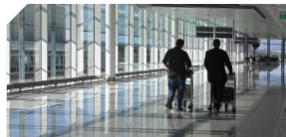


ICT Industry Advisory Group ICT Strategy Implementation Plans

Beta Release 0.1

June 2010



INTRODUCTION

Purpose

This document contains the initial Implementation Plans drawn up by the ICT Industry Advisory Group in support of the Scottish ICT Industry Strategy. These plans provide the start point for the work of the implementation teams who will progress the delivery of the strategy, within five interlinked workstreams.

Within each workstream, we have identified an overall objective, the planned impact, direction of travel, and first steps. We have also identified the partner organisations who will contribute to delivery of the strategy. A range of implementation ideas are also included within each workstream definition, for consideration and development by the workstream implementation teams.

Forever Beta

This is a working document, subject to continual revision as the implementation teams progress. Some ideas may prove impractical or unattractive when they are subjected to detailed economic benefit analysis, better ideas will arise, priorities will change, and at all times we will face practical constraints of resource availability from private and public sector partners alike.

Given its continually-changing nature, the material in this document will be maintained online, i.e., it will be “forever beta”.

The Implementation Teams

Each implementation team will comprise a mix of individuals from both the private and public sector, and will have a Chair who will be responsible for coordinating the work of the team. A team will typically contain 5 to 8 people.

Creating Baseline Data

The Scottish ICT Industry Strategy states that its aim is:

“To radically improve the economic impact of the Scottish ICT sector

which will be measured by:

- An increased GVA contribution from the ICT sector
- An increase in the size of the ICT workforce in Scotland
- A significantly improved export performance for the Scottish ICT sector.”

We have some initial economic baseline data from e-Skills UK, ScotlandIS and Scottish Enterprise, but an early implementation task will be to undertake further research that will accurately determine the existing GVA contribution, size of workforce and export performance of the ICT sector in Scotland. Having done so, we can set clearly enumerated and timebound targets against which the success of the strategy can be measured.

Workstream 1

INCREASING THE RATE OF INTERNATIONALISATION



Overall Objective

Scottish ICT companies derive the majority of their revenues from customers within the UK. We must educate more companies to adopt a global mindset, and encourage further FDI companies to operate (with high-value jobs) on a global scale from Scotland.

Impact

Increasing the number of Scottish ICT businesses with significant international operations will serve a multiplicity of goals. We will improve our export earnings, and build more sustainable businesses as a result. Scotland's international image will be improved. We will attract more foreign investment, and potentially more incoming human talent to complement local skills.

Direction of Travel

The basics of international success are:

- An entity with resources that recognises the value of a differentiated product
- A realistic business plan (ROI)
- A focused go-to-market strategy that aligns to the key targets. These may be combinations of regions, countries or verticals. As a small nation, relatively isolated, we need to pay considerable attention to indirect channels and their value propositions.

Each of our four areas for improvement or development comprises a set of specific topics on which we will focus the resources of the sector, working in partnership with public sector agencies, to deliver increased competitiveness and thereby growth.

First Steps

A number of areas for development already have SDI-related programmes that have been set up to support them. The first steps will be to gather together representatives from SDI, SE account management and the ICT industry, to review existing provision against the detailed implementation proposals outlined below. Evidence will be developed as to the effectiveness of the programmes, identifying where improvements can be made. More detailed plans can then be developed, to deliver against the implementation proposals.

Delivery Partnership - Internationalisation

TOPIC	LEAD	SUPPORT
Increasing The Rate Of Internationalisation		
Focus Inward Investment	SDI	SE, ScotlandIS, Globalscot, Industry Advocates
Provide role models	Scotland IS	SDI, Globalscot, the Entrepreneurial Exchange
Innovate new business models	SDI	SE, ScotlandIS, Globalscot, Industry Advocates
Provide a central market-specific intelligence service	SDI	SDI, Global Scot Network

Details of Workstream 1 – Increasing the Rate of Internationalisation

FOCUS INWARD INVESTMENT (W1.1)

Objectives

We plan to establish a hub of international businesses that nurture and feed the local Scottish business community, and serve as a basis for meaningful and effective international alliances, for product & channel.

We will seek to increase the strategic importance of existing Scottish operations of international businesses, by extending or optimizing their role in the value chain and, in parallel, we will identify targeted inward investors that will add significantly to Scotland's overall strategy for growth in the ICT market.

