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Scottish Enterprise Industrial Fellowships Pilot: Evaluation 2004

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Executive summary

- The SE Industrial Fellowship programme has been a valuable experiment in attracting potential entrepreneurs from the private sector and supporting them as they attempt to start-up new technology businesses;
- The programme has undoubtedly accelerated progress and in all three cases it has made a vital difference between life or death for the businesses concerned;
- The programme has a good operational fit with the SE Network High Growth Start-up Unit (HGSU) and potential with other areas of the Network including clusters and delivery vehicles such as Targeting Innovation Limited (TIL);
- The programme has an excellent strategic fit with Smart Successful Scotland and particularly the Growing Business area;
- There is strong potential for strategic and operational "fits" with several initiatives involving Scottish Enterprise, which are aimed at helping growth companies, encouraging spin-outs and supporting potential entrepreneurs, particularly within the Scottish corporate and SME sectors;
- The small scale of the pilot means that it is difficult to measure "success" in economic terms, but the response from participants suggests that it has delivered both qualitative and quantitative advantage during its brief lifetime
- We recommend that SE promotes the scheme to potential future Industrial Fellows, but this is implemented carefully in order to safeguard the rigour applied to the first round of applicants, and the "light touch" applied to project delivery;
- While its actual economic impact is difficult to measure, given the small scale of the pilot, the programme has demonstrated real potential as a SE Network product which will require careful management, including formal evaluation;
- The programme's management has been conducted in a highly professional manner, although future development will require more formal processes which should remain as "light in touch" as possible.

Recommendations

We recommend the following:

Extension of programme

- The Industrial Fellowship programme should be instituted for a 2-year period with a maximum number of Fellows to be set at 10 per annum;
- That the programme be given a more flexible duration of up to 9-12 months per successful candidate (i.e. a standard period of 9 months with a 3-month option);

Set criteria & evaluation

- The Fellowship programme should produce a single set of criteria for communication to referees, candidates and advisers;
- That an evaluation system be agreed for implementation when the next group of Fellows have been appointed;

Selection & monitoring

- The appointment should be made by existing SE staff, augmented by a small advisory group of seasoned entrepreneurs who have experienced the start-up process, and that the group should have the power of final approval;
- The pilot group should be tracked by Scottish Enterprise for at least 12 months beyond the end of their fellowship;
- The referral system for Fellowship candidates should be explained clearly to all potential referees inside and outside SE;

Referral channels

- Consideration should be given to possible strategic fit with the HGSU, clusters, Targeting Innovation, Scottish Intellectual Asset Management and the newlyrestructured Technology Ventures Scotland (TVS) where those organisations are targeting SME or corporate spin-outs and related commercialisation;
- That the programme be marketed carefully to trusted intermediaries within the SE Network and its approved advisers in the high-growth assistance sector (these might include the HGSU, cluster managers, Targeting Innovation and private sector advisers who work within those groupings).

Introduction

The Industrial Fellowships programme was introduced during 2003-4 as a pilot scheme intended to provide financial assistance to individuals who had presented new business proposals which were perceived to offer strong potential.

The selection process for the three Fellowships included each candidate making a written presentation and attending a formal interview. The three who participated were drawn from an initial pool of seven, each of whom had been referred from various parts of the SE network.

The primary aim of the pilot was to provide a means of supporting potential hightechnology start-ups from within the Scottish industrial base.

The selected candidates demonstrated that each had a strong and viable technologybased proposition which needed time to develop.

The Fellowships were modelled loosely on the well-established Scottish Enterprise / Royal Society of Edinburgh (RSE) Enterprise Fellowships, which are available to academics and researchers seeking to spin-out from the university and higher education system.

One key rationale for the programme is that it should provide "additionality" in terms of sustaining, extending or otherwise benefiting each entrepreneurial venture.

Additional research undertaken shortly following the formal approval of the pilot scheme (David Stewart, 2003) indicated that entrepreneurs wanted particular help in understanding aspects of company creation and management, particularly in recruitment and sales & marketing.

