FROM REFINERY TO FINERY
Why we need strong voices of reason in our volatile world.

THE FLIGHT STUFF
Catherine Baird, of Emirates Airline, on creating a world-class passenger service.

UNLOCKING THE MATRIX
How complex organisations thrive with multiple leaders.

TEMPERATURES RISING IN FROSTY CANADA
Dr Anna Dowbiggin finds out what energy leaders really believe about climate change.

NEXT GENERATION LEADERSHIP DILEMMAS - and How To Solve Them
Adam Smith’s home is ready to greet the world again.

An Introduction from Professor Heather McGregor

Welcome to the third edition of Panmure House Perspectives, the international business journal of Edinburgh Business School, the graduate school of business of Heriot-Watt University. As ever, our aim is to encourage debate and provide informative and original to read for both business and pleasure.

Since our previous edition, a great deal has been happening at Panmure House in Edinburgh, where we have been able to use for ourselves the finishing touches to the incredible transformation of Adam Smith’s final home. Before this year’s Edinburgh Festival Fringe, I asked Financial Times colleague Morven Somerset Webb, the Editor-in-Chief of MoneyWeek, to ‘test drive’ the venue with some lively political and economic discussions during the Festival. She certainly had the wonderful house resonating with the kind of debate Adam Smith would have relished. We also enjoyed a dramatization of Smith’s life by playwright John Yule in his excellent production, The Invisible Hand. There is no doubt that these two events helped set a tone that we hope will continue. Our Principal and Vice-Chancellor, Professor Richard Wrangham, delivered the inaugural lecture to the new Edinburgh Business School, and through the inaugural lecture from Professor Benny Higgins at Heriot-Watt University, we were able to see for ourselves the finishing touches to our magnificent modern world.

The Invisible Hand

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The Relevance of Scotland’s Iconic Thinker

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Curiosity is Key to Innovation

Professor Benny Higgins at Heriot-Watt University, talks about why product development and people are the core ingredients of innovation. She praises Kenny Kemp. p12

You’re Not My Boss

Professor David Teece offers his advice to graduates on the moral issues of their future. He tells us more about this and we will report on it in our next edition.

Unlocking the Matrix

Dr Gordon Jack looks at leadership as leaders in new ways of delivering the transformative power of education to future generations of students. It is an exciting time to be doing so.

Benny Higgins asks whether allowing undergraduates to pick and choose courses from a range of universities will be the shape of things to come.

HONOUR FOR LEADING BUSINESS THINKER

Professor David Teece offers his advice to graduates on the moral issues of their future. He tells us more about this and we will report on it in our next edition.

Professor Robert Macintosh asks whether allowing undergraduates to pick and choose courses from a range of universities will be the shape of things to come.

If you would like to know more about forthcoming issues, please contact: Alex Lumsden, Production Editor, Panmure House Perspectives, Edinburgh Business School, Heriot-Watt University, Edinburgh, EH14 4AS, Scotland, UK. alex.lumsden@ebs.hw.ac.uk

Professor David Teece offers his advice to graduates on the moral issues of their future. He tells us more about this and we will report on it in our next edition.
Leading business thinker PROFESSOR DAVID TEECE, from the University of California's Haas School of Business at Berkeley, tells graduates that Adam Smith and David Hume are the guiding lights for his moral principles of wisdom.

Leading business thinker PROFESSOR DAVID TEECE, from the University of California's Haas School of Business at Berkeley, the connections to Scotland, and to Edinburgh in particular. Adam Smith were key contributors. ‘Smith also suggested that, to find our moral compass, we need to stand outside ourselves and ask what our own actions as subject could be in this regard. His advocacy of high self-awareness was consistent with mystical and meditative practices. If you can recognise your own anger, you have a chance to deal with it. He was empathetic, although sympathy is virtues. He believed that there is an inner voice in all of us, and that we need to listen to it. So life is not just about managing utility, as Jeremy Bentham proclaimed, but about living a life consistent with our core values. “Learn to be an empathetic observer of oneself: it’s hard but necessary and it is the practical moral compass Smith has offered us.”

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Professor Teece said thank you to Edinburgh for the freedom of concepts people everywhere. He urged the graduates to go forth not just with the knowledge they have acquired but with the principles they have inherited. Create, build, manage and renew for society and for yourself, because you are part of a well-educated young people from around the world focusing on the old, but don’t forget to replace it with something better.

Professor Teece spoke about the importance of curiosity: “By “Students always” we mean that we must commit ourselves to a lifelong quest for personal and intellectual growth. There will never come a time when you have learned all you need to know, and you must, of course, put your learning to good purpose.”

He explained that these Berkeley-Haas moral principles were derived from Scotland. “They have deep roots in spirituality, in moral behaviour and in practical wisdom. In fact, they are deeply rooted here in Edinburgh. Moral philosopher and economist Adam Smith was in the inner circle of great minds here in Edinburgh in 1750 until his death in 1790. David Hume and Adam Smith were ringleaders in the Scottish Enlightenment, which illuminated much of the world. The Enlightenment was a movement of ideas and the propagation of ideas. It was a period of great intellectual and scientific discovery. The leaders of this movement asserted the importance of reason combined with the importance of practical ability, and could not be justified by reason. And there was no good reason to exalt knowledge to the church and the state.

‘With Adam Smith, there was an emphasis on observation and empiricism and practicality. The key values he advanced were improvement, virtue and practical benefit for the individual and society. There were and there remain great universities here in Scotland that enabled and encouraged this tremendous burst of scientific and philosophical inquiry.’