Delivery Proposals

The current approach of SDI to the ICT industry should be reviewed by a group including industry representation to determine if there are opportunities for improvement or additional action in the following areas:

- Understanding of the strategic priorities of the inward investor and development of meaningful and influential relationships with decision makers in the company, particularly in headquarter locations
- Identification of factors important to targeted companies including their motivation for overseas investment; international growth aspirations; where the strategic interest of the companies lie; and any "pre-dispositions" we can identify.
- Definition of Scotland's priorities for inward investment in terms of those functions we want companies to bring to Scotland and the scale of investment should we target.
- Potential adoption of a regional emphasis as part of targeting, if benefits are clear.
- A generic, compelling vision of Scotland, and our ICT sector in particular, that will attract attention and give Scotland credibility when a company is assessing a location's suitability as a centre for growth or new investment
- A comprehensive toolkit that allows rapid responses to the level of detail companies require.

PROVIDE ROLE MODELS (W1.2)

Objectives

We aim to provide a base of knowledge that can inspire and guide Scottish business people to build international businesses.

Delivery Proposals

- Gather a readily accessible set of materials that tell the stories of people and companies that have internationalised from a Scottish base. As a first step, review what SDI already have relevant to ICT.

- Gather together and activate a group of individuals, characterised by Scottish backgrounds, international experience and willing to mentor, guide and otherwise support Scottish entrepreneurs in their international ambitions. Use should be made of GlobalScot to help achieve this.
- Identify companies and business leaders having built international business out a local context comparable to Scotland, e.g. the Netherlands, Finland, etc., and seek to engage those business leaders in the pool available to Scottish entrepreneurs. One mechanism to achieve this could be Leadership Journeys. This could be tied in to a broader multi layer program with external bodies - Global Scot for example.

INNOVATE NEW BUSINESS MODELS (W1.3)

Objectives

We aim to increase awareness of new business models available to execute the internationalisation of Scottish businesses and will introduce, through training and education, ICT industry best practice in Channel Marketing and Channel Management, to support the implementation of these models.

We will convey an understanding of the suitability of each business model to the types of value propositions being brought to market, and will thereby assure a means of being at, and remaining at, the cutting edge of thinking regarding business models at a global level.

Delivery Proposals

- Provide sector information for SDI so it can better serve and educate Scottish ICT entrepreneurs, specifically in the use of Alternative Business Model Ideas to aid internationalisation such as:
 - Use of SaaS Model
 - Profitable Open Source delivery
 - Marketing to International Communities Rather than Countries
 - Using the internet for Market Intelligence
 - Use of Web Marketing Material; Search Engine Optimisation; Web Technology for Presentations/ Demos/Meetings
- Organise on a sustainable basis “Supper Club” format events to support insight exchange and publication that draw on the types of people outlined in the discussion on Role Models above
- Encourage Universities to educate business students in ICT sector Channel Marketing and Management techniques
- Provide systematic management team training in Channel Marketing and Management techniques and support their implementation

PROVIDE A CENTRAL MARKET-SPECIFIC INTELLIGENCE SERVICE (W1.4)

Objectives

We will improve the ease, efficiency and accuracy with which a Scottish SME assesses specific foreign market opportunities and specific foreign market needs.

Delivery Proposals

- Introduce an International Business Centre – both a physical presence as well as a virtual facility. This will provide an economic means to access a central market intelligence service, video-conferencing and other facilities and information required to support international business such as legal, accountancy, staffing/recruitment, HR, premises, local/national trade associations or business communities and identification of quality target acquisitions.
- Increase the level of utilisation and interaction between Scottish businesses and the Global Scot Network
- Review whether Global Companies program is delivering for the ICT sector or are there opportunities for improvement? For instance, we could look at spreading the program over a longer period and broadening its coverage.

Workstream 2

CREATING MORE PRODUCT COMPANIES



Overall Objective

Most Scottish ICT companies provide services and bespoke solutions to their customer base. Whilst these are valuable, they do not easily scale to global markets. We need to increase the number of companies that create replicable, scalable and distributable ICT product and niche solutions, by improving product management skills, and understanding of global market sales and distribution.

We must improve the sector's understanding of how to structure, build and grow such companies. We must also improve the understanding of market requirements and large-scale opportunities, and how to grow international sales and distribution channels.

Impact

Creating more product and niche solutions companies in the Scottish ICT sector will allow us to capitalise on the demonstrable wealth of technology-based ideas and creativity coming out of Scotland's universities, colleges and businesses. Product and niche solutions companies can achieve significant scale and reach international markets far more easily than service companies, particularly with expanding routes to market available through Software-as-a-Service (SaaS), and cloud computing technologies. The result will be a greatly-improved export performance by the ICT sector in Scotland.

