in the project (61%, 37) and/or public/third sector partner (84%, 11) – rather than ICs helping to identify partners. The partners' involvement in the IC supported projects was therefore often based on positive collaborative relationships developed prior to engagement with ICs.

Where an academic and/or public/third sector partner was not already in place, the feedback from businesses was that ICs played a supportive role in issuing calls to universities, reviewing the responses, and providing a shortlist of universities, as well as signposting to appropriate public or third sector partners.

Projects that did not Progress

The online survey included feedback from seven businesses that applied to be involved in an IC supported project but were unsuccessful/or chose not to progress.

Almost all received feedback on their application. The projects reportedly did not progress for a range of reasons, which were:

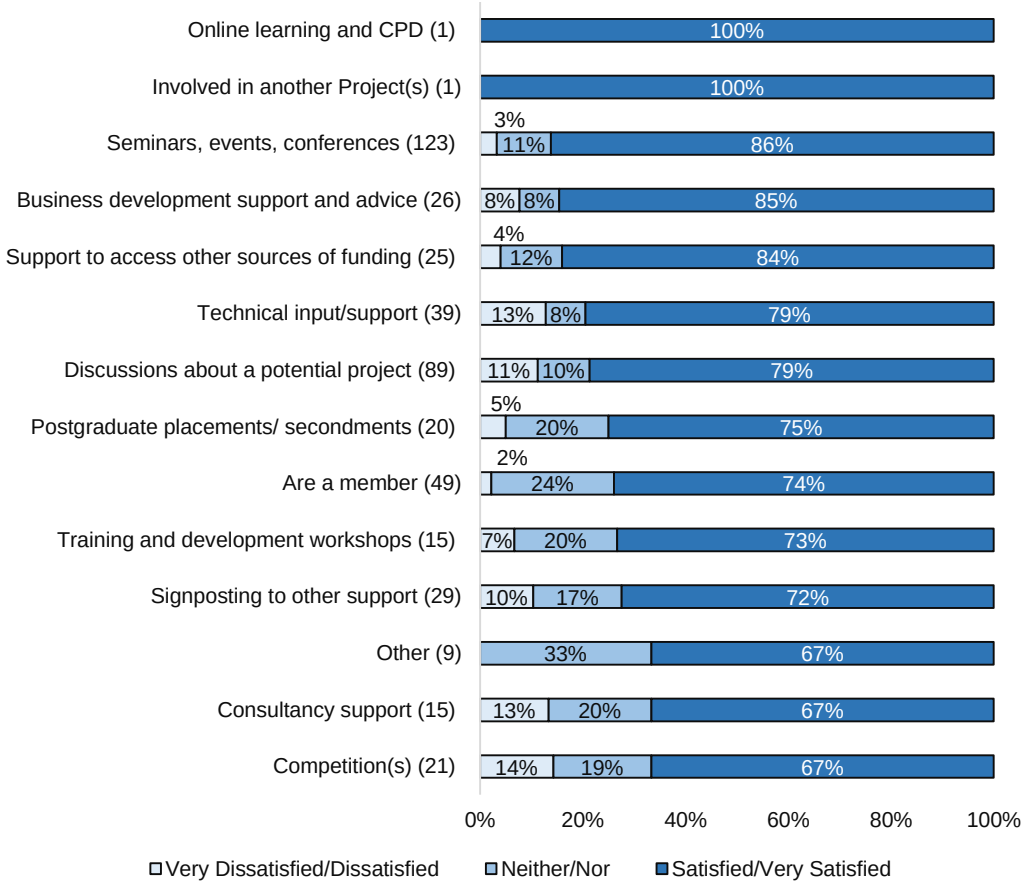
- lack of human resource to take the project forward (two);
- lack of financial resources within the company to take the project forward (two);
- change in company's priorities (two);
- change in market conditions (two);
- negotiations with university contact(s) failed (one); and
- timescales for project collaboration with university and/or other partner(s) not suitable (one).

6.9 Satisfaction with Engagement

Businesses/organisations were asked to rate the activities they had engaged in with ICs. Online learning and CPD, and involvement in another project received the highest satisfaction ratings (note: absolute numbers are low).

Satisfaction was also high for seminars, conferences, and events (86%), business development support and advice (85%), and support to access other funding sources (84%).

Figure 6.12: Satisfaction with Engagement in IC Activities

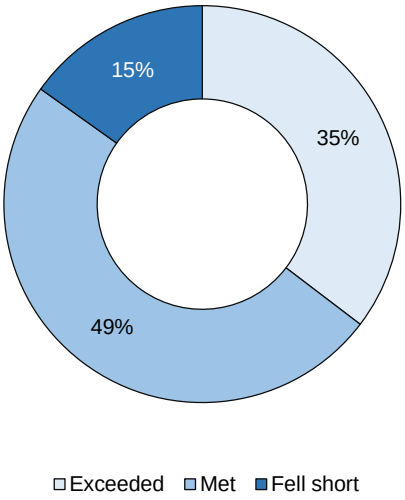


Note: Businesses/organisations that took part in the telephone survey (i.e. involved in a project) were not asked to provide general satisfaction ratings and are not included within this graph. Instead project beneficiaries provided satisfaction ratings in relation to more detailed questions e.g. initial engagement, staff, application process, etc.

6.10 Overall Thoughts on the Support

There was a high level of satisfaction with businesses/organisations' overall engagement with ICs to date. Indeed, some 84% (167) reported that the support had either met or exceeded their expectations.

Figure 6.13: Expectations of Engagement with ICs



N=198

Much of the wider feedback was positive and centred around the proactive nature of IC engagement: hosting events, networking sessions, and contacting businesses/organisations directly to increase awareness. ICs were considered to have developed a reputation for delivering, they have access to a wide range of useful contacts (industry and academia), and have enabled projects to achieve positive outcomes.

Where less positive feedback was provided, businesses/organisations understood that ICs were still relatively new and that marketing, promotion and awareness-raising activities will continue to evolve.

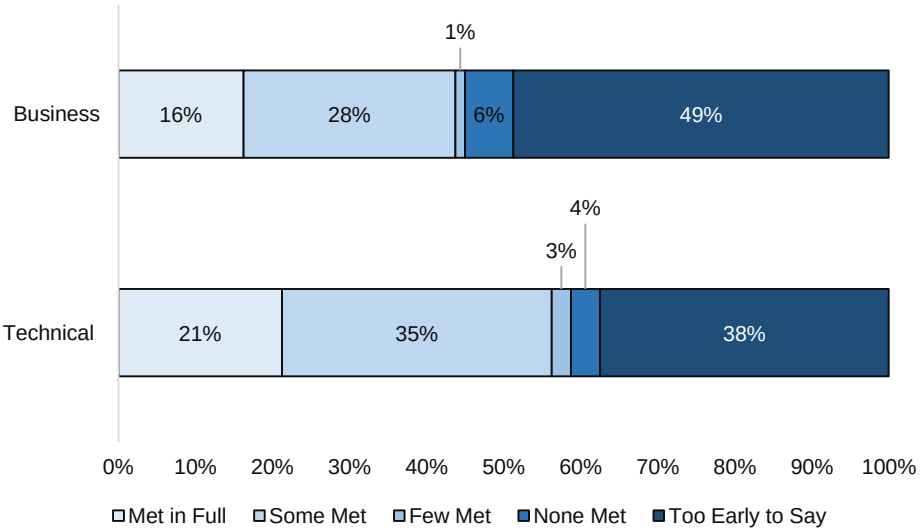
A minority reported the support had fallen short of their expectations (15%, 30) for reasons including:

- no benefits achieved (yet) (four);
- limited engagement from the IC team (three);
- the application was unsuccessful/did not progress (three);
- academic expertise/quality was lower than expected (two); and
- delays in project delivery (two).

Feedback from the telephone survey with businesses/organisations that have engaged in a project found that:

- 56% have met their technical objectives either in full or to some extent (e.g. understand sector/area better, to better exploit opportunities, to develop/test new ideas/technology);
- 44% have met their business objectives either in full or to some extent (e.g. to develop new or improve existing products, process, systems, to develop contacts, to grow sales); and
- given that many projects are live (including many at very early stages – 57% are still in development or at very early stages – see **Figure 6.21**), it is perhaps not surprising that 38% and 49% of businesses reported that it was too early to say whether their technical and/or business objectives have been met.

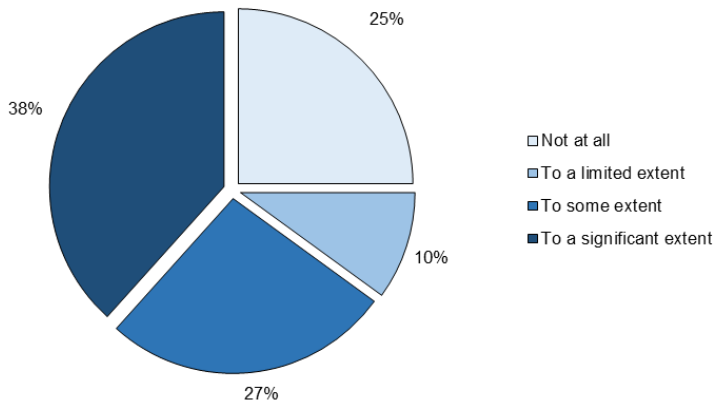
Figure 6.14: Have Business and Technical Objectives Been Met



N=80

As highlighted earlier, a large proportion of businesses have experienced barriers to engagement with the research base in the past (e.g. not knowing who to speak with, different interests of industry and academia). A positive finding from the survey is that two-thirds of respondents engaged in a project (53) reported that the IC support has helped address these barriers to either some or a significant extent.

Figure 6.15: Extent to Which IC Engagement Helped Overcome Barriers



N=81. Note: Only those engaging in a project were asked this question.

For those that reported the IC only helped overcome the barriers to engagement to a little extent or not at all (35%), this was largely because the challenges were outwith the control of ICs, for example:

- academic partner was engaged before approaching the IC (five);
- HEIs operate on different timescales to the private sector (two); and
- issues regarding university ownership of IP (two).

6.11 Benefits

Businesses and organisations were asked a series of questions around whether they have derived any benefits to date from their engagement with ICs or whether they expect to achieve any benefits over the next 2-3 years.

The majority of businesses/organisations reported at least one current/future benefit (93%, 190). A minority (7%, 14) have not experienced any benefits to date and do not expect to in the future.

Table 6.8 summaries the benefits categorised under five headings whilst **Figures 6.16** to **6.20** provides further detail of benefits within each category.

Table 6.8: Current and Future Benefits

	Now		Future	
	Number	%	Number	%
Networking	157	77%	130	64%
Knowledge	143	70%	103	50%
R&D/Innovation	93	46%	124	61%
Finance	67	33%	83	41%
Sales	32	16%	88	43%

N=204, multiple responses possible

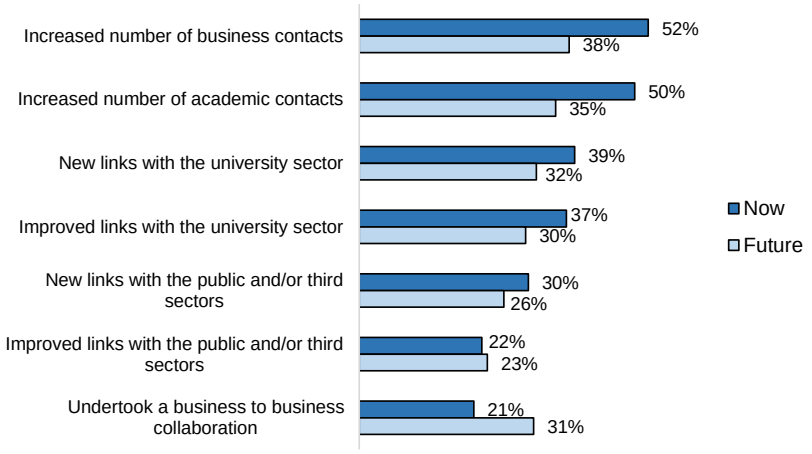
Unsurprisingly, networking and knowledge related benefits were most commonly reported by businesses/organisations to date:

- networking - the main benefits were increased number of business and academic contacts; and
- knowledge – improved awareness of HEIs' capabilities, and improved market and technical understanding were the main benefits reported.

This links back to the main business objectives and reasons for engagement reported.

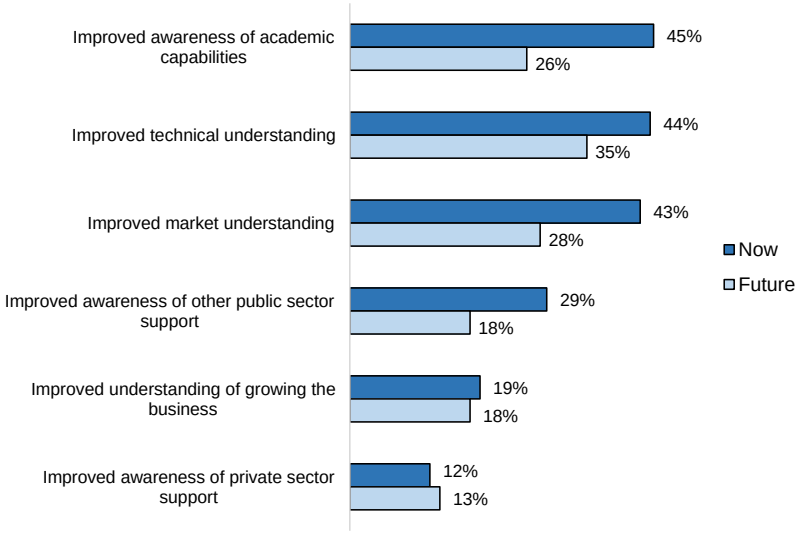
While slightly lower than the first two categories almost half of all businesses/organisations have experienced R&D/innovation benefits to date whilst 61% anticipate doing so in the future. Benefits were spread across a number of areas: new R&D activity and testing of new technology were the main benefits to date whilst developing new products, processes or systems was expected to be the most common benefit in future.

Figure 6.16: Networking Benefits



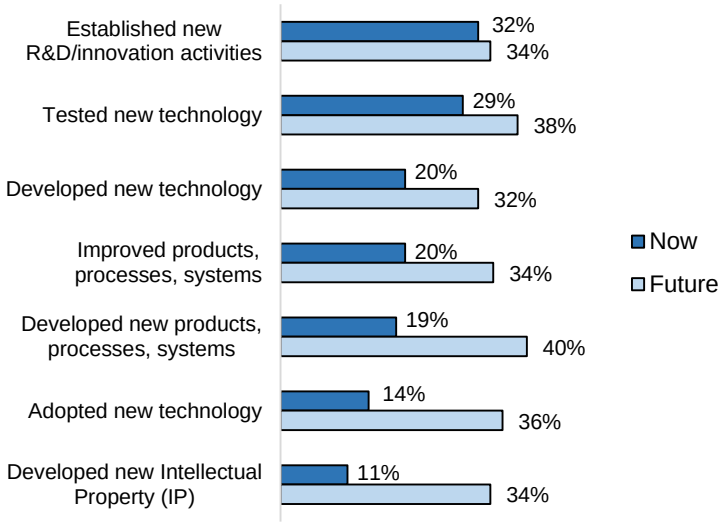
N=204

Figure 6.17: Knowledge Benefits



N=204

Figure 6.18: R&D/Innovation Benefits



N=204

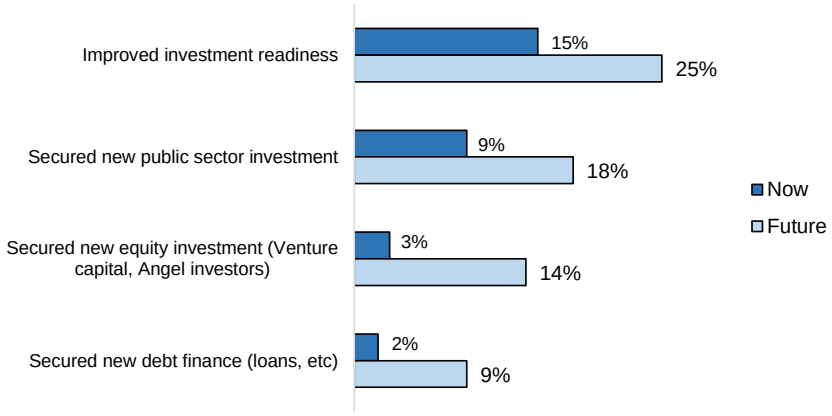
A low proportion of businesses/organisations have experienced finance or sales benefits to date (less than 15%) or anticipate to do so in the future.

There are a number of reasons why these benefits are lower:

- the majority of businesses/organisations engaged with ICs through lighter touch support (attending events, conferences and seminars) therefore may not have derived finance and business sales as a result of engagement;
- 52% are currently in discussion with ICs about developing a project; and
- 57% of projects are still in the early stages of development.

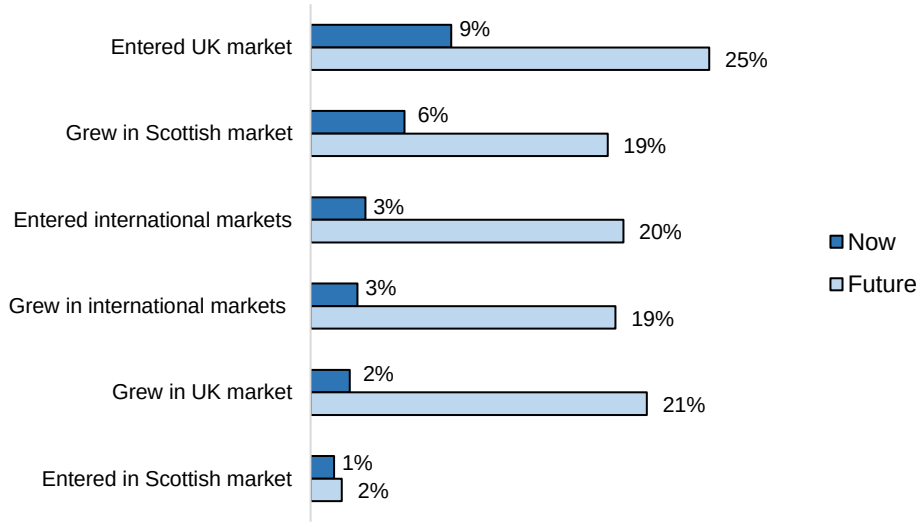
Having said that, 56% (104) anticipate entering a new market or growing in an existing market in the future (either Scotland, UK, or international markets) and one-quarter anticipate improved investor readiness.

Figure 6.19: Finance Benefits



N=204

Figure 6.20: Sales Benefits



N=204

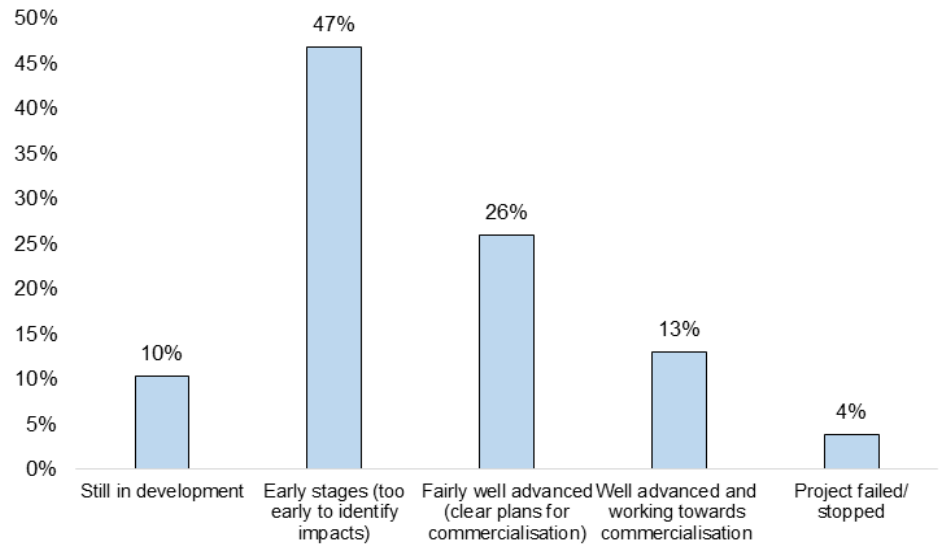
A positive finding is, however, that almost two-thirds of the businesses/organisations reported the project already had, or was likely to lead onto, a follow on project or activity (62%, 48).

6.12 Impacts

Impact questions were only asked within the telephone survey of businesses and organisations that have engaged in an IC project.

Firstly, we were interested in understanding the current stage of projects. Over half are currently in development or at a very early stage in delivery (i.e. too early to identify impacts), (57%, 44) and a further 4% of projects had stopped prior to completion.

Figure 6.21: Stage of Supported Projects



N=77

The following section therefore relates to responses provided by the 39% that reported that projects were either fairly or well advanced (30).

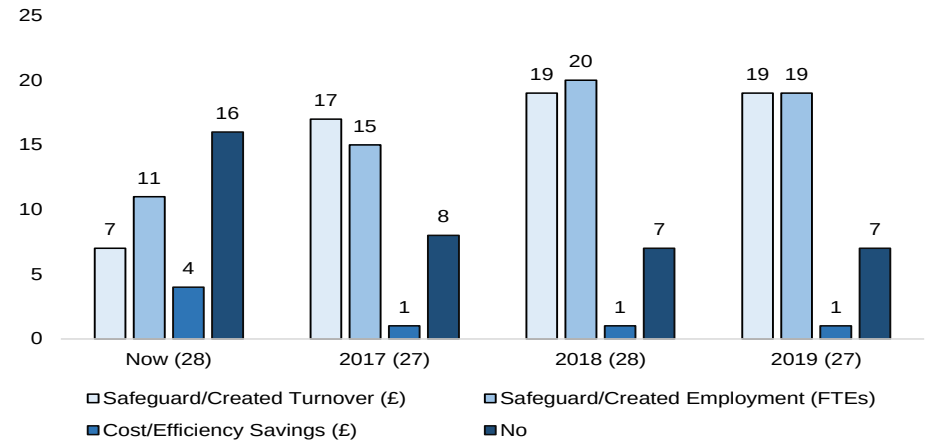
Key points to note include that:

- the vast majority reported impacts achieved to date and/or predicated impacts over one or more of the next three years (90%, 27); and
- few reported no impacts at all over the course of the four years (i.e. to date and over each of the next three years) (10%, three)[9].

Figure 6.22 details the breakdown of impacts reported – now and in each year.

[9] It should be noted that one project's objective was not to result in direct economic benefit for the business/organisation, rather the purpose was to develop the local economy e.g. increased tourism to the local market, increased jobs/turnover for local businesses etc. As a result, one organisation has since hired 2 FTE employees and further impacts are anticipated although are not directly monitored.

Figure 6.22: Current Impacts Reported Now and Forecast Impacts Reported in Each of the Next Three Years

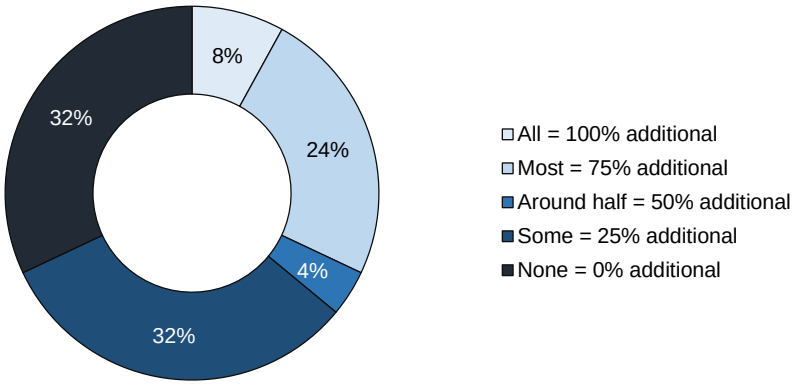


Note: Figures are shown in absolute numbers. Multiple responses allowed.

In the main, impacts centre on sustaining/creating turnover and/or employment – with more reporting such impacts in future years than to date. Fewer businesses reported cost efficiency savings (now or future).

Two-thirds of businesses/organisations involved in a project that is fairly or well advanced (64%, 16) reported that none or some (i.e. less than half) of the impacts reported above would have occurred if the IC support had not been available, **Figure 6.23**. This indicates a relatively high level of additionality.

Figure 6.23: Additionality of IC Support



N=25

Where all or most of the impacts reported would have been achieved without the IC support (32%, eight)[10]:

- half (four businesses) would have sought funding from an alternative source or invested in the project themselves;
- one would have continued without academic verification;
- another would have entered the market and built their knowledge/network from within; and
- one reported the project was not reliant on IC support.

However, all of these businesses reported the support had allowed or would allow impacts to be achieved:

- earlier (seven) – ranging from a low of six months to a high of 60 months (average of 22 months);
- of a greater scale (two) – 25% and 50% greater; and/or
- to a higher quality (one) – 50% better.

6.13 Attitudes towards Collaboration

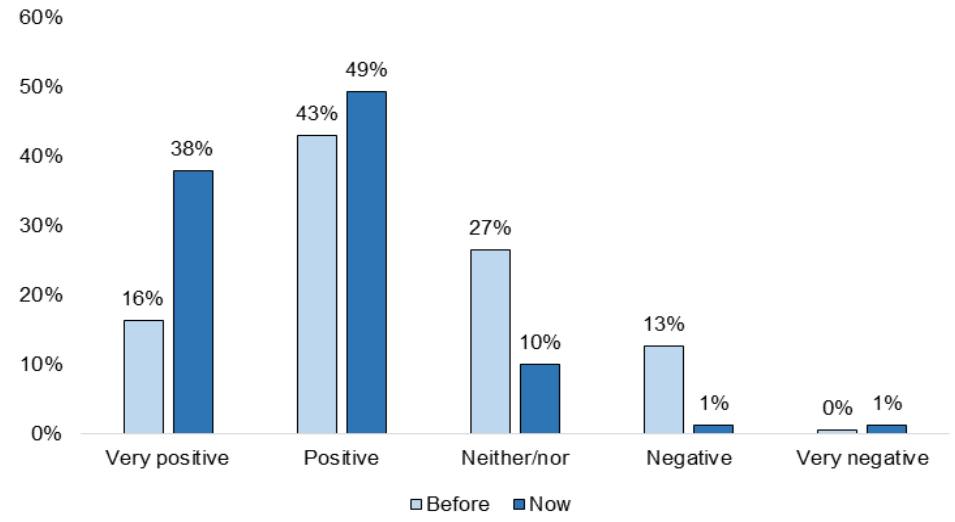
Since participating in an IC supported project, businesses/organisations attitudes towards academic and industry collaboration have improved (**Figure 6.24**).

Prior to the support, 59% (47) reported that they had a positive attitude towards engaging in academic collaborations - this increased to 87% (69) following engagement with the IC.

There has also been a reduction in the proportion reporting either a neither/nor or negative attitude.

[10] One business/organisation did not comment

Figure 6.24: Attitudes towards Collaboration – Before and Now

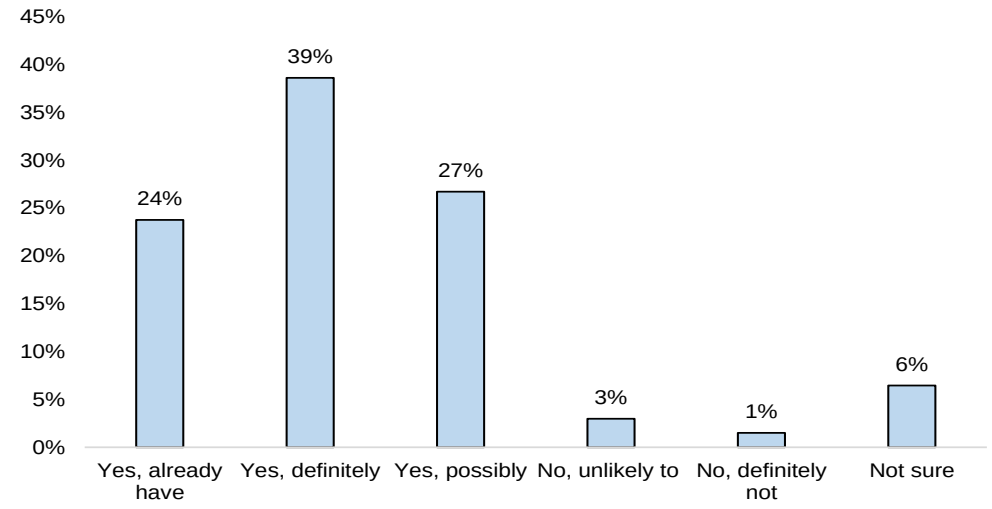


N=79 (Tel Survey Only)

6.14 Continued Engagement with ICs

Almost two-thirds of businesses/organisations (63%, 126) have continued to engage with ICs or will do so in the future. A further 27% (54) reported they will possibly continue their relationship with ICs. This is consistent with the high levels of satisfaction reported earlier.

