

**Evaluation of Enterprise  
Fellowships**

**Final Report for**

**Scottish Enterprise**

## Executive Summary

### Introduction and approach

Scottish Enterprise (SE) and the Royal Society of Edinburgh (RSE)'s Enterprise Fellowships programme targets researchers and innovators with entrepreneurial potential and a promising science and technology based business idea. It helps awardees grow their businesses via a year's salary, business training, business development funding and access to mentors, business experts and professional advisers.

The purpose of this study is to evaluate the findings of Phase III of the programme, which ran between 2008 and 2013, to understand whether it remains fit for purpose and identify whether there may be potential for improvement.

Our approach for this evaluation was predominately qualitative in nature, focussing on individual and group interviews to understand the extent to which the programme:

- remains on track to deliver the intended outputs and outcomes
- remains fit for purpose, and continues to align with SE's strategic objectives
- continues to operate effectively and identify potential areas for improvement

We based our research on:

- a review of programme documentation (including approval papers, relevant strategic documents, and SE customer relationship management system (CRM) data on Fellows businesses)
- interviews and focus groups with key stakeholders, including representatives from Scottish Enterprise, the Royal Society of Edinburgh, Scotland's Universities, the participating Research Councils, Ex-Fellows and the appointed training provider
- an e-survey of Ex-Fellows

### Strategic case for intervention and alignment to current strategy

The Enterprise Fellowships programme was launched in 1997, with the aim to *"increase the number of spin-out companies from Scottish Higher Education Institutions (HEIs) and to improve the level of understanding of commercialisation more generally within the academic sector"* and to *"increase the number of university researchers who are capable of initiating new businesses from their research"*.

The original 1997 programme was developed in response to the findings of the *Commercialisation Enquiry*, a 1996 joint study by SE and the RSE, and the recommendations of *Technology Ventures: Commercialising Scotland's Science and Technology*, the strategic document which came out of this review. The rationale for intervention for the original programme was based on imperfect information, market power and positive externalities.

Since the start of Phase III in April 2008, Scotland experienced a number of substantial changes in both its economic and strategic environments, including a global economic downturn; a re-focused economic development strategy for Scotland; and strategic changes within Scottish Enterprise such as the restructuring of Scottish Enterprise, the development of a rolling Business Plan, a refinement in the number of products offered, and the separation of its commercialisation and innovation teams. In spite of these changes, evidence from our consultations suggests that the programme continues to align with current economic development strategy in Scotland, and that the rationale for intervention remains.

## Performance analysis

Phase 3 of the Enterprise Fellows programme has funded 41 Fellows, many of whom operate in Scottish Enterprise's priority sectors, most notably digital and enabling technology. It has attracted applications from almost every university in Scotland, though some have proven more successful in their applications than others. Fellows also appear to be receiving appropriate follow-on support from SE following the completion of their Fellowship year.

## Primary research findings

As part of our analysis, we undertook:

- 17 interviews with key stakeholders from Scottish Enterprise, the Royal Society of Edinburgh, BBSRC, STFC, Scotland's universities and selection panel members
- two focus groups, each involving five former Enterprise Fellows
- one focus group involving four representatives from university technology transfer offices
- one focus group involving representatives from Scottish Enterprise

The stakeholders generally agreed that the awards were sufficiently resourced, both in terms of levels of financial support offered to Fellows, and the one year timeframe. In particular, there was a common view that the requirement to work towards a fixed deadline, one-year from appointment 'focused the mind' and helped deliver quick outcomes.

Overall, stakeholders appear to be highly satisfied with the programme and how it is operating. In particular, it is considered to be one of the only mechanisms available to support individuals in academic spin-outs, and that, without it, many technologies developed in Scottish universities may not be commercialised. The incremental improvements that have been made to the programme over the course of the past 16 years<sup>1</sup> were cited as a key advantage.

While a detailed cost benefit analysis of the programme is out with the scope of this research, the majority of consultation participants were of the opinion that the programme offers good value for money and that the average cost per supported individual (c.£90,000) was low when viewed in comparison to other commercialisation interventions, such as the Proof of Concept programme.

The issue of intellectual property remains a challenge for the programme, and we received differing, and often contradictory views from the different stakeholder groups, suggesting that poor communication and misunderstandings in this area may present a barrier to successful commercialisation.

Areas where stakeholders felt that the programme worked well included the quality of the new training provider, the flexibility of the programme to suit individual needs, and the number of new businesses and serial entrepreneurs it has helped to create in Scotland. Areas where it was felt that the programme worked less well included trust issues around access to ownership of intellectual property, IP, (there is a process of negotiation during which it is revealed that different parties often share differing views on the value of the IP and timescales involved), ownership and sub-optimal levels of marketing, and in particular the limited involvement of ex-Fellows in selling the benefits of the programme to prospective applicants.

## Conclusion and recommendations

Our research concludes that:

- **The programme works well:** and is continuously being improved
- **The rationale for intervention remains in place:** although significant progress has been made against it since the mid 1990's
- **The programme still aligns with Scottish Enterprise's strategic goals:** with the Phase 3 programme producing nine current or prospective High Growth Start-UP (HGSU) client companies
- **Enterprise Fellows should conduct more business development on an international scale:** and SDI and GlobalScot could both play a role in this regard
- **Marketing and promotion needs to improve:** and the RSE currently have plans in place to deliver these changes
- **The current two-call system works well:** allowing applicants to enter the programme more than once each year, but retaining a workable cohort size
- **The issue of intellectual property remains a challenge:** and in some cases a culture of mistrust has developed between the Technology Transfer Offices (TTOs) and the Fellow
- **Identifying mentors remains a challenge:** though this appears to be improving
- **TTOs are the gatekeepers to the programme in universities:** helping to 'sift out' bad applications, but possibly also leading to some strong applications not being submitted

Based on our research, we recommend that:

1. Given that the rationale for intervention still remains and the programme has resulted in a high proportion of potential companies of scale the programme should continue. We suggest that there should be improvements in the internal SE mechanisms to show how the positive contribution of the programme also contributes to other targets including Account Management and wider pipeline companies.
2. Scottish Development International and the GlobalScot team should be encouraged to take on a greater role in the programme. This would build on the role they currently play and ensure Enterprise Fellows are tapping into current SDI support mechanisms.
3. Scottish Enterprise should explore the possibility of increasing the £10,000 business development allowance, to allow Enterprise Fellows to undertake more international activities. This would include market research.
4. Scottish Enterprise and the Royal Society of Edinburgh should seek to expand their marketing and promotion activities – this would help increase the pool of potential applicants. Marketing activities could also take place in England (with the aim of drawing the most promising activity to Scotland) in partnership with the Research Councils to help prevent future under spends in councils budgets.
5. Given the current financial realities, Scottish Enterprise and the Royal Society of Edinburgh should explore opportunities to engage new public and private sector funders in the programme. This would allow the programme to continue to support a higher number of participants on each cohort.
6. SE, RSE and the universities should all work collectively towards the goal of increasing communication and trust on the issue of IP ownership. For example, the applicants' workshops could give more focus to the issue of IP, and to

encouraging TTOs and applicants to share their perspectives on the issue and learn from one another. This could be supported by allowing ex-Fellows to contribute to the discussions and share their experiences.

7. Mentors need to be assigned early in the process. There may be a role for ex-Fellows taking on a role in the programme as a mentor as many seem to be keen to 'give something back'.
8. RSE should maintain their strong relationship with the TTOs in their marketing activities, but should broaden their marketing to involve university Research Vice Principals and Heads of Departments in the programme (as key influencers of potential applications).

## 1 Introduction and Approach

The Enterprise Fellowships programme targets researchers and innovators who have entrepreneurial potential and a promising science and technology based business idea. Awardees are supported to grow their businesses via a year's salary, business training, business development funding and access to mentors, business experts and professional advisers.