Direction of Travel

The essential concept behind a product company is scalability: code is written once and sold many times into the global market. This could be achieved by selling shrink-wrapped software applications through PC World, by marketing applications on Apple's App store or by using a 'Software as a Service' (SaaS) business model, all examples of a classic *product* approach. However, in business applications, success is equally likely using a *platform* approach, where a common software platform for a particular niche application can be rapidly tailored to the needs of a diverse range of clients by means of limited customisation: this approach is sometimes called *niche solutions*. There are two main ways to create a product or niche solutions company:

- Many ICT companies start out by offering a service. In time, they may develop expertise in a certain niche and develop some intellectual assets which they develop into either a platform-based niche solution (perhaps a first step) or a standard product.
- Many new software start-ups are based on an innovative product idea.

Software is an ideal medium for product in that it can be scaled without manufacturing investment. However, a limited understanding of what is required in the business approach, structure and growth of a good product or niche solutions company means that those who have a good idea technically may not have the skills to bring it to market. Our approach must help to bridge that gap.

First Steps

- First, an investigation should be made of how best to embed a product sector community within or across existing organisations
- If it is necessary to establish a new organisation, then the workstream will propose a charter and operational plan for the Community, including an initial membership campaign and financial plan. It will also make links with other interested parties.
- Metrics for measuring progress and success must be selected
- It is anticipated the product sector community will act as a vehicle to support the other initiatives within this workstream.

Delivery Partnerships – Creating More Product Companies

TOPIC	LEAD	SUPPORT
Creating More Product Companies		
Adopt Product Company Best Practice	Industry	Academia, SE
Build A Product Sector Community	ScotlandIS	Industry, Academia, SE
Engage education and wider societal interests	ScotlandIS	Industry, Academia, SE

Details of Workstream 2 – Creating More Product Companies

ADOPT COMPANY BEST PRACTICE (W2.1)

Objectives

- To support companies to grow into successful global players by
 - engaging them in a process which recognises productisation needs from the outset
 - helping them to apply Product Management & Product Marketing disciplines
 - providing mentors for young companies creating products / niche solutions
- To provide a forum where companies can share best practice, benchmark their progress, exchange sector knowledge and look for opportunities to collaborate
- To celebrate success and identify role models

Delivery Proposals

- The product sector community (W2.2 below) may provide the best channel to deliver on the above objectives.
- In addition, the provision of international role models (W1.2 above) will help link Scottish companies to best practice abroad.
- Scottish Enterprise will encourage ICT companies interested in marketing products to make use of its Sales and Marketing Programme which will develop relevant skillsets.

BUILD A PRODUCT SECTOR COMMUNITY (W2.2)

Objectives

To foster the creation and development of more product companies will require the development of a Product Sector Community with the following remit:

- To act as an agent of change in moving the ICT industry towards scalable products and provide the stimulus to generate new product-oriented companies
- To create a critical mass for sustained development by

- recruiting established companies, at all stages of development, who already have a strong sense of the 'product' or 'niche solution' offering
- engaging companies with technologies in expanding markets which have a high potential for productisation
- To support the complementary workstreams 'Adopt Company Best Practice' (W2.1) and 'Engage Education and Wider Societal Interests' (W2.3).
- The community will have face-to-face events, mentoring meetings etc but also a strong online presence.

Delivery Proposals

We do not want to set up a completely new organisation in isolation. Our intention is to build a community within or across current structures. Relevant industry organisations may include:

- ScotlandIS – especially the SW Exporters Group
- Informatics Ventures
- BCS The Chartered Institute for IT
- Scottish Developers
- Product Development and Management Association
- Chartered Institute of Marketing

Of course, it must also be aligned with proposals for setting up communities in the other workstreams of the strategy. Perhaps one community can perform multiple functions or perhaps a more limited overlap is more appropriate.

Funding for the Community is proposed to come from

- Scottish Enterprise, especially in the start-up phase
- Industry Associations
- Members

ENGAGE EDUCATION AND WIDER SOCIETAL INTERESTS (W2.3)

Objectives

- To create interest and acceptance of product innovation as a valuable economic and social activity within Scotland: building the 'product pyramid' from the school level upwards
- To encourage academia to ensure that suitable product management and marketing modules are provided for undergraduate, postgraduate and professional development courses.

Delivery Proposals

- ScotlandIS will use its media network to circulate positive news stories about Scottish product-oriented ICT companies, both for the benefit of the company and to build the profile of the sector more generally.
- The Skills Work Stream (W5 below) will take input from the Product Sector Community to shape the delivery of appropriate skill sets in education and training.

Workstream 3

IMPROVING ACCESS TO CAPITAL



Overall Objective

Our goal is to create an entrepreneurial *ecosystem* in Scotland which attracts capital, as well as expertise and entrepreneurial talent.

Our target is that, by 2014, Scotland will have grown an ICT investment ecosystem that is characterised by a vibrant, active angel community and five to six independent venture funds in a range of sizes from £75M to £300M, that focus on investing in native Scottish SMEs, from seed stage to expansion stage.