Figure 6.25: Accessing Future Support from ICs



N=202

The main type of support required in the future is funding (21%, 43). This was followed by:

- access to academic technical expertise (19%, 39);
- support to facilitate collaborations between industry and academia (17%, 35); and
- access to networking opportunities and IC contacts (13%, 27).

6.15 Strengths and Areas for Improvement

Strengths

The main strengths of ICs were identified as access to the breadth and depth of contacts and networks (across the private, public, third and academic sectors) which they can connect businesses and organisations into. This was followed by ICs' ability and expertise in facilitating industry-academic collaborations and their sector/industry and technical knowledge and understanding. Wider strengths identified, but to a much lesser extent, can be categorised as follows:

- quality of events and networking opportunities they provide (seven);
- one-stop-shop/point of contact into Scottish HEIs (six);
- financial support to fund innovative projects (six);
- credible centres of excellence - have "kudos" (six); and
- commercially focused nature of ICs and projects (three).

Areas for Improvements

The main areas suggested by businesses/organisations for the continued improvement of ICs centred on operating models, how funding can be used, and improved marketing and promotion of the IC offer:

- funding – the main comments centred on ICs being allowed to fund businesses, greater clarity/transparency on activities/partners that can be funded, and that larger scale and longer-term projects to address industry/sector challenges (increased funding) should be supported; and

- it was identified that business-academic collaborations were not always the best solution, and that ICs should be allowed to support, for example, business to business collaborations.

These suggestions, however, need to be set within the context that SFC funding for IC project activity can only be used to fund academic input. It is also important to note that some ICs (SMS and SAIC) have adopted an approach where project activity has centred on a smaller number of larger transformative projects.

7. Economic Impact Assessment

This Chapter presents a summary assessment of the economic impacts generated through the ICs Programme to date, and anticipated over the next three years.

The Economic Impact Assessment (EIA) is based on the feedback provided by 81 respondents to a telephone survey – this represents a response rate of 53% of all businesses involved in an active or completed project. The survey sought businesses' views on the current and anticipated influences of project participation, focusing on an agreed range of impact measures including jobs, turnover, and cost reductions.

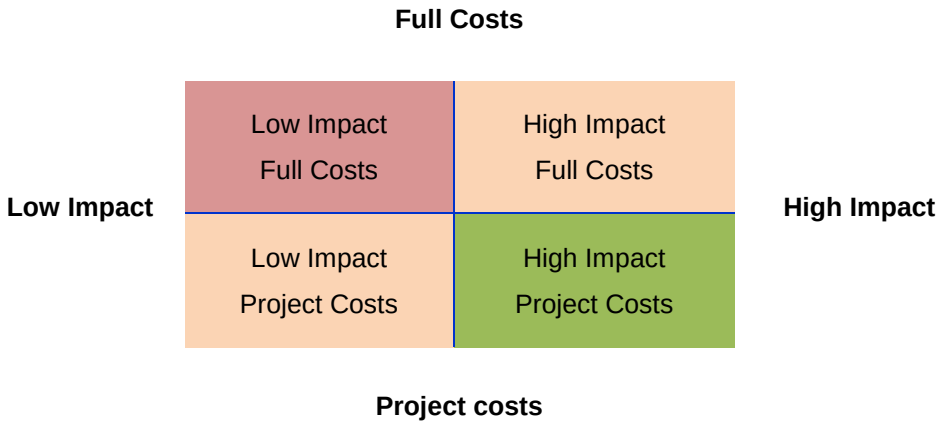
It should be noted that these figures should be treated with caution as the IC Programme is in its early stages. In particular:

- 58% of businesses were unable to articulate whether there were any impacts, reporting that the project was still in development or that it was too early to gauge impacts;
- most reported impacts are in the future and subject to uncertainty; and
- it is unclear what proportion of core costs were used to support project activity.

Therefore, we have presented a number of impact scenarios, summarised in **Figure 7.1**, and explained in **Sections 7.3 and 7.4**.

Appendix D presents the technical aspects behind the EIA, providing details for the GVA benchmarks, Net Impacts and Multipliers.

Figure 7.1: Impact Scenarios



7.1 Gross Impacts

Gross impacts[11] generated through the support are based on direct feedback from beneficiaries regarding the impacts created to date and what they estimate will be the future effects. They are expressed in terms of full-time equivalent (FTE) jobs, turnover, cost reductions, Gross Value Added (GVA) and wages. Employment and cost reductions are based on direct feedback from beneficiaries, while GVA and wages have been calculated using secondary data[12] sector benchmark co-efficients.

The gross impacts reported by the beneficiaries as attributable to the Programme are reported in **Table 7.1**.

[11] Gross impacts are those that are attributable to the project, before allowance for deadweight and other additionality factors.

[12] Taken from the Scottish Annual Business Statistics (SABS). This method was used due to the poor quality and low volume of company specific data on the costs of inputs provided by survey respondents.

Table 7.1: Gross Impacts of Surveyed Beneficiaries

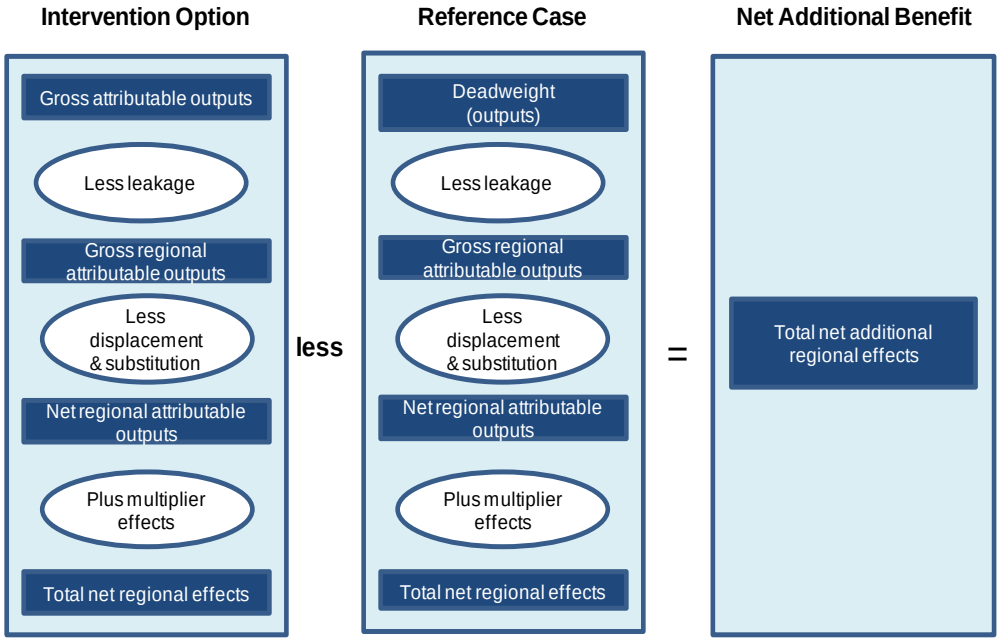
	Jobs	GVA	Wages	Turnover	Cost Reductions
To Date	20	£2m	£0.9m	£6.3m	£0.4m
2017	60	£5.9m	£1.5m	£13.4m	£15.2m
2018	110	£18.1m	£3.8m	£48m	£15.2m
2019	120	£17.8m	£4.1m	£46.5m	£15.2m
Total	**320**	**£44.6m**	**£10.5m**	**£114.3m**	**£46m**

Note: Jobs rounded to nearest 10. Financial impacts rounded to nearest £0.1m

7.2 Net Impacts

The net impact of the Programme is the difference between what would have happened anyway in the absence of the support (i.e. the reference case) and the benefits generated by the Programme (i.e. the intervention case), adjusted for displacement, leakage, deadweight, and multiplier effects, outlined in **Figure 7.2**.

Figure 7.2: Assessing Additionality



Deadweight refers to the benefits and costs of an intervention that would still have occurred if public sector support was not provided.

Displacement is the negative effects on non-beneficiaries which arise because an intervention has generated positive outcomes for beneficiaries. This occurs due to increased competition in the markets in which beneficiaries participate.

Leakage is the proportion of gross impacts that accrue outside the target region i.e. Scotland.

Multiplier effects refer to the impacts associated with additional purchases of inputs from suppliers based in the target area (supplier linkages) and additional consumption expenditure on goods and services of those employed via direct and supplier linkage effects (income multipliers).

Table 7.2 reports on the net impacts. Overall, the level of additionality (i.e. when net impacts are compared with gross impacts for those responding to the survey) is assessed at around 107%, which is high, and reflects that the supply chain multiplier effects outweigh other (negative) additionality effects. In particular, there are low levels of deadweight, with respondents in the main reporting that few impacts would have happened in the absence of IC support.

Table 7.2: Net Impact of Surveyed Beneficiaries

	Jobs	GVA	Wages	Turnover	Cost Reduction
To Date	20	£1.7m	£0.7m	£5.6m	£0.2m
2017	70	£5.3m	£1.4m	£13m	£12.4m
2018	120	£19.1m	£3.4m	£51.7m	£12.4m
2019	130	£18.4m	£3.7m	£49.3m	£12.4m
Total	**330**	**£44.4m**	**£9.3m**	**£119.6m**	**£37.6m**

Note: Jobs rounded to nearest 10, Financial impacts rounded to nearest £0.1m

7.3 Tentative Estimates of Programme Impacts

Adopting a thought leadership approach in order to provide even broad estimates of the overall impact of the Programme it is necessary to 'gross up' the results to reflect the entire population of beneficiary businesses. This calculation is subject to unknown levels of error given that the sample of businesses surveyed cannot be considered representative of the overall population of beneficiaries. Therefore, this assessment is provided as an **estimate only**, and should be treated as such.

The impacts are grossed up to the population based on the inverse of the proportion responding to the survey (e.g. a response rate of 5% generates a grossing up factor of 100%/5% = 20. Statistical outliers (values that lie outside the range defined as plus or minus twice the standard deviation for that variable) were removed from the sample and added back in after grossing up.

Two scenarios are presented, reflecting the Programme context and that at this stage, many beneficiaries were not able to assess the likely levels of impacts from projects which have not yet completed. The two scenarios are:

- **low impact scenario** - assumes no impacts from those who indicated it was too early to estimate impact. With a total of 81 responses, and a population of 155, the impacts are grossed up by a factor of 1.84; and
- **high impact scenario** - assumes that those reporting that it is "too early to tell" are treated like non-respondents. This is equivalent to assuming that they will have similar benefits as respondents able to quantify and report impacts. With a total of 34 responses, this gives a grossing up factor of 4.44.

The combined grossed up economic impacts are reported in **Tables 7.3 and 7.4**[13].

Table 7.3: Low Impact Scenario Grossed up Economic Impacts (ESTIMATES)

	Jobs	GVA	Wages	Turnover	Cost Reduction
Gross Impacts					
To Date	30	£2m	£1m	£6.6m	£0.5m
2017	80	£7.1m	£2m	£16.1m	£15.4m
2018	160	£23.7m	£5.6m	£61.3m	£15.4m
2019	180	£23.1m	£6.1m	£58.4m	£15.4m
Total	**450**	**£55.9m**	**£14.7m**	**£142.5m**	**£46.6m**
Net Impacts					
To Date	30	£1.7m	£1m	£5.9m	£0.3m
2017	80	£6.4m	£1.8m	£15.5m	£12.5m
2018	160	£24.7m	£4.8m	£65.5m	£12.5m
2019	180	£23.3m	£5.3m	£60.9m	£12.5m
Total	**450**	**£56.1m**	**£12.9m**	**£147.7m**	**£37.8m**

Note: Jobs rounded to nearest 10, Financial impacts rounded to nearest £0.1m

[13] Please note that outliers were removed from the sample when grossing up results to avoid skewing the impacts.

Table 7.4: High Impact Scenario Grossed up Economic Impacts (ESTIMATES)

	Jobs	GVA	Wages	Turnover	Cost Reduction
Gross Impacts					
To Date	60	£2.1m	£1.6m	£7.4m	£0.9m
2017	140	£10.7m	£3.5m	£23.9m	£15.9m
2018	280	£40m	£10.7m	£99.8m	£15.9m
2019	330	£38.6m	£11.9m	£92.9m	£15.9m
Total	**810**	**£91.3m**	**£27.6m**	**£224m**	**£48.6m**
Net Impacts					
To Date	60	£1.8m	£1.7m	£6.6m	£0.3m
2017	130	£9.7m	£3m	£22.7m	£12.7m
2018	270	£40.8m	£8.8m	£105.4m	£12.7m
2019	330	£37.7m	£10.1m	£94.6m	£12.7m
Total	**800**	**£90.1m**	**£23.5m**	**£229.3m**	**£38.4m**

Note: Jobs rounded to nearest 10, Financial impacts rounded to nearest £0.1m

7.4 Tentative Assessment of Value for Money

The value for money assessment is based on the cost per job and return on investment (RoI). The former compares the estimates of Programme impacts against public sector expenditure incurred (adjusted to reflect 2016 prices and discounted from Programme start in 2013).

The IC expenditure data provided, distinguishes core costs (staff salaries, overheads, etc) and project grant contributions. However, ICs deliver additional activities over and above direct project funding (events, conferences, MSc programmes, etc.), and the proportion of core costs (e.g. staff) incurred in supporting this additional project activity is not made explicit. In view of this, two profiles are presented:

- **Full Costs -** including all public sector funded projects and core costs; and
- **Project Costs** – including public sector funded project costs only.

Total Programme expenditure, over the evaluation period and adjusted for inflation and discounted from Programme start in 2013, has been £27.2m with project spend being £10.8m[14], giving cost per job figures as outlined in **Table 7.5**.

[14] Monetary values are expressed in 2016 prices, where the GDP deflator has been used to inflate/deflate values.

Table 7.5: Cost per Job

Scenario	Costs	Time Period	Per Gross Job	Per Net Job
Low impact Scenario	Full Costs	To Date	£859,400	£826,000
		In Future	£65,800	£64,900
	Project costs only	To Date	£339,400	£326,200
		In Future	£26,000	£25,600
High impact Scenario	Full Costs	To Date	£479,200	£434,000
		In Future	£36,300	£37,100
	Project costs only	To Date	£189,200	£171,400
		In Future	£14,300	£14,700

The cost per net job is estimated at between £171,400 and £826, 000 to date and between £14,700 and £64,900 in future. While the cost per job to date figure is high, this is not surprising given the nature and stage of many projects, with the bulk of impacts anticipated in future.

Benchmarking data from BIS indicates that, we would expect a cost per job of around £30,000 to £40,000 and therefore the IC project delivers a cost per job that is likely at the upper end of this benchmark.

The RoI is based on the GVA impact of the Programme, assuming a ten year impact period from 2013 (based on SE guidance), set against total expenditure, **Table 7.6**.

Table 7.6: Return on Investment

Scenario	Costs	Time Period	Return on Investment
Low impact Scenario	Full Costs	To date	£0.99
		In future	£1.90
	Project costs only	To date	£2.50
		In future	£4.80
High impact Scenario	Full Costs	To date	£1.57
		In future	£3.06
	Project costs only	To date	£3.99
		In future	£7.75

It is likely that the RoI is somewhere between the "low impact project costs" and "high impact full costs" scenarios for two reasons:

- we assume that some of those who reported that it was too early to give impacts will have similar impacts to the sample and that some will have no impacts; and
- the true costs of the intervention are likely somewhere between project and full costs.

It is also possible that some of these impacts are understated as:

- the IC Programme is currently at an early stage and the majority of surveyed businesses reported that it was too early for them to identify impacts. It is possible that this group, and subsequent participants, could benefit more from project activity; and
- IC core expenditure has to some extent been front-loaded (e.g. marketing, office kit, recruitment costs, etc) while the Full Cost scenario allocates all these costs to existing project activity – in practice these costs will also help support other development activities, including future projects.

A review of evaluations of similar R&D programmes[15] identified a benchmark of between £7:1 and £10.1. Therefore, the IC Programme is delivering returns that are likely below similar innovation focused programmes, however, this is to be expected at such an early stage.

7.5 Optimism Bias

Finally, it is informative to examine the possible influence of optimism bias, where this refers to an observed tendency for projects to over-estimate future impacts. This can be for a number of reasons, including:

- erroneous assumptions about the extent of demand for the project amongst potential beneficiaries;
- overly optimistic assumptions regarding costs and delivery timescales; and

[15] http://www.evaluationsonline.org.uk/evaluations/Search.do?ui=basic&action=show&id=451; http://www.evaluationsonline.org.uk/evaluations/Search.do?ui=basic&action=show&id=468; http://www.evaluationsonline.org.uk/evaluations/Search.do?ui=basic&action=show&id=553

- underestimating time to impact.

In line with SE guidance[16], future net impacts have been discounted by 20% and 40%. These are presented for the low impact scenario in **Table 7.7** and the high impact scenario in **Table 7.8**.

Table 7.7: Low Impact Scenario Optimism Bias

	Base	20% Optimism Bias	40% Optimism Bias
Jobs	420	340	250
GVA	£54.4m	£43.5m	£32.7m
Wages	£11.9m	£9.6m	£7.2m
Turnover	£141.9m	£113.5m	£85.1m
Cost reduction	£37.5m	£30m	£22.5m
Cost per job Project Costs	£25,600	£32,000	£42,700
Cost per job Full Costs	£64,900	£81,100	£108,100
RoI Project Costs	£7.30:1	£5.84:1	£4.38:1
RoI Full Costs	£2.88:1	£2.31:1	£1.73:1

Note: Jobs rounded to nearest 10, Financial impacts rounded to nearest £0.1m

Table 7.8: High Impact Scenario Optimism Bias

	Base	20% Optimism Bias	40% Optimism Bias
Jobs	730	590	440
GVA	£88.3m	£70.6m	£53m
Wages	£21.9m	£17.5m	£13.1m
Turnover	£222.7m	£178.1m	£133.6m
Cost reduction	£38.1m	£30.5m	£22.9m
Cost per job Project Costs	£14,700	£18,300	£24,400
Cost per job Full Costs	£37,100	46,400	£61,900
RoI Project Costs	£11.74:1	£9.39:1	£7.04:1
RoI Full Costs	£4.64:1	£3.71:1	£2.78:1

Note: Jobs rounded to nearest 10, Financial impacts rounded to nearest £0.1m

[16] http://goo.gl/3O9e1W

8. Conclusions and Recommendations

8.1 Introduction

As stated in the Introduction, the study primarily focussed on two main areas:

- the effectiveness of the business engagement processes developed by the ICs; and
- the likely current and future impacts arising from their activities.

In considering the findings of the study, a number of issues are worth bearing in mind:

- the IC Programme is complex and there is considerable diversity in the structure, business models and range of activities pursued by each IC. It is therefore challenging to identify common themes relating to the study objectives;
- innovation and knowledge exchange are long term interventions, and the ICs are still relatively young. This is particularly important when considering the progress towards impacts;
- the resources available to the study did not permit a full economic impact evaluation of each Centre. Instead, the focus is more at the Programme level, particularly in consideration of the business feedback and impact assessment; and
- we have offered some comment on more qualitative issues in areas such as management and governance and monitoring practice, as these are important contextual factors affecting the assessment of the two core study areas. However, these were not the core focus for the study, and will be more fully addressed in the Independent Review of the Innovation Centres Programme.

8.2 Structure

The summary findings have been structured into five areas which together address the issues identified in the study brief. These are:

- Programme development and the models developed by the ICs;
- progress to date and any issues arising;
- business engagement;
- impacts; and
- future development.

8.3 Programme Development and IC Models

The IC Programme

The IC Programme is an attempt to address persistent challenges with Scotland's innovation performance by tackling known areas of market failure affecting the extent and quality of academic and business collaboration. The evidence from the business survey is that the Programme is helping to address barriers to effective knowledge exchange for participating firms.

SFC initiated the Programme, in consultation with the Enterprise Agencies, and is the primary funder of all of the ICs. Indeed, the SFC is the sole source of public funding into the ICs core costs (SE and HIE have contributed funding to specific projects and activities).

The use of SFC monies to support the Programme has some important consequences. Most obviously, this funding can be used only to fund universities and not businesses. Given the reluctance of businesses to invest in unproven technologies, this restriction on the use of funding was reported as a constraint for the ICs. Indeed, the Programme is not generating the level of industry income that was originally envisaged (as forecast in the IC Business Plans), which is likely to also affect performance against forecast impacts. We return to this issue below.

The design of the Programme by the SFC is also such that the ICs are required to be hosted by a university (or consortium of universities). They are therefore not independent legal entities but are projects within the HEIs. This has the advantage of providing the ICs with stability and a clear structure of accountability through the universities and the SFC, but has also raised issues in three respects:

- IC Boards have a somewhat artificial role within this structure as they do not have ultimate authority or control – that rests with the universities and the SFC. Given the fact that the large majority of funding is from public sources, this may be appropriate, but looking to a future in which the ICs have more diversified financial structures, this may become less suitable;
- there have been examples of tensions arising from differences in appetite for risk within the ICs and attitude to risk within host universities. This has arisen in circumstances in which universities are asked to make financial commitments beyond the known funded life of the ICs (five years). While these issues have been addressed as they have arisen, there is a more fundamental question here about the extent to which the location within universities permits the ICs to take an entrepreneurial approach, at least over short term funding horizons. Longer term funding commitment may help with this; and
- the ICs have had to operate within the structures of universities, and many reported issues in areas such as recruitment practice, salary scales, marketing, procurement and finance. However, the evidence suggests that many of these issues have not proved as difficult as originally thought and most have been addressed over time (with some still in that process).

We have noted in **Chapter 2** the absence of any specific targets for the IC Programme as a whole. This makes evaluation at Programme level more problematic as the overall level of value for money expected of the IC Programme is not clear. It is also more difficult to assess the extent to which the Programme as a whole is on track, and whether individual ICs are making a sufficient contribution to the IC Programme objectives.

With hindsight, it would have been useful to set some high level targets for the Programme as a whole to provide guidance on the expected level of economic (and other) returns expected of the funded Centres.

This issue notwithstanding, general oversight of the Programme appears to be thorough and is managed through a variety of structures and processes. However, there are issues with the MEF and the extent to which it is fulfilling its purpose as a means of tracking performance. Target setting and reporting is inconsistent and patchy across the Programme. In our review of the MEF data we found errors and inconsistency between different sets of targets as well as large areas of the Framework that remain unpopulated. While we might expect less in the way of data on outcomes/impacts at this stage, these issue were not restricted to these parts of the MEF.

It is important that this is addressed such that the MEF can function both as an effective management tool for the ICs, and also as a meaningful mechanism for the SFC and other stakeholders to track progress against objectives.

IC Models

The design of the IC Programme as an open call with no template model has facilitated the development of bespoke models for the different ICs based on industry characteristics and innovation needs. This was broadly welcomed, albeit with some calls from the university sector for greater standardisation in areas such as contracting and the conditions of funding. Many felt that the diversity of the IC models made it more difficult to engage and increased bureaucracy.

Despite this, the open nature of the process may turn out to be one of its strengths, as it has allowed quite different models to emerge. Two of the ICs – SMS and SAIC – have taken an 'exemplar project' approach in which large scale priority projects were identified at the outset and are now underway, more or less in line with the original plans. A further two of the Centres – CENSIS and The Data Lab – are focussed on enabling technologies with potentially very wide market application. As such, they have taken a broader approach which identified priority markets and then targeted these appropriately. Both set out plans based (largely) on delivering larger numbers of smaller projects although CENSIS has since shifted towards a smaller number of larger projects as a means of generating greater impacts.

IBioIC and DHI have both developed membership based models for industry engagement (paid in the case of IBioIC and free for DHI) and CSIC is in the process of developing something similar for access to the new prototyping centre.

Finally, OGIC has had to revise its approach as a result of the crash in the oil price and the subsequent pressure on the oil and gas sector in Scotland. The result of this has been smaller projects (and reduced levels of industry income).

Some of the Centres have also developed in-house teams of technical specialists that work with companies on research projects and report this as being of considerable value. Some within the HE community are less convinced of this, perhaps seeing this as competition for IC resources.

More widely, some of the stakeholders expressed concern about the scale of some of the IC teams, and the balance of overheads relative to project investment. This is an area that may merit further scrutiny and guidance from the SFC.

Finally, we would note that the focus of some of the ICs on relatively small scale research collaborations risks overlap with existing providers, most obviously with Interface. Clearly the degree of specialism within the ICs differentiates their offer, but these potential areas of overlap need to be managed through effective inter-agency communications and referrals. The feedback suggests that while progress has been made, there is more to do in this respect.

8.4 Progress to Date

In considering the progress of the ICs it is important to bear in mind their relatively recent establishment. Added to this there were some initial delays in contracting and recruitment in some of the Centres, and this has also affected progress. This is to be expected, and our experience of evaluating innovation and knowledge exchange projects suggests not only that such delays are common, but also that the timescale to impacts can be five years and longer depending on the nature of the activities.

These issues notwithstanding, the evidence suggests that the Centres have made good progress in engaging industry with projects now coming through, even if these are, in many cases, lagging behind targets. SMS and SAIC have both progressed well with initiating projects but both began with predefined projects and industry partners. IBioIC has also made strong progress and is reporting impacts within the MEF.

The feedback from participating companies has been 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.

While many of the projects are still in their early stages, 39% of those within our survey have clear plans for commercialisation or are well advanced in the commercialisation process. While this is broadly consistent with the Centres' feedback that projects typically target TRLs of 4-7, it also suggests that some remain fairly speculative (i.e. at lower TRLs), and may be a way of building industry and academic engagement at this early stage. Some of the Centres did talk of shifting further up the TRL towards more near market projects.

The Centres have reported very little in the way of outcomes as yet, but this should be expected at this stage in their operations. The stand out exception to this is IBioIC which has reported strong progress against revenue and employment outcomes. In many cases, however, no clear targets have been set against many of the outcome indicators in the MEF and this needs to be addressed.

Progress against income targets has also been modest, with income from industry and from other public sources lower than anticipated in the original Business Plans and subsequent Operating Plans. Indeed, this has prompted many of the Centres to revise their forecasts, in some cases quite significantly, suggesting that original estimates may have been over optimistic.

There are two important consequences of this. First, the forecast impacts for the Centres are contingent on the scale of the inputs, thus these will reduce accordingly. Secondly, this has important potential implications for future sustainability, as discussed below.

Finally, while much of the focus here has been on collaboration research projects with academia (and these will be the main driver of impacts), the ICs also have important activities relating to community building, skills and wider academic culture change.

The first of these is covered below under business engagement, but appears to be progressing well. In relation to skills, the ICs have been developing Masters provision along with support such as industry placements and PhD studentships.

For some this has been an area of considerable success (e.g. The Data Lab, SAIC) while progress has been more modest elsewhere (e.g. CENSIS). The ICs involvement in skills remains at the HE level, but in some areas the question of FE involvement has been raised e.g. in construction. This issue is likely to be addressed in more depth by the Independent Review of the Innovation Centres Programme.

In relation to the role of the ICs in supporting cultural change in HE, the general consensus is that it is too early to make any judgements in this respect. Some stakeholders quoted anecdotal examples of where HE practice has been influenced by the ICs but university practice is also heavily influenced by the growing impact focus in the Research Excellence Framework (REF) so attributing change to the ICs is difficult. This is an area that will require further work in the future.

Table 8.1 on the next page provides a broad summary of IC performance to date.

