## Southampton



## Southampton Business School analyses risk of autonomous underwater vehicles

SPOTLIGHT ON: The Executive Learning Partnership OPINION: Four things manufacturing firms must do to survive ALUMNUS PROFILE: Catching up with Renold Tang

## WELCOME TO PROFILE

I'm delighted to introduce the first edition of Profile, the new bi-annual magazine from Southampton Business School. Through Profile, we will share our latest research and enterprise highlights and stories of success.

Looking back on 2016, the Business School enjoyed a notable year. Back in July, we held our first 'Your Future in Partnership' event, where we showcased our expertise to organisations, and learned more about what those organisations may need from the Business School. It was a huge success, and we'll be hosting the event again this year - watch this space for more details.

Southampton Business School was also ranked 6th in the UK for graduate employability (Guardian University Guide, 2017), which is testament to our focus on teaching highly relevant business topics. We have a very successful student placement programme, and our students contribute greatly to some of the world's leading organisations. On page 11, read how our placement students helped technology company Fresh Relevance double in size.

A key strength is our multidisciplinary and integrated approach to research and education. We're driven by innovation and enterprise, and aim to shape future business practice with research that delivers social and economic impact. Page 4 tells the story of our exciting work into developing new autonomous underwater vehicles for carrying out environmental monitoring. Pages 10 and 11 highlight a selection of recent successes, including our recent HESA ranking – the University came 7th among the Russell Group of research-intensive universities for research income raised from industry in the area of Business and Management.



Looking ahead, 2017 is shaping up to be another busy and exciting year. We're re-energising our full-time and part-time MBA programmes with a new focus and also re-accrediting the MBA degrees with the Association of MBAs (AMBA). And, we're applying for accreditation with the Association to Advance Collegiate Schools of Business (AACSB).

Plus, we're launching a new Open Programme as part of our executive education offering, which you can read more about on page 12. We're also running a series of monthly evening seminars, which are open to anyone who wants to learn more about today's major industry issues and network with local business people and academics. Visit our website to learn more www.southampton.ac.uk/sbs-seminars

I hope you enjoy reading about Southampton Business School in Profile. If you'd like to explore ways of working with us in 2017, please contact enterprise@soton.ac.uk

Merti Roool

**Professor Martin Broad** Head of Southampton Business School

## TALK TO US

Have you worked with Southampton Business School? Share your experience with us and you could feature in a future edition of Profile.

**Contact:** enterprise@soton.ac.uk

## IN THIS **ISSUE**

## **OPINION:** Fourthings manufacturingfirms must do to survive

Professor Steve Brown gives his thoughts on how manufacturing firms can thrive in a dynamic environment.



## SPOTLIGHT ON: The Executive Learning Partnership

Read how the region's leading companies are gaining new insights from Southampton Business School.



## Business School highlights

Over the past few months we've launched a new research centre and achieved a national accolade for one of our industry collaborations.



**To find out more about Southampton Business School, visit:** www.southampton.ac.uk/business-school

## FEATURE: Analysing risk in the deep sea

Dr Mario Brito is contributing his risk analysis expertise to the development of a new autonomous underwater vehicle.

## ALUMNUS PROFILE: Catching up with entrepreneur Renold Tang

Renold shares his career insights and entrepreneurial advice.

## Awards&honours

Our recent awards, honours and papers.

# ANALYSING RISK IN THE DEEP SEA

Risk analysis research is helping protect the marine environment.

Southampton Business School risk analyst Dr Mario Brito is working with international scientists and engineers to develop a new kind of autonomous underwater vehicle (AUV) to carry out underwater environmental monitoring.



"We need a better way of transporting sophisticated sensors and scientific instruments to the zones where mining and petrochemical exploration is underway."

Dr Mario Brito Southampton Business School



Unmanned programmable 'submarines' already carry out scientific investigations 6,000 metres below the waves in areas too difficult or dangerous for human beings to reach. However, AUVs now in use consume a great deal of energy as they are powered by propellers and their range can be limited.