The programme is run in partnership with the Royal Society of Edinburgh (RSE) which is currently grant funded to run the selection process and both make and administer the Fellowship awards. Delivery of the programme currently comprises of twice annual competitions with awards made for twelve month Fellowships commencing in April and October. The selection process requires the RSE to make award recommendations to SE. Marketing for the programme is led by the RSE with support from SE. Training and mentoring is delivered by a contractor identified via a public sector procurement process to equip the Fellows with the necessary skills, knowledge and experience required to enable them to successfully launch and/or grow their businesses.

The programme offers successful applicants twelve months salary support, training and mentoring, plus access to £5k business development costs and the opportunity to bid for a further £5k if required.

The 2007 evaluation of the programme identified a clear strategic rationale for this intervention, in addressing the disparity between Scotland's strong research infrastructure, and its weak track record in technology transfer. It also found that, between 2001 and 2006, the programme had:

- helped to establish 35 trading businesses, plus a further nine which were planning to commence trading
- helped to create over 220 new jobs
- led to a number of intangible benefits, including the retention of entrepreneurs and intellectual property which otherwise might be lost to other economies.

However, a lot has changed during the six years since this evaluation was completed. For example:

- all of the beneficiary businesses interviewed at this time are now six years further into their commercialisation journey
- the Scottish economy, which in 2007 had been experiencing the longest period of uninterrupted growth in modern history preceded the longest period of economic decline (the Office for Budget Responsibility currently predicts 'lost ground' from 2008 economic highs will not be recouped until 2014-15)
- the *Smart, Successful Scotland* strategy and Labour-Liberal Democrat coalition of March 2007 has now been replaced by an SNP administration and the *Government Economic Strategy*
- Scottish Enterprise (SE) has undertaken a significant change in direction with regards to commercialisation, and is working towards a new business plan aimed at creating 'companies of scale' with the potential to either achieve £5 million in turnover or £10 million in investment within five years of trading.

The purpose of this study is to evaluate the findings of Phase III of the programme, which ran between 2008 and 2013, to better understand what aspects of the programme work well, and where there is scope for improvement<sup>2</sup>.

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<sup>2</sup> Due to the interconnectedness of SE's suite of commercialisation support products, it is inappropriate to seek to isolate the economic impact of any one particular product. Instead, SE seeks to measure the impact of its entire suite of support through its on-going longitudinal evaluation of its commercialisation activities. The findings of phase 2 of this evaluation, conducted in 2011, is available at [www.evaluationonline.org.uk](http://www.evaluationonline.org.uk)  
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Our approach for this evaluation was predominately qualitative in nature, focussing on individual and group interviews to understand the extent to which the programme:

- remains on track to deliver the intended outputs and outcomes
- remains fit for purpose, and continues to align with SE's strategic objectives
- continues to operate effectively, or whether it could be improved upon

We based our research on:

- a review of programme documentation (including approval papers, relevant strategic documents, and SE customer relationship management system (CRM) data on Fellows businesses
- interviews and focus groups with key stakeholders, including representatives from Scottish Enterprise, the Royal Society of Edinburgh, Scotland's Universities, the participating Research Councils, Ex-Fellows and the appointed training provider
- an e-survey of Ex-Fellows

## 2 Strategic Case for Intervention and Alignment to Current Strategy

### 2.1 Summary

The programme was first developed in 1997 in response to identified market failures that were present at that time. In the years since, the programme has evolved in line with the changes that have taken place in Scotland's economy and policy environment, and it continues to contribute to Scotland's economic development strategy, and the strategic priorities of Scottish Enterprise.

### 2.2 Rationale for original intervention

The Enterprise Fellowships programme was launched in 1997, with the aim to "increase the number of spin-out companies from Scottish Higher Education Institutions (HEIs) and to improve the level of understanding of commercialisation more generally within the academic sector" and to "increase the number of university researchers who are capable of initiating new businesses from their research".

The original 1997 programme was developed in response to the findings of the *Commercialisation Enquiry*, a 1996 joint study by Scottish Enterprise and the Royal Society of Edinburgh, and the recommendations of *Technology Ventures: Commercialising Scotland's Science and Technology*, the strategic document which came out of this review.

The rationale for intervention for the original programme was based on:

- **imperfect information** – Scotland's academic establishments had a successful track record of developing technologies with market potential, many of the individuals working in Scotland's university lacked the knowledge necessary to develop a business plan, attract investment and effectively market their product to customers
- **market power** – setting up a business requires a significant amount of time and financial investment on the part of the entrepreneur. This presents a 'barrier to entry' that makes it difficult for a new start business to compete with companies already in the market place
- **positive externalities** – as well as bringing personal benefits to the Enterprise Fellow, a technology based start-up also brings benefits to Scotland as a whole, through employment, tax contributions, spill-overs to other businesses and the contribution of export sales to the balance of payments

### 2.3 Case for Phase III programme

Phase III of the programme was launched in 2008. The strategic case for this intervention was based around:

- alignment with the *Smart, Successful Scotland* strategy – the programme contributed to Scotland's economic development strategy of the time, and particularly:
  - its contribution towards the objective of "taking forward entrepreneurial dynamism and research & development to deliver innovative companies growing in scale"
  - its commitment to "success in partnership" through stakeholder engagement with the academic and business sectors as well as through partnership with the Royal Society of Edinburgh
- alignment with the Scottish Enterprise *Growing Businesses Strategy* – the



programme contributed to the Scottish Enterprise strategy of the time by:

- targeting resources into Scottish Enterprise's key industries (both National and regional)
- supporting the creation of knowledge intensive starts (spin-outs) which have the potential to grow, using innovation to achieve their competitive advantage
- supporting the development of businesses which have the potential to conduct R&D and absorb the knowledge arising from R&D, thereby increasing the numbers of businesses across Scotland which have the potential to participate in business R&D

Evidence from our stakeholder consultations suggest that the programme continues to contribute to Scotland's strategic goals in all of these intended ways.

## 2.4 Alignment to current strategy

Since the start of the Phase III programme in April 2008, Scotland experienced a number of substantial changes in both its economic and strategic environments, including:

- **a global economic downturn:** following the 'credit crunch' of 2008, Scotland, like many other parts of the world, experienced a period of reduced economic growth and fiscal consolidation, leading to a reduction in public sector spending budgets, and a tightening of private sector lending markets
- **a re-focused economic development strategy for Scotland:** following a change of government at Holyrood in May 2007, the *Smart, Successful Scotland* strategy was replaced by a new *Government Economic Strategy* in November 2007
- **strategic changes within Scottish Enterprise:** over this period Scottish Enterprise has undergone a number of changes, including the restructure of the organisation, the development of a rolling Business Plan, a refinement in the number of products offered, and the separation of its commercialisation and innovation teams

However, in spite of these changes, the Enterprise Fellowships programme still appears to align with the current key strategic documents, including:

- **the Government Economic Strategy (2011 refresh):** the programme contributes to the strategic objective of creating a 'supportive business environment', and particularly the Government's commitments to:
  - "ensure that we are better able to translate [Scotland's universities'] world class research into greater commercial opportunities and growth"
  - "put in place the right mechanisms that enable business to turn innovation and ideas into commercial opportunities – particularly in industries set to drive the global economy in the years ahead such as low carbon and digital"
- **the 2013-2016 Scottish Enterprise Business Plan:** the programme contributes to the Business Plan's ambitions to create "*Globally Competitive Companies*" and to create a "*Supportive Business Environment*". Specifically, it sets out ambitions to:
  - "create an environment which nurtures and supports the development of entrepreneurs"
  - "accelerate the commercialisation of products and processes with

- strong market opportunity, to help grow new companies of scale"
- "increase the contribution that [Scotland's universities] can make to the growth of the Scottish economy .. [including] ... improving the commercialisation of Scottish research"

The 2013-2016 Business Plan sets a commercialisation target to, "by 2015, generate 15-21 entrepreneurial companies capable of achieving £5 million turnover growth within five years of trading, or attracting £10 million investment". At the time of writing (June 2013), 10 Enterprise Fellow's had succeeded in entering companies into the HGSU pipeline as prospects to achieve this measure, including:

- 1 dropped prospect
- 4 current prospects
- 4 HGSU clients; and
- 1 'handed over' client progressed to SE Account Management

#### 2.4.1 Relevance of original rationale for intervention

While Scotland has arguably made significant progress since 1997 in tackling the original market failures which provided the rationale for this programme, there is little evidence to suggest that any of the market failures have been completely eliminated, and, based on the findings from our consultations with technology transfer offices (and following on from the evidence found in both the 2008 and 2011 longitudinal evaluation of SE's commercialisation activities and the R&D Grant evaluations<sup>3</sup>), it appears likely that there are still unexploited commercialisation opportunities in Scottish universities which would benefit from public support.

