



PIONEER

WINTER 2013

*flexible + agile
innovative*

*efficient
reliable*

quality

*lower costs
less time*

BALANCING ACT

MEETING THOSE SEEMINGLY CONFLICTING OBJECTIVES



FRIENDS IN HIGH PLACES

SCHOOL CULTIVATES
CONNECTIONS WITH MAJOR
INDUSTRY PLAYERS

FLYING THE FLAG

OUR STUDENTS SHOW
THEIR TALENTS AROUND
THE WORLD

CONTENTS



06

NEWS

06 RIGHT CONNECTIONS

We continue to build links with major players in business

09 RAW MATERIALS AND RAW NERVES

Initiative addresses sensitive supply issues



16

FEATURES

10 ON THE ONE HAND

Meet those seemingly conflicting objectives

14 BOLD THINKING

Students show their quality in international competitions

16 IN THE SPOTLIGHT

Researchers report their findings on the Edinburgh Fringe



14

WELCOME

PROFESSOR SUSAN HART,
DEAN, STRATHCLYDE
BUSINESS SCHOOL



Working in partnership should always be a two-way process. That is a commitment all of us – staff and students – give as we seek to build alliances locally, nationally and internationally.

Our programme of executive education is at the heart of this commitment and we continue to grow and strengthen powerful relationships with industry, commerce and government.

This year, for example, has seen the Babcock MBA launched, a three-year corporate programme with participants from the UK, South Africa and Germany. The Iberdrola MBA in the Global Energy Industry launched also, with participants from UK, Spain, USA, Mexico and Brazil, and our partnership with William Grant and the MBA 25 programme, which aims to maximise potential and create future global leaders, continues successfully.

The Weir Group and Senergy have continued their programmes with us, with managers globally taking part in their respective programmes. Standard Life completed its second cohort of management development, with the focus on its UK and Ireland distribution teams.

An agreement with V Group has led to the development of a Global Leadership Development programme, with their senior leaders taking part from around the world with the aim of improving business leadership capabilities and enabling structured growth.

As well as the companies benefiting through development of their employees, from managers to senior leaders, the business school benefits from this two-way process, with access to those at the top of these global businesses, providing us with case studies, insights, and live problems,

which we feed back into the classroom and research programmes, enhancing the students' experience and learning with up-to-the-minute, business-in-action thinking.

Our students engage proactively with each other and their peers on different programmes and at business schools around the world via international business competitions and challenges.

Our students continue to shine in attaining prestigious Saltire Internships internationally and corporate experience in this way definitely pays dividends – one of our students who completed an internship with the Edrington group in 2012, for example, has now been recruited to their first ever graduate programme.

“At the heart of everything we do is our mission to promote responsibility and sustainability.”

Our students certainly seem to know the benefits of useful learning, gaining as much industry experience as they can alongside their academic learning – something that we endeavour to include at all levels.

We were delighted to work in partnership with the Scottish Family Business Association on a series of high profile and engaging lectures on family business this autumn.

We welcomed Maitland Mackie of Mackie's of Scotland, Bill Gordon of William Grant & Sons, Jacqui Walker of Walkers Shortbread and Hugh Raven of Ardtornish Estate to the business school to hear their insights into how they run their family businesses and how it can be applied to business more generally. The Hunter Centre for Entrepreneurship is continuing to develop its interest and research in this area but it's something that has wider resonance across the

business school, particularly in the Centre for Corporate Connections, where we are working with William Grant on the MBA 25 programme.

We have achieved some significant results in our research work. We are involved in the Enterprise Research Centre with Aston, Warwick and Imperial business schools – Professor Sara Carter has been appointed as an associate director of the new £2.9 million centre which launched in January this year. At the same time, Professor Paul Stewart in the department of Human Resource Management was delighted to announce his bid had won a prestigious grant of €4.6 million as part of the Marie Curie International Training Network: Changing Employment aims to map the changing nature of employment in Europe. This is an ambitious and large-scale research project that SBS is proud to head up.

Management Science academics were part of a winning team, awarded a grant of almost £1 million, researching how to develop tools to better manage risks in managing supply networks. John Quigley and Lesley Walls will be conducting their

research with companies such as Rolls-Royce and academic partners Bristol, Coventry and Nottingham.

At the heart of everything we do, of course, is our mission to promote responsibility and sustainability, and we are proud to be one of the signatories to the UK Principles of Responsible Management Education, an initiative SBS joined in order to show in a very public way how we are championing responsible management education and building on the ways in which we do so.

There is more detail on these and other items of news and interest in this issue of *Pioneer* – I hope you find it useful and would encourage feedback to help us keep you informed.

Professor Susan Hart, Dean,
Strathclyde Business School

SBS MAKES IMPORTANT STRIDES IN SUSTAINABILITY

SBS has published its first report detailing the progress we have made in becoming more sustainable in our approach to developing enterprising and internationally focused students, since signing up to the UN Principles of Responsible Management Education (PRME) in 2010.

In the past three years the school has made huge progress in living up to the principles, making some key changes to our own sustainability policies and incorporating these values into the education we provide with things such as:

- By redeveloping our Management Development Programme – a core module underpinning all of Strathclyde Business School's undergraduate degrees – we have been preparing our students for futures as sustainable business

leaders, while also teaching them how to live more sustainable lives in general.

- With a commitment to the teaching of the values of global social responsibility, we have revised our MBA curriculum to include Comparative Corporate Governance, a module which teaches participants good organisational governance and



stakeholder management in an international context.

- Through the Hunter Centre for Entrepreneurship, our students have also been able to develop social business plans to receive creativity and entrepreneurship recognition. This year successful students were selected to enter the international Values and Ventures Business Plan

competition, at Texas Christian University in Fort Worth.

- We have focused on research that delivers social and environmental good, through projects on skills utilisation, carbon capture and the impact of care personalisation on voluntary sector workers.

- The Centre for Corporate Connections has also played its part in improving our links with industry. With the creation of the Strathclyde Business Fellow Network in 2012, we have been able to forge links with senior industry figures – many of whom are MBA or executive education alumni, to help us shape the next generation of business leaders.

All our staff are now also encouraged to promote sustainability, through knowledge exchange, representation on external bodies and outreach activities.

THE FULL REPORT CAN BE FOUND AT UNPRME.ORG

NEW CENTRE BOOSTS BUSINESS GROWTH

Strathclyde Business School has an integral role in a new £2.9 million centre that will generate world-class research to help stimulate growth for small and medium-sized enterprises (SMEs).

The Enterprise Research Centre, hosted by Warwick and Aston Universities, will help develop an understanding of the factors affecting business investment, performance and growth. It will become a national and international focal point for research, knowledge and expertise on SMEs.

Professor Sara Carter, at the time head of the Hunter Centre for Entrepreneurship and now associate deputy principal (learning and teaching), was appointed as an associate director of the new centre which opened at the beginning of 2013.

The Universities of Birmingham, De Montfort and Imperial College London are also part of the consortium.

Since the launch, Dr Samuel Mwaura has started at Strathclyde as the post-doctoral Research Associate on the project. Dr Mwaura is working with Professor Carter on the first stage of the project, which entails mining existing datasets, such as the SME Finance Monitor and the British Household Panel Survey, for data about enterprise finance and ownership diversity. A further PhD scholarship, co-funded by Scottish Enterprise, has been awarded to examine entrepreneurial leadership, for which Eleni Kesidou has been recruited. This brings to three the number of PhD scholarships associated with the ERC project at Strathclyde this year.