Table 8.1: Summary of IC Performance Based on Monitoring Data

IC	Financial	Activity	Outputs	Outcomes/Impacts	Comment
CENSIS	Forecast substantial income from Enterprise Agencies which has not yet been achieved	Good progress in company engagement and projects	Outputs behind both in terms of new products and collaborations initiated	No outcome performance data reported Business Plan targets seem high relative to other ICs (e.g. GVA). Since been revised downwards	Revised approach from large number of small projects to small number of larger projects – impacted on target setting
CSIC	Forecast high level of industry contribution and income performance good to date (picked up in 2015/16) Behind in terms of leverage of in-kind support Additional funding secured for new prototyping centre	Good progress in company engagement and project initiation (behind slightly but not markedly)	Outputs behind both in terms of new products and collaborations initiated	No defined targets in MEF No outcome performance data reported CSIC is in the process of developing a revised Business Plan and targets	CSIC is the youngest IC so some lag in project development and outputs should be expected. Has ambitious (funded) plans for prototyping centre and industry membership model for accessing facility and services
The Data Lab	Initial delays in recruitment created early issues which appear to be resolved. As a result initial financial forecasts for income are behind target. Relatively low level of forecast spend on projects relative to total financial plan	Company engagement appears strong but targets unclear in MEF Engagement via events very strong Good progress on developing projects	Academic to business and business to business collaborations initiated but no targets against which to assess performance No new products reported yet	No defined targets in MEF Outcomes reported in job creation No wider outcome performance data reported	Sticking more or less to Business Plan approach with some additions in response to industry input – strong on community building and skills development MSc programme has been very successful
DHI	Ambitious income targets (cash and in-kind). Financial Plan revised downwards and behind in targets (industry, Enterprise Agencies)	Strong on company engagement and earlier stage projects (Exploratory, Laboratory) – behind on Factory project outputs	Outputs behind target in places – hard to assess as some measures in MEF have no targets set New products/services reported	No targets set in places. No outcome performance data reported Business Plan targets revised downwards	Issues with management and governance and DHI has a new Admin Hub University (Strathclyde). Arguably over ambitious income targets

IC	Financial	Activity	Outputs	Outcomes/Impacts	Comment
IBioIC	Forecast large amount of in-kind contribution and performance to date in leverage (cash and in-kind) is good	Company engagement ahead of target and conversion to projects good	Outputs good in terms of new collaborations (academic to business and business to business) and some new products reported	Outcome data reported for revenue and employment and spin out companies – on track if behind slightly on employment No reporting as yet on GVA impacts	IBioIC seems ahead in reporting via the MEF, and progress according to the monitoring data provided is strong
OGIC	Ambitious targets for industry income – behind possibly due to oil price crash and industry contraction	Strong on company engagement but behind on conversion to projects Strategy revised to reflect industry conditions (focus on smaller companies and projects)	On track with industry/academic collaborations but behind on products and business to business collaborations	No outcome performance data reported OGIC is currently looking at revised metrics	OGIC has faced challenging industry conditions and has had to revise its approach to focus on smaller companies and projects. Industry income lower than targeted for similar reasons
SAIC	Predefined projects (similar to SMS). Income targets broadly on track in all areas especially industry	Good progress in company engagement but behind on projects	Outputs behind both in terms of new products and collaborations initiated	Few annual defined targets in MEF No outcome performance data reported	SAIC appears to be broadly on track, even if initial project activity/output forecasts may have been over optimistic
SMS	Modest income targets – projects and partners pre-defined Targets behind slightly but not an area of huge concern	On track 2014/15, and behind 2015/16 but staffing issues impacted on delivery	Behind slightly in company engagement, and progress is fair in terms of collaborations initiated and product development (but modest targets)	No outcome targets set out within MEF Long-term projects – too early for impact There are Business Plan impact targets	SMS set out with defined exemplar projects and industry partners – has stuck to the plan and is proceeding on track, but impacts will be long term

8.5 Business Engagement

It is somewhat difficult to assess the overall effectiveness of the ICs business engagement processes due both to the broad variation in models and issues with target setting and reporting (via the MEF). However, the Centres do each appear to have articulated a model to suit the industry sectors and technology areas with which they are concerned, and progress on engagement appears to be generally good.

There is some evidence to suggest that some of the initial engagement with businesses has targeted what might be described as easy targets – firms with existing university contacts and relationships, those that are innovation active and engaged in innovation support systems, and those that were involved in the development of the IC proposals. This is to be expected, and should not be seen as criticism. There is also evidence to suggest that the Centres have been moving beyond these initial contacts into wider industry networks, and through events, membership programmes and communications efforts have been building communities of interest in their respective areas.

In doing so, the ICs do need to strike a balance. They are set up to work with companies with demonstrable innovative capacity and do not have the resources to be helping large numbers of companies to develop that capacity. Some targeting is therefore required and this is where effective connections to organisations such as Interface and the Enterprise Agencies will be useful.

In relation to the kinds of firms and organisations engaged by the ICs, the study findings suggest the following broad findings:

- the majority of firms engaged in collaborative projects are SMEs, although most of the ICs have also engaged large companies, and projects tend to be relatively short in duration (average of nine months) with the notable exceptions of SMS and SAIC;
- most external collaborative partners are businesses, but public and third sector organisations are also represented, particularly in areas relating to health care (via SMS and DHI) and procurement (e.g. via CSIC);

- company participation in projects is clustered around Glasgow and Edinburgh and the other population centres, reflecting both the concentration of HEIs and of businesses in Scotland. The data suggests a relationship between the location of the Admin Hub University and businesses engaged; and
- most of the businesses involved in projects are based in Scotland (77%) but the Programme has engaged across the UK and even internationally. This raises interesting issues about how economic benefit to Scotland is assessed by the ICs when engaging with businesses elsewhere. Of course, the ICs are all working in areas with global markets and international engagement is essential.

It could be argued that the portfolio of IC projects tends more towards smaller projects with SMEs than might have initially been expected. However, many of these sectors are SME dominated, and many of the ICs spoke of using smaller projects as ways of starting to build longer term relationships with companies. Our expectation is that as the Programme gathers momentum, we would expect to see more in the way of larger research projects, and more multi-partner collaborations.

As noted in the Introduction, it is a core principle of the ICs that they are industry-led, and this raises two broad issues. The first is that industry demand for innovation will vary. For example, the construction industry is well known to be difficult to engage in innovation support and, as such, a part of the role of CSIC will be to build demand within the sector for innovation support. In a similar vein, the two enabling technology ICs (CENSIS and The Data Lab) are involved in the promotion of innovative technologies in a broad range of industry contexts – this again is as much about building demand as meeting existing needs. To some extent, this will be true of all of the ICs, especially if they are to bring new firms into the innovation sphere.

The second issue is that prior experience and past research would suggest that industry tends to define its needs in short time horizons and in terms of incremental rather than step change innovation. The ICs thus may have an important role in defining future innovation needs and opportunities on behalf of the industry – selling industry what it does not yet know it needs – and this is an area in which academia has a key contribution to make. The challenge for the ICs is in bridging the well-known gap between academic research interests and industry needs for results driven innovation solutions.

In addition to business engagement the ICs also have an important role in academic engagement. The analysis suggests that HE involvement is quite concentrated within the cohort of host universities and formal IC partners. This is again to be expected, as these will be institutions with identified expertise in relevant disciplines, and early projects are likely to focus here. However, we would again expect that over time this will broaden to encompass a wider range of the HEIs assuming relevant expertise can be found. It is worth noting that some of the less engaged universities did report difficulties in accessing the ICs and keeping up to date with what was happening.

8.6 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.

For many of the companies that have engaged with the Centres, the main benefits reported to date relate to networking and knowledge gains. This is unsurprising given that many have had only relatively light touch involvement with the ICs. For those that are involved in collaborative innovation projects, the indications are more encouraging. Many reported improvements in their innovation activity already, with more anticipating future gains. Similarly, while financial benefits were reported by relatively few as a benefit to date, again more expected that they would be in a position to develop new market opportunities in future, leading to increased sales.

While the proportions of survey respondents reporting these benefits were not a majority, it should be remembered that most projects are still in the early stages (57% of the projects are in this category)[17]. This provides some confidence that repeating the exercise in time would yield higher results.

Almost two-thirds reported that the project had already led to, or was likely to lead to follow on project activity, again giving some confidence that the ICs are on the right path.

[17] Source: EKOS Telephone Business Survey

There is also evidence that engagement with the ICs has influenced companies' attitudes to academic collaboration in a positive direction, and a large majority have already continued their involvement with the ICs or intend to do so in future.

Of those companies involved in projects at a later stage of development, 90% reported current and/or future impacts. These related mainly to increased revenues and employment, with cost savings less evident. This suggests that the IC support is more focussed on growth than efficiency, which is appropriate and in line with their primary remit.

The economic impact assessment (EIA) is challenging for a number of reasons:

- the early stage of the Programme and the projects that it supports. In fact, it is positive that any significant impacts at all can be identified at this stage;
- the difficulty for some company respondents of forecasting impacts, particularly for early stage projects;
- the reliance on future forecast impacts, which will be subject to a degree of error and uncertainty; and
- the variability of value for money estimates as a result of insufficient data on the distribution of costs.

With these issues in mind, we have calculated a number of scenarios, as outlined in the preceding Chapter. The results within each scenario vary considerably, particularly when optimism bias is applied to the future forecast. However, on the basis of the first analysis, the results suggest that the IC Programme is not yet delivering economic impacts on a scale that might be expected of innovation support programmes. The critical question here is whether this signifies a failure of the Programme or is more a reflection of its stage of development.

At this time, our view tends towards the latter. The ICs are young and are still developing their support models and approach. They are investing in long term projects, many of which will deliver economic impacts that are not possible to capture at this time. While some of the future forecast impacts will also not materialise at the expected scale, 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.

In addition, despite these issues, the IC Programme is delivering a level of economic impact that is within range of what would be expected, which should be a positive and encouraging sign.

In time, once the ICs continue to evolve their support and activities in line with industry need and opportunity and, crucially, the public sector contribution reduces as industry steps up, the return on investment achieved should increase.

8.7 Future Development Issues

Consideration of the future development of the IC Programme is more appropriately the role of the Independent Review of the Innovation Centres Programme, but a number of issues arose in the course of the current study. These are summarised below.

First, all of the ICs are aware of the need to consider their future sustainability and are considering how best to achieve a more diversified funding base. However, stakeholders generally agreed that few, if any, of the ICs are likely to require no public funding support. Instead, the direction of travel is more towards reducing the public sector contribution by increasing industry contributions, accessing wider funding and generating income perhaps through competitive tendering (as in the Fraunhofer and Catapult models).

Indeed, there have been some early successes in this respect (e.g. CENSIS is leading a bid for a Digital Catapult hub in Scotland and The Data Lab has secured some consultancy income). However, we would note that there is some way to go in this area given the lower than expected level of external income to date from industry and public sources such as the Enterprise Agencies. It is also worth noting that the consultation work took place prior to the EU Referendum and many of the Centres identified EU funds as a useful source of income. This will need to be revisited in light of the Referendum outcome.

The Centres will also have to consider the balance between generating income and achieving impact for Scotland, and there is always a risk of mission creep in situations such as this. For example, a shift up the TRL scale into near market commercialisation could offer income potential but risks overlapping with private sector activity and with support provided by the Enterprise Agencies.

This will need to be carefully managed. Certainly, we would expect to see more projects with clear commercialisation plans start to come through.

This is also where long term funding commitment (on the part of the SFC) can help, even if that is funding at a decreasing level. This can provide a degree of confidence to the ICs and their host universities and support a core set of activities that remain focussed on impact.

There have also been calls for changes in governance with some moves towards more independent status for ICs. Issues regarding the treatment of risk and the degree of autonomy for the role of IC Boards provide some rationale for the changes, but this may be more justified when ICs have achieved a broader financial mix. For now, we would note that the issues that have arisen from the ICs as a result of their location within HEIs appear to have been of a lower order than first imagined, and also appear to be manageable with some negotiation.

Some of the ICs are also seeking to shift towards larger, more impactful projects and this is in line with the transformational change objective. However, there is an ongoing case for smaller interventions (although still at a level above that supported via other routes such as Interface) as a means of building relationships and managing riskier areas of innovation. Again, this is a question of balance, and fit with industry needs.

We would also hope to see the ICs begin to really drive the innovation agenda in their respective areas, looking to longer term opportunities and building demand for this kind of innovation, potentially through wider collaborative projects. There are early signs of this and should be encouraged.

From the HE perspective, there were concerns about the ratio of overhead costs to project investment and this is an area that bears further scrutiny, particularly as it affects sustainability. While the immediate potential for economies of scale, for example in some back office functions, is not clear (each of the ICs already benefits from university resources in this respect) this may be an area for further examination in future.

8.8 Recommendations

While it may seem early in the life of the IC Programme both to be evaluating its impacts and also to be making recommendations, some areas are worth consideration. In many respects, the recommendations that follow reflect the direction of travel within most of the ICs, but reinforce these emphases.

Recommendation 1: the SFC and its partners should confirm their longer term funding commitment to the ICs as soon as possible. All of the ICs are considering their future sustainability, and greater clarity around future funding is an important input to this process, as well as helping to manage the risks for host HEIs, and supporting continuity of investment.

Recommendation 2: the SFC and its partners should clarify expectations regarding the extent to which ICs should develop beyond their original remit into wider areas of innovation support (i.e. not involving academic collaboration). This may vary according to the characteristics of each IC and their relevant marketplaces. Within this, there is merit in considering mechanisms through which the ICs can support business innovation were the solution does not depend on academic collaboration.

Recommendation 3: there is a case to be made for reviewing the governance arrangements for the ICs, but this should not presume that greater independence from universities will be the most appropriate solution in all (or any) cases.

Recommendation 4: the SFC and its partners may wish to examine more closely the balance of resources within each of the ICs between core/overhead costs and project investment. This does not mean that smaller in-house teams are necessarily better (and it is too early to form a judgement on this), however, this was raised as an issue through the evaluation and should be examined.

Recommendation 5: ICs' business engagement processes need to continue to broaden and reach beyond the initial focus on those businesses that were involved at the outset in the business planning process and with those businesses where universities had established relationships. However, clarity is needed on the extent to which the Centres should be involved in developing innovative capacity within businesses that are not yet innovation ready.

Recommendation 6: the ICs and the universities should do more to ensure a broader range of engagement, particularly between ICs and non-host/non-partner universities.

Recommendation 7: the SFC and its partners, working with the ICs and their partners, should do more to reduce confusion and overlap in the innovation support landscape. This will require clear lines of communication and effective referral mechanisms, and the relationship between each IC and Interface needs to be clarified and agreed.

Recommendation 8: the ICs' project portfolios should continue to shift towards projects with clear intention to commercialise as a means of generating greater impacts and securing more funding from the Enterprise Agencies into business innovation activity. For some of the Centres, a balance will be required with their role in defining and supporting long term innovation challenges in their respective industry segments.

Recommendation 9: in addition to the existing high level aims and objectives, the SFC and its partners should consider setting targets and/or outcomes for the Programme as a whole to enable informed judgements about the extent to which it is meeting expectations. These will be necessarily retrospective, but will benefit from the experience of the Centres to date. Further thinking is needed on how best to achieve this.

Recommendation 10: the MEF should be reviewed as part of a forward business planning process with two main aims in mind. First, it needs to be a useful mechanism for tracking performance and progress against targets both for the SFC, its partners, and for the ICs themselves. Therefore, the measures should be appropriate and agreed, realistic targets need to be set and progress should be captured and reported. Secondly, the MEF should incentivise the right kinds of behaviours, striking a balance between the need to generate income, and the fundamental purpose of the ICs to create impact.

Recommendation 11: the ICs should each develop a stronger suite of case study materials to communicate their value to businesses as part of their wider marketing effort, and to make better use of these (e.g. promoted and disseminated widely).

Recommendation 12: in addition to regular review of the Programme as a whole each of the ICs should be subject to independent evaluation, at the five year stage in their life. This should be sufficient time to assess their impact to the Scottish economy.

8.9 Final Comments

As a final comment, we would echo the views on many of the stakeholders in our consultation that it is still too early in the life of the IC Programme to form firm judgements on its success or otherwise.

The set-up of the Programme and the eight ICs has been a lengthy and complex process, and the Programme is only now starting to gather momentum in delivery. As such, we would caution against rash judgements before the Centres have a chance to prove their value.

Indeed, the history of innovation support in the UK (and elsewhere) has many examples of initiatives that have been judged as too expensive or insufficiently impactful within the early stages of their lifespan and have then been discontinued. Successful knowledge exchange is long term, often unpredictable and sometimes transformational, and only in time will the full benefits of the IC Programme be measurable.

Appendix A: Partners/Stakeholders Consulted

List of Partners and Stakeholders Consulted	
Innovation Centres – Key Contacts	
CENSIS – x2	OGIC –x2
CSIC – x2	SAIC – x2
DHI - x2	SMS – x3
IBioIC – x2	The Data Lab – x2
External Stakeholders	
Highlands and Islands Enterprise – x1	Scottish Funding Council – x2
Interface – x2	Scottish Government – x2
Scottish Enterprise – x1	
HEIs **Senior Staff with responsibility for Research and Knowledge Exchange or similar, and Academic Researchers)**	
Edinburgh Napier University – x2	University of Edinburgh – x1
Glasgow School of Art x1	University of Glasgow – x2
Heriot-Watt University – x2	University of the Highlands and Islands x 1
Queen Margaret University x 1	University of Stirling – x1
Robert Gordon University – x1	University of St. Andrews – x1
University of Aberdeen – x1	University of Strathclyde x1
University of Dundee – x1	University of the West of Scotland – x1
Case Study Contacts	
Cairngorms National Park Authority – x1	University of Aberdeen – x2
Edinburgh Napier University - x1	University of Dundee - x1
Glasgow Caledonian University – x1	University of Edinburgh - x1
Heriot-Watt University – x1	University of Glasgow - x1
Scottish Government – x2	University of Stirling - x2
Timber Design Initiatives – x1	University of Strathclyde – x3
Gas Sensing Solution - x1	Blueshift –x1
CGG Ltd – x1	Hydrasun –x1
Amiqus –x1	Individual (student) –x1
Ingenza –x1	BioMar –x1
Glycomar –x1	Scottish Sea Farms –x1
Marine Harvest Scotland –x1	Aridhia –x1

Appendix B: Innovation Centres

Digital Health & Care Institute (DHI)

Original and Revised Financial Plan

The original financial plan for DHI as outlined in its first Operational Plan (2013) is below.

Table B.1: DHI Original Financial Plan (initial five years)

Income Source	Original Financial Plan
SFC grant	£10,034,433
EC/Other grant	£4,250,000
Total Grant	**£14,284,433**
Conferences/Membership	£165,000
Consultancy	£1,870,000
Other	£2,895,065
Total Cash Income	**£19,214,498**
In-Kind Contributions	£10,820,748
Estates and Indirects	£2,509,000
Total Income	**£32,544,246**

Source: DHI Operational Plan, 27 February 2013

The original financial plan was based on a number of assumptions. In particular, the funding from EU research grants was significantly over-estimated and the income from consultancy activity and from the Enterprise Agencies has not materialised.

As such, the financial plan for DHI has been re-profiled several times. The last version presented to the Board in March 2016 is significantly lower (totalling £18.9m), and is largely based on SFC grant funding, as detailed in **Table B.2**.

It is our understanding that DHI is working on a revised projection for the final year of the term to 31 July 2017, which will be submitted to the SFC for consideration later this year.

Table B.2: Revised DHI Financial Plan (five years) – as at April 2016

Income Source	Revised Financial Plan	% of Total
SFC	£10,000,000	53%
Industry	£1,252,000	7%
SE	£61,000	0%
HIE	-	-
Other	£187,000	1%
In-kind	£7,464,975	39%
Total	**£18,964,975**	**100%**

Source: DHI Q3 MEF Report to April 2016

The latest MEF Report specifies £11.2m for SFC funding – this includes £1.2m CapEx on the super-computer which is now excluded as it has not transferred to DHI's new host. This has also been excluded from the Actual Income SFC figure in the Table below.

Almost 40% of the financial plan has been achieved as at April 2016, with DHI behind in terms of industry contributions. This aspect was impacted upon during the first six months of 2016 as the change in Admin Hub University (from University of Edinburgh to University of Strathclyde) was finalised.

Table B.3: Revised DHI Financial Plan (five years) and Actual Income to April 2016

Income Source	Revised Financial Plan	Actual Income Received to April 2016	% Income Received
SFC	£10,000,000	£5,626,906	56%
Industry	£1,252,000	£0	0%
SE	£61,000	£52,900	87%
HIE	-	-	-
Other	£187,000	£184,925	99%
In-kind	£7,464,975	1,318,229 *	18%
Total	**£18,964,975**	**£7,182,960**	**38%**

Source: DHI Q3 MEF Report to April 2016 Expenditure To Date. * Figure for 2015/16 not yet available.

Expenditure

There are two main cost centres for DHI:

- core costs – this includes the core team salaries plus other costs such as marketing/events/website, ICT, facilities, travel, other and depreciation.

  Core costs represents 33% of the total revised financial plan; and

- project costs – this includes all costs associated with Exploratory, Laboratory and Factory projects (i.e. grants, other project costs, Glasgow School of Art staff time).

  Project costs represents 67% of the total revised financial plan.

Expenditure to April 2016 is £6.620 million – this equates to 53% of the total financial plan for DHI.

Table B.4: DHI Revised Financial Plan and Expenditure to Date (April 2016)

Cost Centre	Total Revised 5-Year Plan	Actual Expenditure to April 2016	% Spend Achieved to Date
Core Costs	£4,145,000	£2,682,582	65%
Project Costs	£8,405,000	£3,937,497	47%
Total	**£12,551,000***	**£6,620,079**	**53%**

Source: DHI (Revised Plan Breakdown), DHI MEF Report Q3 2015/2016 (Actual Expenditure)
Note: * The difference between the £12.5m and total financial plan reported above is due to the difference between income and expenditure. The latest "plan" projection shows a cash deficit.

DHI Portfolio

The table below provides a breakdown of DHI activity across the three main components of the activity pipeline (Exploratory, Laboratory and Factory). It also provides an update on products developed that have arisen from the projects supported.

Table B.5: DHI Portfolio Overview

	Actual Achieved				Target	
	2013/14	2014/15	2015/16	Actual To Date	Target to 2017	% Achieved
Exploratory	10	13	14	37	49	76%
Laboratory	4	29	5	38	82	46%
Factory	1	9	11	21	84	25%
Products	0	3	0	3	42	7%

Source: DHI MEF Quarterly Performance Report, Quarter 3 Ended 30 April 2016.

DHI has supported 80+ projects, with a pipeline of a further c. 50 projects.

Progress against Key Performance Indicators

Table B.6 presents progress against DHI's own KPIs while **Table B.7** sets out progress against SFC's required KPIs. All data is to April 2016 (where available).

It should be noted that the SFC MEF was introduced in 2014/15 and DHI became operational in October 2013.

As such there was progress achieved against some targets (mainly Inputs but some Activities) prior to the MEF. Actuals for 2013/14 are not provided separately, but are included in the Actual Total Cumulative column (as such there is not always direct read-across). It should also be noted that Full Year Targets for 2014/15 and 2015/16 are based on previous iterations of the Financial Plan, and do not compare directly with the Five Year Targets.

Table B.6: DHI KPIs (2013/14 to April 2016)

	2013/14		2014/15		2015/16		2016/17	
	Target	**Actual**	**Target**	**Actual**	**Target**	**Actual to Date**	**Target**	**Actual to Date**
£ Value of Inward Invest. Funding into DHI	0	0	666,666	100,041	To Be Revised (TBR)	133,267	TBR	TBR
Ratio of DHI £ v In Kind and External £	-	1.5	1.5	1.72	TBR	To be Confirmed (TBC)	TBR	TBR
Exploratory Outputs Complete	10	10	12	12	13	14	14	TBC
Labatory Outputs Complete	4	4	23	27	26	5	29	TBC
Factory Outputs Complete	0	0	25	10	28	11	31	TBC
Postgrad Prog. Developed	0	0	1	1	1	TBC	0	TBC
£ Value DHI Approved Project Intake (Grants)	0	0	1,445,913	1,446,687	TBR	394,315	1,841,002	TBR
% Value of DHI Projects Referred	TBR	TBR	TBR	TBR	TBR	TBR	TBR	TBR

Source: DHI MEF Quarterly Performance Report, Quarter 3 Ended 30 April 2016.

Table B.6: DHI KPIs (2013/14 to April 2016) – Cont'd

	2013/14		2014/15		2015/16		2016/17	
	Target	**Actual**	**Target**	**Actual**	**Target**	**Actual to Date**	**Target**	**Actual to Date**
Additional Innovations Identified as a % of Total Completed Labs.	-	-	50%	TBC	50%	TBC	50%	TBC
Posgrad. Qual. enrolled	120	0	160	0	180	TBC	200	TBC
H&C Employees Trained (av/project)	-	-	25/project	78	25/project	TBC	25/project	TBC
Industry employees trained (average/ project)	-	-	2/project	4	2/project	TBC	2/project	TBC
Right Products, Processes, Services, Models	0	0	5	2	14	0	23	TBC
New Collab. Formed	5	5	18	35	20	26	20	TBC
Publications	-	-	75%	TBC	75%	TBC	75%	TBC

Source: DHI MEF Quarterly Performance Report, Quarter 3 Ended 30 April 2016.

Table B.6: DHI KPIs (2013/14 to April 2016) – Summary Overview

KPI	Target to 2016/17	Actual Achieved to April 2016	% Achieved to Date
£ Value of Inward Invest. Funding into DHI	TBR	233,308	-
Ratio of DHI £ v In Kind and External £	TBR	1.59	-
Exploratory Outputs Complete	49	36	73%
Labatory Outputs Complete	82	36	44%
Factory Outputs Complete	84	21	25%
Postgrad Prog. Developed	2	1	50%
£ Value DHI Approved Project Intake (Grants)	TBR	1,841,002	-
% Value of DHI Projects Referred	TBR	TBR	-
Additional Innovations Identified as a % of Total Completed Labs.	50%	TBC	-
Posgrad. Qual. enrolled	660	0	0%
H&C Employees Trained (av/project)	25/project	78	
Industry employees trained (average/ project)	2/project	4	
Right Products, Processes, Services, Models	42	2	5%
New Collab. Formed	63	66	105%
Publications	75%	0%	0%

Source: DHI MEF Quarterly Performance Report, Quarter 3 Ended 30 April 2016.

The Quarterly Monitoring Reports also include progress against measures identified by the SFC, **Table B.7**.

Table B.7: DHI KPI Update – Progress as per SFC Template (2014/15 to April 2016)

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Full Year Target	**Actual**	**Full Year Target**	**Actual to Date (Q3)**	**2014/16 Target**	**Actual to April 2016**	**% Achieved To Date**	**Five Year Target**	**% Achieved to Date Against 5 Year Target**
Inputs									
SFC £	2,307,684	600,000	2,600,000	1,950,000	**4,907,684**	**£5,626,906**	**115%**	**10,000,000**	**56%**
Industry £	292,000	0	253,000	0	**545,000**	**0**	**0%**	**1,252,000**	**0%**
SE £	-	30,000	31,000	22,900	**31,000**	**52,900**	**171%**	**61,000**	**87%**
HIE £	-	-	-	-	**-**	**-**	**-**	**-**	**-**
Other £	666,666	188,000	105,000	114,925	**771,666**	**302,925**	**39%**	**187,000**	**162%**
In-kind £	766,412	1,318,229	TBC	TBC	**766,412**	**1,318,229**	**172%**	**7,464,975**	**18%**
Activities									
Nos. Engagement with Companies	18	35	20	26	**38**	**66**	**174%**	**63**	**105%**
Of which SMEs	-	29	-	Not Quantified	**-**	**29**		**-**	
Of which international engagements	-	6	-	NQ	**-**	**6**		**-**	
Nos. Projects with Companies	-	85	-	5	**-**	**21 (48)***		**-**	

Source: DHI MEF Quarterly Performance Reports, Quarter 4 May to July 2015 and Quarter 3 Ended 30 April 2016. * 21 is number of contracted pieces of work with an existing business. 48 is total number of projects with at least one business partner (with most at scoping, exploratory or contracting stages).

Table B.7: DHI – Progress as per SFC Template (2014/15 to Q3 2015/16)

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Target	**Actual**	**Target**	**Actual to Date (Q3)**	**2014/16 Target**	**Actual to April 2016**	**% Achieved To Date**	**Five Year Target**	**% Achieved Against 5 year Target**
Activities									
Of which with SMEs	-	79	-	-	**-**	**-**	**-**	**-**	**-**
Of which international projects	-	6	-	-	**-**	**-**	**-**	**-**	**-**
Outputs									
Nos. New Products, Processes, Services, Bus Models Delivered to Market	5	3	14	6	**19**	**9**	**47%**	**42**	**21%**
Nos Academic to Business Collab.	-	27	-	4	**-**	**31**	**-**	**-**	**-**
Nos. Business to Business Collab.	-	8	-	-	**-**	**8**	**-**	**-**	**-**

Source: DHI MEF Quarterly MEF Reports: Quarter 4 ended 31 July 2015 (for 2014/15), Quarter 3 Ended 30 April 2016 (for 2015/16).