Impact

The existence of such funds will provide Scottish ICT entrepreneurs with competitive sources of the capital required to grow companies internationally.

Direction of Travel

We want to foster an environment in which the angels co-invest often with the Funds, and the funds frequently co-invest in Scottish deals with a variety of external/international VC funds (between 10 and 15). Most of these will be based in London but some of these international funds will be headquartered in the US, some in Continental Europe, and some in Asia.

If we do this successfully, there will be a healthy, sustainable competition for deal flow and many examples of “Home Run” deals that will emerge from Scotland’s universities over the coming years. There will be a healthy, active and growing entrepreneurial community with a large percentage of ‘repeat’ entrepreneurs that, while having made substantial fortunes already, are starting companies again, mentoring the next generation of entrepreneurs and actively investing as angels in a variety of deals other than their own. Our target is that many of these companies will achieve successful public listings on the LSE or NASDAQ markets.

Our ultimate aim is that the number one choice of career for science and engineering graduates in the Scottish University system will be “Entrepreneur”. There will be permanent and very popular course offerings in finance, marketing, entrepreneurship and globalisation, offered to engineering and science students at all Scottish Universities. Scotland will regularly play host to leading-edge technology and investment forums such as TechTour, Demo, TED, and TechCrunch.

First Steps

Our primary aim is to increase the visibility of the emerging Scottish ICT ecosystem to international investors, starting the process that will ultimately attract additional investment capability into Scotland.

Delivery Partnerships – Improving Access to Capital

TOPIC	LEAD	SUPPORT
Improving access to capital		
Establish new independent local VC funds	SE	Existing VCs/angels
Attract external international funds	SDI	SE, Globalscot
Improve investor readiness	ScotlandIS	SE
Create a central ecosystem web portal	SE	ScotlandIS, existing VCs/angels

Details of Workstream 3 – Improving Access to Capital

ESTABLISH NEW INDEPENDENT LOCAL VC FUNDS (W3.1)

Objectives

Company growth depends on having access to capital that understands how technology companies work, and can bring experience and contacts to bear. Whilst the Scottish angel community is vibrant, our primary aim is to ensure that the level of VC activity in Scotland is increased significantly.

Delivery Proposals

- In addition to existing investment support mechanisms encourage early-stage fund creation by experienced VC investors through e.g. a Scottish Fund of Funds providing cornerstone finance for such funds
- Explore ways in which institutional funding can be brought to bear.

ATTRACT EXTERNAL INTERNATIONAL FUNDS (W3.2)

Objectives

Increasing visibility of the emerging Scottish ecosystem to international investors will raise global awareness of Scottish opportunities and increase the likelihood of investment in Scotland. By increasing the demand to provide investment funding in Scotland, the cost of achieving successful funding for Scottish business will be reduced.

Delivery Proposals

- Develop and market a Scottish proposition based upon factors such as access to a range of excellent technology opportunities for investment, availability of strong local funds as Scottish investment partners and Scotland as an excellent base from which to do business
- Identify and target VCs and investors, both nationally and internationally, likely to consider investing in Scottish technology opportunities
- Raise awareness of Scottish technology investment opportunities through e.g. the provision of regular analyst coverage to target investors, participation in appropriate focussed conferences and events
- Create opportunities for interested investors to experience the Scottish opportunity for themselves.

IMPROVE INVESTOR READINESS (W3.3)

Objectives

Our early stage technology companies are competing for highly mobile funds and therefore need to be able to compete successfully within an international market for investment funding. We aim to improve the overall attractiveness of Scottish propositions by ensuring that the quality of the commercial component consistently matches that of the technology proposition.

We aim to ensure that globally ambitious technology companies in Scotland gain access to high quality corporate finance/legal advice irrespective of source – much of this will be based in London or elsewhere. We will further support the creation of compelling and investable management teams that are based in Scotland.

Delivery Proposals

- Undertake “Product Marketing” Tours for SME CEOs to large potential ICT customers in Asia and North America
- Continue to provide the Saltire Fellowship as a means to provide intensive internships for exemplary candidates as a training ground for future managers of technology companies
- Provide mechanisms for new entrepreneurs to learn from successful ICT entrepreneurs on how to build a compelling business plan and investor pitch
- Develop programmes that can deliver skills such M&A execution and achieving public listing for companies growing beyond the start-up phase, or ensure the provision of later stage funding that can replace VCs or Angels as a company matures.
- Use mechanisms such as Globalscot to establish a “Goodwill” programme with top tier VCs who agree to participate periodically in pitch workshops, and facilitate opportunities to pitch, for Scottish entrepreneurs.
- Establish a “Start-Up University” that teaches the broad skills necessary to enable successful start-ups
- Develop a long-term recruiting effort to attract both ex-pat and foreign entrepreneurs to become involved in early-stage Scottish technology business of high-growth potential

CREATE A CENTRAL ECOSYSTEM WEB PORTAL (W3.4)

Objectives

It is currently difficult for the various players in the ecosystem to interact efficiently. (Such interactions include syndication opportunities, acquisition opportunities, the matching of investees with investors and sourcing of appropriate entrepreneurial talent.)