<u>Methodology</u>

In undertaking this evaluation, we completed:

- Desk research, including all documentation relating to the Industrial Fellowships including progress reports
- Face-to-face interviews with the three Fellows
- Interviews with relevant Scottish enterprise personnel
- Review of relevant work, including our own evaluation of the SE High Growth Start-up Unit (HGSU) of December 2003.

The Industrial Fellows

David Blackwood

David Blackwood has launched a new company, Volaro, based at Hillington, Renfrewshire.

An existing client of the SE HGSU, David spent nearly £100,000 of his own savings to establish the Volaro concept and fund initial software development. The company is developing a software solution for application in airline ticket sales, concentrating on a niche market dominated by consolidators supplying long-haul travel customers.

The technology, named Arena, is an Internet-based solution which will enable consolidators to deal directly with end-users more effectively than at present. It adopts existing technologies to reduce transactional costs and hence increase margins for customers.

David was introduced to the HGSU by his advisers, Deloitte & Touche. He needed help establishing Intellectual Property Rights (IPR), business planning, fund-raising from investors, finding premises and other related requirements typical of a technology start-up.

He had 20 years experience in the market, working for Amadeus and Barclays Bank. His experience included working with global technology partners and clients including Microsoft, SAP, Wal-Mart and American Express.

He gave up a high-level job with Amadeus in 2001 to pursue his idea, and personally commissioned and funded software development in India.

He was introduced to the Industrial Fellowships programme as a potential candidate by the HGSU. The programme provided him with six months' basic salary and a sum for expenses (principally travel).

At June 2004, Volaro was completing an initial funding round and anticipating initial sales revenues by September 2004.

In summary, his views of the scheme were as follows:

- Cash assistance invaluable at a personal level
- Good liaison with HGSU
- Processes (e.g. progress reports and other contact) improved over time
- Improved his perception of Scottish Enterprise (as did his contact with HGSU)
- Accelerated the progress of Volaro
- Should be rolled-out on a bigger scale, but would need set criteria to maintain quality of proposition

"It gave me time to think things through and to work on the proposition. I could have dropped the idea or rushed in too quickly otherwise. The result should be that Volaro will have a much better chance of achieving high growth and reaching break-even more quickly. Financially the Fellowship was critical for me."

David Irvine

David Irvine, an experienced IT consultant, created Ayrsoft as a means of commercialising software developed in the course of an earlier start-up business which had failed.

Ayrsoft, based in Ayrshire, has developed a Linux-based solution—**icon**, or "Integrated Collaborative Office Network" – for small and medium sized enterprises (SMEs), providing them with the ability to create and manage advanced IT systems at less cost than prevailing products.

The company has experienced considerable difficulty setting up and attracting funding. It is a client of HGSU, having been referred to the unit by an account manager at SE Ayrshire.

David has completed initial funding and recruited key staff including a managing director and marketing personnel.

However the length of time taken before start-up, in terms of company creation, product development and team recruitment, took its toll in terms of personal debt and placed the future of Ayrsoft in considerable doubt as David and his colleagues struggled to sustain themselves financially during the period.

He was introduced to the Industrial Fellowship scheme by the HGSU, and believes that the scheme took a great deal of pressure from the business. He received a basic salary plus expenses, which was used primarily to pay costs related to the start-up process.

Ayrsoft's progress has been slow, but some fund-=raising was completed during 2003-4 and this has enabled the recruitment of a small management team and first steps in the development of sales and marketing.

At June 2004, Ayrsoft was continuing to sell its product at local level, and continued working on new business development.

In summary, his views of the scheme were as follows:

- Cash assistance invaluable at a personal level
- Mixed experience of reporting process during the Fellowship period
- Company "would have gone under" without the fellowship funding

David told our researcher that he had misgivings about the reporting system within the fellowship, and felt there had been misunderstandings on both sides during his period as an Industrial Fellow.

David Srodzinksi

David Srodzinski has created Elonics, a chip design business engaged in the data communications market and based temporarily at The Alba Centre in Livingston.

He had previously been involved in two possible start-ups, neither of which made progress, before deciding to leave a well-paid job with Intel to start Elonics. His previous involvement with Scottish Enterprise had left a negative impression, but he applied for an Industrial Fellowship after attending a seminar and meeting Clive Reeves, a senior manager within Competitive Business.