Table B.7: DHI – Progress as per SFC Template (2014/15 to Q3 2015/16)

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Target	**Actual**	**Target**	**Actual to Date (Q3)**	**2014/16 Target**	**Actual to April 2016**	**% Achieved To Date**	**Five Year Target**	**% Achieved Against 5 year Target**
Outcomes									
Revenue (turnover) to Comp. of New Products, Services, etc	6,933,253	NQ	26,346,362	NQ	**33,279,615**	-	-	**91,518,943**	-
Of which from exports	1,729,153	NQ	6,570,573	NQ	**8,299,726**	-	-	**22,824,824**	-
Of which from new international markets	NQ	NQ	NQ	NQ	-	-	-	**NQ**	-
Jobs Created in Comp.	48	NQ	184	NQ	**232**	-	-	**638**	-
Of which high value jobs	20	NQ	77	NQ	**97**	-	-	**268**	-
Spin-outs or start-ups created	NQ	NQ	NQ	NQ	-	-	-	**NQ**	-
Of which high growth academic spin-outs or start ups	NQ	NQ	NQ	NQ	-	-	-	**NQ**	-

Source: DHI MEF Quarterly MEF Reports: Quarter 4 ended 31 July 2015 (for 2014/15), Quarter 3 Ended 30 April 2016 (for 2015/16).

Table B.7: DHI– Progress as per SFC Template (2014/15 to Q3 2015/16) – Cont'd

	2014/15		2015/16		Total To Date and Five year Targets				
	Target	**Actual**	**Target**	**Actual to Date**	**2014/16 Target**	**Actual to April 2016**	**% Achieved To Date**	**Five Year Target**	**% Achieved Against 5 Year Target**
Outcomes									
Of which high growth industry spin-outs or start-ups	NQ	NQ	NQ	NQ	-	-	-	**NQ**	-
Non Scottish Companies Attracted to Scotland (FDI)	NQ	NQ	NQ	NQ	-	-	-	**NQ**	-
Forecast CO2 Related Savings (Tonnes) from Projects Completed	70	NQ	115	NQ	**185**	-	-	**210**	-
Societal Benefits (IC to identify)	NQ	NQ	NQ	NQ	-	-	-	**NQ**	-

Source: DHI MEF Quarterly MEF Reports: Quarter 4 ended 31 July 2015 (for 2014/15), Quarter 3 Ended 30 April 2016 (for 2015/16).

Stratified Medicine Scotland

Original and Revised Financial Plan

The original financial plan for SMS-IC as provided in the Business Plan and first Operational Plan 2013/18 (2012) is detailed in **Table B.8**. It sets out the five-year plan of c £14.8m made up of largely cash contributions from various sources, including from key industry partners.

Table B.8: SMS-IC Original Five Year Financial Plan

Income Source	Financial Plan
SFC	£8,000,000
Aridhia	£1,300,000
GSK	£200,000
Life Technologies*	£625,000
University of Glasgow	£150,000
Total Cash	**£10,275,000**
Aridhia	£1,300,000
Life Technologies	£2,900,000
University of Glasgow	£300,000
Total In-Kind	**£4,500,000**
Total Income	**£14,775,000**

Source: SMS-IC Business Plan and Operational Plan (2013/2018)
* ThermoFisher Scientific Inc acquired Life Technologies Limited in February 2014

The financial plan has been revised over time, with the latest cash model projections provided in **Table B.9** (note this does not include in-kind contributions, but these are still expected to materialise).

Table B.9: SMS-IC Revised Financial Plan (Cash Model)

Income Source	Revised Financial Plan	% of Total
SFC	£12,000,000	88%
University of Glasgow	£150,000	1%
Thermo Fisher	£625,000	5%
Biogen	£821,919	6%
Total	**£13,596,919**	**100%**

Source: SMS-IC Summary Operating Costs – provided by SMS-IC in June 2016.

Key points to note include:

- the cash contributions of c. £13.6 million is mainly made up of funding from SFC;
- the funding from SFC differs from that reported in the Business Plan as it includes the original £8 million core award plus £4 million capital funding for sequencing and informatics equipment infrastructure;
- the cash contribution from GSK has not been, and is not expected to be, achieved;
- Biogen cash contribution was not expected at the outset, but has been secured;
- in-kind contribution from the University of Glasgow is likely to be significantly exceeded (no charge is made to the IC for finance/HR/management support); and
- Aridhia has been involved extensively in SMS-IC from the outset. The original expectation was that cash and in-kind contributions would be made. Aridhia has contributed significantly in-kind to date with time and expertise. This is expected to continue (rather than a cash contribution).

Expenditure

The financial plan for SMS-IC can be broken down into three main cost centres – team costs (this includes the core team plus the sequencing team leaders/technicians), infrastructure and assets (e.g. genomics sequencing capability), and funding for exemplar projects.

Table B.10: SMS-IC Revised Financial Plan (Cash Model)

Cost Centre	Revised Financial Plan	% of Total
Team Costs	£2,869,417	21%
Infrastructure and Assets	£6,116,396	45%
Exemplar Projects	£4,611,106	34%
Total Costs	**£13,596,919**	**100%**

Source: SMS-IC Summary Operating Costs – provided by SMS-IC directly.

Project activity accounts for 34% of the total cash model. This increases if the costs associated for sequencing team leaders/technicians is also included, as they are involved in project activity.

Expenditure to April 2016 is £7.399 million – this equates to 54% of the total revised financial plan for SMS-IC. Expenditure for team costs and exemplar projects is relatively low – reflecting the time taken to recruit staff, and SMS-IC has also experienced staffing changes resulting in vacant posts while it progresses again with recruitment. The projects supported are all longer-term in nature with further expenditure yet to be achieved.

Table B.11: SMS-IC Expenditure to Date (April 2016)

Cost Centre	Revised Financial Plan	Actual Expenditure to April 2016	% Spend Achieved to Date
Team Costs	£2,869,417	1,177,541	41%
Infrastructure and Assets	£6,116,396	4,816,313	79%
Exemplar Projects	£4,611,106	1,406,068	30%
Total	**£13,596,919**	**£7,399,922**	**54%**

Source: SMS-IC Summary Operating Costs – provided by SMS-IC directly.

Project Portfolio

1. Ovarian Cancer – University of Edinburgh – total cost (£900,434) of which SFC funding (£587,718) – March 2015 to September 2018.

2. Oesophageal Cancer – University of Aberdeen - total cost (£536,959) of which SFC funding (£413,158) – August 2014 to August 2016.

3. Rheumatoid Arthritis – University of Glasgow – total cost (£801,772) of which SFC funding (£674,387) – August 2014 to August 2016.

4. Irritable Bowel Disease/Chronic Obstructive Pulmonary Disease – Biopta – total cost (£539,073) of which SFC funding (£380,073) – November 2014 to November 2016.

5. FutureMS - University of Edinburgh – total cost (£2,625,210) of which SFC funding (£1,003,975). March 2015 to March 2018.

Progress against Key Performance Indicators

There are no five-year targets set in the monitoring reports for any of the Activity, Output or Outcome measures. It is our understanding that this might in part be due to the lengthy discussions about developing the Precision Medicine Ecosystem, the commercial model, and the interface with the Precision Medicine Catapult. During this time, the focus for SMS-IC was on setting up the lab and data processes/workflow and achieving the detailed milestones for each exemplar project. The latest monitoring report specifies that an update on these critical areas will be provided in the next Q4 MEF (2015/16), after the new Commercial Director, COO, and Business Development team are recruited to provide the suitable level of attention and expertise required.

Similar to DHI, It should be noted that the SFC MEF was introduced in 2014/15 and SMS-IC became operational prior to this.

As such there was progress achieved against some targets (mainly Inputs) prior to the MEF. Actuals for 2013/14 are not provided separately, but are included in the Actual Total Cumulative column (as such there is not always direct read-across). It should also be noted that Full Year Targets for 2014/15 and 2015/16 are based on previous iterations of the Financial Plan, and do not compare directly with the Five Year Targets.

Table B.12: SMS KPI Update – Progress as per SFC Template (2014/15 to Q3 2015/2016)

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Full Year Target	**Actual**	**Full Year Target**	**Actual to Date (Q3)**	**2014/16 Target**	**Actual to April 2016**	**% Achieved To Date**	**Five Year Target**	**% Achieved to Date Against 5 Year Target**
Inputs									
SFC £	1,840,563	1,840,563	1,384,614	1,384,614	**3,225,177**	**8,153,842***	**251%***	**12,000,000**	**68%**
Industry £	198,899	140,699	1,246,489	195,988	**1,445,388**	**336,687**	**23%**	**9,376,757**	**4%**
SE £	-	-	-	-		**-**		**-**	**-**
HIE £	-	-	-	-		**-**		**-**	**-**
Other £	126,874	126,874	2,003,470	1,023,126	**2,130,344**	**1,150,000**	**54%**	**4,150,000**	**28%**
In-kind £	1,343,309	1,305,522	1,164,663	856,723	**2,507,972**	**2,162,245**	**86%**	**4,512,289**	**48%**
Activities									
Nos. Engagement with Companies	33	30	85	19	**118**	**49**	**42%**	**0**	
Of which SMEs	21	18	28	8	**49**	**26**	**53%**	**0**	
Of which international engagements	15	12	57	16	**72**	**28**	**39%**	**0**	
Nos. Projects with Companies	17	11	13	6	**30**	**17**	**57%**	**0**	

Source: SMS MEF Quarterly MEF Reports: Quarter 4 May to July 2015 and Quarter 3 Ended 30 April 2016. *See earlier note about start date of SMS and for the MEF.

Table B.12: SMS – Progress as per SFC Template (2014/15 to Q3 2015/16) – Cont'd

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Target	**Actual**	**Target**	**Actual to Date (Q3)**	**2014/16 Target**	**Actual to Jan 2016**	**% Achieved To Date**	**Five Year Target**	**% Achieved Against 5 year Target**
Activities									
Of which with SMEs	13	10	7	5	**20**	**15**	**75%**	**0**	
Of which international projects	1	0	6	3	**7**	**3**	**43%**	**0**	
Outputs									
Nos. New Products, Processes, Services, Bus Models Delivered to Market	1	1	2	1	**3**	**2**	**67%**	**0**	
Nos Academic to Business Collab.	4	4	4	3	**8**	**7**	**88%**	**0**	
Nos. Business to Business Collab.	0	0	4	1	**4**	**1**	**25%**	**0**	

Source: SMS-IC MEF Quarterly MEF Reports: Quarter 4 ended 31 July 2015 (for 2014/15), Quarter 3 Ended 30 April 2016 (for 2015/16).

Table B.12: SMS – Progress as per SFC Template (2014/15 to Q3 2015/16) – Cont'd

	2014/15		2015/16		Total To Date and Five year Targets				
	Target	**Actual**	**Target**	**Actual to Date**	**2014/16 Target**	**Actual to Jan 2016**	**% Achieved To Date**	**Five Year Target**	**% Achieved Against 5 Year Target**
Outcomes									
Revenue (turnover) to Comp. of New Products, Services, etc	0	0	- *	-	-	-		-	-
Of which from exports	0	0	-	-	-	-	-	-	-
Of which from new international markets	0	0	-	-	-	-	-	-	-
Jobs Created in Comp.	3	3	-	-	**3**	**3**	**100%**	-	-
Of which high value jobs	3	3	-	-	**3**	**3**	**100%**	-	-
Spin-outs or start-ups created	0	0	-	-	-	-	-	-	-
Of which high growth academic spin-outs or start ups	0	0	-	-	-	-	-	-	-

Source: SMS-IC MEF Quarterly MEF Reports: Quarter 4 ended 31 July 2015 (for 2014/15), Quarter 3 Ended 30 April 2016 (for 2015/16).

* The Outcomes section was not included in the Q3 MEF for 2015/16. As such have left all indicators blank and cannot assess progress to date in many cases.

Table B.12: SMS – Progress as per SFC Template (2014/15 to Q3 2015/16) – Cont'd

	2014/15		2015/16		Total To Date and Five year Targets				
	Target	**Actual**	**Target**	**Actual to Date**	**2014/16 Target**	**Actual to Jan 2016**	**% Achieved To Date**	**Five Year Target**	**% Achieved Against 5 Year Target**
Outcomes									
Of which high growth industry spin-outs or start-ups	0	0	-*	-	-	-	-	-	-
Non Scottish Companies Attracted to Scotland (FDI)	0	0	-	-	-	-	-	-	-
Forecast CO2 Related Savings (Tonnes) from Projects Completed	0	0	-	-	-	-	-	-	-
Societal Benefits (IC to identify)	0	0	-	-	-	-	-	-	-

Source: SMS-IC MEF Quarterly MEF Reports: Quarter 4 ended 31 July 2015 (for 2014/15), Quarter 3 Ended 30 April 2016 (for 2015/16).

* The Outcomes section was not included in the Q3 MEF for 2015/16). As such have left all indicators blank and cannot assess progress to date in many cases.

Oil and Gas Innovation Centre

Original and Revised Financial Plan

The original financial plan for OGIC as outlined in its first Operational Plan (2014) is below.

Table B.13: Original OGIC Financial Plan

Funding Source	Financial Plan	%
SFC Core Funding	£10,600,000	47%
SFC Education Funding	£1,125,000	5%
Industry project contribution	£6,505,000	29%
SE Project Contribution	£2,350,000	10%
Industry project levy	£768,000	3%
OGIC staff consultancy income	£75,000	0%
HEI royalty income levy	£2,000	0%
OGIC events income	£420,000	2%
HEI staff contribution	£140,000	1%
Board contribution (in kind)	£100,000	0%
Review panel contribution (in kind)	£326,000	1%
Total	**£22,411,000**	**100%**

Source: OGIC Business Plan 2014

The revised OGIC financial plan is lower at c. £19.9m. This is due to a number of potential sources of income not being realised as of yet, including from Enterprise Agencies, consultancy, and event income, as well as a reduction in anticipated industry contributions. A significant addition is the SFC capital funding of £1.67m.

Table B.14: Revised OGIC Financial Plan

Funding Source	Revised Financial Plan	% of Total
SFC Core Funding	£10,600,000	53%
SFC Capital Funding	£1,665,000	8%
SFC MSc Funding	£1,200,000	6%
Industry – cash and in-kind	£5,798,519	24%
Other In-kind contributions	£630,000	3%
Total	**£19,893,520**	**100%**

Source: OGIC Operating Plan 2015-2017

The OGIC financial plan is split into four strands – core costs (staffing and other overheads), capital expenditure, the MSc programme, and project spend.

Project activity accounts for the largest proportion of the revised financial plan (60%).

Table B.15: OGIC Revised Financial Plan – By Cost Centre

Cost Centre	Revised Financial Plan	% of Total
Core Costs	£4,789,199	25%
Capital Spend	£1,665,000	9%
MSc Programme	£1,200,000	6%
Projects	£12,239,321	60%
Total	**£19,893,520**	**100%**

Source: OGIC Operating Plan 2015-2017

Expenditure

Expenditure to date is c. £2.6m – 13% of the total OGIC financial plan. This appears to be behind schedule, however, there was a delay in recruiting staff, with the full team not in place until February 2015, and there has been a particularly low spend on projects, reflecting the change in market conditions (collapse in the oil price). The business plan anticipated supporting a small number of large projects, however, demand has been from smaller companies and for small projects. The MSc Programme is due to begin in September 2016, having been delayed by a year to meet university degree approval process timescales.

Table B.16: OGIC Expenditure to Date (to April 2016)

Cost Centre	Financial Plan to February 2019	Actual Expenditure to April 2016	% Spend Achieved to Date
Core Costs	£4,789,199	£1,654,640	35%
Capital Costs	£1,665,000	£705,126[18]	42%
MSc Programme	£1,200,000	£0	0%
Project Spend	£12,239,321	£155,736	3%
...Projects Committed	£12,239,321	£898,000	7%
Total	**£19,893,520**	**£2,515,502**	**13%**

Source: OGIC Q3 2015/16 MEF Report

[18] It should be noted that the entire sum has so far been committed, but equipment delivered in late 2015 and early 2015 has not been invoiced as of April 2016

Progress against Key Performance Indicators

Table B.17 presents progress against OGIC's own KPIs while **Table B.18** sets out progress against SFC's required KPIs. All data is to April 2016.

OGIC, in common with some of the other ICs, highlighted a number of issues with the suitability of some KPIs, and is currently in the process of drawing up a new set. These concerns are further addressed in the Stakeholder Perspectives (**Chapter 5**) and the Conclusions and Recommendations (**Chapter 8**).

Table B.17: OGIC Specific Key Performance Indicators (to April 2016)

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Full Year Target	Actual	Full Year Target	Actual to Date (Q3)	2014/16 Target	Actual to April 2016	% Achieved To Date	Five Year Target	% Achieved to Date Against 5 Year Target
Number of industry engagements with larger companies	2	13	10	13	**12**	**26**	**217%**	**110**	**24%**
Number of early engagement with companies	0	79	300	36	**300**	**115**	**38%**	**3,300**	**3%**
Number of engagements with stakeholders & associated organisations	0	89	50	22	**50**	**111**	**222%**	**550**	**20%**
Number of projects with larger companies	3	2	6	4	**9**	**6**	**67%**	**47**	**13%**
Number of projects which are active early stage innovation schemes	10	n/a	10	0	**20**	**-**	**-**	**54**	**0%**

Source: OGIC Q3 2015/16 MEF Report

Table B.17: OGIC Specific Key Performance Indicators (to April 2016) – Cont'd

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Full Year Target	**Actual**	**Full Year Target**	**Actual to Date (Q3)**	**2014/16 Target**	**Actual to April 2016**	**% Achieved To Date**	**Five Year Target**	**% Achieved to Date Against 5 Year Target**
Jobs created in universities	24	-	24	-	**48**	**-**	**-**	**258**	**0%**
International engagements (trade and inward investment opportunities	1	1	1	1	**2**	**2**	**100%**	**26**	**8%**
IP Secured	-	-	-	-	**-**	**-**	**-**	**6**	**0%**
IP exploited within centre / partner companies	-	-	-	-	**-**	**-**	**-**	**6**	**0%**
IP Licensing	-	-	-	-	**-**	**-**	**-**	**6**	**0%**

Source: OGIC Q3 2015/16 MEF Report

Table B.18: OGIC - Progress as per SFC Template (2014/15 to Q3 2015/16)

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Full Year Target	**Actual**	**Full Year Target**	**Actual to Date (Q3)**	**2014/16 Target**	**Actual to April 2016**	**% Achieved To Date**	**Five Year Target**	**% Achieved to Date Against 5 Year Target**
Income Received									
SFC Funding	1,611,547	1,575,763	924,964	764,012	**2,536,511**	**2,339,775**	**92%**	**10,600,000**	**22%**
Industry funding	12,500	12,500	879,166	263,501	**891,666**	**276,001**	**31%**	**5,798,519**	**5%**
SE funding	-	-	-	-					
HIE funding	-	-	-	-					
Other Funding	-	-	-	-					
In-kind contributions (Board members, PRP members etc)	-	39,000	140,000	105,000	**140,000**	**144,000**	**103%**	**630,000**	**23%**

Source: OGIC Q3 2015/16 MEF Report

Table B.18: OGIC – Progress as per SFC Template (2014/15 to Q3 2015/16) - Cont'd

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Full Year Target	Actual	Full Year Target	Actual to Date (Q3)	2014/16 Target	Actual to April 2016	% Achieved To Date	Five Year Target	% Achieved to Date Against 5 Year Target
Activities									
Nos. Engagement with Companies	50	53	100	85	**150**	**138**	**92%**	**1,100**	**13%**
Of which SMEs	50	50	80	26	**130**	**76**	**58%**	**880**	**9%**
Of which international engagements	1	2	10	20	**11**	**22**	**200%**	**110**	**20%**
Nos. Projects with Companies	13	4	29	10	**42**	**14**	**33%**	**184**	**8%**
Of which with SMEs	10	5	12	2	**22**	**7**	**32%**	**76**	**9%**
Of which international projects	0	0	1	2	**1**	**2**	**200%**	**7**	**29%**
Nos. New Products, Processes, Services, Bus Models Delivered to Market	-	-	1	-	**1**	**-**	**0%**	**11**	**0%**
Nos Academic to Business Collab	-	32	30	-	**30**	**32**	**107%**	**210**	**15%**
Nos. Business to Business Collab	NQ	NQ	NQ	NQ	**NQ**	**NQ**	**NQ**	**NQ**	**NQ**

Source: OGIC Q3 2015/16 MEF Report

Table B.18: OGIC – Progress as per SFC Template (2014/15 to Q3 2015/16) - Cont'd

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Full Year Target	Actual	Full Year Target	Actual to Date (Q3)	2014/16 Target	Actual to April 2016	% Achieved To Date	Five Year Target	% Achieved to Date Against 5 Year Target
Outcomes									
Revenue (turnover) to Comp. of New Products, Services, etc	-	-	-	-	-	-	-	3,500,000	0%
Of which from exports	-	-	-	-	-	-	-	875,000	0%
Of which from new international markets	-	-	-	-	-	-	-	437,500	0%
Jobs Created in Comp.	2	-	2	-	2	-	0%	150	0%
Of which high value jobs	-	-	-	-	-	-	-	148	0%
Spin-outs or start-ups created	-	-	-	-	-	-	-	10	0%
Of which high growth academic spin-outs or start ups	-	-	-	-	-	-	-	5	0%
Of which high growth industry spin-outs or start-ups	-	-	-	-	-	-	-	5	0%

Source: OGIC Q3 2015/16 MEF Report

Table B.18: OGIC – Progress as per SFC Template (2014/15 to Q3 2015/16) - Cont'd

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Full Year Target	Actual	Full Year Target	Actual to Date (Q3)	2014/16 Target	Actual to April 2016	% Achieved To Date	Five Year Target	% Achieved to Date Against 5 Year Target
Intellectual property secured	1	1	1	1	**2**	**2**	**100%**	**26**	**4%**
Non Scottish Companies Attracted to Scotland (FDI)	-	-	-	-	**-**	**-**	**-**	**25**	**0%**
Forecast CO2 Related Savings (Tonnes) from Projects Completed	-	-	-	-	**-**	**-**	**-**	**100**	**0%**
Societal Benefits (IC to identify)	-	-	-	-	**-**	**-**	**-**	**-**	**0%**

Source: OGIC Q3 2015/16 MEF Report

Scottish Aquaculutre Innocation Centre (SAIC)

Original and Revised Financial Plan

The original SAIC financial plan as outlined in its first Operational Plan (2014) is below.

Table B.19: Original SAIC Financial Plan (Cash and In-Kind)

Funding Source	Financial Plan	% of Total
SFC Core Funding	£11,100,000	64%
SFC Capital funding	£1,500,000	9%
Industry funding	£3,084,001	18%
In-kind contributions	£1,638,001	9%
Total	**£17,322,002**	**100%**

Source: SAIC 2014 Business Plan

The latest SAIC financial plan of £28.686m is more than was originally anticipated due to an increase in expected industry contributions, an increase in 'other' funding and the additional SFC capital funding.

Table B.20: SAIC Revised Financial Plan (Cash and In-Kind)

Funding Source	Revised Financial Plan	% of Total
SFC Core Funding	£11,100,000	39%
SFC Capital Funding	£1,710,000	6%
SFC MSc Funding	£1,297,000	5%
Industry	£8,185,000	29%
HEI	£1,384,000	5%
Other	£5,010,000	17%
Total	**£28,686,000**	**100%**

Source: SAIC Q3 2015/16 MEF Report

The financial plan can be broken down into four main components: core costs (staffing and overheads), the MSc Programme, purchases of capital equipment, and project activity.

The vast majority of the SAIC financial plan is allocated for Projects (82%). Core costs represent a small proportion of the overall financial plan.

Table B.21: SAIC Financial Plan – By Cost Centre

Cost Centre	Financial Plan	% of Total
Core Costs	£2,104,000	7%
Projects	£23,573,000	82%
MSc Programme	£1,297,000	5%
Capital Equipment	£1,710,000	6%
Total Costs	**£28,684,000**	**100%**

Source: SAIC Q3 2015/16 MEF Report

Expenditure

Total expenditure to date is low at £4.821m - 17% of the total SAIC financial plan. This, in part, reflects the time lag in recruiting the staff team and the approach taken to fund longer-term projects.

Table B.22: Expenditure to Date

Cost Centre	Revised 5-Year Financial Plan	Actual Expenditure to April 2016	% Spend Achieved to Date
Core Costs	£2,104,000	£584,000	28%
Project Costs	£23,573,000	£2,452,000	10%
MSc Programme	£1,297,000	£187,000	14%
Capital Grant	£1,710,000	£1,598,000	93%
Total	**£28,684,000**	**£4,821,000**	**17%**

Source: SAIC Q3 2015/16 MEF Report

The SFC capital grant of £1.7m has been used to purchase a variety of equipment mainly hosted at the University of Stirling, but also at other universities.

Table B.23: Equipment Purchased through SFC Capital Grant

Equipment	HEI	Grant Awarded	Actual Spend
Liquid chromatography - tandem mass spectrometry instrument	University of Stirling	£440,000	£440,000
VS120 S5 histoscan with phase contrast	University of Stirling	£158,000	£149,386
3D Tracking Equipment	University of Stirling	£130,000	£126,285
High Definition, low dose x-ray machine	University of Stirling	£130,000	£119,777
Automated feed delivery systems and loggers	University of Stirling	£40,000	£35,886
qPCR LightCycler system	University of Stirling	£27,000	£22,495
Digital PCR system	University of St Andrews	£113,000	£112,077
Automated Imaging and tracking equipment	University of Aberdeen	£66,000	£0
Automated feed delivery systems and loggers	University of Aberdeen	£87,600	£87,515
Liquid chromatography-tandem mass spectrometry instrument	University of the Highlands and Islands	£440,000	£439,828
High-performance liquid chromatography instrument	University of the Highlands and Islands	£78,000	£64,816
Total		**£1,709,600**	**£1,598,065**

Source: SAIC Q3 2015/16 MEF Report

Progress against Key Performance Indicators

Table B.24 presents progress against SAIC's own KPIs while **Table B.25** sets out progress against SFC's required KPIs. All data is to April 2016.