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<sup>3</sup><http://www.evaluationonline.org.uk/evaluations/Search.do?ui=basic&action=show&id=349>;  
<http://www.evaluationonline.org.uk/evaluations/Search.do?ui=basic&action=show&id=479>;  
<http://www.evaluationonline.org.uk/evaluations/Search.do?ui=basic&action=show&id=451>;  
<http://www.evaluationonline.org.uk/evaluations/Search.do?ui=basic&action=show&id=348>)  
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### 3 Performance Analysis

This section provides an overview of the performance of Phase III of the programme, based on information provided to us by Scottish Enterprise.

#### 3.1 Summary

Phase 3 of the Enterprise Fellows programme has funded 41 Fellows, many of whom operate in Scottish Enterprise's priority sectors, most notably digital and enabling technology. It has attracted applications from almost every university in Scotland, though some (universities) have proven more successful in their applications than others. Fellows also appear to be receiving appropriate follow-on support from SE following the completion of their Fellowship year.

#### 3.2 Selection processes

Forty-one individuals were awarded Enterprise Fellowships over the course of Phase III, with the numbers falling steadily year on year, from eleven in 2008, to ten in 2009, eight in 2010, seven in 2011 and five in 2012. This may in part be due to the selection panel increasing their focus on quality, and 'sifting out' applicants with limited commercialisation potential. This can be evidenced by the fact that, while five of the successful applicants to the first three rounds failed to establish a company, only two of the applicants to the subsequent seven rounds failed to do so. Over the course of the funding round, approximately one in three applications was approved.

Selection round	Applications received	Successful applications	Eventual companies*	% of applications successful	% of successful applicants forming companies
2008 Round 1	20	8	4	40%	50%
2008 Round 2	4	3	3	75%	100%
2009 Round 1	13	6	5	46%	83%
2009 Round 2	16	4	4	25%	100%
2010 Round 1	16	3	3	19%	100%
2010 Round 2	12	5	4	42%	80%
2011 Round 1	9	3	2	33%	67%
2011 Round 2	8	4	4	50%	100%
2012 Round 1	6	1	1	17%	100%
2012 Round 2	19	4	0	21%	0%
<b>Total</b>	<b>123</b>	<b>41</b>	<b>30</b>	<b>33%</b>	<b>73%</b>

\* Number of applicants in each round that had formed a company by May 2013

Approximately half of all applications came from individuals seeking to develop a business in the Emerging Technology sector, with this sector also contributing to approximately half of all successful applications. The life sciences and energy sectors also both produced a significant number of applications and awards. Correlating with research strengths in these areas twenty eight of the forty one recipients of Phase III awards (two-thirds of the total) were hosted by the University of Edinburgh, the University of Strathclyde or Herriot-Watt University. There were no successful applications from Glasgow Caledonian University, Queen Margaret University or the University of Stirling, and no applications were made to the programme from the University of the West of Scotland.

Of the five universities that submitted 10 or more applications to the programme, Heriot Watt University experienced the highest success rate, at 62%, while the University of St Andrews experienced the lowest, at 10%. While it is difficult to explain the precise

reasons for these variances, they may be partly attributed to some University Technology Transfer Offices taking on more of a sifting role in submitting applications, and only putting through applications considered to have a reasonable chance of success. The universities that have produced the highest numbers of successful Enterprise Fellowship applicants tend to be the same as the ones that have historically produced the highest numbers of spin out companies. For example, the three universities that have produced the highest total number of SE supported spin out companies are also Edinburgh, Strathclyde and Heriot Watt, together accounting for 62% of all supported spin-out businesses<sup>4</sup>.

Host institution	Applications received	Successful applications	Success rate
University of Edinburgh	36	11	31%
University of Strathclyde	25	9	36%
Heriot-Watt University	13	8	62%
University of Dundee	13	6	46%
University of Aberdeen	4	2	50%
University of St Andrews	10	1	10%
Napier University	7	1	14%
University of Glasgow	5	1	20%
Robert Gordon University	1	1	100%
University of Abertay	1	1	100%
Glasgow Caledonian University	3	0	0%
Queen Margaret University	2	0	0%
University of Stirling	2	0	0%
Not affiliated to any University	1	0	0%
<b>Total</b>	<b>123</b>	<b>41</b>	<b>33%</b>

### 3.3 Interaction with other SE Support products

Only ten of the 117 awardees to the programme across all three phases had previously received a Proof of Concept award, equivalent to 8% of the total. No previous Proof of Concept award recipients have been awarded Enterprise Fellowships since 2009.

Approximately half of the Enterprise Fellows' companies from Phase III of the programme (44 companies as at 2012/13) received some form of HGSU, Growth Pipeline or Account Management support.

Looking across the three phases, of the 92 related Enterprise Fellows' companies it is possible to track the progress of the 24 businesses that have entered Account Management (as a result of the having detailed CRM records). Over the four years 2008/9 – 2011/12 these businesses have 'drawn down' a total of 361 products (excluding engagement with the Scottish Investment Bank which accounted for £5.1m of funding across 12 businesses), equivalent to an average of around 14 products each, or approximately 3 products per company per year. As shown in the table below, which disaggregates the number of products and associated annual costs by financial year, 'market development' was the most common support product, followed by Innovation and Strategy. This suggests that SE has been effective in providing aftercare support to Fellows beyond their Fellowship year.

<sup>4</sup> Source: SE Commercialisation Supported Business Database, extracted May 2013. Excludes non-university spin outs and spin-outs for whom no host university was recorded.  
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Product type	08-09	£	09-10	£	10-11	£	11-12	£	Totals	
									nos	£
Business improvement	5	£15k	6	£18k	7	£24k	4	£10.6k	22	£67.5k
Innovation	20	£123k	8	£49k	30	£194.4	32	£160k	90	£526.4k
Investment	1	n/a	1	n/a	0	£0	18	n/a	20	£396k
Market development	45	£66k	23	£34k	73	£116k	49	£76.4k	190	£292.4k
Strategy	25	£131k	5	£26k	1	£5k	3	£12.7k	34	£174.7k
Workforce skills & development	0	n/a	0	n/a	3	£8.6k	2	£6k	5	£14.6k
<b>Total</b>	<b>96</b>	£434k	<b>43</b>	£226k	<b>114</b>	£447	<b>108</b>	£364.7k	<b>361</b>	<b>£1.1m</b>

### 3.4 Programme Performance

It is widely recognised that the Enterprise Fellowship programme is an important pillar of commercialisation support required to help achieve the ambitions set out in SE's Business Plan. A wider perspective of the support requirements in this important area of economic development recognises the complex continuum of a business's journey to market (and growth) which commonly requires a portfolio of support to address the inherent failures within the marketplace. The soon to be published (as at June 2013) evaluation of Account Management support confirms the importance of this portfolio approach, as does the complementary activity of the strategic commercialisation longitudinal study (see [www.evaluationsonline.org.uk](http://www.evaluationsonline.org.uk)) - which is aimed at better understanding performance across the Commercialisation directorate and recognises the inappropriate, and often impossible, nature of attributing benefits and impact to any individual element of support. Following on from this, the methodology adopted for this project was exclusively qualitative in nature.