A central Web-based resource, by which all current and future participants in the ecosystem can connect, will efficiently and systematically enable such interactions and raise overall awareness of the Scottish opportunity. Such a network should not be restricted to the ICT sector alone, and should instead provide a common focal point for Scottish technology growth businesses.

Delivery Proposals

- Set up as a live 'social' Network - like LinkedIn, Facebook, etc., with Scottish entrepreneurship and investing as its central theme.
- Ensure that the Network provides a common focus for the Ecosystem, with information and connections between entrepreneurs, would-be entrepreneurs and angel networks, VCs, law firms specialising in technology start-up work, resources from SE, HR firms, etc.
- The Network should provide a "deal" platform through which SMEs seek capital, advice and services; investors, angels, lawyers or consultants provided deal flow.
- The Network's content, energy, interactions and usefulness will emerge from within the user base and not from the public sector and should be a dynamic, self-sustaining, resource.

Workstream 4

DRIVING MORE COMMERCIAL INNOVATION



Overall Objective

Our ability to innovate, through universities and our company base, is demonstrably successful, but we must increase the proportion of our ideas that progress to be commercialised product, and the proportion that is commercialised from within Scotland.

Our leadership position in innovative research has simply not translated into leadership in company growth and job creation for Scotland. Our primary objective is to recognise the rapid changes endemic in the global ICT industry and, as a result, focus our efforts on building more commercially capable management teams, equipped to exploit new routes to market, and able to adopt new business models.

Impact

As Scotland becomes increasingly renowned for not only creating innovative ideas, but delivering them internationally as well, we create a virtuous cycle, attracting further talent, capital and foreign direct investment in the ICT sector.

Direction of Travel

There has been an over-emphasis on business *plans* at the expense of business *plays, patterns, perspectives* and *positioning*. We believe that, in the context of commercialisation, craft always beats a plan because start-up plans tend not to be contingent upon business reality. One thing we can do right away to redress this situation is to put much greater effort into the construction of crafty commercialisation teams for spinout and start-up businesses. These teams must have a broad skill-base, including essential expertise such as technology entrepreneurship, business leadership and management, and product and channel marketing and management skills. Individuals with the necessary business (as opposed to technical) skills exist but are not in the ICT sector, or are stove-piped into particular industries and do not interact with the rest of the sector. We must be market-led, not technology- or customer-led.

Without access to the right mix of skills that comprises a tech company team, entrepreneurs end up going it alone. With a better mix of skills in the commercialisation team we would see a larger proportion of Scottish innovation reaching successful commercialisation. With real connections and know-how, with the right behaviours and business models, we can be successful.

First Steps

Our first task within this theme of driving the commercialisation of innovation will be to review the plethora of programmes aimed at supporting entrepreneurs and SMEs in the ICT (or “DMET”) sector. These collectively represent a valuable significant investment by the public sector, our proposal is that they can be better focussed on supporting companies with international ambition.

This initial task will be undertaken by a team involving SE, Scottish Government and ScotlandIS.

Delivery Partnerships – Driving more Commercial Innovation

TOPIC	LEAD	SUPPORT
Driving more commercial innovation		
Build teams that mean business	ScotlandIS	Industry, Academia, SE
Re-focus public sector funding schemes	ScotlandIS	SE, SG
Start thinking commercial much earlier	ScotlandIS / Academia	Industry, SE
Adopt achievable aims	ScotlandIS	Industry, ScotlandIS, SE

Details of Workstream 4 – Driving more Commercial Innovation

BUILD TEAMS THAT MEAN BUSINESS (W4.1)

Objectives

Building a more concentrated **community** of entrepreneurs and technologists will increase the likelihood of strong teams naturally emerging: this can be accreted around and co-ordinated by ScotlandIS which is already part-way there.

Delivery Proposals

- **ScotlandIS** to provide a co-ordination function for currently existing and new meet-up programmes in order to provide a virtual forum and a light framework for regular meetings of ICT business professionals. This is partly a mechanism for publicising and supporting existing groups and forums such as Technology Leaders, Techmeetup, Mobile Mondays and so on.
- **ScotlandIS** to organise X-prize style events targeting ICT entrepreneurial teams where competitively selected business plans win a period of intensive training and networking with the aim of outputting a smaller number of teams focused around the best business propositions
- **ScotlandIS** will be actively involved in all public-funded ICT commercialisation programmes, including the ITI's, Proof of Concept, the High Growth Start-up Programme and any future projects along the lines of the Kelvin Institute. The goal will be to combat isolation and conceive and incubate new projects in a commercially healthy environment.