EMPATHETIC OBSERVER

Professor Teece said Adam Smith clearly did not favour seeking wealth for its sake. He was a stoic and lowly heroes, and the want to foster “improvement in Scotland” and in, ‘The Pheasants of the Moral Gentlemen, wanted to see the “best hearts” balanced with the “best heads.” “Smith also suggested that, to find our moral compass, we need to stand outside ourselves and ask what our own actions as subject could be in this regard. His advocacy of high self-awareness was consistent with mystical and meditative practices. If you can recognise your own anger, you have a chance to deal with it. He was empathetic, although sympathy is virtues. He believed that there is an inner voice in all of us, and that we need to listen to it. So life is not just about managing utility, as Jeremy Bentham proclaimed, but about living a life consistent with our core values. “Learn to be an empathetic observer of oneself: it’s hard but necessary and it is the practical moral compass Smith has offered us.”

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1. FIRST PRINCIPLE: QUESTION THE STATUS QUO

Professor Teece spoke about being the champion of bold ideas, taking sensible risks and embracing uncertainty rather than being cowed by it. “When we fail, we endeavour to fail gracefully. To be at the centre of entrepreneurship and innovation, one has to be bold, walk off the beaten path, know when we are off of it, and behave respectfully towards those that may be trapped and cannot easily get off of it.”

2. SECOND PRINCIPLE: BEYOND YOURSELF (OR NON-SIBI) IN LATIN

“It’s also a phrase inscribed on some war memorials. It’s not just about charity: it doesn’t deny self. Rather, it means ‘not for one’s self alone’. However, it’s not just for the moment. It’s lifelong.”

3. THIRD PRINCIPLE: CONFIDENCE WITHOUT ATTITUDE

“One must be confident without projecting superiority. One must behave cooperatively but without arrogance. Arrogant people don’t lead. This links to the fourth principle.”

4. FOURTH PRINCIPLE: STUDENTS ALWAYS

Professor Teece spoke about the importance of curiosity. By “Students always” we mean that we must commit ourselves to a lifelong quest for personal and intellectual growth. There will never come a time when you have learned all you need to know, and you must, of course, put your learning to good purpose.”

The tale helps brings to life the figure of the young Adam Smith, Scottish Deity, an excellent foil for Rousseau’s, Voltaire and Robert Burns, all played with some acuity and deft moments of amusement. Dr Gill Murray, Deputy Principal (Enterprise and Business), said, “We have had an exceptional representation at this year’s Converge Challenge. We are very proud of our reputation as a champion of innovation and industry, and remain committed to nurturing tomorrow’s entrepreneurs, who are vitally important to building inclusive growth in our economy.

I congratulate all of our finalists and winners, who will, I’m sure, continue to go from strength to strength to strength.”

Converge Challenge is Scotland’s leading competition in venture creation and entrepreneurship development programme for staff, students and recent graduates of Scottish universities and research institutes. More than £160,000 worth of prizes were awarded to 12 entrepreneurs from universities and research institutes from across Scotland at the gala awards, attended by over 200 representatives from higher education, the investment community and the Scottish entrepreneurial sector.

NEW PAPER ON THE PACKING HALL

From the thyroid cells, to the autoimmune response, to cancer, and much more there is hope for the future. The tale helps brings to life the figure of the young Adam Smith, Scottish Deity, an excellent foil for Rousseau’s, Voltaire and Robert Burns, all played with some acuity and deft moments of amusement. Dr Gill Murray, Deputy Principal (Enterprise and Business), said, “We have had an exceptional representation at this year’s Converge Challenge. We are very proud of our reputation as a champion of innovation and industry, and remain committed to nurturing tomorrow’s entrepreneurs, who are vitally important to building inclusive growth in our economy.

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CAMPUS PERSPECTIVES

Adam Smith: The Invisible Hand. Panmure House, Edinburgh

The gentle, brooding character of Adam Smith was brilliantly brought back to life in August as Panmure House hosted with activity during the Edinburgh Festival Fringe.

In a series of pre-opening events to allow the curious to sample Smith’s revolution in the spirit of Edinburgh at home, playwright and actor Alastair Aiken played a powerful dramatic dimension of the lauded economist.

The performance of Adam Smith: The Invisible Hand by In Company Theatre Productions, in conjunction with Edinburgh Business School, was an inspired decision and appropriate here in Scotland that enabled and encouraged this tremendous burst of scientific and philosophical inquiry.

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Two spin-out companies from Heriot-Watt University have come out on top at this year’s Converge Challenge.

Low-carbon brick developer Kenevog won the Design and Creativity Award at the annual competition held in Edinburgh. The company was established in 2015 by Dr Samuell Campbell and Dr Gabriela M. Medero, produces environmentally friendly bricks made from 90% recycled materials from construction work.

Hilzes Solutions received a Kickstarter Award after having named joint best early-stage entrepreneur company. Hilzes Solutions, established by Vassiliki Vlagiadrougou, is developing software for ultrasound image processing that provides highly detailed maps of the circulation of tumours, allowing for faster and better cancer diagnoses.

A total of four Heriot-Watt projects were nominated for this year’s Converge Challenge, which recognises innovation and entrepreneurship from Scottish academic institutions.
A

From Refinery to Finery: A Nigerian Legend With His Eye on Arsenal

ALIKO DANGOTE, one of Africa’s richest billionaires, made his fortune by supplying cement in Nigeria which opened the floodgate to an extraordinary entrepreneurial

life. DAVID PILLING meets him on his 108ft yacht, Mariya, berthed in Lagos’ bustling harbour.

I am sitting with Africa’s richest man discussing his life of superlatives over Thai

food on his 108ft yacht, moored in Lagos Lagoon. Yet the image he projects is

more like a modestly successful encyclopaedia salesman.

When I arrive at the dock, Dangote, a Muslim, is praying in his quarters. He

then comes out to greet me and turns out to be the most solicitous of hosts as we

enjoy lunch together.

A few numbers on the refinery will help illuminate the scale of his ‘craziness’.

When it is up and running — if it ever gets up and running — it will process 650,000

barrels of oil a day, a third of every drop Nigeria produces and approaching 1% of

planetary production. That will make it the biggest oil refinery of its type in the

world. As a sort of side concern, it will pump out all the plastic Nigeria’s 180

million people need (or imagine they need), plus 3 million tonnes of fertiliser a

year, more than all its farmers currently sprinkle on their fields.