SCHOLARSHIP NAMED AFTER BRAVE ESRAA

Strathclyde Business School is to offer the Esraa Mansy Scholarship in memory of an outstanding female MBA student at Strathclyde's UAE campus. It is hoped that the scholarship will motivate and support deserving Strathclyde businesswomen to persevere in the achievement of their own MBA.

Esraa Hassan Mansy applied to the Strathclyde MBA in Dubai at the unusually young age of 24, and was accepted thanks to an impressive display of persistence, talent and maturity.

Esraa fell ill with a serious autoimmune disorder during the strategy module in year two of her Strathclyde MBA. She continued with the programme classes and assignments nonetheless, rarely letting on to classmates about the severity or prospects of her illness. After selflessly using her knowledge and connections to set up and oversee careful treatment plans for her mother, who was battling cancer at the same time, Esraa's own illness suddenly advanced and she died in July 2012. Strathclyde awarded Esraa her degree posthumously.

MULTI-MILLION PROJECT WILL HIGHLIGHT THE CHANGING NATURE OF EMPLOYMENT IN EUROPE

An ambitious €4.6 million four-year project co-ordinated by Strathclyde Business School brings together world-leading academics and researchers to map the changing nature of employment

The Changing Employment project is a Marie Curie Initial Training network that aims to identify the nature of the restructuring of European labour markets and economies as a result of current economic and social change.

An eminent team of specialist supervisors dedicated to dissemination and outreach will support the 12 doctoral students and three post-doctoral researchers. They will develop researchers' skills in advanced social and comparative research methods, and through the variety of employment situations provide transferable skills to undertake work with commercial, educational, governmental and third level agencies in the context of changes in working life.

The project brings together partners from eight other European universities and social and industry partners, including the European Trade Union Institute, Consultingeuropa, EDF, Edrington, the International Labour Organisation, Neuroedukacja, UNISON, Volvo and CAIRDE.



The research will focus on three themes:

- Management and employee relations
- Inclusion and exclusion at work, including examination of the character of democratic engagement
- Impact of the quality of work itself and change on employee wellbeing and work/life quality.

Project co-ordinator Professor Paul Stewart, from the department of Human Resource Management, says: "This is an outstanding research agenda, bringing together a range of critical social scientists and new researchers

concerned with the transformation of employment relations and conditions of work across Europe."

A range of other training activities has taken place across partners' locations and the three research theme groups (management and employees, inclusion and exclusion, employee wellbeing and work/life quality) are working on joint research outcomes.

You can now follow the research on Twitter (twitter.com/changingemploy) and Facebook (facebook.com/changingemployment) or sign up to the RSS feeds to keep up to date with the project news and events.

STRATHCLYDE BUSINESS FELLOW NETWORK GOES FROM STRENGTH TO STRENGTH

The Strathclyde Business Fellow Network (SBFN) has been in operation since July 2012 (strath.ac.uk/businessfellows) and has gone from strength to strength.

There are now 24 business fellows within the network, who are senior professionals from different specialisms such as finance, HR, marketing, hospitality and tourism and entrepreneurship. Business fellows have actively contributed at events such as guest lectures, providing project opportunities and placements for students, engaging in alumni activities, and working with SBS in an advisory capacity both at operational and strategic levels.

All business fellows have an allocated academic champion within SBS who principally works with the fellow on an individual basis, in areas of mutual interest. The latest business fellow event took place on October 22, with the first event of 2014 scheduled to take place on February 25, again in Glasgow.

A new international branch of the Strathclyde Business Fellow Network is to be launched at an event in Dubai on January 22. A further eight international business fellows have been invited and accepted roles as business fellows. Professor Susan Hart will host these new fellows at the event in Crowne Plaza Hotel, Dubai and formally welcome them in person to the network.



BUSINESS SCHOOL CONTINUES TO EARN INTERNATIONAL RECOGNITION

This year started with news that SBS has been awarded EQUIS accreditation by the European Foundation for Management Development (EFMD) for the maximum five year period. SBS has been accredited by EQUIS for the past 11 years and the latest reaccreditation for five years demonstrates SBS's commitment to providing excellent management education and means that SBS remains one of the few business schools in the UK, and indeed the world, with triple accreditation.

Professor Susan Hart, Dean of SBS, says: "We were delighted to be reaccredited by EQUIS and further delighted to hear it was for the full five years. This demonstrates that EQUIS are convinced of the strength of our international presence and our international strategy.

"Our increasing international links with top-quality business schools are firmly positioning us as a school with a strong international

standing and (increasing international) reputation. The EQUIS panel met with a full range of stakeholders while here, including staff, students, alumni and corporate partners, and undertook a very thorough assessment of the business school as a whole."

Strathclyde has also fared well in various rankings of its programmes this year.

Strathclyde Business School's full time MBA programme was ranked in this year's *Financial Times* Global MBA ranking, which lists the top 100 in the world each year. Out of thousands of business schools worldwide, only those that are accredited (AACSB or EQUIS) and meet strict criteria are eligible to take part in the *FT* ranking. This ranking makes Strathclyde Business School the only triple accredited

and ranked business school in Scotland, and confirms our status as number one in Scotland.

We are placed in the top 25 of European business schools ranked and, reflecting the increasing competitive nature of business schools globally, one of only 11 business schools in the UK to be included in the ranking.

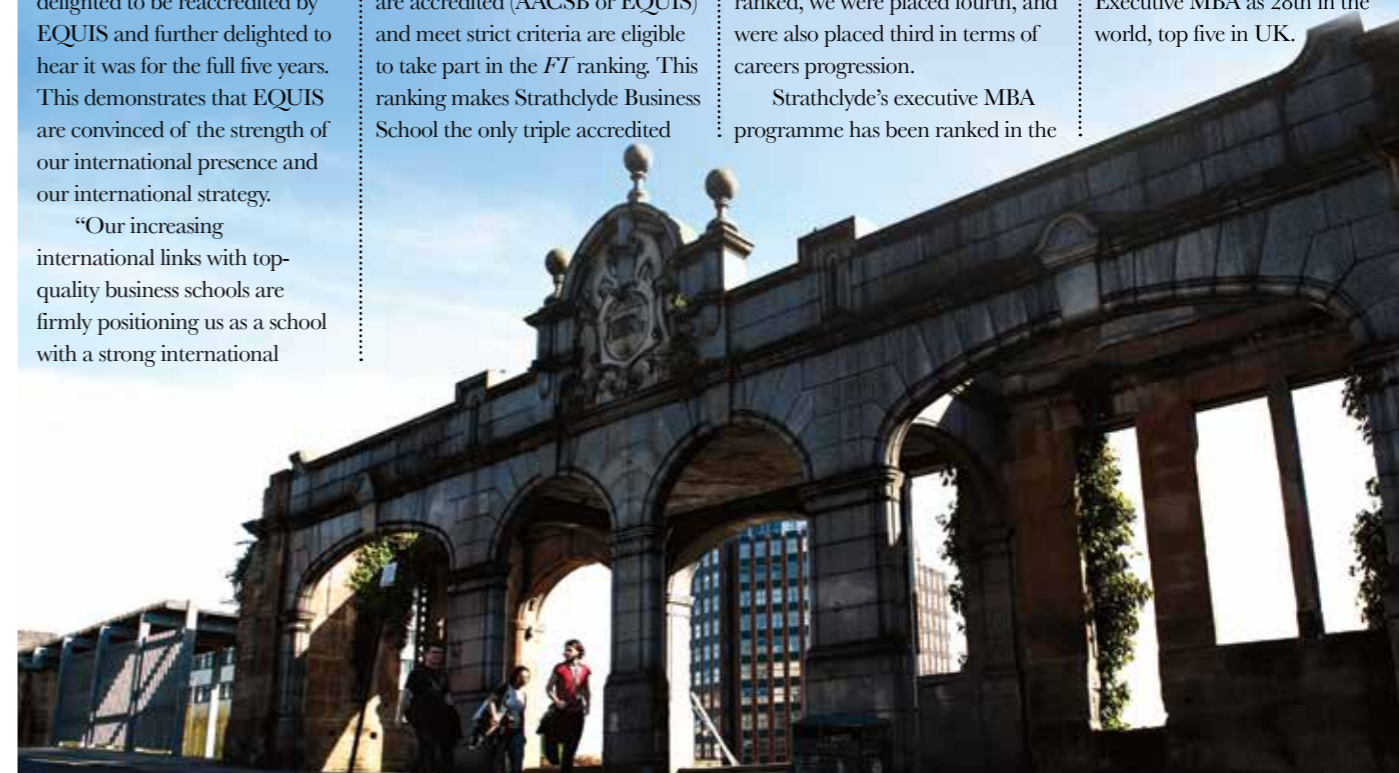
Our MBM programme was also ranked by the *Financial Times*. Its latest ranking of the world's top 70 pre-experience general management programmes – its Masters in Management ranking put Strathclyde's MBM programme 33rd in the world. Out of the 12 UK business schools ranked, we were placed fourth, and were also placed third in terms of careers progression.

