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Summary Report on
The Growth Series:
A series of four debates
on stimulating Innovation
and Entrepreneurship
in Scotland

May 2009

hosted by MBM Commercial LLP and the
university of Edinburgh Business School



UNIVERSITY OF EDINBURGH
Business School





DEBATE 1 Left to right:
Jim Reid, Professor Steven Beaumont, Jack Perry, Derek Waddell, Adrian Smith



DEBATE 2
Above:
Bill Jamieson



DEBATE 2 Left to right:
Carole McCarthy, Ian Ritchie, Professor Peter Denyer, Professor Peter Ghazal



DEBATE 3 Left to right:
John Waddell, Paul Atkinson, Douglas Anderson, Pat McHugh,
Dr David Milne, Charlie Morrison OBE



DEBATE 4 Left to right:
Peter Morrison, Peter Shakeshaft, Sharon Bamford, Mike Rutterford
Gavin Don, Doug Richard

EXECUTIVE SUMMARY

The Growth Series, co-sponsored by MBM Commercial LLP and the University of Edinburgh Business School, had three primary objectives when it was first conceived in 2007: 1) to openly debate the challenges and opportunities for Scotland in building an entrepreneurial, innovative economy; 2) to ensure that leading university, private sector and government representatives were in attendance; and 3) to capture key themes from the Series and from this, offer recommendations for future action.

The first objective was achieved by offering four complementary debates around the central theme. The opening debate, What Role can and should Universities Play in Stimulating an Innovative Scotland, identified the need to maximise the entrepreneurial talent at Scottish universities, the need for more demand-led, market-driven innovation from universities and the need for more risk capital to support new ventures based on Scottish technologies. It was acknowledged in the debate that risk capital would likely increase if the other two challenges were addressed.

The second debate, Creating an Innovative, Technology-based Scottish Economy, identified the need for more scale in Scotland's new ventures, easier processes for spinning companies out of universities and the need for greater incentives, including tax structures, to stimulate entrepreneurship and research commercialisation. Socio-cultural factors such as negative attitudes toward individual achievement, success and personal wealth were identified as constraints on the entrepreneurial drive necessary to fuel innovation in Scotland.

The third debate, Challenges and Opportunities: Entrepreneurship and Investment, identified the need for higher quality management in new ventures, better "investor-ready" preparation by entrepreneurs in order to stimulate private investment and the need to concentrate commercial and investment expertise on particular sectors where Scotland has comparative advantages. Speakers identified the importance of public schemes to stimulate private investment into new ventures, such as the Co-Investment Fund, Scottish Venture Fund and LINC Scotland, but there was general agreement that more private sector investment and debt financing options were needed.

The fourth and final debate, How Can We Better Stimulate Entrepreneurship in Scotland, identified the need for more creative and practical entrepreneurial training at schools and post-secondary institutions, improved efforts to promote entrepreneurship and self-employment in Scotland as a preferred career choice and better utilization of programs already successfully supporting entrepreneurship and new venture creation. The need to portray business set-backs more as learning assets, develop self-confidence and celebrate personal achievement and change the collectivist, public sector dependent mindset in Scotland were also highlighted in this debate.

The second objective for the Growth Series, to ensure broad attendance of key public and private sector stakeholders, was achieved through the contributions of an impressive list of speakers. We would sincerely like to thank them all for their time and contributions.

There was strong representation on the debating panels from Scotland's leading academic entrepreneurs: Peter Ghazal, Peter Denyer, David Milne, Ian Ritchie and Jim Reid. Douglas Anderson, Founder of Optos, one of Scotland's most successful technology companies and Peter Morrison of the RJM Group of Architects also provided viewpoints from an entrepreneur's perspective.

The Series had strong representation from university commercialisation leaders, including Derek Waddell, CEO of Edinburgh Research & Innovation, Stephen Beaumont, VP of Research & Enterprise, University of Glasgow, Adrian Smith, Director of Edinburgh Pre-Incubator Scheme (EPIS) and Sharon Bamford, former CEO of the Scottish Institute for Enterprise.

High-profile business commentators on the panels included Bill Jamieson, Executive Director of the Scotsman, Doug Richard, serial entrepreneur from BBC's Dragon's Den and Gavin Don, Founder of Young Company Finance and Equitas.

There was strong representation from Scottish Enterprise (SE), Scotland's principal economic development agency, that included CEO Jack Perry, Pat McHugh, Investment Director for SE Investments, Carole McCarthy, Director of Innovation & Commercialisation and Charlie Morrison, former Board Member of SE.

Scotland's private investment community was well represented in the Series and included Archangel CEO John Waddell, Paul Atkinson of Par Equity, Peter Shakeshaft, Chairman of LINC Scotland and Mike Rutterford of Rutterford Ltd and co-founder of Archangel.

The third and final objective of the Growth Series was to capture the key themes from each debate and to offer recommendations for future action. In this report, you will find a comprehensive summary of each of the four debates that includes a summary of discussion from each panellist and a summary of question and answer sessions.

The final section of this report offers recommendations that address the central theme of the Growth Series: How to stimulate innovation and entrepreneurship in Scotland? Whether you participated in the debates or not, we sincerely hope the report offers some new insights for you to ponder and reflect on. We also hope that you will join us and participate in future activities arising in response to recommendations from the report.

Dr. Geoff Gregson
University of Edinburgh
Business School

Mr. Stuart Hendry
MBM Commercial LLP

DEBATE 1:

What role can and should Universities play in stimulating an innovative Scotland?

School of Informatics, University of Edinburgh, 29 October 2008

Chair:

Adrian Smith

Director, Edinburgh Pre-Incubator Scheme (EPIS)

Panel members:

Derek Waddell

CEO of Edinburgh Research and Innovation (ERI)

Professor Steven Beaumont

Vice-Principal for Research & Enterprise at the University of Glasgow

Jim Reid

CEO, Haptogen Ltd.