While it is not appropriate, therefore, to undertake a value for money assessment of individual projects or programmes in this space, there are a number of quantitative metrics that can be presented to aid an understanding of performance, building on the previous evaluation (Ernst & Young and Oxford Economics evaluation, 2007): namely levels of investment raised and trading performance where known (from SE's Company Relationship Management database). *Note: while it is recognised that awards are made to an individual, it is their lead role within a Scottish business that is the target outcome from the programme, with underlying performance at the company level that is the ultimate – and readily tracked – measure of success.*

While it is clearly too early to make any forecasts of performance outturns from companies resulting from the Phase III Enterprise Fellowship programme, evidence presented from the earlier phases may give an insight to expected levels of performance from the current phased offering.

#### Investment

Clearly the economic environment is an important backdrop for types of support received and investment raised over time. This environment has altered dramatically since 1997 with unprecedented levels of investment raised around the millennium prior to the bursting of the dot com bubble and the current on-going severity of the credit crisis.

The requirement for investment of scale at key points in the company (growth) journey is well understood. With the exception of bank finance post-Phase I (following on from

the financial crisis where funding from this source fell from 10% of investment totals to 1% through Phase II) the relative importance of sources of finance have been consistent across Phases I and II: in ranked order of importance angel investment and venture capital contributed around 70% of total finance, followed by public sector support (specifically SE's innovation-based products and the Scottish Investment Bank).

This finding chimes with the longitudinal study which established that finance was becoming harder to source, with bank loan finance drying up almost completely. Sufficiently well developed propositions, however, were able to source the finance required. Drawing on these parallels it would be expected that businesses supported by Phase III Fellows would follow the same trajectory, with finance being more difficult to find than in the past and that while VC and angel finance is holding up there may be a migration towards angel financing which is understood to be underpinning private investment in Scotland since the crisis (the proportion of angel finance rising from 3% during Phase I to 11% in Phase II). It would be reasonably expected therefore that this trend would continue for businesses associated with Phase III Fellows and that while finance is available more time is likely to be expended on courting investment (to the detriment of the wider development of the business) and that angel investment may continue to become a more important part of the finance mix. Anecdotal evidence is that businesses are increasingly bootstrapping finance<sup>5</sup> at the early stages.

The 2007 evaluation of the programme by Ernst & Young and Oxford Economics, (focussing on the years 2001 to 2006) identified £7.9million of follow-on public sector funding and £62million of private sector funding in business created or supported by Fellows, though it was recognised this was a low estimate on the basis that not all Fellows returned a questionnaire. Complementary work by SE in April 2012 expanding on this activity highlights a clear ability of the companies to raise significant capital funding:

	<b>Follow-on public funding</b>	<b>Private investment</b>	<b>Total</b>
EF Phase I	c£13.2m	c£57.4m	c£70.6m
EF Phase II	c£10.5m	c£20.75	c£31.25m
EF Phase III	£428k	£44k	£472k

Source: Scottish Enterprise

Based on this data ratios of 1:4.4 and 1:2 of total SE funding to levels of follow-on public and private sector investment are calculated for Phase I and II of the programme respectively.

Investment data for Phase I is likely skewed by a small number of large deals at the time of 'dot com' bubble, although it should be noted that since this time a number of public sector investment vehicles<sup>6</sup> have been established which have been successful in helping bridge the 'equity gap'. Inevitably, however, as the businesses continue to secure external funding as they mature these ratios will grow, assuming increased levels of funding are not offset by similar levels of public cost.

#### Survival rates

With regard to business sustainability, evidence from the former Department of Business, Enterprise and Regulatory Reform (DBERR) established annual failure rates of 10% per annum. Further, levels of acquisition based on research of high growth firms in the UK highlights that around 30% of companies become acquired, with evidence from the University of Glasgow Training and Employment Research Unit (TERU) suggesting that only around one in three of these companies retain some form of local

<sup>5</sup> utilising sources of personal finance, rather than private sector funding

<sup>6</sup> for example the Scottish Investment Bank  
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ownership (with the remaining two becoming significantly reduced operations, shell companies or cost centres).

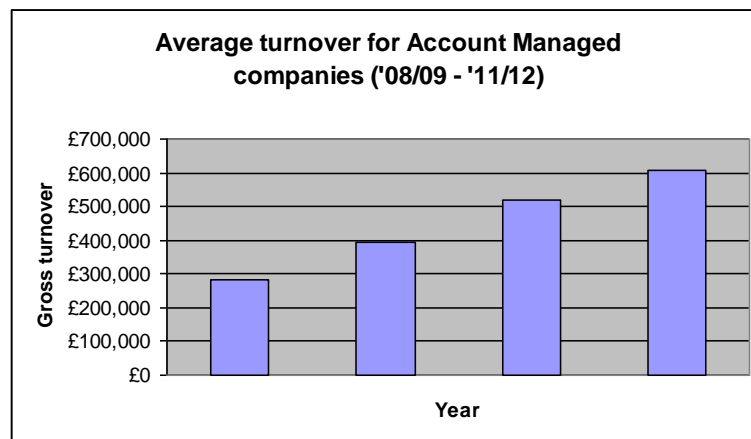
Interestingly, comparing across all Phases of support around 32% of businesses have ceased trading or lost significant function within Scotland, which fits well with the survival rates highlighted above (though it should be remembered that while the database of Enterprise Fellowship activity stretches back to 1997 a number of the companies established fall below a 10 year time horizon).

The higher risk-reward nature of technology businesses may suggest lower survival rates than the wider business community but no known data exists for such a cohort. While there are no directly equivalent (timescale) comparisons to the wider scoped longitudinal work the findings remain favourable. Future updates of this evidence base will allow more robust comparisons.

Linking back to investment, not unsurprisingly, when comparing success rates to overall investment rates there is a high correlation between those businesses that have not been successful in attracting funding and their ability to survive.

#### Company performance

Looking beyond the contribution of public sector expenditure to accrued economic benefit, via company growth, the consideration of turnover is a key performance indicator. The only (gross level) data available is the subset of those businesses<sup>7</sup> that have entered Account Management, where company data is tracked on the CRM system and available from 2008/9 only (as cited above Phase I commenced in 1997). It is not possible to make detailed comment on this data based on the mix of companies at different stages in their development, the short time frame considered and that any analysis should recognise that any Account Management sample will likely skew the data towards the most promising companies. It is clear, however, as shown in the figure below that the data presents an annual improvement in average levels of turnover over this timeframe. In the broadest sense the rate of change observed in performance improvement over time is reflective of that seen in the wider longitudinal assessment, though at a lower level of magnitude.



## 4 Primary Research Findings

### 4.1 Summary

This section provides an overview of the findings from our interviews, focus groups and

<sup>7</sup> 44 of 92 businesses, although a number have ceased trading  
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esurvey, which included:

- 17 interviews with key stakeholders from Scottish Enterprise, the Royal Society of Edinburgh, the Biotechnology and Biological Sciences Research Council (BBSRC), the Science and Technology Facilities Council (STFC), Scotland's universities and selection panel members
- two focus groups, each involving five former Enterprise Fellows
- one focus group involving four representatives from university technology transfer offices
- one focus group involving representatives from Scottish Enterprise
- an esurvey of 16 former Enterprise Fellows the full findings of which are presented in Appendix 2.