As well as acceptance as an Industrial Fellow, David has become a client of the HGSU who have helped in a variety of matters including IPR, and the achievement of a SMART award worth £50,000.

Elonics is engaged in developing a technology which maximises optical networks, usually legacy systems, within the data communications sector. David has extensive industry experience and is a member of a group which is establishing international standards in the area.

David made considerable personal financial sacrifices to establish the business. Apart from giving up his job he had other family and personal expenses to consider, and therefore the Industrial Fellowship was timely and invaluable in terms of support.

At June 2004 he had completed the fellowship and continues to work with HGSU on the development of Elonics' proposition. He has also recruited key technical and commercial staff.

In summary, his views of the scheme were as follows:

- Fellowship invaluable in terms of "taking the strain" off the company founder and accelerating the start-up process
- Would recommend as a means of supporting start-ups, as similar assistance is not normally available to potential entrepreneurs in the private sector
- Process and support from SE personnel of high standard.

"It shouldn't be a meal ticket. There was an opportunity cost in doing this. I had a mortgage and so on, so the scheme eased the strain and took pressure off me. Without it I wouldn't be here. We are definitely further ahead than we would have been."

Summary responses from participants

Questions	Company 1	Company 2	Company 3	
Description				
The company start-up as a business	Trading	Trading	Pre-trading	
Its core activity in terms of products/ services and markets Brief description of progress to date	Developed	Developed	Proof of market	
The immediate future for the start-up	Funding & trading completing	Funding & trading completing	Under review	
Prior experience				
What was your experience of the start-up process prior to this current project	None	2 previous coys	2 previous attempts	
How did the start-up opportunity come about (chance, deliberate strategy, redundancy, etc.)?	Opportunity	Opportunity	Opportunity	
Is this a new business, spin-out or similar?	New	Spin-out	New	
Scottish Enterprise				
What did you want from Scottish Enterprise?	Advice, finance, premises	Finance	Advice, finance, premises	
What was your previous/parallel experience of Scottish Enterprise?	Slight but negative	Slight but negative	Two contacts, negative	
What was your first ever point of contact with the Scottish Enterprise Network?	LEC	LEC	LEC	
Did you know who to approach and what advice was available?	NO	NO	NO	
Where else had you gone for advice on building your business (public or private)?	Deloitte & Touche	N/a	N/a	

Fellowship				"Score"
How did you find out about the Industrial Fellowship?	HGSU	HGSU	SE seminar then direct contact	
What do you think of the selection process (1-5)	5	3	4	
What is your overall view of the process (1-5)	5	4	4	
How have you assessed the impact of the Fellowship?	5	3	4	
How valuable has it been to your enterprise?	5	3	4	
Are you further ahead than you thought you would be at this point?	4	4	4	
	24	17	20	61 / 75
Additionality				01710
Positive result from Fellowship (on a scale of 1-5, 5 being excellent)	5	3	4	
Has the Fellowship made the difference between starting-up or failing to do so?	3	3	4	
Management relationship with SE?	4	3	4	
Would you recommend the Fellowship to an entrepreneur and if so why (and "if not, why"?)	4	3	4	
	16	12	16	44 / 60
Suggestions				
Are there ways in which the Fellowship scheme could be enhanced or improved?	Yes: gave examples	Yes: gave examples	N/a	
Do you have any other feedback that you would like to channel to SE?	Yes: gave comments	Yes: gave comments	Yes: gave comments	

Responses: discussion

Each participant was asked the same questions under the heading of project description, their prior experience of a start-up (if any), their previous contact with Scottish Enterprise and subsequent contact leading to the Fellowship; their experience of the Fellowship itself; and whether it delivered additional value.

They were also asked to make voluntary additional comments if necessary.

We have scored each area according to the answers given by the three Industrial Fellows. This has been applied only in the areas of questioning where a score was appropriate including nine questions about the Fellowship experience and additionality.