Strathclyde's executive MBA programme has been ranked in the

Financial Times' top 100 of such programmes in the world. Our executive MBA programme – offered via part-time study in the UK and around the world at our nine international centres – was ranked 58th globally and in the top 10 of UK-based business schools ranked in the top 100.

We were also ranked in the *Financial Times*' Global Masters in Finance rankings, making top 10 in the UK and 30th in the world.

The Economist ranked the Strathclyde full-time MBA programme in its *Which MBA? Top 100 programmes* as 40th in the world, fourth in UK; and our Executive MBA as 28th in the world, top five in UK.



SBS BUILDS ONLINE PRESENCE WITH BLOG AND SOCIAL MEDIA

Strathclyde Business School launched its Engage blog this year as another way of interacting with our staff, students, alumni and external contacts via social media.

So far, we have had blogs

on everything from family business issues, through branding in the age of social media and immigration debate to students' success stories.

The blog is continuing to attract subscribers but if you

have not yet visited engage-sbs.ac.uk then please do so – and please do subscribe and get involved with commenting or even writing your own blog piece. We would love to hear your ideas.

You can also find us on Facebook and Twitter:

 engage-sbs.ac.uk
facebook.com/strathbusiness
 twitter.com/strathbusiness
 (@strathbusiness)

DIARY OF EVENTS

The project began in December 2012 with a kick-off meeting at the University of Strathclyde and is now fully operational:

MARCH '13: The project recruited 12 early-stage researchers from across Europe (PhD students) and a post-doctoral researcher; they are based across the nine academic partner European institutions.

MAY '13: The launch event and first network training school took place in Gothenburg around the theme of disciplines in work sciences. All videos from the launch can be found on the research website.

NOV '13: The ITN open day, annual colloquium and network school took place in Paris around the theme of Comparative Labour Sociology.

MARCH '14: A second experienced researcher, based at Strathclyde, will commence work on the project.

JUNE '14: The network will hold its first open roundtable and open network school in Leuven around the theme of Labour Markets, 'Flexicurity' and Social Dialogue. This will be the first event where non-consortium PhD students and academics will be invited to participate; further information about this event will be available soon.

WE CONTINUE TO BUILD CONNECTIONS WITH MAJOR PLAYERS IN BUSINESS

Sandy Wilson, head of executive education at SBS's Centre for Corporate Connections, reports on activities in 2013

The Centre for Corporate Connections enables organisations to develop talent in alignment with their strategic objectives through close partnerships focused on designing bespoke educational and leadership development programmes. Our goal is to bring the internationally recognised SBS expertise in research and teaching to ambitious businesses that want to collaborate in the search for solutions that address their current and future challenges.

In the past 12 months new businesses have begun executive development programmes with the Centre while existing partnerships continue to grow and develop.

V Group, a leading global provider of maritime services to the commercial shipping, cruise, energy and defence industries, has agreed a Global Leadership Development Programme with Strathclyde that was launched in September with a dinner hosted by V Group chief executive Clive Richardson and Professor Susan Hart, Strathclyde Business School Dean. The programme will run for at least three years and aims to develop the organisation's senior leaders across the world.

A new relationship has also begun with the Royal Bank of Scotland. CCC will be working with the bank across its operations division and in particular with the board of corporate operations.

Bespoke consultancy projects led by Professor Jill MacBryde and Dr David MacKay have taken place this year, with clients including Glasgow City Council, Land Engineering and Devro. These have focused typically on supporting senior teams to explore and develop their future strategy.

The Iberdrola MBA in the Global Energy Industry launched a two-and-a-half-year part-time degree programme, delivered with Comillas University in Madrid, focused on the global energy industry and with participants from the UK, Spain, USA, Mexico and Brazil.

As for existing clients, we have a long and fruitful relationship with Babcock and we launched an MBA specifically tailored to the company in September. In a bespoke three-year

corporate MBA programme, there are 25 participants from the UK, South Africa and Germany taking part who were specifically identified as part of the company's long-term succession planning.

Launched in 2011, the Weir Business Management Programme offers a postgraduate certificate in management for Weir managers globally – from across Europe to Russia, Canada, India, South America, Asia and Australia. The latest cohort of this programme also started in September.

The Senergy Project Management Programme has been created to support the transition within Senergy to become an international, project-based organisation. A year-round rolling programme of short courses online or in face-to-face classes attracts participants from the UK, Sweden, Dubai, Kuala Lumpur and Australia.

The relationship with Standard Life has developed further with the management development programme which focused on its UK and Ireland distribution teams. The completion of the programme's second session was marked by a dinner hosted by Professor David Hillier and Jeff Regazzoni, head of retail distribution. The Emerging Leaders Development Support (ELDS) programme started its third cohort in October and we are also teaching a short course on 'Developing Commercial Acumen' with Standard Life's graduates.

Babcock MBA students (top), SBS's Dr Jill MacBryde with (left to right) Neil Clitheroe, CEO, Retail and Generation, at Scottish Power; Strathclyde University principal Professor Sir Jim McDonald; and Professor Andres Ramos from Comillas University and MBA global energy students at a wind farm in Spain (below)



NEW SKILLS ENHANCE CAREER PROSPECTS



Among the SBS alumni working with Standard Life, a major player in insurance, savings, investments and pensions, is Jody Lewis, head of customer experience management – UK customer and marketing

After studying media at degree level and then a postgraduate in economics, Jody Lewis started at Standard Life in 2002. On graduation he took a customer services role in Glasgow where he stayed for three years.

By 2005 he had moved through to the head office in Edinburgh where he used his university credentials to tackle a communications role for financial advisors, which led to a communications manager role by 2008. By 2010 he was working as a manager in the chief executive's office and this year was promoted to take on the role of leading the new customer experience management team.

"Standard Life takes development seriously and across all of my roles an emphasis has been placed on personal development – although the onus remains with you to take the initiative," says Jody.

"In 2010 I was nominated to take part in the emerging leaders programme with Strathclyde Business School. I was already working in a management position and had a level of expertise within my role but appreciated that to progress it would be useful to take myself out of my comfort zone and challenge myself to develop new skills.