Table B.24: SAIC Specific Key Performance Indicators (to April 2016)

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Full Year Target	**Actual**	**Full Year Target**	**Actual to Date (Q3)**	**2014/16 Target**	**Actual to April 2016**	**% Achieved To Date**	**Five Year Target**	**% Achieved to Date Against 5 Year Target**
Resources Expended									
SAIC Core Overhead	329,000	329,000	353,000	258,000	**682,000**	**587,000**	**86%**	**2,104,000**	**28%**
SAIC Projects	188,000	188,000	4,488,000	2,255,000	**4,646,000**	**2,443,000**	**53%**	**24,870,000**	**10%**
Activities									
Number of Company led R&D Projects	1	1	9	8	**10**	**9**	**90%**	**36**	**25%**
Number of MSc/PhD company projects	-	-	20	-	**20**	**-**	**-**	**100**	**0%**
Number of new entrants to Education/Training	-	-	25	23	**25**	**23**	**92%**	**125**	**18%**

Source: SAIC Q3 2015/16 MEF Report

Table B.24: SAIC Specific Key Performance Indicators (to April 2016) – Cont'd

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Full Year Target	Actual	Full Year Target	Actual to Date (Q3)	2014/16 Target	Actual to April 2016	% Achieved To Date	Five Year Target	% Achieved to Date Against 5 Year Target
Outputs									
Number of SMEs signposted to other providers	1	1	8	26	**9**	**27**	**300%**	**37**	**73%**
Number gaining and education/ training qualification	-	-	20	-	**20**	**-**	**0%**	**110**	**0%**
Outcomes									
Gross direct GVA	-	-	-	-	**-**	**-**	**-**	**8,830,000**	**-**
Direct income for rural Scotland	-	-	-	-	**-**	**-**	**-**	**2,200,000**	**-**
Direct jobs for rural Scotland (FTEs)	-	-	-	-	**-**	**-**	**-**	**104**	**-**

Source: SAIC Q3 2015/16 MEF Report

Table B.25: SAIC – Progress as per SFC Template (2014/15 to April 2016)

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Full Year Target	Actual	Full Year Target	Actual to Date (Q3)	2014/16 Target	Actual to April 2016	% Achieved To Date	Five Year Target	% Achieved to Date Against 5 Year Target
Inputs									
SFC £	2,485,000	2,485,000	785,000	1,126,000	**3,270,000**	**3,611,000**	**110%**	**12,395,000**	**29%**
Industry (cash) £	23,000	23,000	1,127,700	1,051,835	**1,150,700**	**1,074,835**	**93%**	**5,156,550**	**21%**
SE (cash) £	-	-	-	1,000	**-**	**1,000**	**-**	**-**	**-**
HIE (cash) £	-	-	379,000	424,000	**379,000**	**424,000**	**112%**	**-**	**-**
Other (cash) £	-	-	-	2,000	**-**	**72,000**	**-**	**5,010,000**[19]	**10%**
In-kind £	2,000	2,000	895,300	176,165	**1,130,300**	**176,165**	**16%**	**4,412,450**	**4%**

Source: SAIC Q3 2015/16 MEF Report

[19] Note: No breakdown for other funding formalised

Table B.25: SAIC – Progress as per SFC Template (2014/15 to April 2016) - Cont'd

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Full Year Target	**Actual**	**Full Year Target**	**Actual to Date (Q3)**	**2014/16 Target**	**Actual to April 2016**	**% Achieved To Date**	**Five Year Target**	**% Achieved to Date Against 5 Year Target**
Activities									
Nos. Engagement with Companies	92	92	176	170	**268**	**262**	**98%**	**668**	**39%**
Of which SMEs	41	41	88	82	**129**	**123**	**95%**	**289**	**43%**
Of which international engagements	-	-	88	54	**88**	**54**	**61%**	**328**	**16%**
Nos. Projects with Companies	1	1	29	8	**30**	**9**	**30%**	**136**	**7%**
Of which with SMEs	-	-	5	7	**5**	**7**	**140%**	**15**	**47%**
Of which international projects	-	-	4	3	**4**	**3**	**75%**	**14**	**21%**

Source: SAIC Q3 2015/16 MEF Report

Table B.25: SAIC – Progress as per SFC Template (2014/15 to April 2016) - Cont'd

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Full Year Target	**Actual**	**Full Year Target**	**Actual to Date (Q3)**	**2014/16 Target**	**Actual to April 2016**	**% Achieved To Date**	**Five Year Target**	**% Achieved to Date Against 5 Year Target**
Outputs									
Nos. New Products, Processes, Services, Bus Models Delivered to Market	-	-	-	-	**-**	**-**	**-**	**9**	**0%**
Nos Academic to Business Collab	1	1	4	-	**5**	**1**	**20%**	**23**	**4%**
Nos. Business to Business Collab	3	3	8	-	**11**	**3**	**27%**	**35**	**9%**
Outcomes									
Revenue (turnover) to Comp. of New Products, Services, etc	-	-	-	-	**-**	**-**	**-**	**23,732,000**	**0%**
Of which from exports	-	-	-	-	**-**	**-**	**-**	**-**	**-**
Of which from new international markets	-	-	-	-	**-**	**-**	**-**	**-**	**-**
Jobs Created in Companies	-	-	-	-	**-**	**-**	**-**	**121**	**0%**
Of which high value jobs	-	-	-	-	**-**	**-**	**-**	**-**	**-**

Source: SAIC Q3 2015/16 MEF Report

Table B.25: SAIC – Progress as per SFC Template (2014/15 to April 2016) - Cont'd

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Full Year Target	**Actual**	**Full Year Target**	**Actual to Date (Q3)**	**2014/16 Target**	**Actual to April 2016**	**% Achieved To Date**	**Five Year Target**	**% Achieved to Date Against 5 Year Target**
Spin-outs or start-ups created	-	-	3	0	**3**	**0**	**0%**	**3**	**0%**
Of which high growth academic spin-outs or start ups	-	-	-	-	**-**	**-**	**-**	**-**	**-**
Of which high growth industry spin-outs or start-ups	-	-	3	0	**3**	**0**	**0%**	**3**	**0%**
Non Scottish Companies Attracted to Scotland (FDI)	-	-	-	-	**-**	**-**	**-**	**-**	**-**
Forecast CO2 Related Savings (Tonnes) from Projects Completed	-	-	-	-	**-**	**-**	**-**	**-**	**-**
Societal Benefits (IC to identify)	-	-	-	-	**-**	**-**	**-**	**-**	**-**

Source: SAIC Q3 2015/16 MEF Report

CENSIS

Original and Revised Financial Plan

The original CENSIS proposal outlined in its first Operational Plan (2013-18) is shown below. At this time, CENSIS projected a proposed financial plan of £23.07m, which included £11.2m funding from SFC.

Table B.26: Proposed Financial Plan (initial five years)

Income Source	Financial Plan
Office Costs	£1,975,000
Core Staff Costs	£2,763,000
Innovation and Training	£2,470,000
Project Delivery	£3,996,000
SFC Funds Sub-total	**£11,204,000**
Collaborative Project Match Funding	
Industry Contribution to Centre Project Delivery	£3,649,000
SE/HIE/TSB/EU Cont to Centre Project Delivery	£8,216,000
Total Centre Activities	**£23,069,000**

Source: CENSIS Operational Plan (2013-18)
Note: no Capital Equipment is included within the figures

This financial plan was based on a number of assumptions, and as such has been re-profiled several times (see **Table B.27**):

- the proposed financial plan was revised downwards from £23.07m to £21.7m **–** reflecting the fact that CENSIS was awarded £10m core funding from the SFC (slightly below the £11.2m originally proposed); and
- more recently, the financial plan was again revised downwards to £15.112m – however, it is our understanding that CENSIS is currently working to a financial plan of £13.04m. This reflects a further significant reduction in projected external agencies' contributions and industry income (see footnote in **Table B.27**).

Table B.27 Original and Revised Awarded Financial Plan

Funding Source	Original Financial Plan	%	Revised Financial Plan	%
SFC	10,000,000	46%	10,000,000	66%
SFC Capital Equipment (CapEX)	N/A	N/A	£2,070,000	14%
Other Income*	11,741,000	54	£3,042,000	20%
Total	**21,741,000**	**100%**	**15,112,000**	**100%**

Source: CENSIS Revised 5 Year Financial Plan *It should be noted that the forecast other income as of April 2016 is £600,000 compared with the revised figure of £3.04m. For consistency with the Quarterly Monitoring reports the revised Financial Plan figures have been used.

The financial plan can be broken down into four costs centres, with Project Costs (including CapEX) the largest (46%), and Core Costs 28% of the total.

Table B.28: CENSIS Financial Plan - By Cost Centre

Funding Source	Financial Plan	% of Total
Team Costs	£4,163,000	28%
Other Overheads	£1,725,000	11%
Innovation Costs	£2,246,000	15%
Project Costs*	£6,978,00	46%
Total Costs	**£15,112,000**	**100%**

Source: CENSIS Quarterly Report Feb-April 2016 * Project costs include capital expenditure SFC award of £2.07m

Expenditure

Project expenditure to date for CENSIS is £4.6m which represents 31% of the total financial plan. Note: Project Costs includes £250,000 depreciation of total £2.07m CapEx spent, therefore underrepresents actual spend to date of £2.07m.

Table B.29: CENSIS Expenditure to Date (April 2016)

Cost Centre	Financial Plan	Actual Expenditure to April 2016	% Spend Achieved to Date
Team Costs	£4,163,000	£1,655,000	40%
Other Overheads	£1,725,000	£1,078,000	62%
Innovation Costs	£2,246,000	£349,000	16%
Project Costs*	£6,978,000	£1,531,000*	22%
Total	**£15,122,000**	**£4,613,000**	**31%**

Source: CENSIS Quarterly Report Feb-April 2016 * Includes £250,000 depreciation of total £2.07m Capital Equipment spent therefore underrepresents actual spend to date of £2.07m.

Progress against Key Performance Indicators

Table B.30 provides details of progress against the SFC MEF KPIs to April 2016. The targets are based on the revised financial plan (excluding CapEx) of £13.04m.

Table B.30: CENSIS KPI Update – Progress as per SFC Template (2013/14 to 2015/16)

	2013/14		2014/15		2015/16		Actual to Date and Five Year Targets				
	Full Year Target	Actual	Full Year Target	Actual	Full Year Target	Actual to Date (Q3)	2014/16 Target	Actual to April 2016	% Achieved To Date	Five Year Target	% Achieved to Date Against 5 Year Target
Inputs											
SFC £	£1,209,404	£1,209,404	£2,166,535	£1,573,663	£1,936,679	£1,553,152	**£5,312,618**	**£4,363,056**	**81%**	**£10,000,000**	**44%**
Industry £	-	0	£2,900	£31,142	£58,022	£22,848	**£60,922**	**£68,245**	**112%**	**£304,181**	**22%**
SE £	-	0	£22,188	£0	£443,874	£0	**£466,062**	**£0**	**0%**	**£2,326,719**	**0%**
HIE £	-	0	£1,306	£0	£26,112	£0	**£27,418**	**£0**	**0%**	**£136,882**	**0%**
Other £	-	0	£2,610	£4,711	£52,220	£54,631	**£54,830**	**£73,463**	**134%**	**£273,763**	**27%**
In-kind £	-	0	£0	£0	£0	£55,825	**£0**	**£64,659**		**£0**	
Activities											
Nos. Engagement with Companies	-	150	46	94	38	66	**84**	**310**	**369%**	**160**	**194%**
Of which SMEs	-	80	32	94	38	66	**70**	**240**	**343%**	**128**	**188%**
Of which international engagements	-	20	0	10	0	0	**0**	**30**		**0**	**-**
Nos. Projects with Companies	-	6	9	10	15	18	**24**	**34**	**142%**	**89**	**38%**

Source: CENSIS MEF Quarterly Performance Report, Quarter 4 July 2015, Quarter 3 April 2016. Note discrepancies in 2015/16 MEF reporting means 2014/16 actual figures are different to the sum of individual year actuals.

Table B.30: CENSIS KPI Update – Progress as per SFC Template (2013/14 to 2015/16) – Cont'd

	213/14		2014/15		2015/16		Actual to Date and Five Year Targets				
	Full Year Target	Actual	Full Year Target	Actual	Target	Actual to Date (Q3)	2014/16 Target	Actual to Jan 2016	% Achieved To Date	Five Year Target	% Achieved Against 5 year Target
Activities											
Of which with SMEs	-	3	9	8	2	17	**11**	**28**	**254%**	**78**	**36%**
Of which international projects	-	0	0	0	0	0	**0**	**0**	**0%**	**0**	**0%**
Outputs											
Nos. New Products, Processes, Services, Bus Models Delivered to Market	0	0	2	-	2	0	**4**	**0**	**0%**	**8**	**0%**
Nos Academic to Business Collab.	7	7	24	9	24	15	**55**	**31**	**56%**	**85**	**36%**
Nos. Business to Business Collab.	2	2	1	-	1	0	**4**	**2**	**50%**	**4**	**50%**

Source: CENSIS MEF Quarterly Performance Report, Quarter 4 July 2015, Quarter 3 April 2016.

Table B.30: CENSIS KPI Update – Progress as per SFC Template (2013/14 to 2015/16) – Cont'd

	2013/14 2014/15				2015/16		Actual to Date and Five Year Targets				
	Full Year Target	Actual	Full Year Target	Actual	Full Year Target	Actual to Date	2014/16 Target	Actual to Jan 2016	% Achieved To Date	Five Year Target	% Achieved Against 5 Year Target
Outcomes											
Revenue (turnover) to Comp. of New Products, Services, etc	0	0	0	0	93,000,000	0	**93,000,000**	**0**	**0%**	**£700,000,000**	**0%**
Of which from exports	0	0	0	0	60,000,000	0	**60,000,000**	**0**	**0%**	**£450,000,000**	**0%**
Of which from new international markets	0	0	0	0	0	0	**0**	**0**	**0%**	**3**	**0%**
Jobs Created in Comp*	0	0	0	0	220	0	**220**	**0**	**0%**	**1,200**	**0%**
Of which high value jobs	0	0	0	0	146	0	**146**	**0**	**0%**	**800**	**0%**
Spin-outs or start-ups created	0	0	0	0	1	1	**1**	**1**	**100%**	**4**	**25%**
Of which high growth academic spin-outs or start ups	0	0	0	0	1	0	**1**	**0**	**0%**	**3**	**0%**

Source: CENSIS MEF Quarterly Performance Quarter 3 April 2016. * Jobs created reflect number of person years of employment not FTE jobs.

Table B.30: CENSIS KPI Update – Progress as per SFC Template (2013/14 to 2015/16) – Cont'd

	2013/14		2014/15		2015/16		Total To Date and Five year Targets				
	Full Year Target	**Actual**	**Full Year Target**	**Actual**	**Full Year Target**	**Actual to Date**	**2014/16 Target**	**Actual to Jan 2016**	**% Achieved To Date**	**Five Year Target**	**% Achieved Against 5 Year Target**
Outcomes											
Of which high growth industry spin-outs or start-ups	0	0	0	0	0	1	**0**	**1**	**100%**	**1**	**100%**
Non Scottish Companies Attracted to Scotland (FDI)	0	0	0	0	0	0	**0**	**1**	**100%**	**3**	**33%**
Forecast CO2 Related Savings (Tonnes) from Projects Completed	0	0	0	0	0	1	**0**	**0**	**0%**	**8,000**	**0%**

Source: CENSIS MEF Quarterly Performance Quarter 3 April 2016.

Construction Scotland Innovation Centre

Original / Current Financial Plan

The financial plan summary for the first five-years of CSIC is outlined below, taken from its original Business Plan (2014). This continues to be the projected financial plan that CSIC is working towards.

Table B.31: CSIC Financial Plan Summary

Funding Source	Financial Plan	% of Total
SFC Core Funding	£7,800,000	43%
Other Public Sector	£2,412,444	13%
Commercial Sector	£7,750,609	43%
Total	**£17,963,053**	**100%**

Source: CSIC Business Plan (2014) - Appendix 1 – Financial Forecasts

The financial plan for CSIC can be broken down into five main cost centres, with 55% allocated to project activity.

Table B.32: CSIC Financial Plan – By Cost Centre

Cost Centre	Financial Plan	% of Total
Team Costs	£2,577,155	14%
Other Overheads	£2,943,395	16%
Exemplar Projects	£9,917,681	55%
Other Cost re Public Sector	£1,916,250	11%
Surplus	£608,572	3%
Total Costs	**£17,963,053**	**100%**

Source: CSIC Business Plan (2014) - Appendix 1 – Financial Forecasts

Note: Other overheads includes depreciation and interest.

Other Costs regarding Public Sector includes costs attributable to the Other Public Sector funding shown in Table B.31. An example of this would be development costs of the funded CSIC post graduate course.

Expenditure

Almost one-quarter of the budget (24% or £4.3m) has been spent to date - reflecting a time lag in recruiting staff, which has had a knock-on impact on project development activity.

Table B.33: CSIC Expenditure to Date (April 2016)

Cost Centre	Financial Plan to 2018	Actual Expenditure to April 2016	% Spend Achieved to Date
Team Costs	2,577,155	652,414	25%
Other Overheads	2,943,395	359163.00	12%
Exemplar Projects	9,917,681	3,058,837	31%
Other Cost re Public Sector	1,916,250	153,371	8%
Surplus	608,572	120,106	20%
Total	**17,963,053**	**4,343,891**	**24%**

Source: CSIC Quarterly Report to SFC, April 2016 and CSIC Quarterly Report to SFC – Q4
Note: Other overheads includes depreciation and interest

Progress against Key Performance Indicators

Table B.34 provides details of the five year KPIs for CSIC and performance to April 2016.

It should be noted the KPIs were reviewed in Q3 2015 as recruitment of CSIC staff was delayed in the first year which had an impact on delivery. Year 1 figures have been reallocated across the remaining four years: the total five year target remains unchanged.

Table B.34: CSIC KPI Update – Progress as per SFC Template (2014/15 to Q3 2015/16)

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Full Year Target	**Actual**	**Full Year Target**	**Actual to Date (Q3)**	**2014/16 Target**	**Actual to April 2016**	**% Achieved To Date**	**Five Year Target**	**% Achieved to Date Against 5 Year Target**
Inputs									
SFC funding	£1,761,096	£2,069,820	£1,276,656	£1,113,878	**£3,037,752**	**£3,183,698**	**105%**	**£7,800,000**	**41%**
Industry funding *	£0	£440,225	£724,873	£325,564	**£724,873**	**£765,789**	**106%**	**£3,976,073**	**19%**
SE funding	£15,000	£40,000	£22,500	£66,400	**£37,500**	**£106,400**	**284%**	**£150,000**	**71%**
HIE funding	£5,000	£0	£7,500	£6,000	**£12,500**	**£6,000**	**48%**	**£50,000**	**12%**
Other Funding - public sector	£105,000	£5,000	£185,000	£428,864	**£290,000**	**£433,864**	**150%**	**£1,185,000**	**37%**
Other funding - commercial sector	£85,000	£2,144	£230,000	0	**£315,000**	**£2,144**	**1%**	**£1,800,000**	**0%**
In-kind contributions - other public sector	£35,000	£0	£70,000	£8,000	**£105,000**	**£8,000**	**8%**	**£450,000**	**2%**
In-kind contributions - HEI	£150,000	£0	£328,125	£7,652	**£478,125**	**£7,652**	**2%**	**£984,375**	**1%**
In-kind contributions - FEC	£281,250	£24,638	£200,000	£67,021	**£481,250**	**£91,659**	**19%**	**£1,250,000**	**7%**

Source: CSIC MEF Quarterly Performance Report, Quarter 3 Ended 30 April 2016. * Relates to cash funding, excludes in-kind contribution and approved project yet to commerce are omitted.

Table B.34: CSIC – Progress as per SFC Template (2014/15 to Q3 2015/16) - Cont'd

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Target	Actual	Target	Actual to Date (Q3)	2014/16 Target	Actual to April 2016	% Achieved To Date	Five Year Target	% Achieved Against 5 year Target
Activities									
Nos. Engagement with Companies	95	79	91	59	**186**	**138**	**74%**	**600**	**23%**
Of which SMEs	75	63	77	51	**152**	**114**	**75%**	**500**	**23%**
Of which international engagements	0	0	3	1	**3**	**1**	**33%**	**25**	**4%**
Nos. Projects with Companies	2	2	38	27	**40**	**29**	**73%**	**275**	**11%**
Of which with SMEs	0	0	20	11	**20**	**11**	**55%**	**200**	**6%**
Of which international projects	0	0	2	0	**2**	**0**	**0%**	**15**	**0%**

Source: CSIC MEF Quarterly Performance Report, Quarter 3 Ended 30 April 2016.

Table B.34: CSIC – Progress as per SFC Template (2014/15 to Q3 2015/16) – Cont'd

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Target	Actual	Target	Actual to Date (Q3)	2014/16 Target	Actual to April 2016	% Achieved To Date	Five Year Target	% Achieved Against 5 year Target
Outputs									
Nos. New Products, Processes, Services, Bus Models Delivered to Market	0	-	10	0	**10**	**0**	**0%**	**220**	**0%**
Of which new products	-	-	4	0	**4**	**0**	**0%**	**72**	**0%**
Of which new process	-	-	4	0	**4**	**0**	**0%**	**24**	**0%**
Of which new services	-	-	2	0	**2**	**0**	**0%**	**14**	**0%**
Nos Academic to Business Collab.	0	-	0	0	**0**	**0**	**0%**	**20**	**0%**
Nos. Business to Business Collab.	0	0	30	4	**30**	**4**	**13%**	**185**	**2%**

Source: CSIC MEF Quarterly Performance Report, Quarter 3 Ended 30 April 2016.

Table B.34: CSIC – Progress as per SFC Template (2014/15 to Q3 2015/16) – Cont'd

	2014/15		2015/16		Actual to Date and Five Year Targets				
	Target	**Actual**	**Target**	**Actual to Date (Q3)**	**2014/16 Target**	**Actual to April 2016**	**% Achieved To Date**	**Five Year Target**	**% Achieved Against 5 year Target**
Outcomes									
Revenue (turnover) to Comp. of New Products, Services, etc	**TBC**	0	**TBC**	0	**TBC**	**0**	**-**	**TBC**	**-**
Of which from new international markets	**TBC**	0	**TBC**	0	**TBC**	**0**	**-**	**TBC**	**-**
Jobs Created in Comp.	**TBC**	0	**TBC**	0	**TBC**	**0**	**-**	**TBC**	**-**
Of which high value jobs	**TBC**	0	**TBC**	0	**TBC**	**0**	**-**	**TBC**	**-**
Spin-outs or start-ups created	**TBC**	0	**TBC**	0	**TBC**	**0**	**-**	**TBC**	**-**
Of which high growth academic spin-outs or start ups	**TBC**	0	**TBC**	0	**TBC**	**0**	**-**	**TBC**	**-**

Source: CSIC MEF Quarterly Performance Report, Quarter 3 Ended 30 April 2016.

At conception, the bid steering group populated Outcome figures against some KPIs, however 6 months in, it was discussed with SFC that in reality, it would be prudent to revisit these outputs once CSIC had a better sense of industry uptake and pace. These KPIs are yet to be agreed.

Table B.34: CSIC – Progress as per SFC Template (2014/15 to Q3 2015/16) – Cont'd

	2014/15		2015/16		Total To Date and Five year Targets				
	Target	**Actual**	**Target**	**Actual to Date**	**2014/16 Target**	**Actual to April 2016**	**% Achieved To Date**	**Five Year Target**	**% Achieved Against 5 Year Target**
Outcomes									
Of which high growth industry spin-outs or start-ups	**TBC**	0	**TBC**	0	**TBC**	**0**	**-**	**TBC**	**-**
Non Scottish Companies Attracted to Scotland (FDI)	**TBC**	0	**TBC**	0	**TBC**	**0**	**-**	**TBC**	**-**
Forecast CO2 Related Savings (Tonnes) from Projects Completed	**TBC**	0	**TBC**	0	**TBC**	**0**	**-**	**TBC**	**-**
Societal Benefits (IC to identify)	**TBC**	0	**TBC**	0	**TBC**	**0**	**-**	**TBC**	**-**

Source: CSIC MEF Quarterly Performance Report, Quarter 3 Ended 30 April 2016.

At conception, the bid steering group populated Outcome figures in against some KPIs, however 6 months in, it was discussed with SFC that in reality, it would be prudent to revisit these outputs once we had a better sense of industry uptake and pace. These KPIs are yet to be agreed.

Table B.34: CSIC – Progress as per SFC Template (2014/15 to 2015/16) – Cont'd

	2014/15		2015/16		Total To Date and Five year Targets				
	Target	**Actual**	**Target**	**Actual to Date**	**2014/16 Target**	**Actual to April 2016**	**% Achieved To Date**	**Five Year Target**	**% Achieved Against 5 Year Target**
Outcomes									
Jobs Created in Comp.	TBC	0	TBC	0	TBC	0	-	TBC	-
Of which high value jobs	TBC	0	TBC	0	TBC	0	-	TBC	-
Spin-outs or start-ups created	TBC	0	TBC	0	TBC	0	-	TBC	-
Of which high growth academic spin-outs or start ups	TBC	0	TBC	0	TBC	0	-	TBC	-

Source: CSIC MEF Quarterly Performance Report, Quarter 2 Ended 31 January 2016

IBioIC

Original and Revised Financial Plan

The original financial plan for IBioIC was outlined in its Business Plan (December 2013) – totalling c. £46m and made up of cash and in-kind contributions.

Table B.35: IBioIC Original Financial Plan

Funding Source	Financial Plan	% of Total
SFC Funding (cash)	£12,002,000	26%
Industry Funding (cash)	£9,820,000	21%
External Grants	£15,066,000	33%
HEI Funding	£686,000	1%
In kind contribution:	£8,562,000	19%
In kind - Academic	£8,248,000	18%
In kind - Industry	£314,000	1%
Total	**£46,136,000**	**100%**

SFC funding includes £10m core funding and £2m for the skills programme
Source: IBioIC Business Plan 2013

The financial plan has been revised since this time, **Table B.36**. The total of £46m has not changed, however, how it is projected to be made up has been subject to some adjustments. For example,

- the funding mix from the SFC has increased – this reflects the £10m core award plus new awards of £1.1m for the MSc programme and £1.8m capital investment in two Equipment Centres;
- the proportion of funding expected to come from external funding sources (e.g. Research Councils UK and EU) has been reduced;
- the expected in-kind contributions has increased substantially; and
- most of the industry contributions has changed from projected cash to in-kind contributions.

Table B.36: IBioIC Revised Financial Plan to July 2018

Funding Source	Financial Plan	% of Total
SFC Funding (cash)	£11,265,000	24%
Industry Funding (cash)	£1,109,000	2%
Other Funding (cash)	£7,171,000	16%
Equipment Centre (cash)	£0	0%
In Kind Contribution:	£26,607,000	58%
In kind - Academic	£7,302,000	16%
In kind - Industry	£10,752,000	23%
In kind - Other	£8,553,000	19%
Total	**£46,152,000**	**100%**

Source: Provided Directly by IBioIC in June 2016

Against the revised projected financial plan, 11% of income has been achieved to date, much of which has been secured from SFC and in-kind contributions. Actual to date is behind in a number of areas (e.g. industry funding, other funding, in-kind contributions).

Table B.37: Revised IBioIC Financial Plan (five years) and Actual Income to April 2016

Income Source	Revised Financial Plan	Actual Income Received to April 2016	% Income Received
SFC Funding	£11,265,000	£3,123,000	28%
Industry	£1,109,000	£233,000	21%
Other Funding	£7,171,000	£9,000	0%
Equipment Centre	£0	£2,000	-
In kind contribution	£26,607,000	£1,909,000	7%
In kind - Academic	£7,302,000	£902,500	12%
In kind - Industry	£10,752,000	£804,500	7%
In kind - Other	£8,553,000	£202,000	2%
Total	**£46,152,000**	**£5,276,000**	**11%**

Source: Provided Directly by IBioIC in June 2016

The financial plan for IBioIC can be broken down into four main areas:

- core office - office rental plus salaries and travel for the roles of chairman, CEO, office admin, modern apprentice, finance and legal support staff;
- project office - this includes staff that have roles that are directly related to the business of the IC, such as projects, skills programmes, membership and marketing. It includes project managers, technical director, skills manager, business development managers and admin support;

Core/Project Office costs make up 19% of the total financial plan.

- skills and development programme; and
- project programme – supporting collaborative projects, etc.

The majority of funding is allocated for direct funding of Project activity (70%).

Table B.38: IBioIC Financial Plan – By Cost Centre

Cost Centre	Financial Plan	% of Total
Core Office	£3,481,000	8%
Project Office	£5,052,000	11%
Skills and Development Programme	£5,524,000	12%
Project Programme	£32,095,000	70%
Total Operating Costs	**£46,152,000**	**100%**

Source: IBioIC

Expenditure

Expenditure to date is £5.28m, which amounts to 11% of the total five year financial plan for IBioIC. Actual expenditure to date is behind in a number of areas, in particular the Project Programme.

Table B.39: IBioIC Expenditure to Date (April 2016)

Cost Centre	Financial Plan to July 2018	Actual Expenditure to April 2016	% Spend Achieved to Date
Core Office	£3,481,000	£1,119,440	32%
Project Office	£5,052,000	£1,328,937	26%
Skills and Development Programme	£5,524,000	£904,154	16%
Project Programme	£32,095,000	£1,924,019	6%
Total	**£46,152,000**	**£5,276,552**	**11%**

Source: IBioIC

Progress against Key Performance Indicators

Table B.40 presents progress against IBioIC's KPIs as per the SFC MEF. All data is to April 2016.