"As increasing numbers of companies extract precious metals from beneath the seabed and the petrochemical industry searches for oil and gas in deeper water, it is essential to understand the environmental impact of their activity," says Mario. "We also want to know more about levels of salinity and phosphates and how climate change is affecting the deep oceans because much CO<sub>2</sub> is absorbed by seawater in these areas. To carry out this research, we need a better way of transporting sophisticated sensors and scientific instruments to the zones where mining and petrochemical exploration is underway. AUVs which only use propellers can't do the job."

Mario, from Southampton Business School's Centre for Risk Research, is among 19 partners from nine countries on a major European Union Horizon 2020 BRIDGES (Bringing together Research, and Industry for the Development of Glider Environment) research project taking on this global challenge. The BRIDGES team is developing a different 'gliding' propulsion method for AUVs. It is based on a buoyancy method, pioneered by American researchers; this saves energy and allows the AUV to reach greater depths.

Mario is contributing his risk analysis expertise to the four year €8M project led by Armines. He held workshop sessions with scientists and engineers to assess the reliability and resilience of important AUV systems such as batteries and buoyancy control. Mario is using his own data for the project, gathered as part of his earlier work with the University of Southampton's Ocean and Earth scientists. In 2009, he analysed operating risks for the Natural Environment Research Council's (NERC) Autosub3 which travelled 500 km under the ice shelf near the

Pine Island Glacier in West Antarctica. This was followed by risk analysis of several AUVs including Autosub 6000, Autosub Long Range, ISE Explorer and Remus 100. The analysis conducted for Natural Resources Canada (NRCAN) on the ISE Explorer supported decision making for deploying the vehicle underneath seaice; this vehicle travelled a total distance of 10,000 km under ice.

Underwater Robotics.

Research see

Mario, please contact



A prototype 'glider' three metres long and one metre in diameter is now being developed by the BRIDGES project team. It will then be tested in the Mediterranean near Marseilles and the Atlantic Ocean off the coasts of Portugal and Ireland.

"Effective risk analysis and management is key to the success of this major international project so its ambitious aims can be achieved," adds Mario.

In recognition of his work in this sector, he has been elected Deputy Chair of the Society of Underwater Technology Panel on

To learn more about the Centre for Risk

## www.southampton.ac.uk/centre-risk

To discuss the potential for collaboration with

## M.P.Brito@southampton.ac.uk



At three meters long, the prototype 'glider' is currently being developed by the BRIDGES project team.

## FOUR THINGS MANUFACTURING FIRMS MUST DO TO SURVIVE AND COMPETE



## In recent years, manufacturing has undergone rapid change. In this article Steve Brown, Professor of Operations Management at Southampton Business School, advises how companies can thrive in this dynamic environment.

Throughout the last 20 years, I have worked with many manufacturing companies in the United States and Europe. It has been a time of incredible change which has seen former world-class companies destroyed or merged beyond recognition. Start-ups have revolutionised the market and radical innovation has made a nonsense of accepted wisdoms on 'how to do' business. Yet, despite all this volatility, certain characteristics are common among the firms that survive and outperform competitors.

These are the four key factors:

### 1. The CEO and other senior managers need to understand and support manufacturing operations

Employing CEOs with a clear understanding of the strategic importance of manufacturing operations may seem an obvious point - but many do not understand the function at all. This means decision makers are tempted to make significant cuts to operations for the sake of 'focus', 'value added services' or other vague concepts. However, once the damage is done, it is hard to put matters right.

### 2. World-class manufacturing firms have manufacturing and operations specialists at senior and strategic level positions

The executive board needs to include senior operations people, not only for their technical know-how and ability, but also for their vital contribution to important decisions. This will ensure manufacturing operations support the business throughout its markets.

## 3. Leading organisations make sure that all of their plants have individual manufacturing operations strategies in place

to have specific strategies in place for each manufacturing location. These strategies need to feed into, and form part of, the overall business strategy. Ask any plant manager if they have a strategy and they will say yes, but ask them to explain how it supports the company and they are often embarrassed. This is because their location's strategy does not align with the overall business of the organisation.