"I loved being back in the education environment. The programme was intensive and delivered by enthusiastic tutors with good knowledge based on relevant experience. The fact that you are also working with like-minded people

also helps, and with candidates drawn from different roles from across the company there were always opportunities to look at challenges from several different perspectives which helped to broaden my overall experience.

"One of the biggest personal challenges was taking the finance module, as I am not what you might describe as a numbers guy. I was pleasantly surprised though as the work was both accessible and delivered in a format that I could easily understand.

"The main benefit of the emerging leaders programme for me has been to boost my confidence. I am now more comfortable taking my knowledge and applying it to new situations. In my new role as head of customer experience management I need to be able to identify new ways of helping customers get the best possible experience from Standard Life.

"The kind of things I'll be looking at is learning from customer feedback to streamline existing services. Whether that's making our website more user-friendly or making statements easier to understand, the art of looking at issues from a new perspective is something that's been positively developed through training.

"Taking part in executive education offers no guarantees of promotion, but I think the experience of the emerging leaders' course has plugged gaps in my knowledge, made me a greater asset to the business and has certainly helped me to reach my current position."

MBA25 continued, with Alliance Trust and Craneware as well as a blend of 'not-for-profits' including the Home Office and entrepreneurs, being welcomed to the consortium led by William Grant & Sons. In particular this year MBA 25 delivered a residential class on family business in Stockholm in partnership with Stockholm School of Economics, which offered direct access to family-run businesses such as Bonniers, Spendrups, and Upplands Motor.

Hilton, InterContinental, Swissotel, Apex and Principal Hayley all sponsored participants on the second cohort of the Executive Masters in Hospitality and Tourism Leadership – with all the initial sponsors repeating their support for the second cohort. The third cohort is due to start in January 2014.

Official start of the Iberdrola Global Energy programme in Glasgow in June

V GROUP STARS SHINE BRIGHTER THAN EVER

A Global Leadership Development programme for V Group is the latest partnership programme developed by the Centre for Corporate Connections, and senior leaders will take part from around the world.

The participants from V Group – a leading global provider of maritime services to the commercial shipping, cruise, energy and defence industries – are highly successful in the company already. They will be working closely with a team of coaches who are supporting the learning and project work, helping to embed the learning into their management practice and behaviours and developing self-awareness.

Delegates from around the UK and from Singapore, Norway and Monaco will gather in Glasgow for the programme, which is to be carried out in four modules over 18 months, focusing on leadership skills, operations and project management, business finance and leadership for strategy delivery.

The first module has already taken place and participants commented on how it allowed them to take time out to reflect on the way they manage and consider improvements based on the module, which was tailored to provide relevance to individual members of the group.



DIVERSE INVESTIGATIONS NEED CONTINUED SUPPORT

Professor Paul Thompson, vice-dean of research at Strathclyde Business School, focuses on an important aspect of carrying out research, namely diverse research funding

With income from the main Economic and Social Research Council (ESRC) becoming more competitive and constrained, it is more important than ever that SBS secures sufficient funds to sustain high-quality research from a variety of sources.

In the past five years, SBS has averaged more than £1.5 million in research income. Although the content of research differs enormously across departments and individuals, the dual positioning of a leading international technological university and the place of useful learning has facilitated a broad focus on three core themes: energy and energy management; economic performance and innovation; ethics and equality in business and employment. Each of these has attracted significant levels of research income and investment.

Within energy and energy management, work in the area of climate change, energy conservation and environmental trade balances has led to several awards in Economics, including £450,000 from the Scottish Government and £776,000 from funding councils, the ESRC and EPSRC (Engineering and Physical Sciences Research Council).

Two key projects in Management Science also bring together colleagues from the engineering and business faculties: the Northern Isles New Energy Solutions (NINES), a £1.3 million project funded by Scottish and Southern Energy, and an EPSRC-funded (£315,000) project on new mathematical tools for modelling uncertainties in offshore turbine operation and maintenance.

On economic performance and

“Two Management Science projects bring together engineering and business colleagues.”

innovation, Economics has led a large-scale (£3million) multidisciplinary study assessing the impact of higher education institutions on regional economies, funded by the ESRC and higher education funding bodies. The Scottish Centre for Employment Research (SCER) in collaboration with colleagues at Oxford, secured ESRC funding for research identifying the extent and use of graduate skills in a tightening labour market.

The Hunter Centre for Entrepreneurship was part of a pool of business schools (Warwick, Aston, Imperial and Strathclyde) awarded the Enterprise Research Centre, a £3.6million project analysing SME growth, co-funded by the ESRC, Technology Strategy Board, Department of Business Innovation & Skills and the British Bankers Association.

Examples of funding in the third prominent theme of ethics and equality in business and employment are the study of gender and job segregation in call centres by Human Resource Management, and the SCER project on gendered pay and rewards in different industry sectors funded by the Equalities & Human Rights Commission and Equal Opportunities Committee Scotland.



Professor Paul Thompson is ever alert for new sources of funding

RAW MATERIALS AND RAW NERVES

The History and Strategic Raw Materials Initiative is addressing sensitive supply issues



A large coal mining site at Pingshuo

There is intense political debate and media speculation over the control and supply of certain minerals. The EU, Japan and the US have lodged complaints with the World Trade Organisation against China over controls on exports of 'rare earths', which are important for green technology and household goods, as well as military hardware. In the last few years the European Commission has launched a raw materials initiative. Controversy over control of mineral reserves overshadowed the general elections in Australia in 2010, while Australian competition authorities have recently blocked acquisitions by a number of Chinese metal concerns.

Dr Andrew Perchard is co-founder of the SBS-based History and Strategic Raw Materials Initiative together with his international colleagues, Drs Mats Ingulstad and Espen Storli from the Norwegian University of Science and Technology (NTNU).

“The control and supply of certain raw materials, or ‘raw materials diplomacy’ as it has become known, continues to be a pressing

and highly charged political issue,” explains Dr Perchard.

“This continues to be characterised by highly emotive rhetoric, from the heated public debates surrounding recent Australian and Greenland elections about access to and control of raw materials reserves, to the US, EU, and Japan’s responses to and posturing over China’s perceived stranglehold of ‘rare earths’ – which form components of everything from microwaves, laptops to missile guidance systems.”

Dr Perchard and his colleagues believe that what has been largely missing from these policy deliberations and political debates is historical perspective. He explains: “This is all the more important given that the rhetoric used to justify greater access to, and control over, raw materials reserves bears a striking resemblance to that used in the 1930s, during the height of the Cold War, and in the 1970s. The aim of this network is to bring together leading international scholars from across academic disciplines, as well as business, policymakers and journalists,

to explore this subject, introducing an historical perspective to these discussions.

“A key feature of the network will also be to examine the critical toolkit and language deployed by these different disciplines in exploring this subject.”

Dr Perchard adds: “As economic development continues to exert pressures on our finite resources, the issue of strategic raw materials will become ever more prominent in the years to come, so it’s vital that we devote more time and resources to its study.

“Working with NTNU, we at the Department of Strategy and Organisation have begun to make progress, but we know there is a lot to be done. Over the coming years we’ll be continuing to advance the issue of strategic raw materials through events and a programme of streamed research work.”

“The control and supply of certain raw materials is characterised by highly emotive rhetoric and heated public debate.”



In the current harsh economic and competitive climate, companies are increasingly faced with the difficult task of managing and resolving tensions that often appear paradoxical. They have to be innovative while at the same time being reliable; they have to be efficient while remaining flexible and agile; and they must strive to lower costs and decrease time to market, but never at the expense of quality.