It finds that most stakeholders and beneficiaries agree that the Enterprise Fellowship programme works well, and occupies a unique space in the business support environment. While some areas for improvement have been identified, the programme is evolving over time, and positive steps are already being made to address these issues.

## 4.2 Engagement rationale

Survey respondents reported a variety of reasons for choosing to engage in the programme.

For the Fellows themselves, a desire to spin out a company or take a technology to market, and the attraction of self-employment were the most commonly reported themes, while there was also an identified prestige factor associated with being appointed an RSE Enterprise Fellow.

For the RSE and the selection panel members, the most commonly cited reasons for engaging included altruism, and a desire to help support new entrepreneurs starting out, and the reputational and networking benefits associated with involvement.

Stakeholders from the Technology Transfer Offices (TTOs) described the programme as “a valuable part of their toolbox”, particularly in cases where either the applicant or his/her idea was considered to have strong potential, but where further work was required to develop a credible business plan. They therefore stated that they are happy to recommend the programme in cases where it was considered appropriate to the individual and technology in question.

Stakeholders from Scottish Enterprise saw the programme as one of a number of tools for supporting the development of high growth technology based businesses, and for meeting their strategic commercialisation goals. This echoes the findings from the Longitudinal Evaluation of SE Commercialisation Activities Phase II report, which argued that all businesses going through the process of commercialisation pass through six different phases<sup>8</sup>, and require differing types of support at each phase.

The programme was thought to support the Scottish Government's equalities agenda, without positively discriminating, and none of the consultation participants identified any concerns around the number of female applicants<sup>9</sup>, or applicants from any minority group who were selected onto the programme.

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<sup>8</sup> Basic research, proving the concept, technology development, product development, production/marketing and growing business. These phases are based on the Branscomb Model of company development

<sup>9</sup> c18% are from female entrepreneurs, a lower number than suggested via the Global Entrepreneurship Monitor for all business types - rather than specifically for technology-based businesses – and represents a reflection of the wider environment rather than any programme failure per se



## 4.3 Process review

### 4.3.1 Resourcing and delivery model

The stakeholders and beneficiaries generally agreed that the awards were sufficiently resourced, both in terms of levels of financial support offered to Fellows, and the one year timeframe. In particular, there was a common view that the requirement to work towards a fixed deadline, one-year from appointment 'focused the mind' and helped deliver quick outcomes.

The TTO five focus group participants all agreed that the host fees<sup>10</sup> offered to the Universities were appropriate. However, one voiced a concern about SE's perceived policy<sup>11</sup> of not releasing the fees until an agreement over ownership of and access to IP has been reached, arguing that universities can be 'out of pocket' in the meantime given their requirements to pay for the maintenance of the Fellow and any relevant IP.

Concerns were expressed around the levels of marketing expenditure allocated to the programme; it was suggested that more could be done to promote the programme if additional resourcing became available (in order to identify the best propositions to be brought forward).

While the offer of up to £10,000 business development funding was welcomed (including £5k which needs to be bid for), three focus group participants argued that this amount was insufficient to allow companies to develop their businesses on the global scale that is now required, and this view was not challenged by any other participants<sup>12</sup>.

It was generally felt that the right organisations were involved in the programme, and that, in particular, the involvement of Scottish Enterprise and the Royal Society of Edinburgh are both essential to the success of the programme. However, respondents suggested that GlobalScot and SDI could play a greater role in supporting Fellows in their internationalisation activities. They also suggested that there was scope to generate additional funding for the programme either by involving other Research Councils or through support from industry bodies. In addition it was highlighted that SFC could play a greater role in future, given the increasingly important role of encouraging entrepreneurship and translation of academic invention in its strategy.

### 4.3.2 Strengths and weaknesses

Overall, stakeholders and beneficiaries appear to be highly satisfied with the programme and how it is operating. In particular, it is considered to be one of the only mechanisms available to support individuals in academic spin-outs, and that, without it, many technologies developed in Scottish universities may not be commercialised.

The long term nature of the programme, and the incremental improvements that have been made to it over the past 16 years was commonly cited as a key strength. The time that the programme allows prospective entrepreneurs to develop their business models, the prestige factor that the Royal Society of Edinburgh provides and the access to key business support that Scottish Enterprise involvement adds are further benefits.

While a detailed cost benefit analysis of the programme is out with the scope of this research, the majority of consultation participants were of the opinion that the programme offers good value for money and that the average cost per supported

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<sup>10</sup> In Phase III the programme paid a contribution of up to £10k to cover hosting costs for hosting institutions.

<sup>11</sup> Following subsequent discussions with SE, the research team established that this was not actually SE's current policy, suggesting more clarification on funding rules could be beneficial in future.

<sup>12</sup> It should, however, be noted that SE do not always receive claims from Fellows for this £5,000 entitlement  
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individual (c.£90,000) was low when viewed in comparison to other commercialisation interventions, such as the Proof of Concept programme. However, one consultation respondent took the opposite view, arguing that this £90,000 average cost makes the programme appear expensive when compared against the cost of other training/enterprise support interventions delivered by SE, particularly given that many of the companies formed only employ one member of staff, leading to a high average cost per job.

Aside from this one concern about programme costs, we did not identify any other significant weaknesses to the programme as, while many of the programme participants experienced challenges (particularly around ownership and access of IP and post-fellowship funding), these were related to issues in the wider commercialisation environment, rather than being specific to this programme.

There was a consensus amongst the stakeholders and beneficiaries that no major adjustments needed to be made to the programme in response to the global economic downturn. It was suggested that the recession did create a need for some iterative changes to the focus of the training provision (for example, a greater focus on bootstrapping may be needed in response to the increased risk of businesses failing to secure external funding); however, it was felt that these iterative changes were already taking place.

#### 4.3.3 Selection process

There was a consensus view across Fellows and stakeholders alike that the selection process was appropriate and fit for purpose. In particular, the demanding nature of the presentation, including the number of experienced panel members involved and the challenging questions asked was seen as a good way of identifying the best applicants. The straightforward 'application then interview' approach helped keep the process quick and avoided applicants having to wait too long for a decision to be made.

It was, however, argued that more could be done at the selection stage to pre-empt future issues around IP ownership. For example, representatives from the TTOs suggested that they should be allowed to accompany the applicant to the interview to help field questions related to IP. Ex-Fellows also expressed concerns that, as they were required to sign an in-principle agreement on IP at the application stage, at a point at which they had not received any legal training, they were already in a weak negotiating position at the beginning of their Fellowship.

There were some concerns around the presentation of the application form and, while it was felt that all of the information asked for in the form was needed, the design of the questionnaire could be improved. In particular, it should be noted that while individuals are now entitled to apply to the programme in conjunction with a university that is not their current employer, some of the questions appear assume that the applicant is currently a university employee, making them difficult to answer.

#### 4.3.4 Management, governance and treatment of IP

The stakeholders and beneficiaries agreed that the management and governance systems in place for the programme were appropriate, and that, in spite of the number of parties involved (including three funding organisations, the RSE and the training provider) all of the Fellows received identical levels of support, and all stakeholders and beneficiaries were clear about who had responsibility for each aspect of the programme. It was, however, suggested that the universities could be given greater

involvement in the programme, for example through a representative on the steering group.

The issue of access to and ownership of intellectual property, identified earlier, was a more contentious one, and we received differing, and often contradictory views from the different stakeholder and beneficiary groups, suggesting that poor communication and misunderstandings in this area may present a barrier to successful commercialisation. However, most stakeholders and beneficiaries agreed that a constructive and collaborative approach towards the issue was in the interests of all parties, and that recent changes to the training provider have helped to encourage such an approach to the negotiations.