Every company, regardless of size, needs

### 4. Operations strategies and wider business strategies are coherent

One reason why internal strategic alignment can fail is that business strategy is dealt with as 'long term' in contrast with operation management strategies which are regarded as a day-to-day lower management function. Pioneering Japanese companies resolved this short term versus long term tension many years ago. While some of their counterparts in the UK and US have also achieved this, they are

When these four factors are in place, strategic resonance becomes evident. We have undertaken research that shows that strategic resonant firms outperform their strategic dissonant competitors in a range of key competitive areas including quality, inventory (and Just in Time capabilities), innovation and productivity. These capabilities are evident across a range of industries and company sizes. Capabilities do not come about by chance; they have to be accrued, developed and guarded by senior level managers and CEOs who recognise the importance of these capabilities within operations.

## SOUTHAMPTON **BUSINESS SCHOOL** HIGHLIGHTS



## NEW RESEARCH CENTRE

New research centre focuses on equality, diversity and inclusivity within business

A new Business School research centre will support organisations to meet 21st century challenges. The Centre for Inclusive and Sustainable Entrepreneurship and Innovation will assist the University of Southampton's specialists in this sector in carrying out pioneering research with external partners.

Centre Director Professor Mine Karatas-Ozkan says: "There are huge benefits for enterprises that adopt sustainable business models focused on equality, diversity and inclusivity. Our research shows such models help organisations to connect with their

customers, staff and suppliers in today's diverse communities."

Work already underway includes research into consumer issues in the sharing economy involving enterprises such as Uber and Airbnb, eco-tourism in Turkey, sustainable cities and how entrepreneurial universities can best work with businesses.

"This new and exciting research centre will spread the word about our achievements in this sector and reinforces the link between our research and the educational relevance of our programmes," says Professor Martin Broad, Head of Southampton Business School.

To find out more, see www.southampton.ac.uk/centre-isei or contact Mine Karatas-Ozkan on M.Karatas-Ozkan@southampton.co.uk



## HIGH RANKING FOR BUSINESS SCHOOL'S LINKS WITH INDUSTRY

Southampton Business School's extensive connections with industry have been highlighted by the Higher Education Statistics Agency (HESA). The University of Southampton came seventh among the Russell Group of researchintensive universities in 2015 for the amount of research income raised from industry in the area of Business and Management.

"Enterprise engagement is at the heart of our research; it ensures that our research is relevant to the demands of industry and our position in this league table further reinforces our philosophy," says Head of Southampton Business School, Professor Martin Broad.

A Knowledge Transfer Partnership project, with London Capital Group, led by Professors Ming-Chien Sung and Johnnie Johnson, and Dr Tiejun Ma, was selected to represent the University's impact from investment from industry (and Economic and Social Research Council themed research in Arts, Humanities and Social Science) at a meeting of Russell Group universities in autumn 2016.

The Business School has leading experts on many subjects, ranging from accountancy, banking, finance, risk management and Big Data science, to business analytics, digital and datadriven marketing, innovation, leadership and

enterprise. They have carried out significant research for hundreds of companies and organisations in the UK and further afield.

For more information about opportunities to collaborate with the Business School, contact enterprise@soton.ac.uk.

hit by up to 30 per cent following a cyber attack and 28 per cent of the worst data breaches are caused by senior managers not taking cyber security seriously."

how insights from large datasets can aid decision making and forecast risks. He leads cyber security and risk management.

SOUTHERN SOCIETY ICAEW OF CHARTERED ACCOUNTANTS

Senior Teaching Fellow Richard Cartwright, President of SOSCA,

NATIONAL ACCOLADE FOR BUSINESS SCHOOL COLLABORATION

Links between Southampton Business School and Star Financial Systems Ltd have been praised as 'outstanding' by Innovate UK, the Government's innovation agency.

The successful Knowledge Transfer Partnership (KTP) led by Professor Ming-Chien Sung was a three-year project to aid Big Data decision-making at the company.

Innovate UK judged the partnership as outstanding because of its achievements in 'strengthening the competitiveness, wealth creation and economic performance of the UK by the enhancement of knowledge and skills in the stimulation of innovation'.