These challenges are not entirely new. The term ‘ambidexterity’ was coined by academics in the late 1990s to capture the ability of corporations to manage conflicts and contradictions. For example Toyota – the ambidextrous corporation par excellence – is reputed to owe its success to its ability to manage multiple cultures and criteria that apparently contradict each other. The most striking is the balance between the need for superior leanness and efficiency on one side and flexibility and quality on the other.

While companies are developing new ways to manage contrasts, however, what were difficult challenges before have become even harsher in the past few years. The ever faster and more uneven pace of innovation, the growing complexity of products, technologies and services and the intensified specialisation and division of labour – coupled with increasing modularisation and outsourcing of production and production-related knowledge – are raising steeper challenges for businesses.

Increasingly thin profit margins mean that the consequence of failure to meet these challenges and reach performance objectives can be fatal. Even major operations like Toyota today are facing increasingly harsh realities.

How are companies reacting to these changes? On one hand, there is evidence that many are getting much better at managing inherent contradictions. Being flexible and efficient while remaining reliable and innovative is no longer a matter of choice, as proposed by Burns and Stalker in the 1960s, but absolute imperatives. On the other hand, current challenges imply that achieving multiple and contrasting objectives is becoming harder. Managing contradictions calls for a much deeper analysis of the actual organisational processes by which ambidexterity, or the management of paradoxes, is achieved in practice.

Dr Luciana D’Adderio’s research sponsored by the Advanced Institute of Management (AIM) shows that there are process-level dynamics that, while being easily overlooked by managers and scholars alike, can have a strong impact on the ability of firms to manage and resolve paradoxes and remain competitive.

ON THE ONE HAND

Competing by managing paradoxes has become a key skill in business. Luciana D’Adderio of Strathclyde Business School’s department of Strategy and Organisation, has investigated how such ambidexterity is achieved in industry

Her AIM project on ‘Dependable Innovation’ has looked in new depth and detail at how leading corporations in the high-end electronics and automotive sectors manage conflicting criteria of the kind described above. She argues that academics and practitioners have so far overlooked the potential of a process-centred analysis to identify the subtle dynamics that can exasperate or mitigate the effects of conflicting criteria in business organisations. Her view is that it is only by analysing firm’s operations at the micro level that one can identify the complex interactions among technological systems and organisational functions and cultures that may lead to an increased ability to manage those paradoxes that threaten to undermine firm’s competitiveness or even its viability.

Through a series of detailed ethnographic observations of key design, production, testing and maintenance processes at leading global manufacturers, including Oracle/Sun Microsystems and Hewlett Packard in electronics and Fiat in the automotive sector, Dr D’Adderio has found that, while paradoxes are certainly highlighted and as far as possible managed, their resolution is an ongoing effort, even for the most advanced of corporations. In her analysis of how technical and operational knowledge and activities are integrated across the diverse and distributed boundaries between different

organisations in the value chain, including systems integrators, their customers and their suppliers, she has seen that trade-offs tend to persist.

An example is her analysis of the process of testing of complex computer server products in electronics. Testing involves integrating products and production-related knowledge from all the different actors in the extended value chain, including a highly diverse and distributed network of suppliers and customers, who hold different knowledge and are often mutual competitors. Here she has found that, in conditions of rapid and uneven innovation, high complexity and high specialisation, significant trade-offs can appear, where practitioners try to integrate the disparate product-related knowledge and components into a fully working system.

Contrasting requirements in this context can render the integration task less than straightforward. Paradoxes include the quest for increased flexibility and efficiency (with loose ties between links in the supply chain: the reduction of slack resources and knowledge overlap between integrator and suppliers) and, at the same time, a quest for increased quality and reliability (requiring close ties: the ability to control, track and trace components and co-ordinate knowledge across the integrator supplier boundaries).

The contrast between the need for close and loose ties may result in uncertainties about the system’s overall behaviour. This can lead to undetected faults and therefore potential failures in the field. In other words, in harsh competitive conditions where high innovation and flexibility must coexist with high quality and reliability systemic interactions can emerge that are not entirely predictable and this can have important consequences for the fitness of products, processes and, ultimately, the wider organisation. In this challenging competitive context, best-in-class companies are those that manage to identify the potential trade-offs and learn to reduce or eliminate their unwanted impacts.

Dr D’Adderio has found that the close attention devoted to the micro-process level by her partner organisations, whose advanced practices place them at the leading edge of competition, allows them to remain innovative while anticipating and resolving potential conflicts that otherwise might result in loss of product, process quality and reliability downstream in production or even in the field where customers eventually notice.

For more information see Luciana D’Adderio’s AIM Fellowship webpage at dependableinnovation.org. This article first appeared in ESRC’s *Britain* magazine.

HUNTER CENTRE RESEARCH SHINES SPOTLIGHT ON FAMILY BUSINESS

Family-owned companies are continuing to make a major contribution to the economy and the community

Family businesses are of intrinsic importance to the Scottish and UK economy. They comprise more than 70 per cent of the total number of businesses in the UK; 30 per cent of the UK's GDP is produced by family enterprises and 50 per cent of the private sector workforce in Scotland is employed by family businesses. In Europe, 25 per cent of the 100 largest businesses are family-owned.

Professor Eleanor Shaw, head of the Hunter Centre for Entrepreneurship, says: "Successful family businesses form an important part of the backbone of the Scottish economy: they are highly entrepreneurial in their approach to product and market development, and share mutually beneficial, sustainable relationships with customers and other key organisations along their supply chain. The Hunter Centre has seen a growing focus on working with and learning from successful family business."

Research and teaching interests in family business are not confined to the Hunter Centre and are in fact spread across the business school, probably most publicly in the MBA 25 programme which was developed in conjunction with the famous whisky maker and family business William Grant & Sons.

In the Hunter Centre for Entrepreneurship, one of the key academics involved in this important area of research is Dr Niall MacKenzie. "We've identified there isn't a great deal of support for family business – bespoke support anyway – in Scotland even though such businesses are very important to the economy so we're focusing our research on engaging with family business and the issues they're facing," he explains.

He emphasises that there are several colleagues within the Hunter Centre involved in such research including five doctoral researchers from the US, Germany, China and the UK undertaking family business research on topics such as succession, family business advising, family foundations and philanthropy.



"There's a broad scope of work going on and there's a wide programme of research, teaching and knowledge exchange that both the Hunter Centre for Entrepreneurship and Strathclyde Business School more widely are actively engaged in."

Professor Shaw, who is leading a UK-wide research project on entrepreneurs' engagement in philanthropy, adds, "We know that as well as contributing to the economy, family business gifts more philanthropically than non-family businesses and that family businesses are important economically, socially and philanthropically. Indeed, family businesses are often deeply embedded and integral to the social and economic sustainability of many local Scottish communities."

Recognising just how important family businesses are, the Hunter Centre for Entrepreneurship, in collaboration with the Scottish Family Business Association, hosted a series of lectures that raised awareness of issues of relevance to family business. Indeed, talks delivered by family business mavens including Maitland Mackie (Mackie's), Jacqui Walker (Walkers Shortbread) and Bill Gordon (William Grant & Sons) have touched on themes which chime more broadly than with family businesses alone.

Dr MacKenzie says: "These businesses face very discrete challenges, which often

connect to other challenges that non-family businesses share."

Having contact with individuals from the family business world isn't confined to this lecture series. It is integrated into the BA Business Enterprise degree from year one and in their final year, students have the opportunity of studying 'Family Business: theory and practice'. As the title suggests, this class blends research on family business with the experiences of family business practitioners.