The programme scored highly in most areas, as follows:

Industrial Fellowship

	Score	Possible	%
Company 1	24	25	96
Company 2	17	25	68
Company 3	20	25	80
Total	61	75	81

Additionality

	Score	Possible	%
Company 1	16	20	80
Company 2	12	20	60
Company 3	16	20	80
Total	44	60	73

<u>Overall</u>

	Score	Possible	%
Company 1	40	45	89
Company 2	29	45	64
Company 3	36	45	80
Total	105	135	78

On average the programme achieved 78% positive feedback in terms of the quality and relevance of the fellowships and whether they provided added value in the eyes of the participants.

Conclusions & Evaluation

It is clear from the interviews with Industrial Fellows that the pilot scheme has delivered qualitative and quantitative impact.

Qualitative impact:

- the Fellowship has included some mentoring, general support, and a "doorway" to specific advice within the SE network and via SE programmes such as the HGSU
- The Fellowship has allowed participants additional time to develop their business propositions
- Fellowship has taken short-term financial pressure from individuals and enabled them to use company resources for recruitment, software development, business development and so on.
- In two of the three cases, the experience has significantly improved the participants' perception of Scottish Enterprise (the third being neutral)
- All three Fellows said they would recommend the scheme to a potential entrepreneur in a similar position.

Quantitative impact:

- It is more difficult to quantify support beyond the hard cash provided for the scheme, which totalled just under £100,000. This is because the scheme has lasted for less than 12 months and involves just three recipients, each fellowship lasting six months.
- These three companies are predicted to have raised a total of more than £750,000 in various forms of funding including debt, soft loans and equity investment before the end of 2004. Of the three, Volaro is closest to achieving true market potential in the form of substantial sales revenues during the current financial year.
- However all three have been clients of the HGSU, and two remain so (Volaro and Elonics), therefore a significant part of the financial "added value" provided by Scottish Enterprise can be attributed to various forms of assistance beyond the Industrial Fellowship.
- However, the recipients' agreement that their current progress would not have occurred without the Fellowship remains a significant indicator of the scheme's importance to them. The tables on page 10 apply to the Fellowship programme only.

Addressing market failure

There is no doubt, that the Industrial Fellowship programme is addressing market failure.

We base this assertion on the evidence of the three participants, as well as desk research and previous experience such as our evaluation of the HGSU (completed in December 2003).

The market failure aspects concerns the ability of the private sector to fund or otherwise support individuals at the verge of launching a potentially high-growth start-up. Typically, the private sector supplier includes corporate development advisers, corporate finance houses or specialist investors.

These organisation need to derive fees to justify the investment of time and/or seed funding. Even where some private sector providers will advise in exchange for equity or similar non-cash compensation, they require to cover basic costs and expenses.

Given the nature of the kind of enterprises who have qualified for HGSU support or Industrial Fellowships, there is seldom cash available. Start-ups are not necessarily deriving income from their activities at such an early stage.

In addition, available funds such as seed finance or entrepreneurs' own cash need to be spent on product and IPR development rather than on external consultancy fees and commissions.

In the case of a potential entrepreneur who contemplates leaving full-time employment via their own start-up, there is justified concern that private-sector funding comes at too high a price for such an early-stage business.

Our earlier research into HGSU clients, and this new research into the Fellowships indicate strongly that Scottish Enterprise has an important role in providing assistance with "fewer strings" than the private sector, as well as being able to provide, recommend or finance additional specialist support.

The "honest broker" role is a key element of Scottish Enterprise's activities in this area.

Potential entrepreneurs who work in the private sector have several typical hurdles:

- The risk associated with giving up a well-paid job or existing business
- Strong knowledge of their own specialisms counter-balanced by lack of knowledge in other areas of business (for example commercialisation, marketing, fund-raising)
- Personal networks restricted to their own business or sector
- Poor knowledge, understanding or perception of assistance available from the public sector
- Poor knowledge and understanding of the private sector advisory community.

Lessons learned

This pilot programme was developed on the assumption that there may be potential in providing some form of support for would-be entrepreneurs who might consider startingup technology businesses from within the private sector.

It has been inspired to some extent by the long-established SE / RSE Enterprise Fellowship scheme, which effectively provides a 12-month safety net for academics and researchers as they pursue a start-up, with no guarantee of success.