Table B.40: IBioIC KPI Update – Progress as per SFC Template (Actual to April 2016)

	2014/15		2015/16		Total To Date and Five Year Targets				
	Target	Actual	Target	Actual	2014-16 Target	Actual to April 2016	% Achieved to Date	Five Year Target	% Achieved to Date Against 5 Year Target
Inputs									
SFC £	1,870,000	1,374,000	2,926,000	1,487,000	**4,976,000**	**2,861,000**	**60%**	**13,065,000***	**22%**
Industry £	155,000	112,000	162,000	121,000	**317.000**	**233,000**	**74%**	**1,109,000**	**21%**
SE £	0	0	0	3,000	**0**	**3,000**	**n/a**	**925,000**	**0%**
HIE £	0	0	0	5,000	**0**	**5,000**	**n/a**	**0**	**-**
Other £	0	0	0	1,000	**0**	**1,000**	**n/a**	**6,441,000**	**0%**
In-kind £	1,013,000	577,000	2,637,000	1,139,000	**3,650,000**	**1,716,000**	**47%**	**17,442,000**	**10%**
Activities									
Nos. Engagement with Companies	100	144	140	118	**240**	**262**	**109%**	**700**	**37%**
Of which SMEs	50	61	72	62	**122**	**123**	**101%**	**350**	**35%**
Of which international engagements	20	25	24	16	**44**	**41**	**93%**	**150**	**27%**
Nos. Projects with Companies	9	8	12	6	**21**	**14**	**67%**	**70**	**20%**
Of which SMEs	5	5	6	5	**11**	**10**	**73%**	**35**	**29%**
Of which international projects	1	1	2	0	**3**	**1**	**33%**	**14**	**7%**

Source: IBioIC quarterly monitoring reports Q4 2014/15 (July 2015) and Q3 2015/16 (April 2016)
*Includes £1.8m capital expenditure in addition to core financial plan of £11.265m

Table B.40: IBioIC KPI Update – Progress as per SFC Template (Actual to April 2016) – Cont'd

	2014/15		2015/16		Total To Date and Five Year Targets				
	Target	Actual	Target	Actual	2014-16 Target	Actual to April 2016	% Achieved to Date	Five Year Target	% Achieved to Date Against 5 Year Target
Outputs									
Number of new products, processes, services, business models delivered to market	9	3	6	4	**15**	**7**	**47%**	**45**	**16%**
Number of academic to business collaborations	9	14	12	9	**21**	**23**	**110%**	**70**	**33%**
Number of business to business collaborations	3	12	16	8	**19**	**20**	**105%**	**140**	**14%**
Outcomes									
Revenue (turnover) to companies of new products, processes, services, business models	£1m	£2.66m	£6m	£2m	**£7m**	**£4.66m**	**67%**	**£115m**	**4%**
Of which revenue (turnover) to companies from exports	£0.5m	0	£2m	0	**£2.5m**	**0**	**0%**	**£38m**	**0%**
Of which number of new international markets accessed	0	0	0	0	**0**	**0**	**0%**	**0**	**N/A**
Jobs Created in Companies	70	31	33	5	**85**	**36**	**35%**	**660**	**5%**
Of which high value jobs	51	31	22	4	**73**	**35**	**48%**	**440**	**8%**

Source: IBioIC quarterly monitoring reports Q4 2014/15 (July 2015) and Q3 2015/16 (April 2016)

Table B.40: IBioIC KPI Update – Progress as per SFC Template (Actual to April 2016) – Cont'd

	2014/15		2015/16		Total To Date and Five Year Targets				
	Target	Actual	Target	Actual	2014-16 Target	Actual to April 2016	% Achieved to Date	Five Year Target	% Achieved to Date Against 5 Year Target
Outcomes (continued from previous page) (continued)									
Spin-outs or start-ups created	1	2	2	1	**3**	**3**	**100%**	**14**	**21%**
Of which high growth academic spin-outs or start ups	1	2	1	0	**2**	**2**	**100%**	**7**	**29%**
Of which high growth industry spin-outs or start-ups	0	0	1	1	**1**	**1**	**100%**	**7**	**14%**
Non Scottish Companies Attracted to Scotland (FDI)	0	0	0	0	**0**	**0**	**0%**	**2**	**0%**
Forecast CO2 Related Savings (Tonnes) from Projects Completed	N/A	N/A	N/A	N/A	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Source: IBioIC quarterly monitoring reports Q4 2014/15 (July 2015) and Q3 2015/16 (April 2016)

The Data Lab

Original and Revised Financial Plan

The Data Lab Business Plan (March 2014) outlined the following projected financial plan.

Table B.41: The Data Lab Original Financial Plan

Funding Source	Financial Plan	% of Total
SFC	£11,271,736	45%
SE/HIE	£1,546,009	6%
Consultancy	£400,000	2%
Industry (cash)	£1,030,673	4%
Industry (in kind)	£4,122,691	16%
Industry (PhD match funding)	£875,000	3%
Academia	£3,062,016	12%
Incomes from TSB, EU etc	£3,000,000	12%
Total	**£25,308,125**	**100%**

Source: The Data Lab Business Plan, March 2014

A slightly lower proportion is now targeted to come from industry, and a greater proportion from in-kind contributions. The total financial plan of £25.3m remains the same, including projected contributions from SE/HIE and SFC.

Table B.42: The Data Lab Revised Financial Plan

Funding Source	Revised Financial Plan	% of Total
Core Funding		
SFC	£11,271,736	45%
Additional Funding		
Industry/other	£5,305,673	21%
SE/HIE	£1,546,009	6%
In-kind contributions	£7,184,707	28%
Total	**£25,308,125**	**100%**

Source: The Data Lab, June 2016

The Data Lab's cost centres are outlined below.

Within Core Expenses, a small proportion (c. £2.7m, 24%) is allocated to Project activity. Much of the Additional Expenditure is projected cash funding from industry and in-kind support – this will also contribute towards Project spend (over and above the 11%).

Core costs make up 45% of the revised financial plan.

Table B.43: The Data Lab Revised Financial Plan – By Cost Centre

Cost Centre	Financial Plan	% of Total
Core Expenses	£11,271,736	45%
Of which projects	£2,693,400	11%
Additional Expenditure (inc. in kind)	£14,037,389	55%
Total Operating Costs	**£25,308,125**	**100%**

Source: The Data Lab, June 2016

Expenditure

A substantial underspend was reported in the initial stages of The Data Lab - 36% of projected spend was achieved by the end of its first year. It was agreed to suspend SFC payments for six months from July 2015.

The underspend is largely attributed to delays in recruitment, with expenditure expected to increase as more staff were brought on board and project activity continues to grow. Unspent funds from previous quarters will therefore be reallocated - as such The Data Lab expects to spend the SFC award in full.

Although only £43,242 of core funds has been spent by The Data Lab on projects to April 2016, the amount actually committed is far higher (around £700,000).

Table B.44: The Data Lab Expenditure to Date (April 2016)

Cost Centre	Financial Plan to July 2018	Actual Expenditure to April 2016	% Spend Achieved to Date
Core Expenses	£11,271,736	£1,503,556	13%
Of which projects	£2,693,400	£43,242	2%
Additional Expenditure (inc. in kind)	£14,037,389	£1,837,202	13%
Total	**£25,308,125**	**£3,340,758**	**13%**

Source: The Data Lab, June 2016

Progress against Key Performance Indicators

Table B.45 presents progress against The Data Lab's KPIs as per the SFC MEF. All data is to April 2016.

Table B.45: The Data Lab KPI Update – Progress as per SFC Template (Actual to April 2016)

	2014/15		2015/16		Total To Date and Five year Targets				
	Target	**Actual**	**Target**	**Actual To Date**	**2014-16 Target**	**Actual to April 2016**	**% Achieved to Date**	**Five Year Target**	**% Achieved to Date Against 5 Year Target**
Inputs									
SFC £	1,428,600	1,278,600	1,487,000	588,000	**2,915,600**	**2,106,600**	**72%**	**11,272,000**	**19%**
Industry £	286,767	0	373,664	37,400	**660,431**	**37,400**	**6%**	**2,305,673**	**2%**
SE £	125,151	0	185,494	0	**310,645**	**0**	**0%**	**1,546,009**	**0%**
HIE £	-	-	-	-	**0**	**0**	**-**	**0**	**-**
Other £	60,001	0	173,333	44,233	**233,334**	**44,233**	**19%**	**3,001,000**	**1%**
In-kind £	688,264	224,369	868,992	1,485,598	**1,557,256**	**1,716,868**	**110%**	**7,184,707**	**24%**
Activities									
Nos. Engagement with Companies	0	26	0	145	**0**	**171**	**-**	**0**	**-**
Of which SMEs	0	10	0	60	**0**	**70**	**-**	**0**	**-**
Of which international engagements	0	12	0	44	**0**	**56**	**-**	**0**	**-**
Nos. Projects with Companies	4	1	11	10	**15**	**11**	**73%**	**100**	**11%**
Of which SMEs	0	1	0	7	**0**	**8**	**-**	**0**	**-**
Of which international projects	0	0	0	6	**0**	**6**	**-**	**0**	**-**
Nos. engaged through Data Lab events	105	105	102	1,814	**207**	**1,919**	**927%**	**1,005**	**191%**

Source: The Data Lab quarterly monitoring reports Q4 2014/15 (July 2015) and Q3 2015/16 (April 2016)

Table B.45: The Data Lab KPI Update – Progress as per SFC Template (2014/15 to Q3 2015/16)

	2014/15		2015/16		Total To Date and Five year Targets				
	Target	**Actual**	**Target**	**Actual To Date**	**2014-16 Target**	**Actual to April 2016**	**% Achieved to Date**	**Five Year Target**	**% Achieved to Date Against 5 Year Target**
Outputs									
Nos. New Products, Processes, Services, Bus Models Delivered to Market	4	0	11	0	**15**	**0**	**0%**	**100**	**0%**
Nos Academic to Business Collab.	0	4	0	23	**0**	**27**	**-**	**0**	**-**
Nos. Business to Business Collab.	0	0	0	56	**0**	**56**	**-**	**0**	**-**
Outcomes									
Revenue (turnover) to Comp. of New Products, Services, etc	1,600,000	0	11,025,000	0	**12,625,000**	**0**	**0%**	**104,500,000**	**0%**
Of which from exports	0	0	0	0	**0**	**0**	**-**	**0**	**-**
Of which from new international markets	0	0	0	0	**0**	**0**	**-**	**0**	**-**
Jobs Created in Companies	9	0	37	5	**56**	**14**	**25%**	**248**	**6%**
Of which high value jobs	0	0	0	5	**0**	**13**	**-**	**0**	**-**

Source: The Data Lab quarterly monitoring reports Q4 2014/15 (July 2015) and Q3 2015/16 (April 2016)

Table B.45: The Data Lab KPI Update – Progress as per SFC Template (2014/15 to Q3 2015/16)

	2014/15		2015/16		Total To Date and Five year Targets				
Outcomes (continued from previous page)									
	Target	**Actual**	**Target**	**Actual To Date**	**2014-16 Target**	**Actual to April 2016**	**% Achieved to Date**	**Five Year Target**	**% Achieved to Date Against 5 Year Target**
Spin-outs or start-ups created	0	0	1	0	1	0	**0%**	**10**	**0%**
Of which high growth academic spin-outs or start ups	0	0	0	0	0	0	**-**	**0**	**-**
Of which high growth industry spin-outs or start-ups	0	0	0	0	0	0	**-**	**0**	**-**
Non Scottish Companies Attracted to Scotland (FDI)	0	0	0	2	0	2	**-**	**0**	**-**
Forecast CO2 Related Savings (Tonnes) from Projects Completed	0	0	0	0	0	0	**-**	**0**	**-**

Source: The Data Lab quarterly monitoring reports Q4 2014/15 (July 2015) and Q3 2015/16 (April 2016)

Appendix C: Combined KPIs (Selected)

The data presented in this Appendix is based on review and analysis of IC Quarterly MEF Reports, and is reported to April 2016 (where data is available).

There have been 1,391 engagements with companies for the IC Programme. Engagement is defined as a minimum of four hours of one-to-one contact between IC and company.

Table C.1: Number of Engagements with Companies

IC	Target 2014/16	Actual to April 2016	% Achieved to Date	Five year Target	% Achieved against Five Year Target
DHI	38	61	161%	63	97%
SMS	118	49	42%	NQ	
OGIC	150	138	92%	1,100	13%
SAIC	268	262	98%	668	39%
CENSIS	84	310	369%	160	194%
CSIC	186	138	74%	600	23%
IBioIC	205	262	128%	700	37%
The Data Lab	NQ	171		NQ	
Total		**1,391**			

Source: IC MEF Quarterly Reports

There has been 801 instances of engagement with SMEs. This represents 58% of total engagement, **Table C.2**. Engagement defined as above and SMEs (less than 250 employees, €50m turnover or less or balance sheet total €43m or less).

CENSIS and CSIC have had the greatest level of engagement with SMEs to date (77% of total engagement and 83% respectively).

Table C.2: Number of Engagements with Companies – of which SMEs

IC	Target 2014/16	Actual to April 2016	% Achieved to Date	Five year Target	% Achieved against Five Year Target
DHI	NQ	29		NQ	
SMS	49	26	53%	NQ	
OGIC	130	76	58%	880	9%
SAIC	129	123	95%	289	43%
CENSIS	70	240	343%	128	188%
CSIC	152	114	75%	500	23%
IBioIC	104	123	118%	350	35%
The Data Lab	NQ	70		NQ	
Total		**801**			

Source: IC MEF Quarterly Reports

There has been 238 instances of engagement with international companies. This represents 17% of total company engagement, **Table C.3**. Engagement is defined as above, and international is defined as headquartered outside Scotland. The IC opportunity may be outward (export or internationalisation) or inward (attracting foreign direct investment).

Table C.3: Number of Engagements with Companies – of which International

IC	Target 2014/16	Actual to April 2016	% Achieved to Date	Five year Target	% Achieved against Five Year Target
DHI	NQ	6		NQ	
SMS	72	28	39%	NQ	
OGIC	11	22	200%	110	20%
SAIC	88	54	61%	328	16%
CENSIS	NQ	30	-	NQ	
CSIC	3	1	33%	25	4%
IBioIC	38	41	108%	150	27%
The Data Lab	NQ	56		NQ	
Total		**238**			

Source: IC MEF Quarterly Reports

SMS has had the most international engagement (57% of total company engagement), followed by The Data Lab (33%) and SAIC (21%).

There has been a total of 149 (176)[20] projects with companies supported to date by the IC Programme, **Table C.4**. A project is defined as a defined work stream with associated activities.

The average number of projects per IC is 19.

The number of projects varies by IC, from nine for SAIC to a high of 34 for CENSIS and 48 for DHI (if those at scoping, exploratory or contracting stages are included for DHI).

Table C.4: Number of Projects with Companies

IC	Target 2014/16	Actual to April 2016	% Achieved to Date	Five year Target	% Achieved against Five Year Target
DHI	NQ	21 (48)*		NQ	
SMS	30	17	57%	NQ	
OGIC	42	14	33%	184	8%
SAIC	30	9	30%	136	7%
CENSIS	39	34	87%	89	38%
CSIC	43	29	67%	275	11%
IBioIC	18	14	78%	70	20%
The Data Lab	15	11	73%	100	11%
Total		**149 (176)**			

Source: IC MEF Quarterly Reports

*Figure in DHI MEF Reports has two figures. 21 is number of contracted pieces of work with an existing business, and 48 is total number of projects with at least one business partner (with most at scoping, exploratory or contracting stages.

A total of 84 projects have been with SMEs (note: not all data has been quantified). This represents 56% or 48% of the total number of projects supported based on the two figures reported above for DHI.

[20] See Footnote in **Table C.4** for explanation.

Table C.5: Number of Projects – of which with SMEs

IC	Target 2014/16	Actual to April 2016	% Achieved to Date	Five year Target	% Achieved against Five Year Target
DHI	NQ	NQ		NQ	
SMS	20	15	75%	NQ	
OGIC	22	7	32%	76	9%
SAIC	5	7	140%	15	47%
CENSIS	8	28	350%	78	36%
CSIC	20	11	55%	200	6%
IBioIC	10	8	80%	35	23%
The Data Lab	NQ	8		NQ	
Total		**84**			

Source: IC MEF Quarterly Reports

There has been a total of 15 international projects supported (note: not all data has been quantified). This represents circa 10% of the total number of projects supported based on the two figures reported in **Table C.4**.

Table C.6: Number of Projects – of which International Projects

IC	Target 2014/16	Actual to April 2016	% Achieved to Date	Five year Target	% Achieved against Five Year Target
DHI	NQ	NQ		NQ	
SMS	7	3	43%	NQ	
OGIC	1	2	200%	7	29%
SAIC	4	3	75%	14	21%
CENSIS	0	0		0	
CSIC	2	0	0%	15	0%
IBioIC	3	1	33%	14	7%
The Data Lab	NQ	6		NQ	
Total		**15**			

Source: IC MEF Quarterly Reports

A total of 16 new products, processes, services and business models have been delivered to market for the IC Programme. Defined as products, processes, services, business models should be new or substantially revised. Routine updates should not be counted. Delivered to market means development project is complete. The low number delivered to date reflects the fact that many projects are ongoing and not all are close to market/commercialisation. DHI and IBioIC have delivered the most outputs to date.

Table C.7: Number of New Products, Processes, Services and Business Models Delivered to Market

IC	Target 2014/16	Actual to April 2016	% Achieved to Date	Five year Target	% Achieved against Five Year Target
DHI	19	7	37%	42	17%
SMS	3	2	67%	NQ	
OGIC	1	0	0%	11	0%
SAIC	NQ	0		9	0%
CENSIS	4	0	0%	8	0%
CSIC	10	0	0%	220	0%
IBioIC	13	7	54%	45	16%
The Data Lab	15	0	0%	100	0%
Total		**16**			

Source: IC MEF Quarterly Reports

A total of 152 academic to business collaborations have been made across the IC Programme, with the highest numbers associated with five ICs (OGIC, CENSIS, DHI, The Data Lab and IBioIC).

Collaboration: is defined as a working agreement involving two or more partners where all sides invest resource (time and/or money) with no clear financial outcome defined (i.e. not a normal business transaction)

Table C.8: Number of Academic to Business Collaborations

IC	Target 2014/16	Actual to April 2016	% Achieved to Date	Five year Target	% Achieved against Five Year Target
DHI	NQ	31		NQ	
SMS	8	7	88%	NQ	
OGIC	30	32	107%	210	15%
SAIC	5	1	20%	23	4%
CENSIS	55	31	56%	85	36%
CSIC	0	0	0%	20	0%
IBioIC	18	23	128%	70	33%
The Data Lab	NQ	27		NQ	
Total		**152**			

Source: IC MEF Quarterly Reports

A total of 53 jobs have been created in companies. Defined as jobs created in companies attributable to ICs, most of which have been created by IBioIC and The Data Lab.

Table C.9: Number of Jobs Created in Companies

IC	Target 2014/16	Actual to April 2016	% Achieved to Date	Five year Target	% Achieved against Five Year Target
SMS	3	3	100%	NQ	
OGIC	2	0	0%	150	0%
SAIC	NQ	0		121	0%
CENSIS	220	0	0%	1,200	0%
CSIC	NQ	0	0%	TBC	
IBioIC	85	36	42%	660	5%
The Data Lab	46	14	30%	248	6%
Total		**53**			

Source: IC MEF Quarterly Reports

A total of £4,660,000 revenue (turnover) has been recorded by companies, and is revenue that is attributable to the introduction of new products, processes, services, business models. All of the revenue has been recorded by IBioIC.

Table C.10: Revenues (Turnover) to companies from New Products, Processes, Systems and Business Models

IC	Target 2014/16	Actual to April 2016	% Achieved to Date	Five year Target	% Achieved against Five Year Target
DHI	33,279,615	0	0%	91,518,943	0%
SMS	NQ			NQ	
OGIC	NQ	0		3,500,000	0%
SAIC	NQ	0		23,732,000	0%
CENSIS	93,000,000	0	0%	700,000,000	0%
CSIC	NQ	0		TBC	
IBioIC	3,500,000	4,660,000	133%	115,000,000	4%
The Data Lab	12,625,000	0	0%	104,500,000	27%
Total		**£4,660,000**			

Source: IC MEF Quarterly Reports

Appendix D: Technical EIA

This appendix present the technical aspects behind the Economic Impact Assessment, providing details for the GVA benchmarks, Net Impacts and Multipliers.

Salary and GVA Benchmarks

Salary per head values were taken for the sectors that the beneficiaries operated from the Scottish Annual Business Statistics (SABS) for Scotland[21]. These were adjusted for inflation and the Full Time Equivalent (FTE) value, **Table D.1**.

Table D.1: Salary Coefficients

Sector	Wages Benchmark
Advertising and Market Research	£26,563
Architectural and Engineering Activities; Technical Testing and Analysis	£39,924
Computer Programming, Consultancy and Related Activities	£37,122
Construction of buildings	£25,717
Employment Activities	£26,646
Fishing and Aquaculture	£15,509
Information Service Activities	£36,435
Manufacture of Basic Pharmaceutical Products and Pharmaceutical Preparations	£41,365
Manufacture of Computer, Electronic and Optical Products	£37,168
Manufacture of Food Products	£22,279
Manufacture of Machinery and Equipment (not elsewhere classified)	£36,335
Mining Support Service Activities	£78,638
Office Administrative, Office Support and Other Business Support Activities	£31,261
Other Professional, Scientific and Technical Activities	£24,107
Publishing Activities	£25,220
Real Estate Activities	£20,332
Scientific Research and Development	£33,522
Veterinary Activities	£12,016

[21] http://www.gov.scot/Topics/Statistics/Browse/Business/SABS/LATables

GVA values were derived from Turnover to GVA sector ratios from SABS and applied to the turnover data gathered through the survey work, **Table D.2**.

Table D.2: GVA to Turnover Ratios

GVA Sector	GVA/Turnover
Manufacture of Computer, Electronic and Optical Products	46%
Information Service Activities	79%
Computer Programming, Consultancy and Related Activities	72%
Mining Support Service Activities	41%
Mining Support Service Activities	41%
Fishing and Aquaculture	39%
Manufacture of Food Products	26%
Fishing and Aquaculture	39%
Fishing and Aquaculture	39%
Construction of buildings	35%
Employment Activities	56%
Advertising and Market Research	70%
Computer Programming, Consultancy and Related Activities	72%
Publishing Activities	56%
Office Administrative, Office Support and Other Business Support Activities	58%
Real Estate Activities	62%
Information Service Activities	79%
Information Service Activities	79%
Manufacture of Machinery and Equipment (not elsewhere classified)	35%
Manufacture of Basic Pharmaceutical Products and Pharmaceutical Preparations	60%
Veterinary Activities	59%
Mining Support Service Activities	41%
Architectural and Engineering Activities; Technical Testing and Analysis	56%
Scientific Research and Development	55%
Other Professional, Scientific and Technical Activities	73%
Information Service Activities	31%

Net Impacts

The net impact of the Programme is the difference between what would have happened anyway (i.e. the reference case) and the benefits generated by the Programme (i.e. the intervention case), adjusted for displacement, leakage, deadweight, and multiplier effects.

Deadweight was considered on a case by case basis. The impact survey asked the counterfactual question: thinking about these effects, what would you estimate would have happened if you had not accessed this support?. A ready reckoner[22] was applied to calculate the deadweight effects:

Deadweight Ready Reckoner[23]

	Deadweight
None of the effects would have happened/ will happen	0%
Some of the effects would have happened/ will happen	25%
About half of the effects would have happened/ will happen	50%
The majority of the effects would have happened/ will happen	75%
All of the effects would have happened/ will happen	100%

The overall level of deadweight was very low at 6%, indicating a high level of additionality to the intervention.

Leakage is the proportion of outputs that benefit those outside the Programme's geographical target area (i.e. Scotland). Leakage estimates were based upon what proportion of staff were employed within Scotland. A ready reckoner was applied to calculate the displacement effects.

	Leakage
All of my staff are based in Scotland	0%
The majority of my staff are based in Scotland	25%
Half of my staff are based in Scotland	50%
The majority of my staff are based in Scotland	75%
None of my staff are based in Scotland	100%

The overall level of leakage was relatively low at 19%, indicating that the majority of impacts were retained in Scotland.

[22] The ready reckoners used are based on established good practice and guidance for BIS
[23] Please note, the ready reckoners referred to in the report are used as a guide in assessing case by case impacts.

Displacement is the number or proportion of outputs/outcomes that reduce outputs/outcomes elsewhere in Scotland. These effects can occur in product markets (e.g. amongst non-assisted businesses competing in the same market) or in factor markets (e.g. in the labour market). Displacement was considered on a case by case basis.

First the businesses were asked the proportion of competitors based in Scotland, with a greater concentration of competitors potentially indicating a greater level of displacement.

A ready reckoner was applied to calculate the displacement effects:

Displacement Ready Reckoner

	Displacement
None of the businesses I compete with are based in Scotland	0%
A minority of the businesses I compete with are based in Scotland	10%
Around half the businesses I compete with are based in Scotland	25%
The majority of the businesses I compete with are based in Scotland	45%
All the businesses I compete with are based in Scotland	60%

Respondents were then asked how much of their sales were made in Scotland, with higher levels of sales in Scotland potentially indicative of higher levels of displacement. A further ready reckoner was applied with the average of the two taken as the displacement effect.

Displacement Ready Reckoner

	Displacement
None of my sales are in Scotland	0%
A minority of my sales in Scotland	10%
Around half my sales are in Scotland	25%
The majority of my sales are in Scotland	45%
All the my sales in Scotland	60%

An additional question was asked to establish the level of growth in the sector in which the business operates. Within growing markets competition is likely to be lower and conversely, within declining markets it is likely to be more intense. The following adjustment was made to the ready reckoner based upon the level of growth in the market.

Ready Reckoner Growth Adjustment

	Adjustment
Growing strongly	-15%
Growing	-10%
Static	0%
Declining	+10%
Declining strongly	+15%

The overall level of displacement was relatively low at 18%.

Multipliers are further economic activity (e.g. jobs, expenditure or income) associated with additional income to those employed by the Programme (income multipliers); with local supplier purchases (supplier linkage multipliers) and with longer term development effects (dynamic effects e.g. induced inward migration).

Multiplier data is based on guidance provided by the Scottish Government - Type II multipliers and calculated in a similar way to GVA and Wages benchmarks. Using the reported industry sector, description of business activities and companies house entries to determined multipliers for each sector. The multipliers used are presented in **Table D.3**.

Table D.3: Multipliers[24]

Multiplier Sector	Multiplier
Advertising & market research	1.46
Animal feeds	2.38
Aquaculture	1.72
Architectural services etc	1.81
Business support services	1.52
Computer services	1.53
Computers, electronics & opticals	1.78
Construction	2.11
Employment services	1.59
Machinery & equipment	1.95
Mining Support	1.63
Other professional services	1.48
Pharmaceuticals	1.30
Publishing services	1.62
Real estate - fee or contract	1.42
Research & development	1.99
Veterinary services	1.54

Costs

Two cost scenarios were used, project costs and full costs. Project costs were calculated based on IC direct spend on projects, plus any additional direct project spend by other public sector partners (SE, NHS, etc.). Full costs included both project spend and any overheads associated with the setting up and running of the ICs.

Return on Investment

Return on investment calculations are based on a ten year impact period beginning from the IC Programme's inception in 2013, as per SE guidance[25]. GVA impacts are measured on an annual basis, discounted to reflect net present value from 2013.

Future impacts that occur post 2019 where we have not gathered data have been estimated using 2019 as a baseline, and applying an annual 20% decay factor (as per guidance).

[24] Note: Sectors are different earlier Salary and GVA benchmarks due to using different datasets
[25] http://www.evaluationsonline.org.uk/evaluations/Search.do?ui=basic&action=show&id=547

Appendix E: Case Studies

My Diabetes My Way

DHI			
Business partner(s)	Proposal to spin-out MDMW as a commercial entity		
HEI partner(s)	University of Dundee		
Other partner(s)	NHS Scotland and NHS Tayside (working alongside but not part of contracts)		
Total cost	Total: £180,968	SFC: £149,906 (across four projects)	HEI: £31,062 (across four projects)
Project lifetime	Expected to be 12 months (some projects have progressed faster than others)		

Background

My Diabetes My Way (MDMW) is an interactive website, run by NHS Scotland in partnership with the University of Dundee. It is designed to help people with diabetes, along with their family and friends, access information and resources about the condition. Diabetes is a long term condition where the amount of glucose in the blood is too high because the body cannot use it properly. There are over 250,000 people with diabetes in Scotland – around one person in every twenty.

The website - http://www.mydiabetesmyway.scot.nhs.uk/ - was initially launched in 2008 and has been subject to continued development since, with an expanding user base. As well as providing reliable and accurate information about diabetes, the site also allows patients to access their medical records and aims to help patients manage their condition.

Partners have had involvement with DHI since the IC issued a call, in late 2014, for innovative ideas relating to diabetes that could capitalise on, and increase the value of, existing self-management, diagnostic and communication technologies.

MDMW is overseen by a multi-disciplinary project board including patients, healthcare professionals and computer scientists/technicians. Board members have, in various capacities, had some involvement with DHI for several years, including attending events and acting in a consultative role to the IC.

Project

MDMW has, more recently, received approval of funding through DHI to help improve the MDMW programme and move it towards commercialisation. The research is being undertaken by the University of Dundee. Four separate, but closely interlinked, projects have been initiated, each considering a different aspect of website development. The IC has also provided more general assistance and advice with commercialisation of the platform. The four projects are:

- Integrated Diabetes Data for External Application Services (IDDEAS): research to look at ways the data generated by third-party applications, such as fitness monitors, can be integrated with the website, providing an interface between official NHS data and third-party personal data. The successful development of this innovative way of working could have wider applicability across the NHS. This project has been approved and the contract is being finalised;
- GDS: optimising interpretation of user-generated data i.e. blood test results which can be entered into the website to receive automated advice. This project has been approved and the contract is being finalised;
- MDMW Exploratory Input: early stage research looking at why there has been a low uptake of the platform by patients with Type 2 diabetes. The project grant has been recently approved (award letter pending); and
- CDSBD: focused on clinical support and ensuring that messages on the website reflect the most up to date and accurate thinking on managing diabetes (award letter pending).