It was suggested that the outcomes of the IP negotiations could be improved either by the universities taking more steps to explain their due diligence processes, and the issues they face when signing over IP rights, or by universities adopting a more consistent and aligned approach to negotiating IP. We note that it was also argued that this latter change may be difficult as each negotiation is different, and a 'one size fits all' approach may therefore be inappropriate.

#### 4.3.5 Views on overall success of the programme

As part of our research we asked all stakeholders and beneficiaries to identify where they believed that the programme has worked well, and where it has worked less well. The purpose of this question is to provide an illustration of the range of views expressed in the interviews and focus groups, and these should not be regarded as conclusions on the overall strengths and weaknesses of the programme, which are provided in the final chapter of this report.

Areas where they felt that the programme **worked well** included:

- the large number of new spin out companies that the programme had created since its launch
- the time it offers individuals to set up a business, explore market opportunities and identify and secure funding
- the number of ex-Fellows that had managed to sell their initial start-up, and go on either to form a new company, or take on a senior management role in an existing company
- the fact that very few of the individuals who complete the programme end up going back into academia
- the flexibility offered by the programme, including the freedom for Fellows to change their product, or target a different market, should the right opportunity present itself
- the quality of the current training providers (Entrepreneur Business School Ltd), including the focus of the training on the individual and his/her needs, the good business grounding that the training offers, and the challenge function that the training providers and fellow students offer the Fellows when developing their business plans

Areas where it was felt that the programme **worked less well** included:

- marketing, and in particular the limited involvement of ex-Fellows in selling the benefits of the programme to prospective applicants
- the limited involvement of ex-Fellows in the training – in particular, it was felt that, while ex-Fellows had a lot of advice to offer, and were willing to offer their time, training providers have in the past tended not to invite them to

- participate in sessions
- a lack of mutual understanding, and a culture of distrust on the issue of IP
- the fact that training was spread evenly throughout the year, when a more front-loaded approach could help businesses gain the skills and free up the time needed to more actively target customers and investors
- the fact that a high proportion of the prospective customers, mentors and investors that the Fellows were introduced to were either Scotland or UK based, leading to a perception that the programme has an insufficiently global focus
- the lack of availability of suitable mentors, including instances where the mentor chosen was inappropriate, or where they were not identified until the end of the Fellowship year<sup>13</sup>

It was noted that the programme is improving on all of these fronts, with the appointment of the new training provider seen as a major step forward. However, in each of these further room for improvement was identified.

#### 4.4 Programme benefits

It was generally felt that it is the former (or Phase I and II) Fellows themselves who benefit most from the programme, gaining the time and training support they need to get a business off the ground, leading eventually to turnover, exports, employment and ultimately value add to the economy (defined as gross value added, or GVA). Ex-Fellows also reported further spillover benefits such as the development of long term business relationships with training providers, other Fellows and mentors, and the clarity of purpose that they gained from going through the application process. The programme also contributes directly to a number of key Government Economic Strategy (GES) measures such as increasing research and development spending.

The university TTOs also believe that they have benefited from the programme both by increasing the number of spin-outs they create (thus contributing to their performance reporting metrics) and through the reputational benefits associated with creating a successful spin-out.

The Royal Society of Edinburgh believe that their involvement in the programme has helped to improve its reputation as a pragmatic and business focused organisation, while Scottish Enterprise believe that it has contributed towards their goals of supporting the creation of new high growth businesses in Scotland and therefore economic growth. All of the other participating stakeholders and beneficiaries agreed with both organisations' views.

#### 4.5 Alignment with other SE products

Some ex-Fellows reported mixed views on the degree to which the programme aligned with other forms of SE support. In particular it was noted that, while those companies qualifying for SE Account Management support were able to learn about and access a wide variety of SE financial and advisory products, those who did not qualify for Account Management were not only ineligible for restricted products, but also unaware of those products that they were entitled to. There may therefore be a case for SE providing an on-going signposting service to these companies.

Particular areas where ex-Fellows identified scope for improvement included Encouraging Dynamic Growth Entrepreneurs (EDGE), and GlobalScot, as it was felt that Fellows could have been made more aware of these<sup>14</sup>. There was also a view that the programme could be made to dovetail more with the Proof of Concept fund,

<sup>13</sup> It should, however, be noted that there were instances where Mentor were identified, but Fellows chose not to engage with them

<sup>14</sup> Though it should be noted that EDGE is still a new initiative  
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as it was argued that start-ups need both the right product and the right business model to succeed, and an integrated programme may therefore be a more appropriate way of ensuring that both of these are developed in tandem. It was noted that former recipients of Proof of Concept support tended to have their applications for Enterprise Fellows support turned down<sup>15</sup>, meaning that Fellows often needed to spend part of their fellowship year working on their technology, which is not the purpose of the programme.

While some ex-Fellows argued that there was too much of a focus in the training on how to access public sector investment streams, arguing that this focus, and the level of bureaucracy typically associated with such funds, distracted them from pursuing opportunities for more substantial investments in the private sector, others disagreed, arguing that, in the present economic climate, any form of support was worth exploring.

It was also argued that the Fellows were often faced with a 'cliff edge' between the point at which their Fellowship came to an end, and the point at which they were eligible for e.g. SMART support. This was made more pronounced by the match-funding requirement for many EU funded public sector interventions (e.g. the West of Scotland Loan Fund), which make them unsuitable for start-up businesses with no or limited turnover. It was suggested that a 'parachute loan' fund may be one revenue neutral way to help business bridge this gap<sup>16</sup>.

#### 4.6 Future direction

We asked all of the stakeholders and beneficiaries to identify what changes could be made to the delivery model to increase its effectiveness.

Most stakeholders and beneficiaries agreed that the programme was generally working well, and there was a desire to see the programme continue in broadly its current form. However, there were some areas where there was believed to be scope for improvement, including<sup>17</sup>:

- **approaching other possible funders:** with a view to a further sharing of training costs – these could include other Research Councils, Scottish Funding Council or private sector industry groups
- **increased investment in marketing and promotion:** particularly to encourage University Deans and Heads of Departments to recommend the programme to their researchers
- **a greater focus on assisting Fellows to take a more global approach to developing their business:** including identifying customers and investors overseas, and greater use of SDI support mechanisms
- **encourage a greater sharing of understanding between universities and Fellows on the issue of IP:** this could include encouraging Universities to provide information session to explain their due diligence procedures
- **introducing a formal mechanism to require Fellows to share their quarterly reports with University TTOs:** to help them provide a greater supporting role to the businesses

We also asked stakeholders and beneficiaries the question *"If you had a blank page what key aspects of the programme would stay, go and why?"* Stakeholders and beneficiaries again argued that the programme was generally working well, and no

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<sup>15</sup> This claim is supported by our desk research (see section 3.3)

<sup>16</sup> This argument is consistent with the earlier view that the one year timescale for the fellowship is appropriate, as none of the consultation participants argued that the paid salaries should continue beyond the conclusion of the Fellowship year, or that they would be unable to form a company within the one year timeframe

<sup>17</sup> These points are not ranked in any order of importance. In all cases, the views reported were shared by at least two consultation participants.

substantive changes were needed. However some suggestions were made, including the following from the Fellows:

- **keeping the RSE/SE links:** this was seen to work well, giving the programme prestige, and offering Fellows a route in to the account management system within SE
- **giving the RSE greater involvement in selecting the training partner and in marketing and promotion:** to allow them to pursue identified opportunities to develop the programme, and to protect them from the reputational risk of having management responsibility over a programme they do not have full control over
- **increasing the role of SDI and GlobalScot in the programme:** to help Fellows identify sales and investment opportunities overseas
- **greater focus on early involvement of mentors:** possibly drawing more on the network of ex-Fellows, to allow Fellows to 'hit the ground running' on developing their business proposition, and possibility through the introduction of a 'virtual board'
- **provision for continued technology development:** possibly with greater clarity around the relationship between Enterprise Fellowships and Proof of Concept funding
- **keep the two call approach, but maintain or increase current cohort sizes:** this approach prevents good opportunities from 'slipping through the net' due the timings being incompatible. However, a critical mass of between 6-10 Fellows<sup>18</sup> in each cohort is important as it allows Fellows to challenge and learn from each other.