"It's a great marriage of practice and theory," explains Dr MacKenzie, "and our undergraduate students are very positive about this, they appreciate this contact; it's useful learning coupled with entrepreneurial action. Students taking this class undertake a project on family business that involves working with family firms ranging from a two-man car mechanic business up to a company like Baxters. There's a broad scope of family businesses but they all face similar issues."

Working with the Law Society of Scotland, the Entrepreneurial Exchange, the Association of Chartered Certified Accountants, Family Business Solutions and the Society of Trust and Estate Practitioners (STEP), the Hunter Centre has established the Forum for Family Business, and is involved in STEP, a global applied research initiative that explores the entrepreneurial process within business families in 37 nations, led by Babson College, USA.



Family businesses can be integral to social and economic sustainability, says Professor Eleanor Shaw

YOU KNOW A GOOD OPPORTUNITY WHEN YOU SEE ONE

Strathclyde students are gaining some great experience and proving themselves to be winners

Our students are renowned for their proactive 'can do' attitude, showing a natural flair for 'useful learning' and doing their best to get as much out of their Strathclyde experience as possible by taking advantage of all opportunities which come their way.

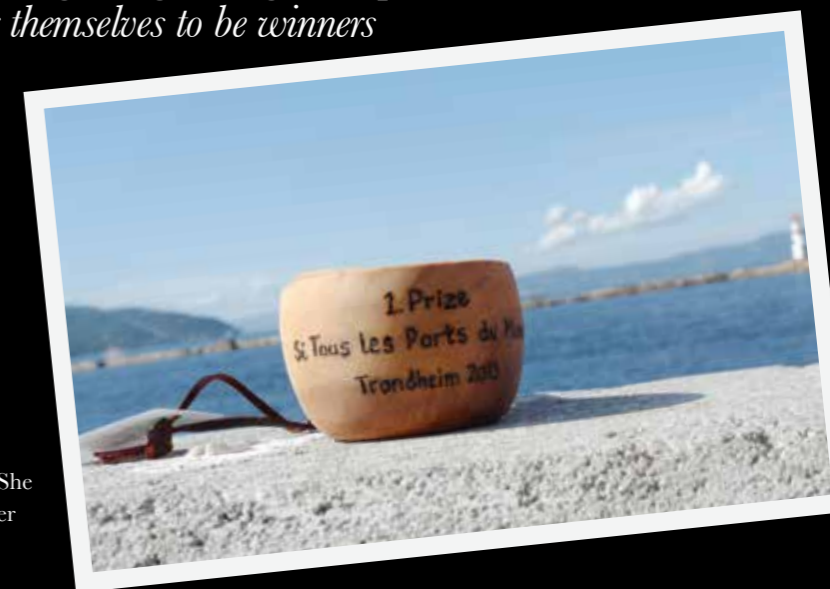
Over the next few pages are some examples of what some of our students have achieved in the past 12 months.

Reem Al Wali (BA in Business Enterprise) attended an entrepreneurship workshop in Norway this year run by the 'Si tous les ports du monde' a network of 'port cities across the world. Reem's idea – a tool to make life easier when you have to manage personal responsibilities when you are away from home – was chosen as one of the three projects from a potential 12, and the students were then grouped into teams for the three selected projects. Her business idea was chosen as best project by a judging panel of investors.

Helen Mullen, a doctoral student in the Department of Management Science, completed an ESRC-funded internship with Creative England in Manchester earlier this year. Helen was selected for the internship after a competitive process. She worked as a researcher for three months on 'Cluster2020', a European-funded project that provided practical guidance to organisations about cluster and business development in the creative industries.

Two first year (2012-13) SBS students, Eleonore Herrmann and Johanna Lim, have been announced as part of the winning team of the global business competition, the Global Enterprise Experience, which sees

groups of students working as a virtual team with competing teams across the globe. This year the contest ran from May 1- 22 and brought together 764 students from 50 countries, working in 95 international teams. The first year students in International Business were two of the eight members of the overall winning team, taking the ANZ Champion Team Award.



Reem's group's winning trophy (above) and touring some of the fjords (below)



BOLD THINKING AND BREAKTHROUGH IDEAS

Students show their quality in international competitions

Five students – Rebecca Richardson, Christie Murphy, Rachael Reid, Fergus Moore and Scott Kennedy – from Strathclyde Business School won a special prize for their business idea at an international social enterprise competition in the USA.

‘Team Revive’ competed at the Values and Ventures Business Plan Competition at the Neeley Entrepreneurship Center at TCU, Texas (19-20 April). They were one of 28 teams from 28 universities worldwide looking to claim a share of total prize money of \$43,000. The

team was given the special Founder’s Award, which recognises bold thinking and breakthrough ideas.

Rebecca Mackenzie, an honours student with the marketing department, represented Strathclyde University at the World Student Sales Contest in February, 2013.

Alastair Lumsden was the first Strathclyde student to go on exchange to Nagoya University in Japan this year. The Management and Business Enterprise student was awarded a scholarship by Nagoya to do so and was one of the top performing students in

his class there. Alastair also secured an internship proactively while in Japan.

Amanda McFadden, a marketing student at SBS, was named Marketing Student of the Year in the Marketing Society Star Awards 2013 which took place in June.

A team of students from the Department of Marketing and the Masters in Business Management programme run by the Department of Strategy and Organisation participated in the Hult Prize Challenge 2013 on March 1 and 2. A team of five consisting of Sauptak

\$43,000

28 teams from 28 universities worldwide looking to claim a share of total prize money of \$43,000

Banerjee and Anastasiya Boykova from the Department of Marketing and Shubhronil Talukdar, Pragnya Venigalla, Ehjaz Habeebullah from Business Management together ventured into a quest to solve the problem of Global Food Insecurity in Urban Slums.

A group of full time MBA students teamed up to take part in the Npower Energy Challenge, an inter-university competition, and participated in the UK heat in February. The four students – Tabish Raza, Pratik Prasun, Praveen Patel and Hemant Chandran – successfully got through the first round of the competition, which was to write a 500-word summary of their ideas on, “How can energy providers engage more positively with customers?”

Newly graduated Alice Leyshon has taken part in a prestigious summer programme at one of the world’s top entrepreneurial institutions after being chosen as one of just two UK students to attend.

Alice (21), who graduated this summer with a first class honours degree in business enterprise from the Hunter Centre for Entrepreneurship, travelled to Boston to take part in the Santander Universities – Babson College Entrepreneurship Program for students. Babson, the top-ranked



From top left: Dr Michael Marck, Rebecca MacKenzie and Euan De St Croix at the World Student Sales competition; Calum Crichton receiving his award from Bailie Liz Cameron, Glasgow City Council, and Andy McDonald, Scottish Enterprise; Alastair Lumsden and friends; students at Values and Ventures in Texas; Alice Leyshon, above and right with colleagues at Babson College; Amanda McFadden receiving the Marketing Student of the Year Award.

university for entrepreneurship education in the world, holds this entrepreneurship programme for students from all over the world to attend.

Calum Crichton achieved a first class honours degree in Finance from the University of Strathclyde, and has another reason to celebrate – Calum was one of four top financial services students from universities in Glasgow to be recognised by Glasgow’s International Financial Services District (IFSD) for achieving top marks in their final exams.

Three Global Energy Management (GEM) Masters students gained highly competitive prestigious internships with Wood Mackenzie international energy consultancy this year, while another GEM student was awarded a scholarship from Iberdrola.

Thirteen business school students were awarded Saltire Internships this year, working with leading companies such as Barclays, Edrington Group, GE Oil and Gas, Jabil Circuit and Wood Group across the USA and UK.