To make things more interesting, Dangote is building the whole thing on a

swamp. (It’s a tax-friendly swamp, at least.) That requires sinking 120,000 piles,

on average 25 metres in length. No port in Nigeria is big enough to take delivery

of the massive equipment, which includes a distillation tower the height of a

30-storey building, and no road is strong enough to bear its weight. Dangote has

had to build both, including a jetty for which he has dredged the seabed for 65m

cubic metres of sand.

There is not enough industrial gas in the whole country to weld everything

together, so Dangote will build his own industrial gas plant. There aren’t enough

trucks, so he’s producing those in a joint venture with a Chinese company.

A distillation tower the height of a

30-storey building

AMBITION TO MAKE THINGS

Many of today’s billionaires spin their fortunes from intangibles: the internet,

The plant will need 480 megawatts of power, about one-tenth of the total that
does not exist in Nigeria. ‘But it’s very difficult to build it,’ he says, looking

guiltily at our feast. ‘It helps to clean your system. More peanut sauce?’

We saw people in the navy last night, our driver said. ‘What are they doing with

them? They have to build both, including a jetty for which he has dredged the seabed for 65m cubic metres of sand.

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than to produce. Only if imports were restricted would it be
couldn’t produce cement, instead importing it by the
presidential summons. He wanted to know why Nigeria
by running for the presidency. Dangote contributed both to
leader who had embraced the country’s lurch to democracy
election in 1999 of Olusegun Obasanjo, the former military
— manages to be understated, if such a thing is possible in
he's got your number.

at all three events at once, an apparition moving unhurriedly
a foreign investors’ post-conference gala — he manages to be
bonhomie as he glides from table to table, picking up
room is to witness a kind of genius. He irradiates a Dickensian
He projects integrity and humility, even piety. I've met mere
“People call me in the middle of the night to tell me about their problems,” he

He makes no secret of how he got his big break, one that
Even Dangote’s yacht — named
, after his mother

He reckons that he takes more than 100 calls a day.
Each day scores of emails come rat-tat-tatting in. ‘You try to be polite and reply

often seeking help of a pecuniary nature.
Not long after I met Dangote, his country manager in Ethiopia was murdered.

‘I love Arsenal and I will definitely go for it,’ he says. ‘It’s a life-long dream.’
You're not getting younger. Sixty years is no joke,’ he says, ‘but it doesn’t make sense
to go out and get someone if you don’t have the time. Right now, things are really,
really very busy, because we have the money, we have the petrochemicals, we have
the fertiliser, we have the gas pipeline.’

‘I think to myself, it can’t be long before he wins some

when he’s not dealing with crises, he’s fending off friends and relatives, who are

‘I’m not getting younger. Sixty years is no joke,’ he says, ‘but it doesn’t make sense
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the fertiliser, we have the gas pipeline.’

With sweet talk like that, I think to myself, it can’t be long before he wins some

‘I'm telling you,’ he says mournfully. ‘I have so many aspirations. It is

Talking about pulling back from the business, concentrating on strategy and letting
others run things day-to-day.

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Often he’s firefighting. Problems erupt in one country or another and he is
currently crisis-crossing the continent by jet. In Tanzania, where he’s built a
$650 million cement plant, he’s battled with the president over a threat to seize assets.
Not long after I met Dangote, his country manager in Ethiopia was murdered.
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Not long after I met Dangote, his country manager in Ethiopia was murdered.
When he’s not dealing with crises, he’s fending off friends and relatives, who are
often seeking help of a pecuniary nature.
Smith’s ideas still have the capacity to take our breath away, through their ambition and brilliance, their scope. They are essential to any attempt to address these challenges, and they need to be widely and fully understood. We need to know not merely what Adam Smith thought but why it matters; and then to apply his ideas and his impact. Our present world, developed and developing alike, faces huge social, modernity. These are momentous achievements.

For all the duo’s numerous points of difference, it would not be too much to call Smith a disciple of Hume. Though no real philosophical correspondence between them survives, there are few pages of Smith in which one does not sense the shadow, if not the influence, of Hume. For all the duo’s numerous points of difference, it would not be too much to call Smith a disciple of Hume.

But, far more than any other thinker, Hume is Smith’s imagined interlocutor; and, though no real philosophical correspondence between them survives, there are few pages of Smith in which one does not sense the shadow, if not the influence, of Hume. For all the duo’s numerous points of difference, it would not be too much to call Smith a disciple of Hume.

By the standards of the time Smith was broadlyleighis in outlook, attempering a belief in the virtualism of constitutional monarchy, religious toleration and personal freedom; but he remained remarkably well-read about his personal political views throughout his life. He never married, and he had no children. As far as we know, there were no secret loves, no hidden vices, no undergraduate pranks, no adult peccadillos: when it comes to any personal detail, Smith’s life is a featureless Sahara. In the words of his first biographer, Dugald Stewart, Smith ‘seems to have wished that no materials were no secret loves, no hidden vices, no undergraduate pranks, no adult peccadillos: when it comes to any personal detail, Smith’s life is a featureless Sahara. In the words of his first biographer, Dugald Stewart, Smith ‘seems to have wished that no materials were furnished by the lasting monuments of his genius, and the exemplary worth of his private life.

Despite these unsurprising circumstances, Smith has not lacked for biographers. He has been greatly favoured in recent years by works that have painstakingly assembled the details of his life, set it vividly against the intellectual backdrops of Edinburgh and the ideas of the Scottish Enlightenment, presented him anew for a popular audience, and explored the span of his intellectual interests, in addition to an ever-expanding academic literature. I have drawn freely and with great gratitude from this body of academic literature. I have drawn freely and with great gratitude from this body of academic literature. I have drawn freely and with great gratitude from this body of academic literature. I have drawn freely and with great gratitude from this body of academic literature. I have drawn freely and with great gratitude from this body of academic literature.