Jack Perry

CEO, Scottish Enterprise

Guests in Attendance:

Approximately 60 guests

DEBATE SUMMARY

Jack Perry

Jack Perry got proceedings underway by raising the issue that there is a mismatch between Scotland's assets and its return on investment. He states that Scotland enjoys great strengths in terms of creativity and talent. This is borne out by the fact that from a population that makes up 8.5% of the UK it is responsible for 15% of all UK patents and last year 26% of foreign direct investment (FDI) in Research and Development. Scotland also enjoys great natural assets. However, he points out that Scotland is about 20% less productive than the competition and growth lags behind that of the UK as a whole and the OECD average.

One of Scottish Enterprise's (SE) objectives is to stimulate demand for intellectual property (IP) which is currently too much driven by supply. R&D expenditure by business is negligible, accounting for only 0.6% of GDP. Sweden and Finland spend five times as much as Scotland. One key question is: How do we stimulate demand? Jack suggests there is a propensity in Scotland to fragment demand through the many business and government organisations and stressed the need for much greater collaboration between organisations. Jack cites one example of collaborative good practice: the collaboration of the Medical Schools of the four major Scottish universities with SE to attract and secure more significant investment. No one university could have captured this investment alone, and Jack suggests the need for more collaboration in order to play on the world stage.

Jack argues that Scotland needs more entrepreneurial talent working in universities – the University of Edinburgh's School of Informatics and its Medical School are good examples of how to get investment from business. Jack ended his discussion by suggesting that Scottish Universities need to play a more central role in stimulating an innovative Scotland by deploying a greater sense of urgency and more commercial impetus to convert knowledge into business capital.

Professor Steven Beaumont

Steven Beaumont began by arguing that Scottish universities have responded well to society's needs and that they have the capabilities to continue to do so in the

future. However, he suggests a big issue is how to better incentivise universities to stimulate innovation. Steven echoed Jack's views that innovation has been too supply rather than demand-led, though he sees signs of this changing with universities moving away from traditional 'blue sky' research to more market-driven applied research. Steven stressed the role universities should play in developing curious, confident entrepreneurial graduates with a broad spectrum of abilities to help deliver the innovation agenda. Universities must try to work more closely with industry both in terms of research activities and in the placement of students. However, for this to happen, he suggests that issues of funding and incentives must be resolved. The RAE (Research Assessment Exercise) has a strong influence on university research funding and produces good academic research as opposed to commercially focused research.

Jim Reid

Entrepreneur Jim Reid has been involved in approximately 20 spin out companies, many from universities. Jim began by suggested that, based on his substantial experience, the spin out process is too complicated, takes too long and is too expensive. Jim commented on the poor record of growth by both start up and spin out companies in Scotland – i.e. only 15 such spin outs have gone on after five years to employ 50 or more employees and 30% of spin out companies fail between years 5 and 10. Jim's own company, Haptogen, grew to 35 people but failed to find growth capital in Scotland and so sold out. Jim lamented the fact that only 0.1% of GDP is spent on risk capital investment in Scotland and concluded that innovation by itself is not enough without appropriate funding mechanisms in place.

Derek Waddell

Derek Waddell set out the University of Edinburgh's record in innovation, outlining the central position innovation occupies in the University's five year strategic plan, alongside that of knowledge transfer. In terms of teaching, the University teaches entrepreneurship to both undergraduates and postgraduates. In terms of company formation, the University has created 62 companies in the past five years, employing 200 people, with 90% still trading five years on. In the past year

alone, 26 companies have been set up through ERI, the

University's technology transfer office. Interface, which facilitates access by industry to the academic research base of most Scottish universities, is a good example of university/industry collaboration, as is Scottish Enterprise's proof-of-concept fund. Derek states that, pound for pound, Scottish universities outperform their US counterparts in commercialising research. He suggests that the need for strong management in spin out companies invariably means externally sourced management and that this is a weakness in the Scottish Innovation System. He suggests that Scottish Enterprise's Global Scot programme may have a positive impact on bringing commercial expertise back to Scotland.

QUESTIONS AND ANSWERS (Q&A):

The following issues were highlighted in the Q&A session:

- Scotland has a strong Angel network but no comparable venture capital (VC) network. As a result there is too much reliance on Angel investment as opposed to VC or private equity. This affects the typical size and risk profile of available funding. Angels lack significant funding to allow a company to grow globally (the required figure of £30m was mentioned);
 - It is difficult to obtain the right business experience in Scotland. There are many top Scottish CEOs but many of these run companies overseas because they get better experience abroad. There is a lack of opportunity in Scotland for high-end private sector business management experience;
 - Scotland needs companies to locate here and there is a need to analyse the needs and problems that such companies face - to determine how Scotland can position itself as an attractive location;
 - There remains an ongoing issue of loneliness and a sense of isolation among Scotland's entrepreneurs;
 - Scotland is not a forgiving business environment for failed entrepreneurs, despite the fact that the 'recycled entrepreneur' with a wealth of experience has much to offer (e.g. failure seen as an asset in Silicon Valley). There is an issue here of how to learn better from experiences;
 - Scotland's culture has changed for the better over the years, but we do not celebrate entrepreneurial success or generating personal wealth;
 - Scotland's industrial structure remains a key constraint, i.e. there is a lack of an indigenous private sector industrial base and inadequate capital to build one;
 - The corporate landscape is dominated by small to medium sized enterprises (SMEs), particularly on the small side. They tend to under-invest in technology thus lowering the uptake in innovation overall in Scotland. Indeed, the rate of business R&D in Scotland is amongst the lowest in Europe;
 - Visa regulations are an issue, though Fresh Talent
- has been good at attracting talent from overseas by providing a two year visa to work in Scotland. Funding councils also put funding into overseas studentships. Talent Scotland has been successful in providing a matchmaking service for Scottish business but more has to be done to attract and maintain talent in Scotland;
 - At a pre-college/university level, entrepreneurship tends to be educated out not in to potential students, suggesting the need for a more directed and integrated approach to entrepreneurship education in Scotland;
 - Can or should we expect academics to become entrepreneurs or is it better to facilitate the hand-over of their IP to others to get on with it? This remains a heated debate, e.g. Peter Denyer is the exception rather than the rule of a successful academic entrepreneur;
 - Universities are big businesses and should think of themselves as such. They need to incubate businesses better in order to get momentum behind them, i.e. to push them to the next level (there remains a debate on whether or not universities should be more or less involved in incubating businesses);
 - Glasgow University has its own investment fund to self fund its start ups. By contrast, the University of Edinburgh has an investment advisory panel that includes Peter Denyer and Ian Ritchie. Although not directly providing it itself, it was argued that the University of Edinburgh is still well connected for funding;
 - All spin out companies rely on a 'three legged stool' of management, finance and technology. Management and finance are the two wobbly legs and this probably accounts more than anything else for why so few spin outs reach any scale.