The Saltire Foundation offers its internship programme to give students the chance to experience the working environment of highly successful firms.

Those involved were Heather Robertson; Jamie Cooper-Higgins; Ryan McMunn; Rennie Dickson; Claire McEvinney; Nicole Perry; Lucy Milson; Sonya Pencheva; Nicole Brodie; Hugh Gillies; Hannah King; Leanne Keil; Charles Razimbaud.



COMEDY IS AT THE CUTTING EDGE OF ACADEMIC PUBLISHING

Researchers report their findings – on the Edinburgh Fringe

I say, I say, I say, what does academic business research and comedy stand-up have in common? If you think ‘not much’, then the joke is on you.

Two Strathclyde Business School PhD researchers, Rachelle Pascoe-Deslauriers and Alistair Scotland, have been promoting their research through stand-up comedy in Bright Club Scotland’s Fringe show during August as part of Edinburgh Festival Fringe.

Rachelle Pascoe-Deslauriers, PhD researcher in the Department of Human Resource Management, has been involved with Bright Club Glasgow since March 2012, performing at the Stand in Glasgow and Edinburgh on a number of occasions. Her research into post-redundancy job transitions of middle-level public sector employees in Scotland and Canada might not seem the stuff comedy is made of, but Rachelle explains that Bright Club has helped her to articulate her research to diverse audiences.

“Being able to explain complicated concepts in an easy to understand manner is an invaluable skill to

develop,” says Rachelle. “Bright Club gives you a crash course on accessible public speaking.

“When I tell people that my research looks at lay-offs and organisational downsizing, the response I get is twofold: firstly, they are intrigued as to how I can turn that content into stand-up comedy, and secondly, they want to know more about the actual research.”

Alistair Scotland, PhD researcher in the Department of Management Science, has been involved with Bright Club Glasgow since May 2012, performing at the Stand in

Glasgow. His research explores the facilitation of virtual teams, through running causal mapping sessions over videoconferencing software.

“I joined Bright Club to talk about my research in a different context,” says Alistair. “After performing in comedy clubs and the Edinburgh Fringe, academic presentations are a piece of cake!”

The Fringe show has performed to packed audiences, and been well received by festival critics.

The performances are not improvised but involve the careful crafting of their sets – not unlike writing for a thesis or for publication. The time restriction, the need to communicate your research to a wide audience and the requirement of comedic content means that the writing and delivery must be accessible, succinct and – most importantly – funny!

“After performing in comedy clubs and the Edinburgh Fringe, academic presentations are a piece of cake!”



TONY CULTIVATES CELTIC’S CARING SIDE

As Celtic FC Foundation’s chief executive, Tony Hamilton wants to make a real difference to people’s lives in Glasgow, nationally and internationally

Celtic FC is known and supported around the world for its football but MBA alumnus Tony Hamilton wants to make it equally well known for its charitable arm – the Celtic FC Foundation – for which he took on the role of CEO this year.

“I have a simple and clear objective: my role is to make Celtic and its Foundation the most philanthropic football club in the world,” he says.

Tony – who completed his part-time MBA in 2010 – has been working at Celtic since 1994, when he left a trainee manager position and took half the salary to grasp the opportunity of working there, with his first position as a reporter/presenter in the club’s media on a freelance basis.

A staff job presented itself in 1999 and by 2003 Tony was running one of Celtic’s divisions as head of multimedia. He spent the next 10 years developing that role, taking on marketing for a while and introducing social media, live TV and internet broadcasting and streaming, as well as events, match days and physical and digital publications.

That was not enough for Tony, though: “I knew that I needed a fresh challenge and I wanted that to be within the club. And now I’m fortunate enough to have a new role and a new focus.”

Part of that challenge for Tony was embarking on his MBA studies. While he had been managing at a senior level for many years, he was keen to do an MBA at Strathclyde.

“Having not had an ordinary degree but having managed at a senior level for 10-plus

years, I wanted to do something which would satisfy me personally but also make me think about what I was doing and ultimately make me a better business leader,” he says.

“I’m still learning. I learn every day from the directors of the club and foundation, from my peers and from my mistakes. Learning is now a huge part of my life and that has only really come about since I graduated in late 2010.”

Tony has been CEO of the club’s charitable arm – Celtic FC Foundation – since April. “At the football club, charity is in our DNA,” he explains. “There are three strands to Celtic – with football and commercial expertise being the other two. Charity is the reason we were formed by a Marist Brother and some local Glasgow businessmen in 1887. At that time, the objective was to ‘put food on the dinner tables of children and the unemployed’.

“Fast forward 125 years and we are still doing the same work. An example of this is our support for the Trussell Trust, which runs 370 food banks in the UK. Beyond that we are one of the biggest private investors in Glasgow City Council’s education system. We work with many schools – non-denominational and faith – across the city and beyond.”

Having had a charity fund since 1995 and a Foundation/Community Department since 2006, the two parts were merged and a new entity was set up which operates as a SCIO and is governed by the Scottish charity regulator, OSCR.

“I want Celtic FC Foundation to be an exemplar in the third sector space and we are a fair bit away from that at the moment. But we will get there. I want its work to genuinely make a difference to people’s lives. That is not a sanctimonious statement, but a genuine desire and one that is shared across the Club and among our supporters.

“There are people in our community whose lives are blighted by addiction, unemployment and lack of opportunity. I see our role as a charitable organisation to impact positively on those people who need help to get back on their feet and many others like them across the world, who are affected by famine and war. These plans may sound overly grand but they are sincere. Celtic would not be here if it wasn’t for need.”

Tony cites a recent success story in terms of raising funds where they raised around £500,000 for cancer charities, food banks and other good causes when they staged the Stiliyan Petrov Legends’ Match in front of 60,000 spectators.

“There’s a lot of work to get done and it can be fairly relentless. With increased responsibility comes increased expectations and I have to work exceptionally hard with my team to exceed the targets I set myself and those that are set by the board,” says Tony.



MALAK BRINGS A WEALTH OF EXPERIENCE TO HER NEW ROLE

MBA alumna Malak Al Shaibani takes over as head of Oman's National Business Center



Setting up and running her own business gave MBA alumna Malak Al Shaibani the experience and insight which makes her an ideal candidate for the role she has recently taken on as director general of the National Business Center in Oman.

Malak – who did her MBA full time in Glasgow from 1996-1997 – has, over her 23-year career, spent 15 of them working with the Oman Government, specifically in promoting industry and investment in Oman.

She took a detour from this path to encompass corporate affairs and human resources roles with Oman's first aluminium smelter and also took on the challenge of restructuring an SME fund that supports entrepreneurs, while in 2011-12 she took time off full employment to establish her own consultancy firm.

It was that particular period which gave her first hand insight into the entrepreneurial process. "The first six months were great but after that – due to the global financial crisis – things became a bit more difficult."

Malak made the decision to return to full time employment. While she has not given up on the idea of running her own business again, she was delighted

to take up her current position with the National Business Center to support Omani entrepreneurs.

"When I was running my own company I faced a lot of challenges myself as a result of my exposure to both public and private sector: the executive president of the Industrial estates offered me the opportunity to take up this new challenge," she says.

With her experience in and exposure to start-ups and turn-arounds of companies in Oman, as well as a strong network of both public and private sector individuals who she can call upon to help support entrepreneurs, Malak was the obvious choice for the job.