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Many of the deepest ideas in Smith’s work fall back to the bottom of academic uneventfulness; just before his death he invaded the business world, visiting the Bank of Scotland to burn almost all his manuscripts, about which contents we can only speculate. His last days were spent in the researches of acclamation. The single, isolated, but vital element in his thought, survive only through this body of academic uneventfulness. Many of the deepest ideas in Smith’s work fall back to the bottom of academic uneventfulness; just before his death he invaded the business world, visiting the Bank of Scotland to burn almost all his manuscripts, about which contents we can only speculate. His last days were spent in the researches of acclamation. The single, isolated, but vital element in his thought, survive only through this body of academic uneventfulness. Many of the deepest ideas in Smith’s work fall back to the bottom of academic uneventfulness; just before his death he invaded the business world, visiting the Bank of Scotland to burn almost all his manuscripts, about which contents we can only speculate. His last days were spent in the researches of acclamation. The single, isolated, but vital element in his thought, survive only through this body of academic uneventfulness. Many of the deepest ideas in Smith’s work fall back to the bottom of academic uneventfulness; just before his death he invaded the business world, visiting the Bank of Scotland to burn almost all his manuscripts, about which contents we can only speculate. His last days were spent in the researches of acclamation. The single, isolated, but vital element in his thought, survive only through this body of academic uneventfulness.
Heriot-Watt University, approaching its 200th anniversary in 2021, was the first college in Scotland to admit women into a place of scientific learning. We pay tribute to one of the University’s alumnae.

**Why chemistry really matters**

Eleanor’s eldest brother, also Willie, had been inspirational learning. They were working-class Edinburgh folks. and bringing their macaroni and ice cream. to Edinburgh, seeking sanctuary from upheaval parents were from Northern Italy but escaped department store on Princes Street. Her mum’s as a time-served upholsterer in posh Jenners of work during the 1930s before finding a job at the Battle of the Somme who was in and out Montgomery Street, off bustling Leith Walk. Her father, Willie Kemp, was a stretcher-bearer of mathematics and physics at George Heriot’s School in 1947–8, and he was a clever, kindly man with a gentle sense of humour. Love was in the air at the Watt. Call it ‘chemistry’ of another type. They were married in October 1953 at the Old Parish Church in Corstorphine. Bob, who passed away three years ago, went on to have a distinguished career with Shell Oil worldwide. This was a time when acrylic paint was taking over from distemper, and she was responsible for its development. However, as a woman, she was barred from going onto the bridge to test her new concoctions. Instead she experimented by painting panels outside the Leith Walk factory. She was made an Associate of the Royal Institute of Chemistry in March 1955.

**I recall the classes and the labs we had practical and placed us in good stead for working in post-war industries.**

Eleanor was awarded her diploma in applied chemistry at the Watt and I found it very inspirational,’ she told me when we spoke recently in her Aberdeen home. She met her husband Robert ‘Bob’ Weddell on the course. He had won a certificate of merit for mathematics and physics at George Heriot’s School in 1947–8, and he was a clever, kindly man with a gentle sense of humour. Love was in the air at the Watt. Call it ‘chemistry’ of another type. They were married in October 1953 at the Old Parish Church in Corstorphine. Bob, who passed away three years ago, went on to have a distinguished career with Shell Expro.

**WOMEN IN SCIENCE**

Eleanor was awarded her diploma in applied chemistry and admitted as an Associate of the College in November 1954, when the College Principal was Hugh Nisbet. Armed with her diploma, she secured a job as an industrial chemist with Craig & Rose, the paint makers who made the famous coatings for the iconic Forth Bridge. This was a time when acrylic paint was taking over from distemper, and she was responsible for its development. However, as a woman, she was barred from going onto the bridge to test her new concoctions. Instead she experimented by painting panels outside the Leith Walk factory. She was made an Associate of the Royal Institute of Chemistry in March 1955.

**How leaders prosper through poetry and emotion**

**COMPOSITOR AND A Printer, before his call-up to the RAF, Eleanor was the baby of the clan, but her brother, who was nearly a decade older, and her other brother, Norman, persuaded Eleanor, adept at science and maths, that she must, must go to the college. They understood Heriot-Watt’s reputation as a pioneering institute which welcomed and encouraged women. ‘I’m very proud to have studied at Heriot-Watt. I recall the classes and the labs we had were practical and placed us in good stead for working in post-war industries.**

Eleanor lives quietly in Aberdeen, but her memories of her Heriot-Watt days of chemistry and admitted as an Associate of the College in November 1954, when the College Principal was Hugh Nisbet. Armed with her diploma, she secured a job as an industrial chemist with Craig & Rose, the paint makers who made the famous coatings for the iconic Forth Bridge. This was a time when acrylic paint was taking over from distemper, and she was responsible for its development. However, as a woman, she was barred from going onto the bridge to test her new concoctions. Instead she experimented by painting panels outside the Leith Walk factory. She was made an Associate of the Royal Institute of Chemistry in March 1955.

**FORTH BRIDGE PAINT**

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profund appreciation and a deep interest in the arts and culture help create better and more-rounded business leaders, according to Edinburgh Business School heard in Malaysia.

Professor Higgins referenced how artists over centuries, faced with changing landscapes, had to adapt their approach to their creative work. ‘In the same way that you can get your body physically fit through exercises, how this changes and how they adopt different thinking, you can get your mind intellectually fit by thinking about lots of things, including an interest in the arts, whether that be looking at visual arts, listening to music, or reading literature or poetry. They are all things that add to the breadth of your intellectual capital.’

‘My interest in all of these things is for pleasure but I do think you gain the advantage in that it broadens the way that you think.’