DEBATE 2:

Creating an Innovative, Technology-based Scottish Economy

Royal College of Physicians, Queen Street, 25 November 2008

Chair:

Bill Jamieson

Executive Editor, The Scotsman

Panel members:

Ian Ritchie

Founder and CEO of OWL Ltd

Professor Peter Ghazal

Founding Director of the University of Edinburgh Medical School's Division of Pathway Medicine

Carole McCarthy

Director of Innovation and Commercialisation, Scottish Enterprise

Professor Peter Denyer

Founder of Vision Group Plc

Guests in Attendance:

Approximately 70 guests

DEBATE SUMMARY

Bill Jamieson

Bill Jamieson opened the debate by referring to the economist and political scientist, Joseph Schumpeter, who wrote about the pivotal role that the entrepreneur had in leading economies out of recession. Bill remains convinced that the current recession will lead to a hunger for new technologies that will contribute to the recovery. Scotland scores well on business creativity – 15% of all UK patents have their origin in Scotland, double the UK average per head of population. However the challenge is to convert more ideas into business success.

Ian Ritchie

Ian sits on the Advisory Board of Pentech Ventures, which has substantial funds from Alliance Trust and Scottish Widdows Investment in its £46m funds. Ian spoke of the difficulties of raising funds from his own ventures in Scotland.

Ian focused on the funding issues faced by entrepreneurs in commercialising their knowledge. Quoting a statistic that Scotland is responsible for 1% of the world's innovative ideas per capita – far higher than the global average – he lamented Scotland's inability to commercialise its innovations. Dolly the sheep is a classic example – the Roslin Institute, developer of the cloning technology, failed to raise Scottish funding. Would this have happened in California? Another example is MTEM, the most successful spin-out to date from the University of Edinburgh, which received the bulk of its financing from Norway. As a result Scotland missed out on what could have become a major technology-based, world-leading company. Ian also referred to MicroEmissive Displays (MED), a major University of Edinburgh spin out that is now in administration due to lack of funding.

Ian criticised the short term view of many investors, pointing out that Wolfson Microelectronics and Optos had been going for 19 and 16 years respectively before being floated. The typical horizon among Scottish investors is 10 years – too short for many companies, he argues.

Peter Ghazal

Peter began by offering an academic perspective on the topic, suggesting a strong need to better understand what role academia should play in stimulating innovation and entrepreneurship in the Scottish economy. He

suggested that the role of academia is to provide a whole spectrum of innovative ideas, while the role of the business community is to provide clarity about market demand.

Peter suggests the need for a cross disciplinary team-based approach to the development of new ideas and the need for certain technologies to be more applicable to commercial products and the market place. Peter finished on an upbeat note by saying that, based on his experience in the US, there will be huge opportunities for commercialising medical sciences in Scotland in the future.

Carole McCarthy

Carole stated that Scottish Enterprise (SE) is currently undergoing major restructuring to position itself with enterprise and innovation as core to its mission.

SE has a clear mandate to support technology-based companies but needs to further respond to the challenges of low growth and poor innovation performance while supporting high-growth companies with superior technologies. SE is also committed to stimulating and commercialising business innovation and wants to see greater innovation across the whole of industry, not just in certain sectors or technologies.

In the context of this discussion, Carole defined commercialisation as the unlocking of value from a science base. To this end, SE has established the Proof of Concept programme through which it invests approximately £6m per annum. This programme is not just a fund but also a source and base for other types of support. Her fellow panellists, Peter Denyer and Peter Ghazal, have both benefited from funding via Scottish Enterprise.

Carole spoke about the need for more scale in Scotland's new ventures. A recent Targeting Innovation report showed that out of 200 spin out companies it reviewed, 30% failed, 55% have less than 10 employees, 15% with more than 10 employees while very few companies achieved any level of scale. SE is committed to promoting scale, but this requires strong management talent and the appropriate investment infrastructure. Companies need time to grow and funding needs to reflect this. Finally, Carole spoke about the need for SE to

complement and not duplicate the activities of the private sector, identifying the important role Scotland's private sector needs to play in partnership with public support initiatives. SE is also committed to examining how to best address the funding gap in the current funding climate.

Peter Denyer

Peter began by outlining his own experiences as an entrepreneur. He has been involved in University spin outs for many years, starting with his own spin out, Vision Plc, which was spun out in 1990 and sold in 1999. He has since become a business angel. This has given him an opportunity to recycle his knowledge, which he has done with five companies that have emerged from Edinburgh, Strathclyde and Dundee universities.

Peter argues that the public should expect the university base to generate innovation, given that universities in Scotland receive close to £1billion in funding. At the same time, Peter identifies that all five companies he has spun out from universities were characterised by difficult and complicated negotiations. While he claims that the University of Edinburgh was easier to do business with, there were still complications that he feels could have been avoided.

He feels that universities tend to be too protective of what they have, or what they think they have, particularly in terms of IP. Peter agrees that for a company to raise money it needs to own or control the IP; something universities tend to be reluctant to assign. Peter posed the question, are we right to expect academics to be entrepreneurs? Perhaps a better formula would be to have seasoned entrepreneurs brought closer to universities to help spin out companies, rather than expecting academics to commercialise their research.

He praised SE programmes, especially the Proof of Concept programme, which has stimulated a good number of start ups. The Royal Society of Edinburgh (RSE) Enterprise Fellowship is identified as good value for money and operationally effective. SE's Co-investment Fund has also been a success, with several of Peter's companies benefiting from it.