## 5 Conclusions and Recommendations

### 5.1 The programme works well

While stakeholders and beneficiaries offered suggestions as to how the programme could be improved, they all agreed that the model was generally a successful one, which was capable of improving over time with minor tweaks. This is corroborated by evidence from the Enterprise Fellows survey, which includes several anecdotal examples of how the programme has contributed to business successes.

### 5.2 The rationale for intervention remains in place

While most stakeholders and beneficiaries believed that Scotland has made significant progress in the area of technology transfer since the mid-1990s, the rationale for intervention issues of imperfect information, positive externalities and market power remain present in the market place, and are arguably structural issues that can be addressed but never fully resolved.

### 5.3 The programme still aligns with Scottish Enterprise's strategic goals

Phase III has now been running for five years and 41 Enterprise Fellowships have been awarded. To date, this cohort has resulted in nine current or prospective HGSU client companies.

**Recommendation – given that the rationale for intervention remains and the programme has resulted in a high proportion of potential companies of scale the programme should continue. We suggest that there should be improvements in SE's management information to show how the positive contribution of the programme also**

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<sup>18</sup> Scottish Enterprise funded Fellowships form part of the overall cohort alongside BBSRC and STFC funded Fellowships.  
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contributes to other targets including DRM and wider pipeline companies.

#### 5.4 Enterprise Fellows should conduct more business development on an international scale

Many of the consultees, in particular the Enterprise Fellow focus groups, believed that given the need for companies of scale to sell to a global market, the programme should have a more international focus. We do note however that SDI support was highlighted as beneficial by survey respondents.

**Recommendation – Scottish Development International and the GlobalScot team should be encouraged to take on a greater role in the programme. This would build on the role they currently play and ensure Enterprise Fellows are tapping into current SDI support mechanisms.**

**Recommendation – Scottish Enterprise should explore the possibility of increasing the £10,000 business development allowance, to allow Enterprise Fellows to undertake more international activities. This would include market research.**

#### 5.5 Marketing and promotion needs to improve

Throughout the primary research respondents felt the marketing of the programme could be improved in order to identify and bring forward the best prospects. This was also something that RSE realised needed development and as such they had already submitted a proposal to SE which aims to improve this through a range of activities which centre around funding an additional person solely responsible for marketing and promotions. We note that the research councils also have issue in this area due to lack of resources and are happy to discuss joint marketing.

**Recommendation – Scottish Enterprise and the Royal Society of Edinburgh should seek to increase their marketing and promotion activities – this would help increase the pool of potential applicants. Marketing activities could also take place in England (with resulting projects anchored in Scotland) in partnership with the Research Councils to help prevent future underspends in councils budgets.**

#### 5.6 The current two-call system works well

Stakeholders and beneficiaries agree that the programme benefits from having two calls per year, and this ensures that good prospective Enterprise Fellows won't 'slip through the net' as a result of the call coming at the wrong time. They also agree that having between six and ten Fellows in each cohort is beneficial, as it gives Fellows an opportunity to learn from and challenge one another during the course of the training.

**Recommendation – Given the current financial realities, Scottish Enterprise and the Royal Society of Edinburgh should explore opportunities to engage new public and private sector funders in the programme. This would allow the programme to continue to support a higher number of participants on each cohort.**

#### 5.7 The issue of intellectual property remains a challenge

While significant improvements regarding the IP arrangement have been made since the start of this funding period and the appointment of the new training provider has reinforced this, there have still been recent incidences where IP negotiations have broken down, and a culture of mistrust has developed between the TTO and the Fellow.

**Recommendation – SE, RSE and the universities should all work collectively towards the goal of increasing communication and trust on the issue of IP ownership. For example, the applicants' workshops could give more focus to the issue of IP, and to encouraging TTOs and applicants to share their perspectives on the issue and learn from one another. This could be supported by allowing ex-Fellows to contribute to the discussions and share their experiences.**

### 5.8 Identifying mentors remains a challenge

While this has improved and the mentor support was described as good, there are still instances where Fellows do not get assigned a mentor until late on in the process, reducing their scope to contribute to the development of the business plan and leading to delays in the process of company formation.

**Recommendation: Mentors need to be assigned early in the process. There may be a role for ex-Fellows taking on a role in the programme as a mentor as many seem to be keen to 'give something back'.**

### 5.9 Technology Transfer Offices are the gatekeepers to the programme in universities

Decisions on which applicants a university decides to support generally rest with Technology Transfer Office. This can be viewed either as a positive or a negative. On the positive side, it allows the TTOs to take on a 'sifting' role, to eliminate ideas with more limited commercial potential. On the negative side, it may mean that promising academics that have a limited relationship with their TTO may not get the opportunity to learn about or participate in the programme.

**Recommendation: RSE should maintain their strong relationship with the TTOs in their marketing activities, but should broaden their marketing to involve Research Vice Principals and Heads of Departments in the programme.**



**List of Consultation Participants**

We are grateful to the following individuals for their participation in our consultation exercise:

#### **Scottish Enterprise/Business Gateway representatives**

- Eleanor Mitchell
- Gavin Laird
- Kevin Bazley
- Andrew Henderson
- Ulrike Knies-Bamforth
- Clive Reeves
- Silvio Clemente
- Ian Brown
- Denise O'Connor
- Mark Western
- Neil Ferguson
- Paul Lewis

#### **Training Providers**

- Alister Minty (EBS Ltd)
- Bill Bryan (EBS Ltd)
- Jonathan Levie (Hunter Centre)

#### **University Technology Transfer Office representatives**

- Mel Anderson (University of Glasgow)
- Stewart McKenzie (Strathclyde University)
- David Waddell (University of Edinburgh)
- Olga Kozlova (Heriot Watt University)
- John McKenzie (University of Dundee)
- Alastair Main (University of St Andrews)

#### **Ex-Fellows**

- Elias Ekonomou (VitalMeda)
- John Harrison (Surface Active Solutions)
- Norman Alm (CircaConnect)
- Anne Attridge (Klik2Learn)
- Andrew Sherlock (Shapespace)
- Chris Capus (Hydrason Sonar Systems)
- Keith Symington (Conjunct)
- Iain Woodhouse (Carbomap)
- Lee Baker (ChiSquared Solutions)
- Babs Oyenyin (Intelligent Flow Solutions)

#### **Royal Society of Edinburgh and Selection Panel representatives**

- Edward Cunningham
- William Duncan
- Anne Fraser
- Grahame Bulfield
- Adam Bock (participated via e-mail)

#### **Research Council representatives**

- Faith Smith (BBSRC)
- Phillip Tate (STFC)

**Findings from Internet Survey**

## Summary

In addition to the face-to-face contact with the Enterprise Fellows through the focus groups we also ran an e-survey to capture individual feedback.

In total 16<sup>19</sup> Fellows responded to the survey and 100% completed every question. Three of the respondents are currently based in a Scottish university, all others are in companies. Respondents ranged from those who started in 1999 to those who started in 2013. The following section summarises the findings.

Overall Enterprise Fellows were highly complimentary of the programme and believed it should continue. They viewed it as an excellent programme which helped academics gain valuable business knowledge, training and experience to enable them to spin out a successful business. From the 16 respondent, 13 had established a business; two had established more than one business.

To date Enterprise Fellows have gained a range of benefits and outcomes that they attribute to the programme. These include:

- international exports
- company growth – employment and turnover
- starting our further companies
- access to investment

Enterprise Fellows believe they will continue to have similar benefits in the future and one is focussing on a trade sale.