Proctor Hirst, the 16th century painter of the Venetian school, managed to ‘penetrate the market’ dominated by Titian, who was the most prominent and well-known painter of that era. He did this by adopting painting techniques which produced smaller artworks more quickly aiming for a different market, which was the less wealthy. This was therefore a more commercially-sound move. With the wide-spread emergence of photography in the mid-19th century, and the ease of travel which brought the influence of other cultures into Europe, visual representation of art had to change once again towards more abstract ideas. Impressionist painter Vincent Van Gogh gained inspiration from Japanese woodcuts and adopted Japanese art into his work, which at that time, which at that time was unheard of in Europe. He mentioned how Paul Gauguin, the Post-Impressionist, travelled to Tahiti in French Polynesia, and developed a more primitive style. This inflected his painting with a very different style and influenced the likes of Pablo Picasso, who was prepared to take on all kinds of artistic influences.

Artists have to make the same kind of choices as those in the business world. So, for me, it is interesting to see how this changes and how they adapt different thinking, developing creatively."

Professor Higgins then turned his attention to the key competencies as he felt they are important for people in leadership positions.

One of these competencies is curiosity and the world of art is a source of enhancing natural curiosity, while another is communication. There are very few people who write well, who don’t read well. He believes reading literature, and in this he includes poetry, enables people to experience the rich cultural context of a particular art, poet, and how his observations at the Edinburgh International Book Festival spoke of Harry Potter and the Harry Potter, omnipotence and almighty politician helped leading politicians communicate more effectively. Research has shown that those with a deeper interest and understanding of poetry, which is often ambiguous, also has a better understanding of ambiguity in life.

Reading poetry over time sharpens your mind and your ability to cope with ambiguity, which is very important in business, Professor Higgins said.

A particular favourite is the American poet Robert Frost. He referred to his poems such as ‘Stopping By Woods On A Snowy Evening’ and ‘A Road Not Taken’.

Readers can also learn more about how the artist lends his eye to the human condition. ‘I hope this will inspire others about art, as I hope it will inspire about poetry and the arts and culture help create better and more-rounded business leaders, an audience invited by Edinburgh Business School.

The use of the word ‘summer’ to express warmth, delight and wellbeing might be culturally dissonant to someone from Indonesia, where summer is not a very pleasant time of year.

He said that poetry makes the reader aware of the different metaphors and language. In all, he said that business people should embrace their culture and use it to help them define their own lives and society. His inaugural speech was warmly received by the guests.

During his trip, Professor Higgins also delivered a lecture at the Malaysian campus on ‘Building a Bank for a Dedicated Customer Base – the story of Tesco Bank. How RBS and Tesco created one of the biggest online UK banking successes.’

I wanted to make a point about the difficulty of translating things. Poetry is all about metaphor and translating poetry is very difficult to do. This makes you think about other cultural references where that might be the summer in Indonesia or the summer in England. For example, it is almost impossible to translate Dante Alighier’s ‘Commedia’ into English, although it has been attempted many times. It requires so much rhyming which is straightforward in Italian but not in translation to English. The full sense is lost.

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EYE ON THE PRIZE

Why Alana is the perfect partner for Alexa

PROFESSOR OLIVER LEMON and his team of Heriot-Watt PhD students are the only contenders from a UK university left bidding for the Amazon Alexa Prize – down to the final three for the second year running. The Edinburgh team’s work is delighting Echo customers and pushing the frontier of AI science.

It’s an exciting time for our Alexa Challenge team in Edinburgh as we enter the final stages of the competition for the second year running. This is a fantastic achievement for our team, which is the only UK university in the last three. Heriot-Watt was one of only eight universities selected for the 2018 semi-finals, out of nearly 200 international entrants, then whittled down to three. The winner will be announced in Las Vegas on 27 November. Our team of eight is Amanda, Alessandro, Igor, Ioannis, Xinnuo, Shubham, Verena and me, as faculty advisor.

COHERENT CONVERSATIONS

The target set by Amazon was to create an entertaining and engaging conversational AI system for the device that can talk about any topic the user desires. This is a huge challenge that pushes the state of the art in AI and in understanding and generating human language.

Our conversational AI system, called Alana, has been in development at the University of Edinburgh for the past 18 months or so, and has engaged in hundreds of thousands of conversations with people on all sorts of topics. For example, people can talk about music, movies, the news and politics, as well as general chit-chat. At the end of each conversation, the users give us a rating out of five stars, and the three teams with the best average rating are selected for the final. Our system reads the news every night and also accesses the whole of Wikipedia – so it has a lot it can talk about!

The remaining teams and their bots in the final are headed by teams from the Czech Technical University in Prague, and Gurnuck, from the University of California Davis. With us luck in the final, and follow us on @alanaateth

What is the best cultural publication of recent times in your opinion?

Gary Shteyngart is a favourite author. A Russian émigré whose family emigrated to the US in 1979, his novel Pecker was a huge success. It’s a satire about a hedge-fund manager who has a nervous breakdown at the same time as Trump’s campaign is sweeping across the US. As a child, Shyteygart was ambitious to make money but now finds himself in a place to live without?

What is the one website/blog you can’t live without?

The blog Out of Place, written by undergraduate and postgraduate cultural students in Heriot-Watt. Have a look at https://www.outofplacehiwat.com/

What’s on my reading list?

What books are on your bedside table at the moment?

I read a broad spectrum, which includes academic-related material but also dives into philosophy. One book that I have been reading is Divine Beauty: The Invisible from the Celtic World by Donnchadh Ó Fíorúin. He has the unusual gift of being able to write very simply about complicated matters. His Divine Beauty: The Invisible Embrace is imbued with the spirituality of his own heritage, and it is a very read book. I am too young.

What academic publication/report has given you the most pleasure and/or satisfaction?