With Centre for Risk Research colleagues Professor Johnnie Johnson, Dr Tiejun Ma and Dr Peter Fraser-Mackenzie, Ming-Chien worked with the company to develop a state-of-the-art graphical dashboard to enable staff to use data from their clients to analyse and understand their trading behaviour.

Ming-Chien says: "We are delighted to have won this tremendous accolade from Innovate UK. Star Financial Systems Ltd has now set up a spin-out company, Analytic AI, to further develop the insights gained through the project. It has served to develop a strong strategic partnership between Southampton Business School and Star Financial Systems Ltd."

Star Financial Systems Ltd Chairman Kevin Taylor adds: "The KTP has helped transform our business culture, equipping us with the data analysis and data processing capabilities to flourish in a turbulent environment."

To learn more about the Centre for Risk Research, visit www.southampton.ac.uk/centre-risk or contact Johnnie via email at J.E.Johnson@southampton.ac.uk

MEETING THE CHALLENGE OF CYBERCRIME

The Southern Society of Chartered Accountants (SOSCA) ioined Southampton Business School to host a and big data.

Former Commissioner of the City of London Police, Adrian Leppard says: "Fraud costs the UK economy £50bn a year. Increasing numbers of SMEs are being held to ransom, a company's brand value can be

organised the seminar: "I wanted to bring people together to learn more about the opportunities and threats of technology and showcase our research." More than 50 business leaders also heard talks from Microsoft, J.P. Morgan and business advisors KPMG during the seminar.

School seminars, visit: www.southampton.ac.uk/sbs-seminars

Richard can be contacted via email at **R.J.Cartwright@southampton.ac.uk** 

## BUSINESS SCHOOL INTERNS MAKE A DIFFERENCE

Students on every undergraduate course at Southampton Business School have the opportunity to take a year out from their studies to work in industry.

Mike Austin, Chief Executive and co-founder of internet marketing specialists Fresh Relevance, is a big fan of the placement system. "With their combination of skills, enthusiasm and new ways of working, University of Southampton's interns are a great asset for us. I believe they would bring a breath of fresh air to any company," he says.

Fresh Relevance's workforce in Southampton has more than doubled in size to 25 over the last year, thanks in part to the contribution of its interns, and is now opening a US branch in Boston. They work with cutting-edge software to help companies increase sales by building relationships with their customers through personally targeted communications and bespoke online platforms.

After offering a 12-month internship to one Business School undergraduate in 2015, Mike welcomed two more this year to work across the business. "We give them experience of working on a wide range of exciting projects during their time with us and value their fresh perspective on what we do."

Southampton Business School is ranked 6th in the UK for graduate employability (Guardian University Guide, 2017). Undergraduates on all programmes have the opportunity to spend time away from their studies on placements and internships. Our excellent placements team has recently been shortlisted for the 'most improved commitment to employability' award at the National Undergraduate Employability awards.

Rob Jack, Riikka Kemppainen and Rochelle Clark in the Placements Office are keen to talk to any companies and organisations that want to know more about their services. See www.southampton.ac.uk/sbs-placements



## THE EXECUTIVE LEARNING PARTNERSHIP

Senior managers from more than 25 of the region's leading companies and organisations are gaining fresh insights through Southampton Business School's Executive Learning Partnership.

Led by Director of Executive Education Paul Bennett, the Partnership offers monthly master classes on topical issues delivered by industry experts, master practitioners and specialist academics.

"Leadership, strategy and change management are enduring topics, but we also feature emerging themes such as the impact of technology, sustainability and positive psychology in the workplace," says Paul. "Our programme for 2017 will cover key business issues in an agile and flexible learning environment, always challenging current thinking and behaviour."

Among the first companies and organisations to sign up as partners were J.P. Morgan, Ordnance Survey and the Royal National Lifeboat Institution (RNLI). From the outset, they seized their opportunity to send senior managers and potential leaders to the events to learn more about a wide range of business subjects and meet fellow professionals.

"We work with our partners to decide on the coming year's programme so we can provide relevant education and training tailored to their needs. They tell us where we should focus to benefit their businesses," adds Paul. "Partners find it incredibly useful to discuss new concepts in confidence alongside senior executives from very different companies in the public, private and third sectors."