Preliminary research (by David Stewart, independent consultant) indicated that there was a need for support among entrepreneurs and potential entrepreneurs. The areas of Finance and Sales & Marketing were pinpointed as those where particular support was required.

Our research bears out this earlier conclusion. The financial support implicit in the Fellowships allowed 'breathing space" for the three Fellows. Their participation in the HGSU programme meant that they had access to impartial advice and knowledgeable assistance in terms of assessing true funding needs and setting about the fund-raising process.

Two of the three spent a considerable amount of their time within the Fellowship on developing sales and marketing techniques, key messages to their chosen markets, and appraising the true market potential of their products.

Given that the programme was a "pilot", supporting just three Industrial Fellows, it is clear that its process was developed as things progressed. This is certainly the case in terms of instituting regular reviews and requiring Fellows to provide progress reports.

The intention has been to keep the process simple. This is the correct approach, given that the Fellows must concentrate on developing their business proposition.

Effectively the programme provides potential entrepreneurs with a "soft landing" which would be provided otherwise by the private sector.

From their evidence, two of the three Fellows had made considerable personal investments in their business ideas. The third had given up a senior job with a major corporation.

Finally it is clear that the Industrial Fellowship programme will be of considerable benefit to individuals with good ideas, usually with strong potential IPR, who are willing to give up their jobs, or at least a great deal of their spare time, in pursuit of a start-up.

It is less clear whether the programme could be extended towards encouraging spinouts at corporate level (i.e. persuading companies to support spin-outs even where those companies do not have full control of the new business). However, it could be that a form of Fellowship could be offered to interested companies who might be encouraged in entering joint arrangements with SE which are aimed at fostering private-sector spinouts. In summary, "lessons learned" include:

- The need for clear processes including monthly written progress reports and regular reporting meetings which might alert SE personnel to new issues arising within the start-up
- The need to broaden the pool of candidates at or before the interview and selection process, so that referrals and direct applications come from a broader variety of sources
- The need to decide whether the programme in future will be a Network product administered by internal managers such as HGSU, Targeting Innovation, or similar.

Discussion on potential programme development

There is consensus that the programme should be extended, and our research supports that suggestion.

The main reasons expressed by all interviewees, and borne out by our own research and knowledge of the market, are as follows:

- The level of private sector spin-outs in Scotland is historically low
- Public sector effort to improve commercialisation has been concentrated on the research and academic sectors, principally through programmes including RSE Enterprise Fellowships and the Proof of Concept fund
- Given Scotland's business sector, small and medium sized enterprises (SMEs) may offer the greatest number of potential spin-outs
- There may be strong potential among individuals with expertise who are currently employed by large corporations and are willing to start-up a new business if conditions are right (two of the three fellows worked previously for large multinationals)

What do these individuals need?

In the main, potential entrepreneurs in the private sector divide into two types in terms of business start-up in the technology sector:

- Those who start-up with an idea or particular specialism and a short employment record (i.e. straight from university or business, and usually under 30 years old)
- Those whose specialism has been developed in research & development or similar disciplines within existing companies and who are prompted by the "entrepreneurial spirit", or by conviction that their idea can work commercially, or by external circumstances such as a desire to "return home" to Scotland, redundancy or other re-structuring which has an impact on the individual

They need a broad variety of support measures, including some or all of the following:

- Start-up advice, including incorporation, IPR protection, management, recruitment, finance and product development
- Proof of concept and proof of market undertakings
- At a personal level, some means of minimising or "capping" personal risk
- Advice in specific areas where they have no personal experience (recruitment and fund-raising being typical examples).

Identifying targets and filtering

There is no doubt that individuals such as the three "pilot" Industrial Fellows need to be identified, assisted and encouraged. There is a well-documented shortage of them in Scotland, and public policy on economic development – principally Smart Successful Scotland and related strategies – recognises the gap.

However it would be a mistake to tackle this situation by simply promoting the Industrial Fellowship programme to a broad audience. At base level, the Fellowship effectively supplies a salary and expenses to an individual contemplating a start-up.