A report by James Al-Ali, a visiting scholar at the University of Sheffield on the responsible use of metrics has been particularly timely. I explored the use of metrics as a measure of quality, and this confirms a study on the relationship between culture and economy, particularly on the cultural conditioning of economic perspectives. It’s a theme that I much neglected in an economic world which seems dominated by statistics. I’m a great admirer of Regina Bendix, an anthropologist at the University of Göttingen in Germany. She has published so much in the field of spirituality, fiction and poetry. One book on my table is Milkmen by Anna Burns. She has won the 2018 Man Booker Prize for her novel set in the University of Ulster and have many happy memories, but the conflict was always there in the background. Milkmen explores the conflict in Northern Ireland from the perspective of an 18-year-old boy. As a novel, it doesn’t focus on personalities or state violence; instead, it explores the alternative religions and the constant presence of anxiety and fear, which can be measured in a very real way.

I look forward to reading The Seventh Function of Language by Fredric Jameson. This book explores the conflict in Northern Ireland from the perspective of an 18-year-old boy. As a novel, it doesn’t focus on personalities or state violence; instead, it explores the alternative religions and the constant presence of anxiety and fear, which can be measured in a very real way.

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Q: Hello, Catherine. Tell us something about your position and your main responsibilities.

Catherine Baird: I have been in the aviation industry for 30+ years. My career has focused on people, particularly the frontline in the air. I’ve had responsibility for cabin crew recruitment, training, career development and management across a number of airlines. My current role at Emirates encompasses cabin crew training and development - from induction, safety and emergency procedures (SEP), image and uniform (I&U), medical, security, service and hospitality across all cabins. And, career development for inflight leadership roles. We also provide services to our Pilots for SEP and I&U for all Emirates uniform wearers across the group.

PHP: How did you get into the airline business and what attracts you about it?

Catherine Baird: I spent many years in Education, teaching in Australia. Like all good Aussies I put on a backpack and went looking for work. While in London I joined British Airways (BA) as long-haul cabin crew on the Boeing 747. In BA I moved into crew training and recruitment as a dual role with flying around the world and the history is amazing. It’s all about the people – the people I get the privilege to work with and people, as customers, who all have amazing stories to share – you grow and learn so much in this industry.

PHP: Emirates is recognised as one of the world’s leading airlines for customer service, why is this?

Catherine Baird: I believe our success and reputation comes down to two key elements:

• An unwavering commitment to product and service innovation, with our customers at the very centre of everything we do, and
• Our people. We have over 160 nationalities who speak over 40+ languages in the Emirates Group, I am constantly humbled by the amazing people who work with us, people with exceptional qualifications, experience and inspiring stories to tell.

PHP: Who have been the people you admire and have encouraged you in your career?

Catherine Baird: I have been inspired and encouraged by the myriad of talented people I’ve had the great fortune to work with across the globe. The people I admire lead with clarity, authenticity, compassion, courage and integrity. I’ve also discovered that the greatest learning often comes from the most unexpected places! And, I am constantly inspired by the bold and courageous leadership of HH Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai. I am an avid reader of this writing – books and poetry.

PHP: What advice do you give to people who join the airline?

Catherine Baird: Aviation is a dynamic, challenging, ever-changing and demanding industry. The industry has people at its heart. So you’ll need a passion for people, for going out of your way for others and, resilience and grit sets you apart.

PHP: How does an organisation retain its culture as it expands? What have you put in place to ensure that the culture is carried on?

Catherine Baird: It is imperative that you’re very clear about where you’ve come from and where you’re going, about where you’ve been and where you’re going to. It’s all about the people – the people I get the privilege to work with and people, as customers, who all have amazing stories to share – you grow and learn so much in this industry. At Emirates we’ve been very lucky to have the warmth, generosity and kindness inherent in the tradition of Arabic hospitality to inform our foundation of service. And, we celebrate the richness of our cosmopolitan make-up by helping to define a unique global culture. We have intentionally created programmes and processes to nurture and sustain these unique aspects of our amazing Emirates cabin crew community.

PHP: What should any leader understand about working in a people business?

Catherine Baird: I believe, as a leader you are only as successful as the team around you. Your role is to nurture and develop each and every one of your team to be the best possible version of themselves. At the core, it doesn’t matter where we come from, our age, gender, background or experiences – we are all human. And, for humans to thrive and trust we need to feel valued, recognised, encouraged, developed and, the key ingredient, kindness.

PHP: What’s your favourite leisure time activity and where would this be undertaken – and with whom?

Catherine Baird: No surprise, to travel. I love to explore new destinations with my husband and, equally, I love to visit well-travelled paths to be with our family and the amazing friends we have all over the globe.

Catherine Baird:

A Soaring Flight Path

Education Background and Experience

- 1987–94: British Airways, based in London
  - 1987–91: cabin crew, BA’s first-class and British First Class service
  - 1991–94: Head of Induction and Development of Crew Policy, BA, based in Dubai

- 1994–2001: Emirates, Australia and UAE
  - 1994–2000: Senior Vice President, Cabin Crew Training, based in Melbourne
  - 2000–2001: Director of Training, based in Dubai

- 2001–03: Star Alliance, based in Frankfurt

- 2003–09: Emirates, based in Dubai
  - 2003–07: Senior Vice President, Cabin Crew Training, based in Dubai
  - 2007–09: Senior Vice President, Recruitment, based in Dubai

- 2009–11: Emirates, based in Dubai
  - 2009–10: President, Cabin Crew Training
  - 2010–11: Senior Vice President, Cabin Crew (CA) with accountability for both international and domestic recruitment, crew career advisor. Facilitator on internal training courses

- 2011–15: Star Alliance, based in Frankfurt

- 2015–17: Emirates, based in Dubai

- 2017–19: Emirates, based in Dubai

- 2019–present: Emirates, based in Dubai

- Education
  - 2001: Star Alliance, based in Frankfurt
  - 2005: Master of Business Administration, International Management, University of Bath, UK

Catherine Baird:

It is imperative that you’re very clear about where you’ve come from and where you’re going, bringing the best of who you are as an enabler for future transformation. CATHERINE BAIRD

The flight stuff: CELEBRATING A CABIN CREW SUPREMO CATHERINE BAIRD is an accomplished woman in today’s global airline industry. As a Senior Vice President with Emirates in Dubai, she is recognised as a leader in people development at the pinnacle of her chosen profession. To commemorate Catherine’s achievements, she will be receiving an honorary doctorate from Heriot-Watt University in Dubai at the forthcoming graduation ceremony. We caught up with her in Australia.
Who takes on the leadership roles in professional environments where all are equal? Gordon Jack’s study into ‘distributed leadership’ among doctors, academics and local politicians shows there is a great deal still to understand. Kenny Kemp reports.