RE-FOCUS PUBLIC SECTOR FUNDING SCHEMES (W4.2)

Objectives

Each public sector programme has its own sponsoring agency or entity, and its own requirements and structure. Reliance on the government funded model can lead to a mindset where entrepreneurs are focusing their energy on finding and qualifying for “soft money” rather than growing their companies with a market-led, time-critical sense of urgency.

The allocation of the available government funding should be investigated and possibly restructured or rationalised in order to ensure that maximum funds go directly to validated commercial projects with strong crafty teams behind them, and that these funds only be provided to those willing to invest their own funds. This will involve dialogue between the government, its agencies and ScotlandIS.

Delivery Proposals

- **SE** and **ScotlandIS** to enter dialogue and develop a strategy to increase the amount of government funding made available to entrepreneurs as cash grants on a co-investment basis and only as a match against funds obtained or personally provided by the company founders. ScotlandIS should be included in the assessment process where the opportunity relates to ICT.
- **SE** and the **SG** to streamline the number of different “assistance” programs, focusing on those which have proven effective. A method will need to be agreed and implemented to assess and rank existing schemes in terms of their results and value.

START THINKING COMMERCIALLY MUCH EARLIER (W4.3)

Objectives

Those in academic and research institutions, where much of the innovation originates, are sometimes not willing to “let go” and allow commercialisation soon enough. Sometimes there is no genuine or powerful ambition to create a business, and the commercialisation project is actually a tacit or subliminal ploy to continue a research programme or extend the life of an academic team.

We aim to ensure that commercial considerations and market-oriented perspectives, especially whole product requirements and channels to market, must be developed much earlier in the innovation cycle.

Delivery Proposals

- **ScotlandIS** and **SE** to develop a strategy for redesigning existing commercialisation programmes such as the Proof of Concept scheme with Product Management and Channel Marketing built both as teaching and as part of the qualification agenda. **SE** to ensure that **ScotlandIS** is involved in the assessment process when candidates have an ICT focus.

ADOPT ACHIEVABLE AIMS (W4.4)

Objectives

A focus on world-shaking success increases the field of competitors to such an extent that success is far less likely. The availability error is also a factor here, whereby realistic niche opportunities remain invisible behind a smokescreen of zeitgeist technology trends, consumer culture or simple ignorance. A small amount of craft is infinitely better than any reach-for-the-stars master plan. We want to see more new businesses with validated niche markets and pragmatic positioning strategies.

Virtually all media focus is on the very small number of entrepreneurs who are hugely successful (the availability error again). Most correctly see this as a lottery and many are dissuaded from attempting something themselves. Those who do step up to the mark are perhaps inappropriately directed towards overly competed areas of opportunity and ignore realistic strategies.

We aim to educate potential Scottish ICT entrepreneurs that niche topics and niche markets may represent their most successful route to market.

Delivery Proposals

- **ScotlandIS** and **SE** to create a programme to highlight *relevant* role models to candidate entrepreneurs at relevant jumping-off points - such as a programme targeting 3rd to 6th year pupils.
- **SE** to support the ICT Forum’s plan which outlines a number of steps aimed at achieving the culture change needed to raise the visibility and awareness of ICT as an enabling technology.
- **ScotlandIS** to conduct a PR campaign to promote local success stories to the mainstream media in an effort to diffuse the celebrity business culture.
- **ScotlandIS** and **SE/SDI** to recruit successful technology entrepreneurs from abroad (especially North America and Asia) to come to Scotland and work with local companies.



Workstream 5

ATTRACTING AND RETAINING KEY SKILLS

Overall Objective

There is a wealth of technical talent in the Scottish ICT market, and yet the industry faces a long-term skill supply shortage that could hamper its ability to reach its full potential, because of the decline in domestic uptake of academic ICT courses. Our primary objective is to reverse this decline.

In addition, the sector requires to attract more commercial and entrepreneurial talent from other industries, to complement its technical expertise. Reflecting one of the major axes of the Government Economic Strategy, attracting and retaining key skills is essential to delivering on this strategy.

Impact

The ICT sector represents 5% of Scotland's economic output, but 8% of the UK's. Attracting and retaining key industry skills will allow us to achieve a GVA impact at least on par with the rest of the UK, and will significantly improve our ability to gain export income.