Benefits

Overall, MDMW feel that DHI has been an important source of funding and support in allowing continued development of the functionality of the website's application. Dr Debbie Wake, the clinical lead for MDMW, describes it as the *"type of work we would otherwise struggle to get funding for"*, with the way DHI functions – with a focus on supporting practical and innovative solutions rather than detailed analysis of scientific outcomes – being different from most funding streams. The main issue which has arisen has been the negotiation of contracts with the university (the DHI contract being different to many traditional grant contracts including aspects of IP and commercialisation targets). Although this is progressing, it has been a fairly lengthy process to resolve. Post-launch, MDMW outlined estimated turnover of £100,000 in year one, rising to £1 million in year three.

Managing Information in Medical Emergencies

DHI				
Business partner(s)	N/A			
HEI partner(s)	University of Aberdeen			
Other partner(s)	Scottish Ambulance Service			
Total cost	Total: £199,199	SFC: £89,760	Public Sector: £87,000	HEI: £22,439
Project lifetime	May 2015 - July 2016			

Background

Volunteer Community First Responders (CFRs) provide vital emergency care to individuals in between the time a 999 call is made and the arrival of the emergency services. This is particularly true in rural areas where it can take longer for the ambulance service to reach the patient. Academic researchers at the University of Aberdeen's Centre for Rural Health and RCUK-funded dot.rural Digital Economy Hub developed a patient medical monitoring app to support the CFRs – known as Managing Information in Medical Emergencies (MIME). The MIME Android App captures physiological data and produces a handover report for CFRs to quickly update medical staff.

Academic staff were looking to refine the App to ensure it met regulatory approval, test the app with user groups, and plan for commercialisation. DHI was well-known within the university as staff members had been involved with the ICs inception.

The team subsequently prepared a proposal which outlined the plans for staff to work in collaboration with the Scottish Ambulance Service to test the app. Academic staff were generally satisfied with the application process for DHI support and reported it to be straightforward when compared to some other funding applications.

To date DHI has been helpful in terms of suggesting companies to develop micro sensors for the app and have been flexible in terms of the project's anticipated completion date. In particular, the project took longer than expected to get off the ground due to delays in getting all of the contractual documents agreed.

The project started in May 2015 and was due to complete by April 2016. DHI granted the project a three-month extension to account for the delays – which was appreciated by the project partners.

Although academic staff were happy with the support received, a view provided was that the IC had perhaps funded "*too many projects at the outset*", which impacted on the amount of funding available for projects and the level/intensity of support provided by the team. There was also considered a lengthy delay at the beginning of 2016 when DHI went through a process of "*prioritisation and rationalisation*" – although it was reported that this has now picked up again. Note: this time period aligns with the change in DHI host from the University of Edinburgh to the University of Strathclyde which impacted on DHI's delivery.

Commercial support was offered through DHI, to help make contacts with bigger commercial players and broker deals. However, progress has been slow, and MIME Technologies is unlikely to engage with DHI on this level.

Project

Academic staff and the Scottish Ambulance Service have met on a number of occasions and discussed the app. It was agreed the technology would be tested with Red Cross volunteers. The team introduced volunteers to the app (which can be used on a mobile or tablet device) and explained how it works. Volunteers were then able trial the app in medical situations at the following sporting events: the Edinburgh Marathon; Inverness Half Marathon; and Rugby Six Nations. Feedback from a target of 75 users across a number of groups will be compiled into a final report.

Benefits and Impacts

In order to commercialise the technology, academic staff set up a spin out company – Mime Technologies – in July 2016. The team has high aspirations for growth and believe the technology will be relevant for a number of sectors (NHS, Fire and Rescue, Oil and Gas). In addition, it is considered that Mime Technologies will also help relieve budgetary pressure on the NHS by providing more experienced CFRs and a more efficient patient handover.

Over and above the commercial benefits, the project has resulted in a number of academic benefits, including:

- it has already informed research activities and a research paper;
- it might be used as a Research Excellence Framework (REF) case study; and
- it is anticipated to result in an increase in academic funding.

Rheumatoid Arthritis Exemplar Project

SMS			
Business partner(s)	Aridhia, Thermofisher, Sistemic		
HEI partner(s)	University of Glasgow (lead)		
Total cost	Total: £801,772	SFC: £674,387	HEI: £127,385 in-kind
Project lifetime	August 2014 – August 2016		

The Project

Rheumatoid Arthritis is the most common of the chronic inflammatory arthritic conditions, and has significant impacts for the well-being of patients (pain, disability, premature mortality), health care cost and societal costs. Current Rheumatoid Arthritis drug therapy is largely methotrexate (MTX) which works well in patients who respond to it. However 60% of Rheumatoid Arthritis patients on MTX either do not respond or show toxic effects. If the patient does not respond to MTX, it may take many years of iterative drug escalation until their Rheumatoid Arthritis is effectively managed with worsening of the patient's condition.

The SMS-IC project is led by the University of Glasgow and seeks to identify a genetic signature in Rheumatoid Arthritis patients that can predict those who will and those who will not respond to MTX treatment at the outset of their disease. If successful it will allow rheumatologists to more accurately assign patients to drugs that will work for them, possibly creating a more compelling argument to rapidly advance patients to biological therapy. Better managed patients will have better health outcomes and will have a decreased impact on societal costs.

The early months of the disease are very important in determining long term prognosis, particularly to prevent early damage and loss of function, thus making the correct initial choices is very important.

The project has been looking at sequencing DNA and RNA, and whilst this is not particularly novel in itself, there is a unique opportunity given the structure of the Scottish health system that brings a large cohort of patients, all very well characterised, from all over Scotland for the study. The project used clinical data and samples arising from a previous successful Pfizer/Scottish Government funded study, also involving several biomedical Universities and NHS Scotland.

SMS brought the partnership together, making use of the expertise of the formal industry partners. Core sequencing activities were conducted by Thermofisher, Sistemic were involved in the extraction of the RNA samples and Aridhia were involved in data analysis.

As one of the first projects undertaken by SMS, an initial challenge was testing the in-house equipment and systems that have been developed within SMS-IC (based at the Queen Elizabeth University Hospital in Glasgow), working out what worked well and what did not. Despite some slippage on timescales, the investigators were admirably supported in problem solving and solution finding by SMS. The DNA sequencing has been completed, whilst the RNA sequencing is close to completion. The project is now in the data analysis stage, and thus not quite at the stage of reporting outcomes.

Benefits and Impacts

If the results are positive and a molecular or clinical signature is found, then there will be benefits for whoever takes forward commercialisation; if no useful signals arise, then nevertheless, there will be widespread benefits for the academic and clinical community in knowledge gained and it will thus guide future research. Further, regardless of the result of the research, it demonstrates that it is possible to do this kind of research to a world class standard in Scotland, that Scotland is open for this type of business, and is highly competent in delivery.

The companies involved in the project will benefit reputationally from delivering a project to a high Good Laboratory Practice (GLP) standard and working with a large number of partners. They will be able to use this exemplar as proof of delivery of their services.

With regards to benefits for the university, this is expected to result in a number of publications, and has allowed staff to work in a cross-disciplinary manner with other universities and industry partners, and to build long-lasting relationships. Further, grants in excess of £200,000 have been secured that would not have happened without this project.

Finally, if the results of the research are positive, this will have an impact on public health. Whilst no new treatment will be developed from this project, there is the potential for improved diagnostics which will help with targeting drugs more effectively.

Ovarian Cancer Exemplar Project

SMS			
Business partner(s)	Aridhia, Thermo Fisher		
HEI partner(s)	University of Edinburgh (lead)		
Total cost	Total: £900,434	SFC: £587,718	HEI: £312,716 in-kind
Project lifetime	March 2015 – September 2018		

The Project

The Ovarian Cancer project is one of five exemplar projects supported by SMS and is led by the Edinburgh Cancer Research Centre, based at the University of Edinburgh.

The project aims to help understand if a novel class of anti-cancer drugs, known as PARP inhibitors, can be extended into a wider group of high grade serious ovarian cancer (HGSOC) patients. Currently, the drug is only prescribed to around 15% of HGSOC patients who possess a genetic mutation that makes them receptive to it. For other patients, the drug is ineffective, and treatment is instead based on platinum based chemotherapy and resection surgery.

The study has set out to determine if similar genetic mutations can be found in other patients' tumour tissue, on the basis that an additional 35% of patients may have such a mutation. This would then allow for an extension of the license to use PARP inhibitor drugs to a wider proportion of patients.

The project has utilised the Ion-Torrent Personal Genome Machine platform, located at the SMS base in the Queen Elizabeth University Hospital in Glasgow. This is a Thermo Fisher device that is used for gene panel DNA sequencing, effectively translating chemical information into digital data. The initial cohort of samples has been provided by the University of Edinburgh (via the NHS), although in future samples will come from the University of Glasgow, University of Aberdeen and University of Dundee (all consortium SMS-IC partners).

SMS is also supporting the bio-informatician team through the use of its high capacity data centre, the aspect of the project which involves biomedical informatics specialists Aridhia.

The project will receive just over £900,000 in total funding, just under two-thirds of which (65%) is from the SMS core grant and the remainder from in-kind academic support.

SMS-IC were considered to have played a crucial role in bringing the project together. Although the academic partners involved have worked together previously, this is the first time that there has been a direct collaboration with the industry partners, Aridhia and Thermo Fisher.

Benefits

The primary benefit of the research will be to provide an evidence base of genetic sequence data from a cohort of HGSOC patients. This will help further understanding of the expected outcomes for patients with particular gene mutations with new anti-cancer drugs, and help identify patients suitable for future clinical trials.

The *"national effort"* behind the exemplar research, involving multiple partners, has reputational benefits for each of the organisations involved and the overall R&D landscape in Scotland. The academics overseeing the project have subsequently been approached by a major industry player who is set to provide funding for further collaborative research over the coming years. The ongoing SMS-funded project was a factor in helping to secure this.

For SMS-IC to continue working effectively, the lead academic partner in this project recommends that a strategy is developed for closer integration between biological data and clinical data. Bringing together existing clinical data in a meaningful and robust way will help increase the utility of SMS and make it more attractive to industry.

Load Bearing Flexible

OGIC			
Business partner	Hydrasun		
HEI partner	University of Strathclyde		
Total cost	Total: Phase 1 -£24,560 Phase 2 - £34,114	SFC: Phase 1 -£12,280 Phase 2 - £17,057	Industry: Phase 1 -£12,280 Phase 2 - £17,057
Project lifetime	Phase 1 – December 2014 to January 2015 Phase 2 – October 2015 to January 2016		

Background

Hydrasun is an Aberdeen based multi-national company that provides integrated fluid transfer, power and control systems to the energy, petrochemical, marine, and utilities industries worldwide.

Hydrasun was looking to develop a new technology to improve light well intervention activities, which are maintenance activities of subsea oil wells without the use of a rig. The current technology uses steel coil tubing, which can fatigue quickly under adverse conditions. The new technology would involve the development of a load bearing flexible tube which would be more lightweight, flexible, more resistant to fatigue, and would allow the use of a smaller boat for interventions.

Hydrasun came into contact with OGIC due to a previous working relationship with a member of OGIC staff. They were very satisfied with all aspects of the initial contact and reported that OGIC were very good at facilitating the partnership with the University of Strathclyde. They were pleased that there was no constraints or limitations from OGIC on the scope of the project.

After discussing the scope of the project with Hydrasun, OGIC sent out a call to Scottish universities and received five responses. The University of Strathclyde's proposal was seen as far and away the most appealing, after Hydrasun met with shortlisted universities. The University of Strathclyde was appointed the university partner, and it was decided to proceed with a phase one project involving a small scale desk review for proof of concept.

The Project

Phase one was a success (proof of concept), and phase two funding was secured to test the product. This involved tensile testing, fatigue testing, tests to failure and hysteresis testing.

The project has been successful, and Hydrasun has completed its first sale. The fact that a university had undertaken the testing gave the product credibility, particularly as the University of Strathclyde has a good reputation/profile within the industry.

Hydrasun was very pleased with the work the University of Strathclyde undertook, as their previous experience of working with universities was that everything proceeds slowly. They surpassed and exceeded their expectations, particularly with regards to speed of response and thoroughness of reporting.

Benefits and Impacts

Hydrasun reported numerous benefits and impacts from the project, having increased their business and academic contacts, improved their technical understanding, undertook innovative activities and grew their market in Scotland.

Hydrasun reported significant impacts from the project, having already increased turnover and employment. They also anticipate further impacts in future, with total projected turnover impacts in the millions of pounds. In the absence of the project, only around half of these impacts would have been achieved, and would have been delayed by approximately a year.

Polymer Aerogel Blanket Development

OGIC			
Business partner	Blueshift International Materials		
HEI partner	University of Strathclyde		
Total cost	Total: Phase 1 -£40,000 Phase 2 - £300,000	SFC: Phase 1 -£20,000 Phase 2 - £150,000	Industry: Phase 1 -£20,000 Phase 2 - £150,000
Project lifetime	Phase 1 – April 2015 to August 2015 Phase 2 – December 2015 to March 2017		

Background

Blueshift International Materials is a Texas based materials company, specialising in the manufacture of polymer aerogels primarily used for insulation. Blueshift recently entered into discussions with a multi-national oil and gas company about supplying new insulation materials for their North Sea operations. This required the development of their core product to suit conditions in the North Sea and specialist expertise was sought to help them achieve this.

Blueshift came into contact with OGIC via SDI, as they lacked knowledge about the Scottish University sector and needed guidance on potential partners. Blueshift was very happy with OGIC's support to identify a university partner and in scoping out the project. In particular, they noted the speed at which the project progressed, the project's focus, and the professional manner in which it was orchestrated.

The initial meeting between Blueshift, OGIC and the University of Strathclyde was reported to be informative for both parties, with the aim being to get to know each other and the specifics of the project. It was decided to proceed with an initial, small scale proof of concept project. This was to examine both Blueshift's existing material, and to explore any alternative materials that may offer a more cost effective solution, before deciding whether to go on to a more involved phase two project.

The Project

Phase one was successful, and Blueshift was very keen for phase two to progress, however, at this point the global oil price fell, and price considerations became much more important for the prospective client. It was therefore decided that the focus of phase two should shift to a new, potentially cheaper, material proposed by the University of Strathclyde.

Phase two is approximately halfway completed, with the six person research team at the University of Strathclyde working in close contact with Blueshift. The material has been developed and the team is currently working on a prototype of sufficient size to test performance in the required conditions.

Benefits and Impacts

Results from phase two have been positive and both partners are optimistic about the potential outcomes. Whilst it is too early to predict specific impacts, Blueshift believes that it could potentially increase their revenues in excess of $10 million, and although it would be a more expensive product for the oil and gas industry than existing technology, it would result in improved operating efficiency and reduced costs overall.

Blueshift has also been in discussion with OGIC about establishing a manufacturing base in Scotland, however, this is dependent upon the results of the project and demand from the North Sea oil and gas industry.

Impacts for the University of Strathclyde to date have been substantial, with additional impacts expected in future. In particular, impacts noted were improved career prospects for academics involved, as well as a positive reputational impact for the University of Strathclyde as a whole. The project:

- has been submitted as a case study to the Research Excellence Framework (REF);
- will lead to a number of research publications;
- has leveraged in additional funding for a PhD studentship;
- has been presented at major international conferences;
- has forged inter-departmental links; and
- has opened up a whole new avenue of research for the department.

Furthermore, the project is also generating rich fundamental and applied knowledge for the relevant industry and research community. The novel materials developed in this project will be utilised in industrial sectors where energy conservation is prominent to their operational performance and responsibility for the environment.

Scottish Shellfish Internship

SAIC				
Business partner(s)	Scottish Shellfish			
HEI partner(s)	University of Stirling			
Total cost	Total: £9,461	SAIC (SFC): £3,861	Industry: £1,750 (cash) £1,750 (in-kind)	HEI: £2,100 (in-kind)
Project lifetime	13 weeks, May 2016 – August 2016			

Background

Scottish Shellfish are a farmer cooperative concerned with the growing and packing of live and added value mussels. The business sought to optimise the quality of their product by refining the logistics process of moving the product from farm to retailer.

It was originally envisaged to be a student project in the SAIC funded MSc programme, however, none of the students in the current SAIC Scholars cohort chose the project. Once it was clear that the project was not going ahead, and the appetite from the commercial partner to progress this work without delay was strong, SAIC contacted the University of Stirling to see if the project could be progressed in other ways. After consultation with Scottish Shellfish, SAIC agreed to fund an internship for the project and SAIC identified an ideal, highly motivated candidate, who had experience of working with local shellfish growers and retailers within the Oban area.

The intern, Dan Mulqueen, found out about the project through his contacts with SAIC and was offered the opportunity to undertake this commercially focused, MSc project level study this year, based on the good impression he had made with SAIC during his Life Sciences CV competition ScotGrad internship with the team in 2015.

The Project

The project focused on the transport of live mussels from the mussel processing factory to the retailer. The product is currently transported in a net and a modified atmosphere packaging (MAP) environment.

Scottish Shellfish had carried out an initial pilot trial to test the hypothesis that storing and transporting the mussels in an iced environment would reduce mortality at the end of shelf life.

This trial had highlighted that there was a reduction in mortality, however this lacked scientific rigour, and the academic-supervised project therefore aimed to robustly assess the effectiveness of different packaging techniques using scientific methods.

The project also required discussion and agreement with Scottish Shellfish's customers in the major retailers.

The main focus has been on the usage of an ice and polystyrene package environment, which has had initial positive results in terms of both weight loss and survivability, with a potential reduction in mortality from 10% to 1%.

The remainder of the internship will focus on refining these results and designing a code of practice on alternative packing methods. Any future research beyond this internship will focus on the farm to processing plant leg of the journey.

Benefits and Impacts

The project has provided a number of benefits for Scottish Shellfish, the intern, the retailer and final consumers. The main outcome of the project will be optimised quality for key stakeholders in the supply chain. In the future this could lead to better efficiency in the processing factory, and better yields for Scottish Shellfish and the mussel farmer. There is also potential, in the long term, for this to lead to increased retail sales.

For the intern, there has been a significant impact, in the first instance this project has allowed him to have an insight into the inner workings of a successful food processing business in Scotland. In addition to this, the interaction in the workplace and the cross functional nature of the project has increased his confidence, his motivation and has given him a clearer idea of what he wants to do with his career. He is planning on undertaking an MSc at the University of Stirling and then moving into the industry. He has also made some excellent connections in the industry, and has been used as an example in his university course, having given a number of presentations to fellow students.

For the business it has allowed the academically robust trial to continue as a stand-alone project and be conducted separately from the day to day operational practices. A clear outcome of the project is that Scottish Shellfish will have validated, robust data in the form of a report that can be shared with key stakeholders in the process e.g. retailers.In the absence of SAIC support, this internship would not have gone ahead, and the project would have been delayed until the following year's MSc programme.

Wrasse in the Salmon Industry

SAIC				
Business partner(s)	Marine Harvest Scotland, Scottish Sea Farms, BioMar			
HEI partner(s)	University of Stirling			
Total cost	Total: £4,051,425	SFC: £831,530	Industry: £2,212,150 £799,862 In-kind	HEI: £207,883 In-kind
Project lifetime	June 2015 – November 2018			

Background

The project is a large scale collaboration between a number of major players in the Scottish aquaculture industry, jointly led by Marine Harvest Scotland and Scottish Sea Farms, aimed at tackling the long standing problem of sea lice in the farmed salmon industry. The objective of the project is the scaling up of Wrasse production, which are a fish that can be introduced to salmon cages to feed on sea lice.

Marine Harvest Scotland and Scottish Sea Farms have been domesticating Wrasse since 2010 and participated in a three year Innovate UK funded project with the same partners to achieve similar aims, however, this was only partially successful, and there was a clear need for additional work.

There were two main reasons for accessing support from SAIC, firstly, the partners needed additional financial resource to undertake the project at the necessary scale, and secondly, there was a need for an organisation to act in a coordinating role to bring structure to the project.

The Project

The project has four workstreams:

- Broodstock and genetics – to develop a sustainable stream of eggs from captive Wrasse with the right genetic profile through selective breeding;
- Nutrition – to develop feed for the Wrasse that maximises size and longevity, whilst minimising costs;

- Health – developing processes, medications and vaccines to ensure the health of the Wrasse; and
- Deployment – the testing of Wrasse in live salmon cages.

The four workstreams cover the entire lifecycle of Wrasse and have made great strides in developing a commercial Wrasse production operation. The project is currently able to produce around 200,000 Wrasse per year, although this is still a fraction of the requirement.

There are still a number of elements that are unresolved, however, the partners now have a much greater understanding of Wrasse and its needs, and all are confident of a successful conclusion of the project.

Benefits and Impacts

All partners reported substantial benefits and impacts from the project - networking, knowledge and innovation benefits, as well as entering new, and growing existing markets in the future.

Scottish Sea Farms, Marine Harvest Scotland and Biomar identified financial and employment impacts, with the creation of millions of pounds of turnover and cost savings over the next three years, as well as substantial increases in employment.

The main benefits for the University of Stirling has been the strong reputational impact on the department, which is becoming recognised as a world leader in the field, with the project lead chairing the conference on cleaner fish at the upcoming European Aquaculture Society conference in Edinburgh.

Further impacts include – approximately ten publications across a number of journals; the publication of a book; and the funding of four active PhDs, most of which is additional to the project.

The majority of the impacts would not have happened in the absence of SAIC support - while some kind of project would have happened anyway, this would likely have been smaller scale and the impacts would have been realised much later.

Machinery Condition Management

CENSIS				
Business partner(s)	Scottish Water			
HEI partner(s)	University of Strathclyde			
Other partner(s)	N/A			
Total cost	Total: £134,000	SFC: £50,000	Industry: £30,000 £30,000 In-kind	HEI: £24,000 In-kind
Project lifetime	Q4 2014 – Q4 2015			

Background

Shortly after CENSIS launched in 2013, the Innovation Centre opened a call for proposals.

Academics from the Electronic and Electrical Engineering department at the University of Strathclye, together with exisiting contacts at Scottish Water, developed and submitted a proposal to determine if, and what, efficiencies could be made at water and waste water pump stations throughout Scotland.

The proposal was one of the first projects to receive approval from CENSIS. The University of Strathclye was generally satisfied with the application process, and reported that it has been refined over time.

Project

The University of Strathclye led the project with six academics contributing to the study: including one principal investigator who had overall responsibility for the project and a Research Assistant.

A number of early stage meetings were held with Scottish Water to gain contextual understanding of different pump stations in Scotland (large vs. small, rural vs. urban) and to decide which pump station(s) would be the focus of the study.

Scottish Water chose a larger pump station and provided the academic team with access to waterflow rates data for analysis.

The team analysed the data to determine the most efficient number of pumps (one, two or three) that needed to be operational, depending on the flow of water and other contributing factors. By doing so, the University of Strathclyde has developed a set of pararmeters for optimum operating efficiency which Scottish Water could, in theory, now apply to all of their pump stations.

Benefits

Funding from CENSIS enabled the department within the University of Strathclyde to employ a research assistant for the duration of the study. The successful applicant was a mechanical engineer with experience in control theory, thus bringing both mechanical and electrical engineering knowledge to the study.

The project also enabled the Principle Investigator to further her research within the university resulting in a presentation at an international water conference.

Although the department already had connections with Scottish Water, the project enabled the team to develop this further.

The Electronic and Electrical Engineering department at the University of Strathclyde is now involved in other academic-to-industry collaborative projects with CENSIS and with other ICs (The Data Lab).

As the outcome of the project was successful, Scottish Water now has the facility to further test the efficiencies in other pump stations. Longer term this could result in both cost and energy savings for Scottish Water as running pump stations use large quantities of energy.

Intelligent Self-Learning Sensors

CENSIS				
Business partner(s)	Gas Sensing Solutions Ltd (www.gassensing.co.uk)			
HEI partner(s)	Glasgow Caledonian University			
Other partner(s)	N/A			
Total cost	Total: £150,000	SFC: £75,000 cash £0 in-kind	Industry: £4,000 cash £71,000 in-kind	HEI: £0 cash £0 in-kind
Project lifetime	August 2014 – June 2016			

Background

Gas Sensing Solutions (GSS) is a Scottish based SME that designs and manufactures the world's lowest power consumption carbon dioxide gas sensors.

The current project emerged as a result of a previously funded Innovate UK project. The project looked to determine the feasibility of using Glasgow Caledonian University (GCU) random neural network algorithms to provide an intelligent self-learning (ISL) software platform for the GSS carbon dioxide gas sensors.

A key goal was use of ISL capability to analyse GSS carbon dioxide gas sensor outputs as a means of establishing people occupancy in buildings – monitoring of exhaled carbon dioxide level provides a means of detecting people. This data provides necessary information for automated efficient power control of air conditioning systems and air quality for peoples' wellbeing.

GSS approached GCU after finding out about their ISL capabilities through the GCU Business Development department. The team worked together to undertake the Innovate UK feasibility study, and then approached CENSIS for funding to further test the sensor, develop a deployment strategy for the ISL carbon dioxide sensor, and develop a plan for commercialisation. The funding provided by CENSIS "*complemented the Innovate UK funding*" and allowed the team to advance the project to the next stage.

Both partners were satisfied with the support provided by CENSIS: the application process was straightforward, the funding options suited their needs, staff members were attentive, and ensured the project's momentum was maintained at a steady rate.

Project

Together GSS and GCU have successfully tested the ISL sensor technology. The technology was tested within an environmental chamber at Glasgow Caledonian University. The results enabled academic staff to develop an algorithm to determine optimum built environment operating conditions based on people occupancy. The technology was further tested in live scenarios on three occasions within lecture theatres at the University.

The next step is to test the ISL sensor technology at a major global end user company and explore opportunities for commercialisation of the product.

Benefits

The project has been a positive experience for both partners involved. Firstly, GSS has benefited from:

- increased contacts within the private and academic sectors;
- developed a closer relationship with CENSIS and have subsequently become involved in other industry-academia collaborations;
- increased their awareness of funding options; and
- increased the promotion and marketing of GSS by using the application based publications.

GSS also anticipates to experience business impacts as a direct result of the support. The project is likely to result in an increase of turnover of between 20-40% in their building application area and in turn will increase employment by three or four FTE positions.

As for Glasgow Caledonian University, the academic has benefited from:

- verifying the successful use of the sensing technology for the built environment; and
- high impact publication of study findings.

Optimising the Production of a Biologically Active Microalgal Polysaccharide

IBioIC				
Business partner(s)	Glycomar Ltd (with Micro A A/S)			
HEI partner(s)	SAMS, University of Strathclyde, Edinburgh Complex Fluid Partnership			
Other partner(s)	N/A			
Total cost	Total: £218,134	SFC: £139,606	Industry: £43,627 (in-kind)	HEI: £34,901 (in-kind)
Project lifetime	2015/16 Q1 – 2015/16 Q4			

Background

Polysaccharide is a novel chemical produced by a microalgae, a marine micro-organism. The chemical has a wide range of potential uses and is being developed for application in wound care and cosmetics.

The main industry partner for the project was Glycomar Ltd, a biotechnology company based at the European Centre for Marine Biotechnology near Oban. A number of academic partners were involved in the project, from the nearby Scottish Association for Marine Science (SAMS), University of Strathclyde, and the Edinburgh Complex Fluids Partnership, based at the University of Edinburgh. Glycomar had previous experience of working with HEIs in Scotland, including a number of the academics involved with the project.

Micro A are a Norwegian company with ownership of patented photobioreactor technology, which using light, seawater and carbon dioxide, creates the conditions necessary for industrial-scale cultivation of algae.

Project

The project aimed to identify a strain of microalgae with the optimum yield of polysaccharides and to assess its viability for commercial use. In doing so, the project partners hoped to develop the UK's first example of a new, high value product from marine biotechnology, using microalgae for sustainable IB production.

A number of different strains of *Prasinococcus capsulatus* – a type of algae – were tested, with one particular strain identified as the optimum for industrial production.

Just under two-thirds of project funding came from IBioIC's SFC core funding, with the remainder in-kind funding from the industry and HEI partners.