Consider an eminent heart surgeon operating in a busy city hospital who clashes openly with a senior clinician who is also a respected cardiologist. The fallout in the department is toxic and impacts on the healthcare of patients. Or imagine a long-serving council chief bristling when an obstreperous elected leader rebukes him for funding cuts that impact thousands. And think of a big-ticket professor asked to represent his university instead of promoting his individual research. He refuses point-blank, saying it’s not his job. Such areas of potential conflict are legion, and they are common in almost every professional walk of life.

Although some environments involve workers ‘doing what they are told’ by their bosses, or following orders like unquestioning soldiers, today’s workplace is increasingly nuanced and sophisticated, and demands collaborative and consensual leadership.

Gordon Jack, who holds a PhD in management from Heriot-Watt University, has been exploring leadership in ‘low-authority environments’. His research backs up anecdotal stories about feuding doctors, irascible academics and intransigent politicians. He points out that many people from these groups are ‘massively underprepared’ for leadership, which can lead to negative perceptions of elevated responsibility and general levels of dissatisfaction. In turn, this discourages many from stepping forward to become leaders and can sometimes result in the widespread disengagement of those who are prepared to take on such positions.

Dr Jack sees a solution in understanding the multiple motivations of those working at equal levels in an organisation. It is about finding the common ground in which two equals both gain something from a leadership situation. This, he concludes, is an under-researched area requiring further study.

This is in contrast to leadership, management and organisational structures across disciplines, which have been researched and contextualised for many years; the bases of these concepts can be traced back thousands of years to their crudest forms.

‘Vast amounts of literature on leadership and management revolve around the assumption that people do as they are told without confrontation, with threats of sanctions being one key driver.’

Historically, in large militaristic and religious organisations, this may have been an accurate account of what happened. Soldiers, for example, joined the army and were commanded by senior officers to carry out orders and missions, which they did without dispute, says Dr Jack.

However, in modern practice, this is no longer the case even in the military.

‘Today’s workplace is increasingly more nuanced, sophisticated and demands collaborative and consensual leadership.’
LOW-AUTHORITY SETTINGS

"Human capital is one of the most likely hindrances an organisation will come up against in contemplating a change initiative," Dr Jack says.

For his research, he chose "low-authority settings." Low-authority is a hybrid term used to describe professional settings where lower levels of formal power are bestowed on the nominal person in charge, with subordinates often acting independently and, sometimes, in contravention of direct instructions. These environments are commonplace in institutions and organisations with high levels of professional autonomy and skill. Dr Jack’s research was undertaken in three fields: academia, healthcare and local government.

He interviewed staff in 23 universities worldwide (including nine vice-chancellors and two vice-principals), seven health boards (including 14 lead clinicians and 13 clinical directors), and 14 local councils (including nine leaders and six deputy leaders).

Professionals in academia and healthcare undertake extensive amounts of training to attain professional status, with continuing development required to progress upwards in an organisation.

The political environment is different in that there are no formal entry requirements, despite the fact that politicians with professional qualifications are elected to local government. Politicians are elected on the basis of leadership as a result of their popularity with the public and colleagues.

Professionals also differ from business or tradepeople in that they belong to disciplines governed by codes of ethics and to professional organisations whose commitments are rooted in the expected behaviour of their members. Doctors, for example, often feel more loyalty to the General Medical Council than to their local NHS Trust, which may be their direct employer.

Low-authority leadership is also described as ‘distributed leadership’ in that leadership is probably best conceptualised as a group quality, as a set of functions which must be carried out by the group. Members of a surgical team take turns in operations depending on the situation and skills demanded at that stage of the procedure.

Despite movement toward collegiality, more recognised leadership styles still tend to see the responsible person as a heroic figure, acting independently and often blaming one individual rather than a team," says Dr Jack.

THE IVORY TOWER POWER: ACADEMICS

A first-rate research academic does not necessarily make a good manager. They may be罚ing their energy and passion to the research and places of higher education where professors in departments must interact with the wider organisation. Dr Jack’s research questions expose an ambiguity about who is managing, who manages academics and who they are as their boss. Among the responses was:

"Students are superiors. My university [jill] would actually be easier to manage a class of primary school children, because you could tell them to sit down and be quiet. A consequence failed to define whom they are as their boss. Among the responses was:

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[...]

"I thought there’s a view of clinicians versus management. There is a view that you are the buck stops and I think that is the only way to be when you’re having to make a decision."

Despite these views, there seems to be confusion as to who is being led and who is doing the leading. One striking feature across the range of responses was a lack of agreement as to who reports to whom, and about who the leaders perceive to be their own leader.

The difficulty with consultants is that we are employed by the health board to deliver certain aspects of a service, but actually there’s a management structure in place (the General Medical Council).

Another stated:

"The management structure here has really not given me any advice or help with anything. It’s all done through the medical directors and clinical directors."

Another medical respondent said:

"The role in the NHS is very much that you’re a manager and you’re one of them – a bad guy, who’s carrying out government targets and forcing policies."

Another stated:

"There appears to be an engrained culture within the NHS where, for example, the political party in power is supposed to work in harmony, consequently having a detrimental effect on the organisation."

One manager was obviously frustrated by such a response: Poochier gamekeeper, or gamekeeper turned poacher, as the case may be. He gave me 007. I went back to the practice… One of my colleagues said, ‘What is it? 007?’ I thought there’s a view of clinicians versus management. There is a view that you are the buck stops and I think that is the only way to be when you’re having to make a decision."