However, Peter also questioned whether or not the level of public support is not also a potential constraint to commercialising research. He points out that none of these initiatives were available when he started Vision Plc, so he had no alternative but to go out and find customers, with the company growing through bootstrapping and expanding the customer base. Peter encouraged SE to continue reviewing and changing its funding and support initiatives according to the needs of the economy.

Q&A:

The following questions were put to each panel member in turn:

Is innovation too supply rather than demand led?

- SE is attempting to look far more at the demand side in assessing projects. Intermediate Technology Institutes (ITI) are designed to respond to the demand side through the analysis of future market opportunities;
- Research should be science-led not technology led

and there must be an understanding of market need;

- Universities do not make products and should not be responsible for such, and spin outs require a long development time;
- Knowledge transfer needs to focus more on innovation and entrepreneurship and the development of bright graduates leaving universities and joining Scottish companies;

Does Scotland have the potential to be a world-leading centre for renewables?

- Scotland is rich in renewable resources (i.e. wind, tidal, wave, etc.) so why is more not being done to stimulate and support the industry? Scotland has strong science and research in the field including hydro electricity development;
- There are an encouraging number of potential university spin outs in the renewable sector;
- A major drawback in renewables is that, although the power is low-cost once flowing, initial capital costs can be huge. Also, when oil is relatively cheap and efficient, there are lower incentives to invest in renewables (a barrel of oil can deliver the same energy as the labour of 300,000 people). It is not commercially viable to carry out a successful renewables programme without long term political will, which appears to be lacking in Scotland, but is apparent elsewhere in Europe;
- SE is active in this area, though the challenge is the high capital cost of major demonstration projects;
- We should treat renewables as an infrastructure project of national strategic importance - this would ensure greater prioritisation;
- There is a culture in Scotland that hinders flexibility in committing to new opportunities such as renewables and constrains product development.

Do Scots want to get rich?

- Should the question be - are Scots highly motivated towards entrepreneurship and wealth creation? This is questionable. In Scotland it is fairly easy to enjoy a reasonable quality of life so what's the incentive?
- Is there a lack of opportunity or of aspiration? Research by SE into the desire in business for scale and growth indicates the latter. SE contacted a number of companies valued around £30m to discuss how they could grow. Many failed to engage;
- The economist and political scientist, Joseph Schumpeter was quoted as saying that the main incentive for success was in terms of being well regarded rather than financial gain;
- Peter Denyer's experiences suggest a negative attitude to making money in Scotland - when Vision was floated he received negative publicity in the press. This contrasts with attitudes to making money in the USA;
- From a historical perspective, Scots have been victim

of adverse demographics. In the 19th century Scots were extremely entrepreneurial. The First World War then killed off many Scottish entrepreneurs, and during the Second World War, Scotland was the base for traditional heavy industries. As well, from 1951 to 1971, 600,000 Scots out of a population of 5 million emigrated – many of whom were entrepreneurial and attracted by the opportunities abroad. A lack of skilled immigration and corresponding inflow of new ideas to Scotland may also be a factor;

- There is a lack of sales expertise in Scottish companies.

What level of success can an unknown academic have in attracting private investors? Do you need a track record?

- The RSE Enterprise Fellowships is a good scheme with experienced mentors and opportunities for introductions to allow entrepreneurs to find good non-executive chairmen, something that appeals to investors;
- It depends on how good the idea is. Peter Denyer was untested when he spun out Vision. It's all down to the strength of the idea and your own drive;
- A track record is not always essential for attracting investment, although commercial and business experience can be essential for commercial success;
- For a spin-out venture to be successful, the academic should create a team before creating a company in order to focus activity. Some support schemes aim to support an individual – this is wrong, they should always look at supporting teams.

Do we have the necessary building blocks to effectively commercialise university research?

- Many start up ventures reinvent the wheel in terms of basic company functions such as HR policies etc, thus diverting much needed time and effort from the product and market. We need an equivalent of a 'self assembly company kit';
- Scotland lacks a sufficient number of large technology-based companies, with the result that we lack sufficient experienced senior level managers;
- When a company's market is overseas, there is no reason why entrepreneurs can't base their R&D and HQ in Scotland and their sales & marketing function nearer their markets;
- SE should be commended for their efforts, but there is still a gap in terms of funding to allow a firm to gain critical mass.

If the panellists had one suggestion to put to the First

Minister on the topic, what would it be?

- Greater incentives for entrepreneurs through a kinder tax structure;
- Government must persuade banks to lend to entrepreneurs, perhaps in the form of an innovation fund with a 20 year horizon;
- Various schemes and initiatives need to be joined up and integrated better to remove 'process' barriers on the commercialisation route; this will make support more effective by reducing time and resource constraints on entrepreneurs and new ventures seeking, securing and utilising support;
- To have fewer strings, conditions and red tape attached to funding. So often funding is restricted.

DEBATE 3:

Challenges and Opportunities: Entrepreneurship and Investment

School of Informatics, University of Edinburgh, 11 February 2009

Chair:

Dr David Milne

Co-founder and Non-executive Director, Wolfson Microelectronics

Panel members:

John Waddell

Chief Executive, Archangel Informal Investments Ltd

Douglas Anderson

Founder and Executive Director, Optos Plc

Charlie Morrison OBE

Former Chairman of Finance & Operations Committees of Scottish Enterprise (SE)

Paul Atkinson

Partner, Par Equity LLP

Pat McHugh

Investment Director, SE Investments

Guests in Attendance:

Approximately 70 guests

DEBATE SUMMARY

David Milne

Chair David Milne began by contrasting the various funding schemes that are now available with what was available when he sought to raise money for Wolfson in the mid 1980s – the opportunities for raising money are greater now. Much smaller sums were then invested. SE then was very bureaucratic, with all investment decisions having to be signed off by their Board – “a long winded and time consuming affair”. Wolfson raised their funds through high net worth individuals (there were no angel networks then) and friends/family. He praised the current angel network in Scotland which he regards as very good at supporting early-stage companies. David is still unsure about why some companies cannot grow beyond a critical size in Scotland, perhaps due to a combination of local factors: lack of ambition, finance and management skills perhaps?