Direction of Travel

Business is driven by people and limited by the availability of people with the right skills, experience and attitudes to help grow companies. The rapidly changing and global nature of the ICT sector plus the fact that it almost always needs to operate with other sectors means that the challenges facing our sector are particularly acute. Scotland produces international corporate leaders in the ICT sector, and global-scale entrepreneurs in other sectors. Our Universities produce a disproportionate number of technical students, yet we still have serious issues to contend with in resourcing our companies.

First Steps

During the course of the strategy development, the lack of detailed statistics and Labour Market Intelligence at a Scottish level became apparent.¹ Some base-lining research is needed to support and benchmark this plan, including :

- investigating the influences on pupils when deciding upon their future career paths;
- better forecasting the demand for specific skills, creating clear picture of current skills gaps, a reliable forecast of future demand & critical gap analysis and measures of impact of economic downturn on the employment of ICT skills;
- a clear picture of the output of ICT education, monitoring the destinations of school-leavers and graduating student, : where do our ICT graduates go? how many enter the ICT sector in Scotland? ;
- data to forecast the mix of early-stage, high-growth start-ups versus major employers; what skills are going to be at a premium and what 'big bets' can and should we make in educating for future ICT?

¹ Since this summary was written eskills UK have published the Technology Counts Scotland 2010 which provides a baseline for further detailed research.

Delivery Partnerships – Attracting and Retaining Key Skills

TOPIC	LEAD	SUPPORT
Attracting and retaining key skills		
Improve perceptions of ICT as a career	e-skills UK	ScotlandIS, Industry, Academia, SE, SDS, HIE, LTS, BCS, Directors of Education (?)
Better match skills to industry needs	ScotlandIS/e-skills UK/SFC ?ICT Skills Network	Industry, Academia, SE, SDS, Open University, HIE, SCQF, SQA
Improve attitudes to entrepreneurship	ScotlandIS	Industry, Academia, SE, HIE, SIE
Attract and retain talent	e-skills UK	Industry, Academia, SE, BCS, IET, Fresh Talent, SDS, Scottish Chambers, KTP, TSB

Details of Workstream 5 - Attracting and Retaining Key Skills

IMPROVE PERCEPTIONS OF ICT AS A CAREER (W5.1)

Objectives

The last decade has witnessed a decline in interest in ICT as a career for school leavers in the UK. Data from e-Skills UK, UCAS, CHPC, ScotlandIS, to name a few, refers. UCAS, for example, reported a 49% reduction in first degree entrants into ICT related degree courses between 2001 and 2006 in the UK.

Our failure to reverse this trend means we limit our ability to grow our sector, export our skills and products globally, and attract inward investment. Our Universities continue to attract undergraduates, but with increasing numbers coming from outside Scotland they risk effectively become training grounds for our competition.

Our aim is to reverse the decline in interest in ICT as a career for school leavers and mature entrants in Scotland.

Delivery Proposals

a) Careers Advice/Perceptions

Develop and deliver a comprehensive campaign which utilises a range of media to:

- i. Address young people's perceptions² of ICT as a career;
- ii. Influence the influencers
- iii. Address the gender imbalance in the sector

² Build on work of eg eskills UK Computer Clubs

- iv. Highlight the opportunities and transition paths for mature entrants, using case studies and industry heroes
- v. Professionalise the industry - Work with BCS and IET the professional bodies for the industry, create a campaign to professional qualifications for the industry.

b) Supporting Teachers and Schools

Support teachers, through the delivery of quality training and equipment, in improving the teaching of computing science and ICT. Use media such as the internet and social networking to help to change perceptions, and maintain the curriculum in the fast moving ICT environment as topical and engaging.

Make starting your own business a topic that school guidance teachers are briefed on and can engage with children as they are considering options and include specific ICT sector foci such as the potentially low cost of entry, mobility, geographic independence.

BETTER MATCH SKILLS TO INDUSTRY NEEDS (W5.2)

Objectives

A problem is developing in the supply of ICT skills to the ICT industry and to other users of expert ICT skills. The skills gap is now considered critical and is recognised as impacting UK competitiveness. Scotland has been falling behind the UK since 2000 in the use of ICT and urgent action is needed to address this in order for Scotland to fully realise its potential and continue to be a growing and thriving economy. The continued adoption and exploitation of ICT could generate an additional £2.8 billion³ of GVA to Scotland's economy over the next five to seven years.

Key requirements include product sales professionals who have technical expertise; environment-specific application support skills; and highly-skilled, experienced software developers with commercial acumen.

Our aim is to better understand industry needs to ensure a sustained supply of the right skills to create, attract and train talent and investment, both local and overseas. This will improve the operational capability of local companies and provide incentive to inward investors.