"I know the entrepreneurial path can be a lonely journey and it's not for everyone but it's a passion of mine – I admire and really get inspired by those who have made it on their own. In Oman we have a very risk-averse culture and everyone is looking for a job – to be an employee – but our culture and heritage many years ago were based on trade and entrepreneurship. We need to instil that in our young people again. In Oman, entrepreneurship is about wealth creation as well as creating

self-employment opportunities. Oman has limited resources in terms of oil and the thrust has always been to diversify the economy into other areas and create job opportunities."

The National Business Center provides office space, mentoring and coaching as well as training and networking and links to potential customers.

"We're keen to aid our incubated companies to grow and compete in the local and global markets," says Malak. "My brief has been to make NBC a successful and effective centre to promote and develop SMEs by providing physical facilities and value added services, capitalise on linkages with industrial areas and the private sector to target budding entrepreneurs from universities, individuals and even retired Omanis.

"We aim to facilitate and support the growth of investable ideas into successful businesses; build entrepreneurial skills through dedicated and focused training, coaching and mentoring; and provide business support facilities such as office space, administrative support, financial support and consultancy services that are crucial in ensuring the success and survival of new ventures."

So far, Malak has seen ventures particularly in ICT, creative industries such as fashion design, as well as catering and supply services to major industries.

She has been named variously as one of the most powerful women in corporate Oman and was also named as one of the top 20 women in Oman in 2008, 2010, 2012 and 2013. Now in a very prestigious role, Malak believes in creating an enabling environment for women to succeed.

However, regardless of whether the budding entrepreneur is male or female, young or old, Malak is determined to spread the culture of business incubation in Oman and make the National Business Center a successful enterprise in itself, helping those on the 'lonely journey' of the entrepreneur.

STRATHCLYDE PARTNERS DALHOUSIE IN SECOND LIFE RESEARCH

A series of workshops hosted in the online virtual world of Second Life has leveraged a number of research opportunities for Strathclyde Business School and its partner Dalhousie University in Canada.

A partnership development grant from Canadian body SSHRC kick-started the process, with Calvin Burns (HRM), Andrea Coulson (Accounting and Finance), John Quigley (Management Science) and Howard Ramsay (learning technology adviser) from SBS, working with Kevin Quigley (School of Public Administration) and Ron Pelot (Industrial Engineering) at the University of Dalhousie, Canada.

While many people will be familiar with Second Life as a 3D virtual world better known for its social side, SBS and Dalhousie are using the social media technology as a new way of engaging in research internationally.

All involved in the research project have their own unique Second Life avatar, and the Second Life technology allows academics and government officials from across Canada and Scotland to meet from their own offices, reducing the impact of geographical distance and time zones and reducing financial and carbon costs.

Professor John Quigley explains that there are two aspects to the Second Life workshops: the first is to explore actual research themes and the second is to investigate the medium of Second Life.



"Being able to interact through Second Life could prove a much more engaging way of learning."

"The Canadian government is interested in this way of communicating. Canada is a vast country with government bodies spread across it and it's very expensive for them to fly staff to one place for essential meetings. This is a much greener and less expensive option. We've held three workshops this way and it's been an interesting experience seeing how people interact and pose questions, and we're seeing the development of protocols such as how we facilitate questions, how people should act, how we lead workshops."

The research being discussed concerns risk, and workshops have already focused on critical infrastructure challenges such as supply networks, cyber-security, and pandemics – specifically the 2009 H1N1 influenza pandemic. "When you study and compare crises and emergencies across countries," says Professor Quigley, "you often compare events that are not altogether similar. What made H1N1 so intriguing was that it was the same problem at the same time. It allowed researchers to gain invaluable insights into similarities

and differences in the ways different communities respond to risk."

Professor Quigley notes that the Second Life format could have uses with the distance learning programmes offered by SBS. "Being able to interact through Second Life could prove a much more engaging way of learning than simple book learning and more similar to the environment you get in the classroom. It could be that this may be a more engaging way of learning than, say, a webinar. We'll be able to assess this at the end of the workshops."

The links gained with Dalhousie via this research has led to joint Strathclyde/Dalhousie supervision of PhD students; and further projects have come out of it, as well as joint papers and literature reviews. Other academics in the Management Science department – Lesley Walls and Robert van der Meer – have also become involved in PhD supervision and presenting on Second Life themselves, while a PhD student is carrying out research comparing risk communication via social media channels in both Nova Scotia and Scotland.

HAPPY MEMORIES OF MALAK'S MBA

"My MBA class was large and quite an international group," says Malak. "We worked a lot in teams and doing it in a year was tough, but I made many friends and I have really good memories. One of my closest friends from then, in fact, travelled from Greece to visit me this year in Oman and we spent most of our time talking about our memories of the programme."



Calvin Burns from HRM is part of the team

MAKING MANUFACTURING SUPPLY CHAINS MORE RESILIENT

EPSRC funds collaborative research into minimising risk in manufacturing

£1m

the amount won to develop tools to better manage risks in manufacturing supply networks

Management Science academics at SBS are part of a UK-wide group that has won a prestigious major grant of almost £1 million to develop tools to better manage risks in manufacturing supply networks.

Funded by the Engineering and Physical Sciences Research Council (EPSRC), Strathclyde won a collaborative bid in partnership with the universities of Bristol, Coventry and Nottingham. Each academic institution focuses on a different element of the project, building on their distinctive knowledge and experience of management, modelling and risk. Each element will be brought together through collaborative working over this three-year project to develop useful methods and tools.

Industry partners including Nautricity, Rolls-Royce, Dynex, Tricorn Group, PA Consulting and DSTL will be involved in this research from the outset, with an initial launch meeting of the research and industry team taking place at Nottingham in November.

Professor Lesley Walls explains: “The idea is to develop ways of managing resilient supply networks: supply networks that can continue to deliver if there is a natural hazard or disaster.

“Loss of supply flow due to such hazards can lead to major disruption in global supply chains. While such risks cannot be predicted with certainty, it is possible to use our understanding of hazard types and the behaviour of networks to design supply chains that are more resilient. For example, companies



can think through alternative supply providers or routes to plan mitigations and so maintain operations.”

Professor John Quigley further clarifies: “As well as natural hazards, strategic uncertainties also affect supply networks. Manufacturing is a competitive business and so there are risks associated with international partnerships. Take an example where a company is doing business in China, then it might be useful to offer decision support for the managers there so that companies can ensure contracts are watertight or appropriate incentives are used in different situations.

“Obviously, different companies will have different uncertainties that have to be addressed. However, it is possible to conceive a general framework that encompasses the types of decisions that companies might expect to make to manage a resilient supply chain.”

A general approach can be applied

Professors Lesley Walls and John Quigley are developing a general risk model

to specific scenarios. Take an aerospace company, which by its very nature will be reliant on supplies of high-specification parts, some of which may have a limited number of suppliers meaning that there is a risk that a competitor buys up required components leading to loss of supply. “Someone buying up parts critical to the supply chain would be extremely problematic,” says Professor Quigley.

“In response, a company might take production in-house but that could be expensive, and so there are risks involved either way. Our work involves looking at possibilities for risks to occur and to rule out those deemed more unlikely, concentrating instead on the more likely scenarios.”

Professors Quigley and Walls will head the Strathclyde research that will focus specifically on a novel modelling approach which they call Dynamic Strategic Bayesian Networks. This is a new idea that will extend risk modelling methodology and should lead to a reduction in supply risks associated with partnership forming and investment strategies.

“Our intention is to come up with a general model for dealing with risk. The companies will be giving their time, information and data to help us do that, and through dialogue industry will make us aware of their particular challenges. While we won’t be providing specific solutions during the research project, by the end of the research period we will provide a general approach that can be adapted by each company to its particular circumstances.”

“It is possible to design supply chains that are more resilient.”