David identifies the SE Co-investment Fund as a recent welcome addition to the funding landscape in Scotland, particularly as there is a limit to the amount individuals want to invest. The Fund works because due diligence has already been carried out with prime investors and it is a good creative way of freeing up money. Scottish Equity Partners (SEP) has a good track record in investing – there are many staff in SEP from Scottish Enterprise.

David also talked about the importance of the sales function and interacting with the market as key elements for successful investment. He finished by suggesting that there will be a huge amount of money available soon, as there is nothing for investors to invest in at the moment; a situation very similar to that after the dot.com crash.

Charlie Morrison

Charlie spent 28 years with IBM at their Greenock plant before starting up a number of businesses from 2005. He has been on the board of SE for 6 years.

Charlie highlighted the need for a sectoral/industry approach to investment. Scotland desperately needs economic growth and this can best be achieved by selecting those sectors or industries that have the highest potential for success. He identifies the inordinate level of intellectual assets residing in Scotland.

From an investment point of view, he argues that Scotland needs to identify gaps in sectors and technological areas where Scottish science and R&D investment could have the greatest impact and then drive investment into these sectors.

Charlie argues that Scotland needs funding councils and angel groups to drive investment, given the large number of angel syndicates in Scotland. He suggests the need for a more structured approach, where angel groups become sector experts that have expertise and appetite in these specialist areas. He also suggests a need to look at consolidation sector by sector to overcome the issue of lack of growth. For example: Scotland has 1,500 software companies – could there be 10 world beaters instead?

Finally, he argues that in order to get best value from companies, there needs to be greater emphasis on robust management systems – many companies fall down through bad management.

Pat McHugh

As the only public sector representative on the panel, Pat spoke about the role of the public sector in investment. SE's involvement in investment in Scotland is due to market failure in the supply of capital, i.e. there is always a shortage of investment capital in Scotland.

The objective of the SE investment team is to help grow the investment market, in two ways:

- Support LINC to grow angel syndicates (there is a renowned and healthy angel environment in Scotland). SE has been doing this since 1991;
- Through the provision of money, primarily from three funds that co-invest alongside private sector funds:
 - Seed fund** – to invest in start ups up to £100k, as part of a deal package of £300-400k;
 - Scottish Co-investment Fund** – mainly for early stage companies that have revenues. This has been in existence since 2003. It is the most successful early stage fund in Europe, which invests up to £1m. The fund co-invests alongside a commercial partner who is responsible for due diligence and negotiating terms;

Scottish Venture Fund – for high-potential companies, SE will invest £0.5m - £2m with private sector partners; 2008 has been the busiest year since the Fund began. Archangel is a very active Fund co-investor.

SE will invest £25m from their funds in 2008. Pat argues that there will always be a place for the public sector to support the early stage risk capital market by complementing an active private sector provision.

Douglas Anderson

Douglas has been an entrepreneur since the 1970s and has worked through many recessions which have a flip side of providing opportunities as well. Douglas's own area of expertise is in the medical sector which is characterised by high costs, long time scales and tight regulatory compliance. These factors add to the already substantial risks that any new enterprise faces.

What is the key to attracting investment? The answer, according to Douglas, lies in having a clear value proposition grounded in knowing customer needs. His experience is that disruptive technology is often viewed with disbelief. In the early 1990s, Optos had a product that was widely dismissed by many in Scotland. Optos in fact began their operations by focusing on the large, lucrative but highly competitive US market.

Douglas identifies banks as contributors to the investment gap - by not actively supporting entrepreneurs and new ventures in Scotland. In the past, he suggests that banks had branch managers who knew their clients face to face; now very often bankers operate remotely and thus do not know or understand their clients.

John Waddell

John has spent almost 4 years as the Chief Executive of Archangel Informal Investments. Their direct investments were around £12m in 2008, with £6m involving co-investments with other parties. They work hand in glove in a symbiotic relationship with the Scottish Co-investment Fund. They also work with other angels in leveraging deals and putting together larger deals. In the face of the recent credit crunch, Archangel became the 11th largest investment institution in Scotland in 2008 and continues to attract new investors.

The strength of the extensive angel network in Scotland is that the various angel groups speak to each other and work together. In terms of the bigger players, VCs still provide opportunities for large investments into high-growth potential ventures as do trade players who have cash. John argues that "cash is still king and good deals will always find investment". John identifies a strong sense of entrepreneurship in Scotland and suggests that passion and belief on the part of Scottish entrepreneurs is what sells well to investors.

Paul Atkinson

Par Equity has 40 plus advisors offering support to entrepreneurs and new ventures seeking investment. Paul joined other panellists in praising the Co-investment Fund and was optimistic about the overall outlook for investment in Scotland, believing that there is funding and deals to be had out there. He suggests there is a large challenge in the IT sector with the credit crunch as clients cut back on their IT spend.

Paul contrasted the well co-ordinated nature of investment through angel groups with the less co-ordinated nature of investment through VCs and banks. He suggests the need to better co-ordinate access to capital and make the process less opaque. He finds that many businesses go to advisors who are ignorant of the angel network.

Paul argues that there is a public relations problem in Scotland regarding reporting the economy and suggests that there is very little information on how Scotland's small companies are doing. All that is written appears to be doom and gloom. He argues that there are multiple examples of successful technology companies and that these need to be highlighted and celebrated.

He concludes that there remains investment out there seeking good business ideas, and suggests that despite the credit crunch, this is still a good time to start a business.

Q&A:

The following questions were put to each panel member in turn:

Who will pick the winners in the sectors?

- One must be aware of the changing and dynamic nature of sectors, especially in the environmental and renewables sectors (particularly waste renewables), clean technology and life sciences;
- We need the best advice from global players and we need to carefully choose the best sectors to focus on;
- Cloud computing offers huge potential; Scotland is well placed in the IT sector in terms of expertise and to take advantage of its technological expertise.

If panellists had £5m what would they invest in?