In order to avoid a deluge of applications for such an appealing proposition, certain criteria and hurdles require to be in place.

These criteria should be set with the intention of ensuring that the programme attracts a high quality pool of applicants, and therefore a strong cadre of successful Fellowships.

The criteria should include:

- Rigorous "interviews" in the form currently undertaken by HGSU
- Presentation of a business plan with credible detail about what work will be undertaken during the Fellowship period, how much money is required, and how the money will be spent
- Peer review, or review by a panel of experts.

It should be made very clear that applications for Fellowships will be entertained only where they demonstrate a clear understanding of the product or service to be developed, its IPR potential, its market potential, the calibre of individual concerned in terms of knowledge and experience, and the support mechanisms which will be in place (whether or not those mechanisms are provided by the SE Network).

We recommend that applicants must be referred by suitably qualified officers within the SE network, or trusted professional advisers who have a clear understanding of the Fellowship programme's aims and objectives.

The existing infrastructure related to technology start-ups within the Network includes the cluster teams, LEC high-growth account managers, the High Growth Start-up Unit (HGSU) and others.

The three pilots were HGSU clients, and two of them had been so before selection as Industrial Fellows. This suggests two choices:

- That Industrial Fellowships become an added channel of service provided by HGSU; OR
- That future Industrial Fellowships are drawn from a broader potential pool of candidates.

The preferred answer may be a combination of the two. We know from separate research on the work of HGSU that candidates are subjected to rigorous examination by the HGSU team and its advisers. This examination could be extended to include potential candidacy for Fellowships.

However, there is an associated risk that HGSU candidates assume they will qualify for Fellowship, the effect being that the scheme's criteria become distorted as clients perceive if to be simply another source of public subsidy.

The second risk is that some potential Fellows may not meet the normal criteria of the HGSU, or cannot be accepted by HGSU because of resource limitations or similar barriers.

In addition it is important to recognise that within the Competitive Business division 9and particularly the cluster teams) there are skilled personnel with specialist knowledge who may be able to support candidates for Fellowships, especially where the potential business would be unsuitable for the HGSU alone.

Selection

It would be inappropriate to offer Industrial Fellowships on a broad basis such as SE's current productisation programme. It can certainly be "productised" but it should be remembered that the programme is most likely to develop as a discrete, narrow service rather than a broad one.

A broadly-accessible Fellowship could lead account managers may perceive the Fellowships as an additional channel for clients, even if they would not normally qualify. This could be time-consuming and present a distraction to the real goal of the Fellowships, which must be to ensure high-quality candidates who receive the right level of support, whether financial or advisory.

Therefore, we believe that firm criteria be set for Industrial Fellowship qualification. Candidates should present compelling reasons for acceptance, based on their business proposition, their own financial input to the start-up, personal exposure in terms of financial risk, and clear aims and objectives.

The selection process for the pilot scheme was simple and successful. However if it is to be extended in terms of period of funding, and the lifetime of each fellowship, we suggest the following:

- A peer group of experienced entrepreneurs participate in the selection process, alongside SE personnel
- This peer group should include people with direct personal experience of starting and building a business, preferably in the technology sector
- The peer group member involved in a selection decision should have the casting vote

Programme management

The pilot programme was managed by Julie Morrison, in conjunction with SE Network colleagues in the HGSU and Competitive Business areas. The three Fellows all made very positive comments about this aspect of management.

In the event that the programme is enlarged and extended, it may be that it would be better managed under a specific contract either within the organisation or by an appropriate supplier, such as one of those operating within SE's non-technical framework agreements.

This would enable specific provision of selection, process and management of the programme under SE supervision.

Strategic fit with other organisations

Scottish Enterprise is engaged in several partnerships or joint ventures whose activities may cross over that of the Industrial Fellowship scheme. Consideration should be given therefore to whether these organisations be "kept in the loop" in terms of recruitment, targeting and selection of Industrial Fellows.

Examples include professional advisers, consultants and organisations who have experience of working with Scottish Enterprise and particularly in specialist areas such as the clusters and HGSU. Another strategic partner may be found in Targeting Innovation Ltd., for example.

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