The Executive Education team is always open to new ideas. One meeting was moved from Southampton to Cisco's UK headquarters in Reading so partners could learn at first hand about the next generation of technology.

The Executive Learning Partnership's sparky Leadership Debate in March 2016 is a highlight of the year. A panel of top executives discussed contemporary issues in a high powered Question Time' format; former Air Vice Marshal /like Harwood and Deloitte Global Chairman iteve Almond have been among previous uests. The 2017 Debate will be held at J.P. /lorgan's Corporate Centre in Bournemouth.

Southampton Business School is also aunching an Open Programme of leadership and management education for ambitious executives from companies in any sector. Starting in March 2017, two-day residential sessions will be held each month in Southampton with input from top academics and industry specialists.

To find out more about becoming a partner or details of our Open Programme, contact Paul at **Paul.Bennett@southampton.ac.uk**. Visit **www.southampton.ac.uk/elp** for more about the Executive Learning Partnership.



"Belonging to the Executive Learning Partnership helps us make sure our skills and knowledge are up to date. That's because we learn so much about important areas of business from the industry experts who conduct the sessions. We send different managers to each Partnership event so several of us can benefit from the wide range of subjects on offer. I attended the customer centricity session which was very relevant for me and I valued the opportunity to find out more about the latest thinking in this area."

Philippa Davis, RNLI

**To find out more about the Executive Learning Partnership visit:** www.southampton.ac.uk/elp

"We see the Executive Learning Partnership as a way to re-calibrate and re-focus on business. The topics are based on the latest research, they are fact-based and always relevant. We often send several people to each session so we can share the knowledge afterwards. The speakers are very interesting with varied approaches and styles of delivery. It is also good to sit next to managers from different companies and different drivers. We value our relationship with Southampton Business School."

Debbie Homer, J.P. Morgan

## CATCHING **UP WITH RENOLD TANG**



Entrepreneur Renold Tang has spent 30 years growing his own accountancy practice and other business interests.

In this issue, Renold shares his career journey and the advice he would give to anyone thinking of starting their own business.

## **Business Economics and Accountancy 1980 Director, TBW Accountancy Limited**

## What did you enjoy most about studying at the University of Southampton?

I had a wonderful three years at Southampton, it's an attractive campus with a friendly environment. In particular I enjoyed meeting interesting people from different nationalities. My time at Southampton gave me my first experience of 'independence' that was very helpful later on in my career. I was a Business Economics and Statistics student but my tutor said that I should switch from Statistics to Accountancy and I did. It was the right decision because a knowledge of accounting and finance is important for anyone starting up a business.

#### What are you doing now?

I combine my accounting practice with running a range of commercial ventures with partners. Staying in the profession is the best way to keep up to date with ever changing legislation that you need to know and I can then apply that knowledge in the business world. Right now, I'm working on an exciting long-term project to build 20,000 new homes.

### What difficulties have you encountered in your career and what have you learned from them?

No matter what you do there will be ups and downs. My first business ended in failure - we started a kitchen manufacturing company during a recession when people didn't want to buy new kitchens. We then started a cheque cashing company which became a nationwide franchise and was very successful. Over the years I've learned to expect the unexpected and keep going, there will always be setbacks on the road to success.

### What advice would you give to anyone considering starting their own business?

You need to be willing to make sacrifices in your life and have 24/7 dedication.

My top tips are:

- Expect the unexpected
- Even the best plan could fail
- Do what you say you will do
- You will never be able to please everyone
- Learning is ongoing
- Work with partners to share the business burden
- Do not be proud, admit failure from time to time and learn from it
- There will be 'good times' and 'bad times' but 'time' will always pass, do not give up

## As a supporter of the University of Southampton's Small Business Clinic, what do you think are the current key challenges and opportunities for entrepreneurs?

Working hard is always a challenge but it will bring opportunities. Plan wisely and prepare to work around the clock if you need to. Consult the professionals, but check their advice to see if it fits your needs. Marketing your goods and services is always essential, you may have the best product but people need to know that it exists.