- The consensus was that no one panellist would invest all in one company but into many, perhaps into 20 companies, including (according to Douglas Anderson) into medical device companies;
- Panellists suggested a portfolio approach, and warned against trying to pick a winner. The clean-technology industry in California was given as an example of an industry that had huge potential but no clear winner yet.

How good is the Co-investment Fund?

- Pat McHugh said it was too soon to say. It was started in 2003 and expects returns from 2011 or 2012. It takes 7-8 years to get a return. Currently the fund has 30 co-investment partners and works with 200 companies.

If investment is doubled would we get double the return – is it a funding issue or an issue of entrepreneurs having the necessary vision, skill, and appetite?

- Paul believes that it is a lack of transparency about how to find money;
- John disagreed, saying that more cash would not do the trick. His experience is that there is an attitude of “come and talk to us” by entrepreneurs who at the same time, are not prepared or investor-ready. Entrepreneurs need to be better prepared to put their proposition to investors. There is also a lack of respect in Scotland for the salesman – in contrast to the high level of respect they receive in the USA.

Closing Remarks

David Milne suggested that the investment community in Scotland needs to be more entrepreneurial and less systems oriented and needs to foster and support a Scottish entrepreneurial spirit. He praised SMART awards as excellent for small companies to invest in innovation, with the process characterised by quick decisions and low levels of regulation.

DEBATE 4:

How Can We Better Stimulate Entrepreneurship in Scotland?

Royal College of Physicians, Queen Street, 3 March 2009

Chair:

Peter Shakeshaft

Chairman, LINC Scotland

Panel members:

Doug Richard
Sharon Bamford
Gavin Don

Serial Entrepreneur, former “Dragon” on BBC’s “Dragon’s Den”
CEO, UK India Business Council (former CEO of Scottish Institute for Enterprise)
Visiting Professor, University of Edinburgh Business School, Founder of Equitas,
Chairman of Newsbase,
Rutterford Ltd, Co-Founder of Archangel
Group Chief Executive, RMJM Group of Architects

Mike Rutterford

Peter Morrison

Guests in Attendance:

Approximately 70 guests

DEBATE SUMMARY

Peter Shakeshaft

Peter Shakeshaft opened the debate, stating that “entrepreneurs may be born rather than made but the skills required can be taught”. He stressed that Scotland needs the right environment and culture to embrace entrepreneurialism. Successful role models such as Tom Hunter are very important. The key to economic success, he adds, is to better leverage and exploit Scotland’s extensive intellectual assets.

Gavin Don

Gavin drew on three themes for his comments: culture, finance and education. He suggests that entrepreneurship in Scotland has come some way in recent years and that the entrepreneurial network is much bigger than say 15 years ago. However, he points out that a sufficient ‘churn’ of successful entrepreneurs is still not there and there is a lack of feed-through from one generation of entrepreneurs to another in Scotland.

Gavin argues that there is no lack of an initial entrepreneurial spirit in Scotland but that it evaporates due to an overwhelming perception that mortality rates for start ups is 90%. Hard data for such rates is actually 30% over 10 years.

He suggests that starting a company takes cash, typically in the range of £5-10k. Carphone Warehouse for example needed only £3k, though much more is needed for technology start ups. The key here is the angel network in Scotland that comprises between 600-700 active angels. He suggest that this number is about 5% of what we should have in a developed economy and argues that Scotland needs to educate those with money on the opportunities for investing in Scottish start ups. He suggests that the Dragons Den programme has made private investment a mainstream topic, perhaps making it more acceptable to potential business angels.

In addition to a cultural change, Gavin suggests that Scotland needs a change in regulation and tax breaks for investors. Scottish angels are not rich enough and certainly not as rich as angels in the US. Raising £10m for a technology company through Scottish angels is not

currently possible; therefore we need funds to do this. Indeed, access to private investment of this magnitude in Scotland is not possible. For 30 years, the investment firm 3i was the driver for English entrepreneurial finance; Scotland needs something similar that brings with it professional private sector managers.

Gavin’s final point touches on entrepreneurial training. If you can persuade people to become entrepreneurs, you can then teach skills that build on their innate skills. Gavin argues that it is possible to teach such techniques. He suggests that we still have a fond but misplaced idea of “entrepreneurs as being born not made”, when instead we should have a culture of teaching practical, not necessarily academic, techniques. He suggests the need to develop a business computer simulator to see how people react in various business scenarios. Teaching the entrepreneur in a risk free environment that highlights consequences of decisions and actions would also add to that person’s confidence.

Doug Richard

Doug suggests that US education for children is low on competence but high on confidence, and suggests the opposite is the case in the UK. Doug defined entrepreneurship very broadly as any self employed enterprise and not confined to starting a high technology, high growth venture such as Google. Entrepreneurship is not rocket science, he argues, it is starting your own business. He suggests that a key problem is that the UK lacks enough people who want to start businesses.

He argues that too many young people have a corporate mindset in terms of future employment. You may not be able to teach desire, passion, spirit, but you can teach everything else. There is a need to change the rhetoric of entrepreneurship at a very young age, particularly in Scotland where so many are employed in the public sector. Doug summed up with these words – “culture, teaching and self regard”.

Sharon Bamford

Sharon points out that Scotland has done well over the last 15 years in creating networks and support systems to stimulate entrepreneurship; the Scottish Institute for Enterprise (SIE) being a good example of a program that mentors and supports post-secondary students with entrepreneurial ideas. While the infrastructure may be in place, two vital ingredients - culture and confidence - are missing, especially a lack of confidence to think big and take the leap and start a business.

Sharon identifies the recent success of India's entrepreneurial culture, one characterised by ambition, hard work, talent and confidence. She points out that India is also a nation of savers; their banks have huge reserves to invest.

She argues that there is a lack of global ambition and confidence in Scotland. Every student graduating in Scotland should have exposure to emerging global economies, and an understanding of their drivers, as these will be the leading economies of the future. Sharon summed up with the words - culture, confidence and global ambition.