Benefits

Although Glycomar's relationship with Micro A predates their involvement with IBioIC, the collaboration with the Innovation Centre allowed efficiency savings to be made with their joint activity, and contributed to the development of new IP.

Overall, the project has furthered understanding of polysaccharide production and brought it closer to industrial cultivation. The project met Glycomar's expectations at the outset, with most of the technical objectives achieved.

The success of their continued collaborative activity has seen Glycomar and Micro A form a new joint venture, Prasinotech.

Glycomar estimate this will achieve new turnover of £250,000 and employment of four FTEs within three years. Prasinotech will implement the manufacture of high value polysaccharide products from microalgae, and is the first company in the world to specialise in this field. The company's first products are Prasinoguard and PrasinoPS, active ingredients for use in cosmetic skincare, such as anti-inflammatory products.

Glycomar has had some wider involvement with IBioIC, including a seat on its Commercial Advisory Board, and have attended various events and conferences. The networking opportunities it has provided have been of particular value.

Optimising Biotechnological Protein Expression Through Predictive Management of Cellular Translation

IBioIC				
Business partner(s)	Ingenza			
HEI partner(s)	University of Aberdeen			
Other partner(s)	N/A			
Total cost	Total: £281,814	SFC: £112,870	Industry: £140,727 (in-kind)	HEI: £28,217 (in-kind)
Project lifetime	Q3 2014/15 – Q3 2015/16			

Background

Ingenza, a Scottish SME, is a world leader in the application of IB and synthetic biology. They are a founding member of IBioIC and one of two companies with 'Leading Member' status, meaning they are centrally involved in its governance structure.

Synthetic biology is the process of more predictably genetically engineering organisms to produce industrial products, by controlling use of the biochemical pathways within them and introducing new ones. However, adapting the chemical pathways within an organism is typically a highly iterative process, and reducing the required number of design-test cycles is a complex challenge which this project sought to advance.

Project

The project brought Ingenza together with the University of Aberdeen. It aimed to develop a system to predict and then control part of the biological system related to the synthesis of proteins. The team developed a mathematical model to predict how the expression of recombinant proteins impacts upon the concentration of 'transfer RNA', which are the molecules in a cell that deliver the building blocks for protein synthesis. This model allowed the team to optimise the sequences of the genes encoding important commercial protein targets to ensure more effective synthesis and a higher yield of protein.

In effect, Ingenza provided the university team with problems, i.e. proteins that were not folding or synthesising correctly, which the university adapted their mathematical model towards solving.

The overall results of the project were variable, as expected for such a complex and general biological challenge – although the model did not work in every scenario, it did lead to instances where there was better protein expression than would have been possible without it, including synthesis of a high value biologic. It has furthered the understanding of this emerging field and allowed the development of an academically-validated model, an 'enabling technology', which could have much wider applicability in biotechnology.

Benefits

The project proved to be mutually beneficial for all partners.

It gave the university an opportunity to work in what was a relatively unusual project, combining both theoretical modelling and experimentation. The collaboration ran smoothly, with the university commenting on how easy it was to interact with Ingenza and on the company's openness to academic interaction.

For Ingenza, the primary benefit has been an ability to modify the gene sequence used to create proteins in *E. coli*, a process which is now around 20% more productive than previously. This has pharmaceutical applications and, as Ingenza own commercial rights to the modified gene sequence, may be licensed out in future to drug companies.

Additionally, the project has been used by Ingenza as a demonstrable example of their capability in redesigning genes that contain high value proteins. The work completed with the University of Aberdeen is now something which they can show to potential customers, and present at international symposia.

The model has also been applied to predict optimum gene sequences in some of Ingenza's other customer programmes, with end-users in plastics and rubber, helping to move processes from feasibility stage to commercial viability.

Ingenza continue to play a key role in IBioIC and have participated in a number of different funded-projects, with various partners. The company believes the networking role of IBioIC to be crucial, particularly in bringing potential end-users of biotechnology feedstocks to the table. As with this project, IBioIC can also help identify enabling technologies within universities and signpost them to industry partners that can apply them commercially.

Amiqus

The Data Lab				
Business partner(s)	Amiqus Resolution Ltd			
HEI partner(s)	University of Strathclyde			
Other partner(s)	N/A			
Total cost	Total: £33,856	SFC: £22,285	Industry: £6,000 (in-kind)	HEI: £5,571 (in-kind)
Project lifetime	Q2 2015/16 – Q3 2015/16			

Background

Amiqus is a digital start-up that aims to utilise open data to automate the process of resolving commercial disputes, and to make legal assistance more accessible for SMEs.

The software being developed will have a user based search feature, which will function by 'text mining' through an extensive database of case law and legal data to predict the outcome of a dispute if it was taken to court. This 'disruptive' process will allow all sides to make an informed decision on the best route forward, in view of avoiding a lengthy and costly court case.

Founder Callum Murray approached The Data Lab for support on the recommendation of the Scottish Edge Fund, with this being his first collaborative research project with a Scottish HEI. Through The Data Lab, Amiqus have pursued a project with the University of Strathclyde. This was felt to be a good fit due to Callum's prior knowledge of the university's law school, and its computer science expertise. The project involves input from both departments.

Project

The project has a total value of £33,856, two-thirds of which was secured through The Data Lab's SFC core funding. The remainder is comprised of in-kind funding from Amiqus and the University.

Research has focused on two core components. One aspect has involved understanding where legal data currently sits and agreeing access to it, with input from the University law school. The other aspect has focused on data science, particularly language processing and complex search processes known as deep learning. This is to ensure that the programme's search algorithms bring up the most relevant legislation and case histories and that it provides an accurate prediction for users.

Benefits

Having initially approached The Data Lab with an ambitious proposal valued at £150,000, Amiqus were advised to reapply with a more manageable sized project. This was a helpful learning experience and the business feel they are now better equipped to deal with any larger scale collaborative projects that may follow.

The current project is now on track to deliver its objectives, with an early working prototype in development. Callum believes what they have managed to achieve to date with the funding will prove crucial to the future development of Amiqus:

"Now we can prove outcomes, it's much easier to access finance – these small pockets of funding are very important as you can do a lot with them and it leads on to much more once your credibility is established."

Within three years, predicted annual turnover from the software under development is £3.7m, with employment reaching 20 FTEs.

Amiqus have experienced a range of benefits from their engagement with The Data Lab, on top of the technical expertise it has allowed them to access. Of particular note has been networking opportunities, including introductions to foreign government officials who expressed an interest in the project, and access to court statisticians in the UK.

Callum has also been a speaker at a Data Lab meet-up, giving him the opportunity to talk through the practical applications of Amiqus' project with an audience of 100 people.

Data Talent Scotland

The Data Lab	
Business partner(s)	Co-organised with We Are The Future and MBN Solutions. Various private sector participants.
HEI partner(s)	11 HEI participants
Other partner(s)	Various public sector participants (e.g. NHS National Services Scotland)
Total cost	£23,300 (The event made £26,100 in sponsorship and ticket sales income – this was split between the three organising partners)
Project lifetime	One day event - 16 March 2016

Event Background

Data Talent Scotland was a one day talent collider event held at the Assembly Rooms in Edinburgh, in March 2016. The event aimed to scale up the activities of The Data Lab by bringing together students at all 11 Scottish universities that offer relevant courses, with industry and public sector employers. In doing so, The Data Lab could reach out further than the 40 MSc students (in three universities) that had direct funding from The Data Lab in 2015/16.

Through the event, The Data Lab hoped to establish itself as a catalyser for driving value through data, and a key point of access/a network for data skills and talent in Scotland and beyond.

The event exceeded expectations in terms of both attendance and impact, with around 500 delegates attending on the day. It was organised by The Data Lab in partnership with We Are The Future, an Edinburgh based events management business focused on entrepreneurship and start-ups, and MBN Solutions, a recruitment business focused on the digital/tech sector, on a profit sharing basis.

The event featured a number of workshops and keynote speakers, as well as exhibitors. Feedback from students was positive but indicated that they would have benefited from more time to network and build contacts, which is now likely to be built into future events of this kind.

As well as attracting a large number of students and data science enthusiasts, The Data Lab feel that the event was successful in attracting businesses from the sector. The event offered academics, students, industry and public sector representatives a rare opportunity to be in the same room together. Around 100 corporate tickets were sold with 30-35 exhibitors, while ten free places were offered to start-up businesses.


Image: The Data Lab

Benefits

NHS National Services Scotland (NHS NSS), which provides information and intelligence advice and services to all Health Boards across Scotland, exhibited at the event and ran a workshop focusing on how data can transform healthcare. One of the key benefits for the organisation was being able to network with students within the field of data science. The organisation has seen a spike in interest in their latest round of graduate recruitment, and the involvement with the talent collider event has been a factor in this rise. For NHS NSS, the event also had the unexpected benefit of enabling networking with SMEs active in data science and, as a potential customer, helped improve their understanding of the sector in Scotland.

The IC will be contacting industry/public sector attendees in due course to monitor any job-creation impacts that have come from the event, although they understand that around ten students have already gained employment from contact made at the talent collider.

Plans are now underway for an expanded talent collider event in March 2017, in a larger venue, Murrayfield. This will be one of the key anchor events in the inaugural week-long DataFest, the other being a two day international conference, supported by events – such as hackathons and meet-ups – held nationally. An advisory group for the festival is being finalised, and will focus on how The Data Lab can use the festival to continue scaling up their impact and attracting data science businesses to locate or expand their presence in Scotland.

Scottish Scenic Routes: Year 3

CSIC		
Business partner(s)	Ian Whyte Associates	
HEI partner(s)	University of Strathclyde, University of Edinburgh, University of Dundee	
Other partner(s)	Cairngorms National Park Authority, Loch Lomond and the Trossachs National Park, Visit Scotland, Scottish Canals, Sustrans, Transport Scotland, Scottish Natural Heritage, Architecture and Design Scotland, Timber Design Initiatives	
Total cost	Total: £325,864	Public Sector: £325,864 cash
Project lifetime	May 2015 - September 2016	

Background

The Scottish Scenic Routes Initiative is a project to enhance the visitor experience of Scotland's landscape through the creation of innovatively designed viewpoints and landscape features. The initiative has three key aims:

- to enhance Scotland's tourism infrastructure by creating new and innovative design and construction along Scotland's scenic routes;
- to support employment and the economies of rural communities in often remote parts of Scotland; and
- to showcase through design competitions the work of emerging designers and to give the winning participants experience, mentoring and the chance to see these early career opportunities realised in full scale physical form.

Funding for the initiative was provided by Scottish Government and the project was supported by a wide range of partners including, but not limited to: Cairngorms National Park Authority, Scottish Canals, Loch Lomond and the Trossachs National Park and Edinburgh Napier University. The first two years were successful and four structures were delivered.

Scottish Government approached CSIC in advance of the third year of the Initiative to support links with academia and industry partners, and to promote the Initiative as an opportunity for innovation in architecture, landscape architecture, design, and construction.

Project

The third year of the Initiative focused on two locations within the Cairngorms National Park - Tomintoul, Devil's Elbow – and another, Banavie, near Fort William. A total of 72 proposals were received and were whittled down by the judging panel to up to four entries each site to go onto phase two. Eleven shortlisted entries were granted £1,000 to further develop their proposals. The judging panel then selected the two winners – one for Tomintoul and one for Devil's Elbow.

No winner was selected for Banavie as the submissions were deemed insufficiently robust in addressing the complex range of design challenges posed by the site.

The two successful winners were awarded a prize and provided with further support to develop their design. Winners were mentored by Ian Whyte Associates (commissioned to project manage the design element of the study by the Cairngorms National Park Authority).

Construction is currently underway at both locations and are due to be completed by end of summer/start of autumn 2016. Overall those involved it the project were satisfied with the IC. In particular CSIC was praised for their ability to unite the wide range of partners involved with the study and ensuring project momentum. This was especially true as a number of partners are volunteering their time to the project.

Benefits and Impacts

A number of benefits have already been experienced as a result of the project: partners have:

- increased the number of business/public sector/academic contacts;
- developed technical understanding;
- tested and adopted new technology;
- improved their awareness of public sector support;
- anticipate securing new public sector funding in future; and
- anticipate developing new products.

The competition winners have also been able to develop new skills, turn their designs into physical structures, and increase their design portfolio. Visitors to the area will also benefit in future from improved services i.e. improved walking/cycling routes, and local businesses are anticipated to benefit from increased visitor/tourist spend.

Offsite Hub Consortium

CSIC					
Business partner(s)	CCG Ltd, Alexanders Timber Design, Carbon Dynamic, Makar, Scotframe, Oregon Timber Frame, Stewart Milne Timber Systems				
HEI partner(s)	Napier University				
Other partner(s)	Scottish Enterprise; SDI				
Total cost	Total: £188,576	SFC: £29,640 cash £2,500 in-kind	Industry: £35,000 cash £64,626 in-kind	HEI: £6,000 cash £9,080 in-kind	Public Sector: £20,000 cash £21,730 in-kind
Project lifetime	February 2016 – September 2016				

Background

The Offsite Hub Consortium was borne out of a UK Commission for Employment and Skills (UKCES) funded project that sought to identify a solution to the skills shortage and gaps in relation to offsite construction in Scotland. In undertaking the first project Edinburgh Napier University, together with Heriot-Watt University, CCG Ltd and Stewart Milne Timber Systems found the disparate nature of the construction sector often meant companies were facing the same or similar challenges which they were each trying to overcome individually. It became apparent that a consortium of industry, public sector and academia could begin to address the key challenges in a joined up and collaborative way.

Project

Scottish Enterprise and Scottish Development International funded an initial workshop that brought Edinburgh Napier University together with seven industry players[26] to develop a Construction Sector Strategy. A number of partners were aware of the newly developed CSIC and identified a series of key areas in which the CSIC could further support the industry:

- skills;
- branding and marketing;
- business models and strategies;
- innovation (product and process); and
- internationalisation.

[26] Alexanders Timber Design, Carbon Dynamic, CCG, Makar, Scotframe, Oregon Timber Frame, Stewart Milne Timber Systems

CCG Ltd reported the support had met their high expectations, and found the administrative function of CSIC to be of particular benefit to the project, as it can often be difficult to maintain momentum on a project that is not core business activity.

Progress

The project is progressing well and the consortium comprising of seven industry partners, one university and two public sector organisations have met on two occasions to discuss, define and refine the key objectives of the group. CSIC is acting as project manager for the study whilst Edinburgh Napier University is providing academic input and knowledge management for the community of practice.

Two international learning journeys were organised and attended by the group, as well as representatives from CSIC and SE/SDI – in Japan and the USA. The purpose was to undertake knowledge exchange on an international platform in relation to offsite hub construction. The next step is for the Consortium to formalise the work and learning undertaken to date and develop a platform for progressing with project ideas and solutions.

Benefits and Impacts

Although the Consortium is still relatively new, a number of benefits and impacts have been experienced. Firstly, trust has developed (and is continuing to develop) amongst the partners (across public, private and academic sectors). In a sector made up of many companies the timber subsector is developing a unified voice.

The project has also enabled a greater number of industry partners to be involved in the identification of issues and potential solutions. This means industry develops a greater responsibility and ownership of the tasks to be undertaken. It has included early contact and alignment with trade organisations e.g. Structural Timber Association to ensure resources are optimised efficiently and to establish opportunity and scope to work for collective benefit.

Edinburgh Napier University has also benefitted in a number of ways. Firstly, the international visits have further developed its international academic relationships, and Edinburgh Napier University are in talks to develop an international student exchange with the University of Utah. The Offsite Hub has also made the process of the university's engagement and collaboration with industry easier and more efficient. Lastly, the Scottish timber subsector has gained international promotion – both industry and academia presented at an international summit.

Appendix F: Non-Engaged Businesses

This Appendix presents the main findings from the telephone survey of businesses that have had limited or no engagement with ICs to date.

Summary

The study has sought to provide feedback from businesses that have had little or no engagement thus far with the IC Programme. This is not a large scale or representative survey and, as such, findings should be treated with caution. Feedback was secured from ten businesses.

Of interest is that there is a high level of awareness of ICs in Scotland among the businesses, with many reporting that they had some or a good understanding of the role and remit of ICs. This reflects the fact that most have had some contact or engagement with ICs. This includes, for example, attending events and seeking technical advice/support.

Positive messages from businesses centred on motivated and knowledgeable IC staff teams and that the support was tailored towards the needs of industry. Where more negative feedback was provided, this was in the main related to the constraints of SFC monies (it can only be used to support HEI input), it does not support business to business collaborations, and concerns around IP.

The businesses are in the main innovation active, having accessed a wide range of innovation support in recent years, including from the Enterprise Agencies, Innovate UK and Interface to name a few.

A positive finding is that over half reported that they would be likely or very likely to engage with ICs at some point in the future. Key areas for support and advice include product testing/validation and technical support for product development.

Background

All ICs were asked to provide a few contacts each that fell into the "non-engaged" category, with five ICs providing details for 33 businesses[27]. **Table F.1** provides details of the contact details provided and the number of interviews completed.

Table F.1: Non-Engaged Businesses

IC	Non-Engaged Businesses	Completed	% Complete
SAIC	3	2	67%
OGIC	3	2	67%
DHI	22	5	23%
CSIC	4	1	25%
CENSIS	1	0	0%
Total	**33**	**10**	**30%**

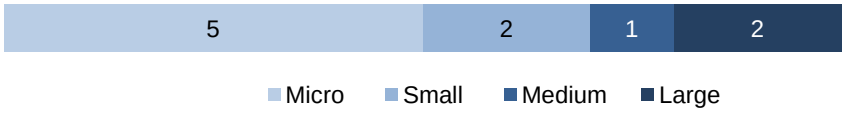
The overall target for the telephone survey of non-engaged businesses was 20 interviews.

Ten interviews were completed. With the exception of DHI contacts, all businesses were contacted three times. While we could have secured further interviews with DHI contacts, this would have skewed responses for what is a small-scale survey.

Background

All businesses are based in Scotland, with most well established and trading for more than ten years (six). Half of businesses are SMEs and half are micro businesses (fewer than 10 employees), **Figure F.1**.

Figure F.1: Size of Business



N=10

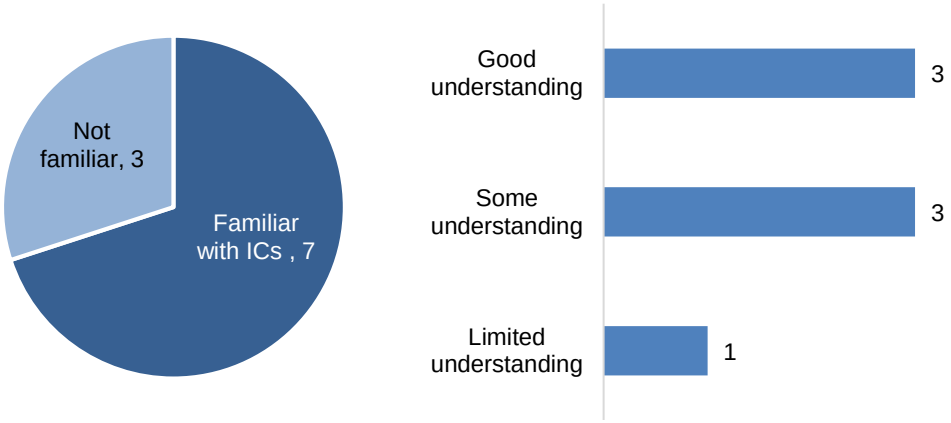
The businesses that took part in the survey operate in a range of sectors, including: aquaculture, oil and gas, construction, healthcare, defence/security, and IT/software.

[27] Two other ICs indicated that they could not think of any businesses in this category. Another IC provided two contact details but indicated there were some sensitivities around making contact (and as such were excluded).

Awareness and Understanding of ICs

There was a high level of awareness of ICs among non-engaged businesses. Seven businesses had heard of ICs in Scotland, most of whom reported that they had some or a good understanding of the different ways in which ICs could support their business. The main ways in which businesses had found out about ICs was through the Enterprise Agencies (SE/HIE) or from the IC (staff team or attended an event/conference).

Figure F.2: Awareness and Understanding of ICs



N=10

Where there was an awareness of ICs, most businesses commented that they understood the role to be that of stimulating innovation and supporting companies to make connections with the research expertise and capabilities within Scottish universities.

Wider comments were more specific to particular ICs – for example, DHI – where a business commented that its role was to assist businesses to develop and test new technologies and products which could then be supplied to the NHS. A further comment was that ICs were hubs - where similar businesses could be located and encouraged to work together, much like a business incubator.

Engagement with ICs

Almost all of the businesses that were aware of ICs have had some engagement with ICs (six). The main reasons for engagement were to:

- seek technical/product advice (two) – for one business contact with the IC is still at an early stage, but is progressing well and might lead to a project. The other business reported that there were some uncertainties regarding IP and decided not to progress engagement with the IC further;
- take part in networking opportunities (one) – the business reported that they were interested in attending industry-specific events to make new connections within the sector; and
- form a working relationship/connection (three) - three businesses did not require IC support as such, rather they considered themselves strategic partners of the IC (e.g. either working within the same 'community' or delivering complementary support).

The one other business that was aware of ICs has not engaged with the IC Programme to date. While they reported a limited understanding of the role of ICs they felt that their service offer was not appropriate to the needs of the business.

Views on Business Engagement Activity of ICs

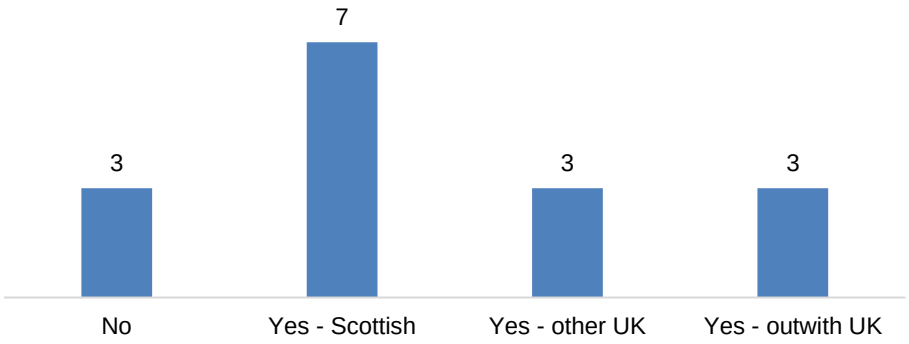
Four of the businesses that have engaged with ICs felt that they have effective business engagement mechanisms. The businesses commented on motivated and engaging staff teams within ICs with good sectoral knowledge, and that the service offering appeared tailored towards the needs of industry.

The main negative comment related to the funding constraints associated with SFC funding for ICs – and that monies can only be used to support HEI involvement (and not the business itself).

Collaborative Activity

Most businesses had prior experience of undertaking collaborative activity with universities, colleges or research institutes in Scotland and/or further afield (seven), **Figure F.3**.

Figure F.3: Collaborative Activity with Academic/Research Institutions



N=10, multiple responses allowed

The previous business-academia collaborations had been brokered in different ways, including: existing relationships with universities (three), strategic frameworks (two), direct contact by a university (one); through Interface (one); and EU funding (one).

Some businesses have, however, experienced barriers in accessing university expertise. The most common barriers reported were: that the interests of businesses and universities are too different, concerns about IP, and that university expertise is too expensive to access.

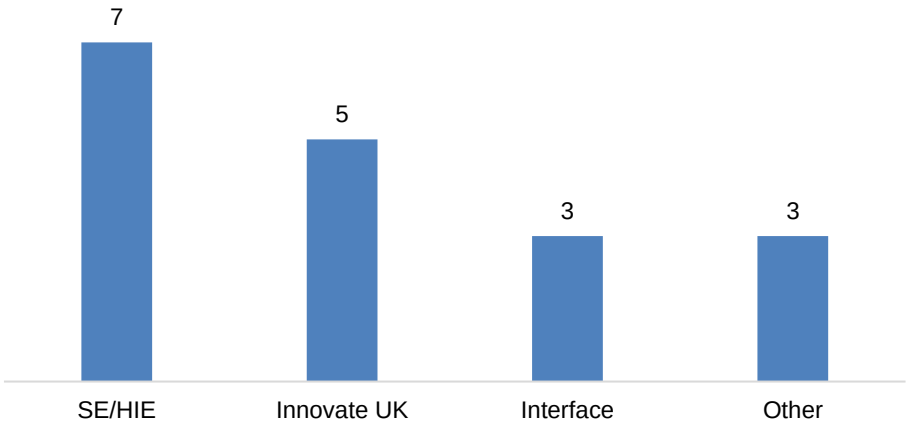
That being said, almost all of these businesses reported that they had a very positive attitude towards business-academia collaborative working (six).

Innovation Support Received

Most businesses have accessed support to increase their company's innovation within the last few years (eight). In the main this has been provided by the Enterprise Agencies in Scotland and Innovate UK (**Figure F.4**).

Other sources of support were accessed from Skills Development Scotland, Small Business Research Initiative, and Knowledge Transfer Network.

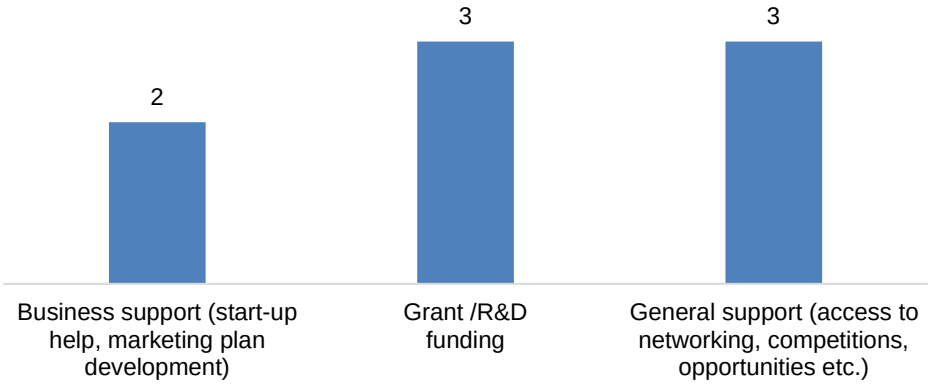
Figure F.4: Sources of Innovation Support Accessed



N=8, multiple responses allowed

Figure F.5 shows the most common types of innovation support businesses received – including a mix of advice, grant funding, networking, etc. The two businesses that have not accessed any support to increase innovation within the business felt that they did not need this type of support.

Figure F.5: Types of Innovation support

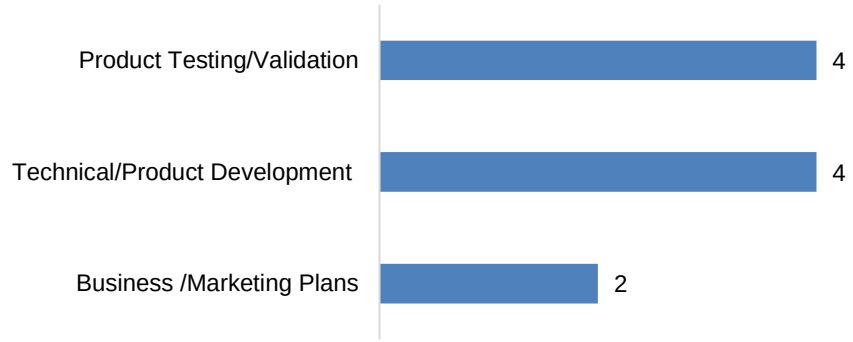


N=8

Future Engagement with ICs

Over half of non-engaged businesses indicated that they were likely/very likely to approach an IC for support in the future (six), and **Figure F.6** shows the main support needs identified.

Figure F.6: Future Support Needs



N=6, multiple responses allowed

Four businesses reported that they were unlikely to approach an IC in the future for support. One business regarded itself to be working in partnership with an IC, and whilst they did not require support they expected their engagement to continue at a more strategic level.

Other comments centred on limited interest in accessing innovation support, that ICs do not support close to market activity and commercialisation, and concerns about confidentiality and IP in particular.

Wider Comments on ICs

Some of the non-engaged businesses provided some final comments about the IC Programme, including the following:

- there were some concerns raised about confidentiality and IP (two);
- the ICs should increase awareness of the innovation support they provide and promote the benefits to businesses (one);
- ICs should focus more on being led by industry rather than trying to drive industry needs (one);
- ICs should not try to become self-financing and must not capitalise on businesses who are trying to grow and develop (one); and
- there is no shortage of innovation support available in Scotland, resulting in a fairly cluttered landscape - there needs to be more clarity about the support ICs provide and how it complements wider provision (one).