Wider benefits were also cited including access to networks, alumni, mentoring and the increased confidence and knowledge enabling them to establish a successful business.

While challenges were highlighted, respondents used various means to overcome them including the support and knowledge gained through the programme.

While respondents felt that in general the programme was working well and should definitely continue they cited a number of areas that could be improved. These were generally focussed on the content of the training and the ongoing mentoring. An increased focus on investment, including pitching to the investment community was viewed as a favourable addition.

## Reason for involvement

While Fellows provided various reasons for getting involved, the majority wanted to commercialise their research or had a product under developed that they wanted to get to market. The majority viewed the programme as an ideal way to do this, providing the skills development opportunities to give them a good grounding on which to either start a business or develop their business acumen to enable them to move into a key business role in the future. We note that 13 are currently in established businesses.

The majority heard about the programme and were encouraged to participate by their Technology Transfer Offices.

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<sup>19</sup> Of the 16 respondents, 6 also attended a focus groups

## Outcomes of support

The majority of respondents had started up a business as a direct result of the programme; some also started a second and third business. Others used the support to develop a pre-existing business that was struggling, gaining knowledge that helped raise investment or support further product development. Others highlighted the ability to tap into wider grant funding such as SMART.

Some examples of outcome include:

"We spun out our company the following year and have since turned this into an international business exporting product to all corners of the globe. We raised over £800k of debt funding and have converted this into a profitable company with over £5M in sales revenues employing 6 people and growing rapidly."

"We have started a second commercial company in Scotland which is already in profit and which has thus far achieved sales of £0.5M."

"The company was already registered but I was struggling to make first sale, eventually I managed to make my very first sale 5 months before the end of the fellowship. I have now started to get pre-orders in high volumes from first buyers, so definitely it has given a powerful impact on the business."

"The company has now spun out, and has four employees including myself. We started in January, moved location in March and have been selling products ever since."

"I founded a company in 2004 that is still going to this day. We have raised ~£1.4M over this period the majority of which was spent supporting Scottish jobs."

"I was MD of a company that developed a new automation technology, this was sold to an American firm for \$1.5m, I now run an Engineering consultancy employing 11 people with turnover £500k."

Respondents also highlighted a number of future outcomes which they also attributed to the support. This included:

- job creation and turnover growth
- moving into new markets and geographies
- further product development
- securing further investment
- future trade sale

Some specific comments included:

"We plan to turn both companies into businesses worth £100m (we are currently in negotiations for a number of contracts heading towards this scale). Following exits of this type we wish to reinvest our cash into other such schemes and spin outs in order to stimulate further growth and technology exports from Scotland. We very much hope that our experience, international networks and advice can help other entrepreneurs to avoid the mistakes that we made."

"For me personally I am desperately trying to start a business, but software instead of hardware this time. The EF time gave me a better idea of what is scalable."

"We hope to secure round two investment to grow the company, set up offices in the US and aim to achieve 1 million pounds revenue by year 3."

“Increase in the number of countries throughout the world that we sell systems to. Increase in Scottish design team.”

## Benefits of support

At an individual level respondents cited numerous benefits resulting from the support. These ranged from networking and the alumni and the great mentoring support, to increased knowledge and confidence in business, to being fully responsible for the start-up of the business. The involvement of SE and its support mechanisms were viewed as essential. Some specific comments on benefits include:

“The Enterprise Fellowship programme has given me the opportunity to take control of my career and commercialise the skills that I have built up over many years.”

“Networking and being able to demonstrate new forms of technology.”

“It was responsible for starting the whole story. Without the fellowship scheme this whole journey may never have started. The fellowship scheme was a great initiator and provided some sound networks to get the ball rolling. The connection with SE and SDI in particular has been instrumental over the years.”

“It has developed my understanding of the business aspects in company spin outs. Also the large network of contacts who were highly relevant to developing the company in terms of exposure has been excellent. Overall, it has allowed me to be more confident in my abilities surrounding a business-based role I now have in the company.”

“It brought me business training (to stop thinking like an academic) and connections to others in the same position as myself.”

“The mentoring was fantastic, lots of advice coming from real experience which is what I needed.”

Respondents also highlighted a range of benefits that the programme had brought to their organisations. This ranged from credibility and improved business profile, to increased exposure and recognition of the business to potential investors, to a ‘leg up’ in the business world. The kudos associated with being a Fellow was frequently cited as the key benefit. Some specific comments on the benefits to the business include:

“In the early years it was a degree of credibility. This still stands to this day.”

“Opportunities to speak to investors and generally get a lot of exposure for the company, as the network of contacts you meet through the RSE is great.”

“Recognition and contacts with potential future investors and people who might come on board.”

“A ‘leg-up’ without which the company may not have got off the ground. (Primarily giving me the time to work on it for a year as a full-time paid position).”

## Challenges

Respondents highlighted numerous challenges which they experienced both during and following the support. One respondent stated there were too many to mention but their “*never give up attitude*” helped them overcome them. Challenges included:

- access to working capital, raising investment/convincing partners to fund post Fellowship

- giving up a career and only having a short time i.e. a year to get the business established
- finalising IP/licensing negotiations with the university
- market research and understanding routes to market
- product development and technical challenges

While these challenges often caused problems, the resources provided through the Enterprise Fellowship programme was often used to help overcome the challenges as well as the tenacity of the individuals. Some specific comments on challenges were overcome include:

"I was struggling to build a route to market, generate initial interest both from customers and investors. I had few knowledge about raising investment, doing marketing research and bootstrapping production. I resolved most of the issues talking with the EF mentors who suggested several approaches for each issue, there is not a magic formula every case is different and mentoring is good for that."

"Getting to terms with thinking in terms of customers and sales - Resolved by applying myself to the course and talking to lots of experts in the field."

"Main hurdle has been raising funding for the business but it has been resolved by tenacity."

"The main challenge was to convince my Swedish partner to produce the computerised device. This has been resolved by taking on the role of Radiographer Consultant and working with them in order to advise them on the technological benefits of computerised positioning."

"Too numerous to mention in a short survey. Mainly overcome by sheer determination and a stubborn "never give up" attitude. Also having a partner in the business has helped tremendously over the years."

### A fit for purpose programme

A number of respondents felt unable to comment on this as they were not up to speed with the current programme. Of those that did comment all thought the programme should continue and most cited some tweaks. Some areas for development include:

- bigger focus on mentoring and expanding the role of mentors towards making introductions
- more focus on sales and marketing
- increased financial training and an increased focus on raising investment – introductions to the investment community e.g. introduce angel/investor panels to pitch to
- increased use of the alumni – bringing back previous fellows to share their business acumen
- maybe a focus on untenured academics as the cohort i.e. they don't have a fall-back position and could be more driven
- to help ensure there is no cliff to fall over at the end e.g. SMART or similar funding starts immediately after or runs concurrently in the final stages of the programme; the need for a bridging programme of some sort

The most frequently cited area was to bridge the gap at the end of the programme. We note that other areas for development were also cited, but in the current programme these have now been changed.

Respondents highlighted a range of areas that they felt worked well. Specific comments include:

"Mentor advice was extremely valuable."

"Good links with past and present fellows via the RSE. The dinners for example are an excellent occasion to listen to prime speakers and mix with past and current fellows."

"The connection to SE and the focus on spinning out a business with a business plan in hand. I'm sure these results in the first 2 years of the fellowship speak for themselves in relation to the number of companies that were started from the scheme."

"Bringing fellows together for exchange of ideas and mutual support. Support of new fellows by previous fellows. "

"Personal support, encouragement, learning and contacts for me."

"Opportunity to spend time thinking about the business opportunity."

"Meeting previous fellows, meeting our peer group fellows also was very, very useful and supportive."