Mike Rutterford

Mike stated that the UK government talks a good game but does not deliver for entrepreneurs, on tax relief for example. Scotland, he points out, has some excellent opportunities for raising capital compared to 15 years ago. The Entrepreneurial Exchange is a great network and the Dragon's Den programme has been good at promoting the concept of entrepreneurship.

Scotland also has one of the best networks of angels anywhere. Why? Scotland is small enough for everyone to know each other. Mike suggests that the Scottish Enterprise appointment of Crawford Gillies as their new Chairman bodes well for innovation in Scotland, given his experience and background.

Mike sees the current economic climate as a time of great challenge but also massive opportunity; if you are small and nimble there are many opportunities to expand and develop your business. Redundancy can be a blessing in disguise to encourage individuals to start their own business. Perhaps many new start ups will arise.

From a cultural point of view, Mike believed that there has been a sea change in attitudes to starting a business in Scotland, with a generally much more positive attitude. Inroads have been made but there is still much to achieve. Mike echoes earlier comments about the worrying level of public sector employment in Scotland and the influence of the 'public sector mindset' as a constraint to entrepreneurship.

Peter Morrison

Peter believes that a compelling quality of entrepreneurship is tenacity - to not take 'no' for an answer. How an entrepreneur deals with failure marks a successful entrepreneur out. He argues that Scotland has a culture that allows people to have it too easy, beginning in primary school. He argues that we should give young children far more responsibility at a young age.

Peter stresses that big business has a duty to promote the entrepreneurial traits of drive, flexibility and "to go where the work is" rather than encouraging what Peter sees as "big company complacency". Peter suggests that Scotland is still far from viewing risk as a positive thing and sees the process of getting funding as still too bureaucratic.

Q&A:

The following questions were put to each panel member in turn:

Why do institutional investors not invest more in entrepreneurs?

- Gavin suggests that institutional funds should allocate 0.5 to 1% to entrepreneurs; this is an asset class that is being missed. Currently their money is going towards buyouts. He argued for use of compulsion in terms of the definition of entrepreneurs as an asset class;
- Peter points out that Harvard University's endowment fund does well by a wide range of asset class allocation. Scotland needs to re-establish rules for oversight; there is now a profound decoupling of those in charge and those overseeing them;

How can the corporate world better encourage entrepreneurship?

- Through sponsorship and promotion;
- Joint venturing. Microsoft, for example, wants to expose start ups to their products; a win/win situation that ensures it remains in touch with the youth market;
- One way companies encourage entrepreneurship in India is through philanthropy;
- In Aberdeen, anecdotally, many companies spin out of corporations, and are thus already globally focussed and highly managerially experienced. There is evidence that R&D investment in small companies is high in oil/gas;
- While government is well resourced, there is massive frustration over procurement procedures. Governments give grants but they do not buy the product. A recent Harvard Business Review article shows that large Fortune 1000 type European companies are less likely to purchase from SME suppliers - a discontinuity. The US government by contrast is required to spend 23% of its expenditure on SMEs. There is nothing like this in Scotland; if so it would transform the SME sector overnight;
- In the US, you can get 100% public sector grant funding for SMEs.

Where should entrepreneurs look for funding?

- Perhaps every angel should partner with a potential angel and thus double the Scottish angel network overnight, e.g. “Angel Buddies”;
- Given the current credit crunch, the funding market is terrible. In terms of raising money for business, wait for the slump to finish or go to angels;
- The Scottish government should put money from its proposed raising of alcohol duty into an entrepreneurship fund.

Closing Remarks (Dr. Geoff Gregson)

Geoff summarised discussion of the fourth debate as follows:

- More promotion and celebration of self employment and entrepreneurship as a career in Scotland;
- Improved entrepreneurship training in Scottish education, with new approaches and tools and an elevation of its status as a subject; passion and creativity needs to be stimulated at an early age; skills need to be taught – product development know how, marketing needs to be taught better;
- Leverage existing structures, e.g. Entrepreneurial Exchange, Informatics Ventures, Scottish Institute for Enterprise, etc. and existing investment mechanisms, i.e. the Scottish angel funding model is held up as international good practice;
- Educate angels better about new technologies and sectors and expand the angel base given the absence of VC activity; but not lose sight of the fact that friends and family as a funding resource remain important;
- Role of government remains important through particular support initiatives and co-funding schemes; better synergy between support mechanisms is suggested;
- Linked public and private sector efforts are necessary to stimulate more of an entrepreneurial risk-embracing culture; successful entrepreneurs need to have an ability to deal with setbacks and to use failure as a future asset; the business environment must be able to accommodate and support such a reality.

RECOMMENDATIONS

The following recommendations are proposed to further stimulate innovation and entrepreneurship in Scotland.

1. INCREASE “APPLIED” RESEARCH ACTIVITY FOR SCOTTISH INDUSTRY

- R&D expenditure by Scottish business is 0.6% of GDP, amongst the lowest in Europe;
- Efforts to stimulate higher levels of R&D investment by Scottish business have met with limited success;
- Scottish universities possess a significant R&D capability but are not fit-for-purpose nor are they offered appropriate incentives to engage in applied research that is relevant for much of Scottish Industry.

PROPOSED ACTION: Establish a public-private partnership advisory body, - funded by Scottish Enterprise and the Scottish Funding Council - that offers incentives to industry and university representatives to match respective needs and capabilities and intermediates such collaborative activity.

2. ESTABLISH A PUBLIC SECTOR PROCUREMENT “REQUIREMENT TO PURCHASE” GUIDELINE FOR SCOTTISH SME

- The Scottish economy is dominated by small to medium-sized enterprises (SME);
- The public sector is a large customer, yet there is no current incentive for the government to purchase products from Scottish SME.

PROPOSED ACTION: Scotland should follow the US model and set a minimum percentage target of 25% of expenditure for Scottish SME.