Looking ahead, you will need to deal with more and more legislation. New tax laws, Companies Act requirements, Health and Safety legislation, employment laws, human rights, data protection and anti-money laundering rules combine to form higher and higher barriers for 'start-up companies. That is why we set up the Small Business Clinic to try to help them.

## AWARDS. HONOURS AND PAPFRS

## A summary of some of Southampton Business School's most recent high-profile achievements.

#### Grants

#### Professor Johnnie Johnson, Professor Frank McGroarty, Professor Ming-Chien Sung, Dr Richard McGee, Dr Tiejun Ma and **Dr Jeremy Eng-Tuck Cheah**

Developing an innovative, cloud-based risk management framework. Seven Investment Management/ESRC Impact Acceleration Award 2016-17, £260,000

### **Professor Julia Bennell**

Newton Foundation Fellowship: Grant to fund a collaboration with Marta Cabo at ITAM University in Mexico to develop cutting and packing apps that can cover a range of applications and be accessible to SMEs in Mexico. The Royal Society, £75,000

#### Dr Tiejun Ma, Professor Ming-Chien Sung and Professor Johnnie Johnson

Kdb database platform, optimised for streaming, real time and historical Big Data analytics. Kx Systems, \$250,000

#### Dr Tiejun Ma, Professor Ming-Chien Sung, Professor Johnnie Johnson, Dr Stefan Lessmann and Dr Raquel Florez-Lopez

Effective Risk Management for Big Data-Supported Mobile

Audaque/ESRC Impact Acceleration Award £296,000: £150,000 (Audaque software and staff support), £120,000 (Audaque Big data computing infrastructure), £5,000 (Audague travel/ subsistence), £21,000 (ESRC IAA grant)

Governance of higher education in Africa, Europe, Vietnam and the UK The Leadership Foundation, the Worldwide University Network and The British Council, £68,914

## Professor Mine Karatas-Ozkan, Dr Pelin Demirel and Dr Shahnaz Ibrahim

Development of Agro/Eco-Tourism Entrepreneurship with Food Safety Practices: Evidence from South Aegean Region of Turkey Newton Fund Institutional Links, £50,000

## Achievements

Professor Yehuda Baruch was appointed Vice President for Research of The European Academy of Management (EURAM).

Professor Sally Brailsford received her third Goodeve Medal from the Operational Research (OR) Society. The prestigious award is made to the author of the best academic paper published in the Society's journal in the previous year. Sally is the first person to win three Goodeve Medals. She also received an award for sustained support and encouragement for the development of OR from The Companionship of Operational Research. Professor Johnnie Johnson has been elected

Vice-President of the Asia Pacific Association for Gambling Studies.

Dr Denise Baden has been interviewed on BBC 24 about the death of Fidel Castro. A YouTube video of the interview went viral with 2.6 million views.

Professor Martin Broad and Dr Oliver Marnet Southampton Business School's Dr Mahmoud Al-Sayed, Dr Ian Cammack, Dr Stefan Cantore, Dr Roy Edwards, Dr Ian Harwood and Dr Weisha Wang received Vice-Chancellor's Teaching Awards in 2015/16.

## **Top academic papers**

Dr Stratos Ramoglou has co-authored the paper 'A realist perspective of entrepreneurship: Opportunities as propensities' in the Academy of Management Review (ABS 4\*\*)

Professor Julia Bennell has co-authored the paper 'Dynamic Scheduling of Aircraft Landings' accepted by the European Journal of Operational Research (ABS 4\*)

Professor Tolga Bektas has co-authored the paper 'A comparison of three idling options in long-haul truck scheduling' accepted by Transportation Research Part B (ABS 4\*)

Professors Frank McGroarty, Ming-Chien Sung, and Johnnie Johnson are among coauthors of the paper 'Time is money: Costing the impact of duration misperception in market prices' published in the European Journal of Operational Research (ABS 4\*)

Dr Wai-Wai (Joyce) Ko is a co-author of the paper 'Understanding the Process of Knowledge Spillovers: Learning to Become Social Enterprises' published in the Strategic Entrepreneurship Journal (ABS 4\*)

## Find out more

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Sign up to our enterprise mailing list: www.southampton.ac.uk/sbs-sign-up