Delivery Proposals

A successful ICT sector is one that is built on a strong Industry – Academia – Government partnership. A thriving commercial ICT sector must be under-pinned by a strong academic base.

a) Industry Academia engagement re skills development

Create a mechanism⁴ to encourage Universities/Colleges to engage Industry far more closely in curriculum design, and provide swift responses to market needs. This should be at a variety of levels including Post Qualifying Education, masters and doctorates.⁵ Industry must be willing to

³ Source : eskills UK Technology Counts Scotland 2008; ICT Forum for Scotland

⁴ Build on the early work undertaken by Scottish Funding Council to develop the ICT Skills Network further

⁵ On an individual basis some institutions, such as Napier, Dundee and Abertay have Industry advisory groups.

invest time in being involved in this effort.

b) Support the continuing drive for world class excellence within Scottish universities

Scotland's ICT industry includes and is supported by world class research across the Scottish universities. The creation of SICSA (Scottish Informatics and Computer Science Alliance) is helping to reinforce this. The research base is an essential element for the industry as it provides expertise and new opportunities for commercialisation. Closer links with industry should be of mutual benefit. Help the universities to develop their commercialisation skills, including placements, internships and bilateral staff exchanges with industry.

IMPROVE ATTITUDES TO ENTREPRENEURSHIP (W5.3)

Objectives

Encourage people to exploit their ICT education to consider "working for themselves" or starting a business. The ICT sector offers many such opportunities, with very low barriers to market entry.

The majority of recent disruptive technological innovations have come from entrepreneurs under 25. Increase the participation rate of this segment in starting companies. They have fewer financial commitments, lower costs, and are more able to sustain themselves during early lean years of a start-up. This demographic has excellent commercialisation potential if appropriately equipped.

Innovation will come from new ideas and products, from new companies. We need to seriously ramp-up the number of company start-ups. To do this we need to help more Scots, or those who wish to stay here after University, understand the benefits of starting their own company

Delivery Proposals

a) Promote entrepreneurship

Develop a programme/campaign to raise awareness of the opportunities to establish a technology business in Scotland, at a variety of levels – schools, colleges/universities/ general population. Support with access to expertise to assess business ideas and assist in scoping the ideas into a business plan.⁶ Note that this linked to *Perceptions of ICT as a Career* above.

b) Building commercially savvy, entrepreneurial teams

Create a virtual academy to foster commercial skills – this will include a range of modules including building product companies, sales, marketing, channel management, international sales and marketing, raising capital, contracts and agency agreements, design innovation etc. The intent is that these can be embedded in other courses at colleges and universities⁷ but also stand alone for accredited e-learning by people already in the work place/independent learners/mature entrants.

c) Develop more ICT Leadership Courses

Develop/foster leadership expertise to support growth in the industry, equipping existing and future

⁶ This should build on the work of eg Informatics Ventures, Abertay, to create a buzz around IT entrepreneurship

⁷ Work with Scottish Institute for Entrepreneurship

ICT leaders with the skill sets to implement step change in their business and grow, particularly in export markets.⁸ Utilise expertise amongst Scottish diaspora working in ICT to mentor young leaders.

ATTRACT AND RETAIN TALENT (W5.4)

Objectives

In the current economic climate, there are a number of technology companies that are reducing staff numbers, amongst them well qualified individuals, experienced in technology, who will seriously consider their future now. Many may be encouraged to consider setting up their own ICT start up, using redundancy funds as capital. There is a potential opportunity for leveraging displaced talent into the early stage ICT growth community. If we can learn how to move talent dynamically between sectors, we build a strategically important capability for Scotland, enhancing our resilience towards future changes in the job market. Our aim is to:

- Attract and retain suitably qualified experienced individuals in academia and business to grow and develop the ICT industry in Scotland.
- Identify mechanisms that would effectively enable a redeployment of managerial skills from other industries into early growth companies in our ICT sector
- Attract home-grown graduates as a good source of ICT talent, and the Scottish ICT workforce of the future.

Delivery Proposals

a) Casa Scozia

Create a programme to entice back the Scottish diaspora who have worked in and built technology companies and in academia overseas, and attract senior people currently working in Scotland, and coach them in mentorship/working with SME's.⁹

b) Careers Xchange

Put in place a comprehensive framework that supports the redeployment of talent and assisted movement of skills between industry sectors, identifying the key triggers and enablers, and the steps in process and sources of advice. This might include developing new types of Knowledge Transfer Partnerships for career changers, enabling the company base to access experienced personnel from other industries who are taking a further qualification.

c) Develop new routes into the industry eg through apprenticeships.

Complement current supply of college and university leavers by creating new pathways to the industry through modern professional apprenticeships, and accreditation of prior learning.¹⁰

⁸ Build on the work at RGU in this field, and eskills UK's ITMB

⁹ How does this fit with Talent Scotland ?

¹⁰ See eskills UK proposal to Scottish Funding Council