3. IMPROVE THE SPIN-OUT PROCESS FOR SCOTTISH-BASED ENTREPRENEURS TO COMMERCIALISE UNIVERSITY RESEARCH

- Despite high levels of spin-out activity at Scottish universities, there is a poor record of growth by Scottish spin-outs and a high attrition rate;
- Scottish technologies are often secured by foreign interests; this trend is likely to continue if the entrepreneurial community is not further developed in Scotland to commercialise such technologies (see also recommendation #6);
- Scottish entrepreneurs who engage in commercialising university research consistently cite a set of recurring difficulties in working with universities;
- University policies towards academics engaged in commercial activities are not clearly understood by many academics or industry;

PROPOSED ACTION: A formal, objective review of the spin-out process at Scottish universities should be undertaken – focused on generating recommendations for improving university engagement with the private sector and examining possible new incentives for Scottish -based entrepreneurs to commercialise university research.

4. IMPROVE THE MATCH-MAKING PROCESS BETWEEN “INVESTABLE” ENTREPRENEURS AND INFORMAL INVESTMENT IN SCOTLAND

- Angel investors consistently cite the poor level of ‘investor-readiness’ of Scottish entrepreneurs and their lack of due diligence on the investor being approached;
- Entrepreneurs consistently cite their frustration in accessing angels or differentiating amongst the large number of angel syndicates active in Scotland;
- Business advisors appear poorly informed on angel investment - which weakens the match-making process between relevant (i.e. investable) entrepreneurs and appropriate angels or angel syndicates.

PROPOSED ACTION: To examine and improve the match-making and investor-ready processes for “investable” entrepreneurs, in discussion with LINC Scotland and with relevant agencies advising such entrepreneurs.

5. CREATE A “SCOTTISH INNOVATION FUND”

- Scotland has a strong Angel network supporting early-stage companies but no comparable venture capital (VC) network; with only 0.1% of GDP spent on risk capital investment;
- The current level of private capital available in Scotland has been identified as insufficient to “grow to scale” globally competitive Scottish companies.

PROPOSED ACTION: To engage relevant parties to discuss the creation a Scottish Innovation Fund of £500 million (e.g. 10 limited partners committing £10million per annum over a 5 year period) - and to subsequently identify & appoint a world-class Fund management team.

6. RE- CONFIGURE & RE-ALIGN ENTREPRENEURSHIP EDUCATION & IMPROVE ITS PROMOTION IN SCOTLAND

- Entrepreneurship education is characterised by fragmented content and delivery, with various programs independently initiated and no clear progressive and sequential curriculum to stimulate and educate students over time on the subject;
- Entrepreneurship education requires more creative methods for teaching entrepreneurial skills and for instilling self-confidence, creativity and risk-taking behaviour in Scottish students;
- Entrepreneurship education requires greater support for teachers and others expected to deliver such education¹ ;
- Entrepreneurship education benefits are compromised by weak support or indifference from many Scottish institutions and media regarding the importance and value of entrepreneurship for Scottish society and for its economy (refer also to recommendation #8).

PROPOSED ACTION: To generate a new blueprint for entrepreneurship education in Scotland – though consultation with schools, colleges, universities and industry – and with sponsorship from Scottish Executive, Scottish Funding Council, Scottish Institute for Enterprise and the Entrepreneurial Exchange, amongst others.

¹ Refer to Catherine Fagan’s article, “Enterprising Education in Scotland: Is Education for Work Enough?” in the Journal of Educational Inquiry, 2007, 7(1).

7. IMPROVE EFFORTS TO SUPPORT AND TRAIN ENTREPRENEURIAL MANAGERS

- Scotland lacks sufficient numbers of experienced, successful entrepreneurial managers, given the low level of corporate venturing and small base of large technology-based companies (exception being the oil & gas sector in Aberdeen);
- Most enterprise support programmes or continuing professional development (CPD) courses do not focus on the challenges of “managing” entrepreneurial firms (e.g. developing robust, low-cost management systems, customer & investor readiness, marketing and sales, technical and commercial integration, etc.);
- Most student work placements and internships are biased towards ‘traditional’ management practice rather than the practices of entrepreneurial managers;
- For Scotland to generate more entrepreneurial talent from its universities, new initiatives could develop entrepreneurial management skills by placing select students into entrepreneurial ventures; these could be distinct from, but coincide with, the broad base of initiatives currently supporting academic entrepreneurship.

PROPOSED ACTION: To consider a new initiative that provides early-stage entrepreneurial managers with mentoring support from successful entrepreneurs and also offers placements within select entrepreneurial firms (could be an ‘advanced initiative’ within the Entrepreneurial Education programme; see recommendation # 6).

8. IMPROVE THE QUALITY OF DATA AND INFORMATION ON ENTREPRENEURIAL ACTIVITY IN SCOTLAND

- Scottish media coverage on small business and enterprise is identified as weak and overshadowed by a generally pessimistic and critical viewpoint in reporting the Scottish economy and Scottish business performance;
- Data on entrepreneurial activity is often incomplete and inconsistent in its quality and mode of dissemination (i.e. via news and media, reports, websites, etc.);
- A lack of accurate public data on new ventures, investment and enterprising in Scotland challenges the generation of robust academic research on the topic;
- Various initiatives to stimulate and support entrepreneurship in Scotland are compromised by the existing level of coverage (refer also to recommendation #6);

PROPOSED ACTION: To improve the generation of enterprise data by Scottish Enterprise, to centralise such data for ease of access and to develop a more coordinated, collaborative approach to reporting such data and related entrepreneurial activities by existing organisations.

9. COMMIT PUBLIC POLICY TO DEVELOPING SCOTLAND AS A WORLD-LEADER IN RENEWABLE INDUSTRIES

- Scotland has world-leading expertise in science related to renewable resources and technologies, but uncommitted public support to stimulate their commercial exploitation or create industry leadership;
- An encouraging number of high-potential university spin outs have arisen to exploit renewable technologies;
- Renewables should be seen as an “infrastructure project” of national strategic importance that requires government leadership and commitment (but history suggests a risk-adverse policy culture in Scotland that hinders flexibility in committing to new opportunities and necessary product development).

PROPOSED ACTION: To further debate this recommendation - with the intention of coordinating leading university and industry leaders to lobby Scottish Executive as to the Importance of Developing Scotland as a World-Leader in Renewables.



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