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Energy producers and the utility companies that supply electricity in Ontario have differing views on how they must tackle climate change. Kenny Kemp reports on research undertaken by DR ANNA DOWBIGGIN, who has recently completed her DBA at Edinburgh Business School. She suggests the industry should work more closely on its future narrative.

**PANMURE HOUSE PERSPECTIVES**

**ISSUE 3**

**EXAMINING ATTITUDES**

**[ TEMPERATURES RISING ]**

in frosty Canada

Long-range weather forecasters predict a dramatic increase in the incidence of extreme weather that will have a destructive impact on electrical power supply around the globe. But do those who work to keep the lights on, and our homes cool in summer and warm in winter, fully understand the multiple dangers of this potential disruption to our energy supply – and how does this impact on the work they are doing now? Anna Dowbiggin, a native of Canada, undertook her Doctor of Business Administration with Edinburgh Business School, Heriot-Watt University, to find out more about the electricity sector’s perception of the risks involved, drawing some important conclusions that can be shared across the world.

She chose to focus on Ontario, Canada, a highly populated region in a country of extreme hot and cold weather. Her research was supported by David Butters, the president and chief executive officer of the Association of Power Producers of Ontario (APPrO), who says that the study of the accumulated views of producers and suppliers will help ‘to inform policy and practice and assist in the process of advancing corporate adaptation measures for future climate change in Canada’.

Dr Anna Dowbiggin knows her work has immediate relevance: ‘Climate change has already affected Ontario electricity suppliers through heat waves, severe flooding and ice storms. Risk effects of the physical manifestations of climate change have left businesses and households without power, heating or air conditioning on many occasions. Yet little work has been done on examining the additional risk effects associated with secondary and indirect impacts of climate change on industry.’

**VULNERABLE TO EXTREMES**

Canadians are the third-highest consumers of electricity per person among the OECD countries, surpassed only by Norway and Iceland, and the seventh-highest consumers of electricity in the world. She selected Ontario precisely because it has the highest per capita usage of electricity in the country and the largest infrastructure network of electrical utilities. Population intensification in the southwest continues to increase electricity demand; so future outages will have severe impacts on lives and quality of living.

**CLIMATE CHANGE IS ONE OF OUR MODERN WORLD’S MOST IMMEDIATE CHALLENGES**

In her research, she raised the question of how the electricity sector will be able to cope with such unpredictable increases in extreme weather.

She was keen to learn the extent to which power producers and utility companies manage climate risks depending upon their current management beliefs and interpretations.

Climate risk management is particularly salient for the electricity sector in Ontario. District utilities and their upstream generation partners are noted time and again for being vulnerable to potential extreme and sudden weather impacts, she said.

She explained that the pressures are intensified because of the ageing infrastructure of the power producers and network grid operators, with key assets, such as transformers, conductors, wires, poles and cables, reaching the end of their life cycle.

‘Extreme weather forecasting done in 2001 suggested Ontario was at high risk for flooding and freezing temperatures. Fifteen years later, the Canadian Electricity Association (CEA) reiterated the same claim, asserting the sector is increasingly more vulnerable to climate risk due to aging transmission equipment, lack of capital investment for infrastructure renewal and lack of planning for climate change impacts. CEA documents state that recent Canadian government infrastructure planning did not include considerations for “climate hardening” or the technical and structural modifications to protect electrical power plants and equipment from specific physical impacts of flooding and extreme hot and cold temperatures.’

**DR ANNA DOWBIGGIN** has worked in corporate governance and sustainability assessment for a number of Canadian and international firms, and is a management consultant living in Toronto. She founded and launched two companies in the 1990s, and is an avid hiker and skier.
Risk
Exogenous factors
Endogenous Factors
Revised model of risk perceptions in the electricity sector.

CURRENT CONDITIONS

Exogenous factors
Endogenous Factors

Revised model of risk perceptions in the electricity sector.

Exogenous factors
1. Sudden, direct climate events. This encompasses the weather-based risk assessment
saliency of each for the interviewee. The exogenous risk effects comprised climate
evidence is seen to be relevant. Dr Dowbiggin's interviews involved reviewing eight
associations, such as APPrO and the Canadian Electricity Association.

Endogenous factors
2. Climate data, relating to not only access but the interpretation of relevant climate
modelling data, for better preparations.
3. Climate policies impacting the electricity sector.
4. Greenhouse gas abatement and the impact of government regulations pertaining
to emissions directly affecting the natural gas [fossil fuel] generating producers.

Risk

Future Risks

CURRENT CONDITIONS

Risk

Ageing Infrastructure

Risk

Future Risks

CURRENT CONDITIONS

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Ageing Infrastructure

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Future Risks

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Risk
n many dynamic and complex organisations, workers and managers have more than one boss. It’s a messy fact of working life. As you might expect, this can result in inertia and conflicts of control, and can have a debilitating impact on an organisation. This is the so-called ‘matrix’ structure where people have two or more bosses, building across the dimensions of job function, product or service delivery, or geographical region. It can lead to people getting themselves and their organisations into a tangle.

Richard Sunderland, a regional director for the British Council, decided to look at how such structures work in multinational organisations. He undertook his Doctor of Business Administration at Heriot-Watt University, studying leadership behaviour during the transition to a matrix structure in the context of this international public sector organisation.

The matrix leadership idea was spawned in the 1960s in the American aerospace and engineering industries, especially in the complex project management of NASA’s missions to put a man on the moon. This was so complicated that new structures were needed to manage multiple centres of control. By the 1980s the idea of a matrix structure had fallen out of favour and was perceived by many as unworkable and to be ‘avoided at all costs’.

The associated problems were power struggles, slow decision making, a lack of clarity about roles and increased overheads. However, there has been a revival of interest, and many organisations, faced with increasingly complex and rapid change, are experimenting with the matrix. Today the matrix is an increasingly common organisational form, with some 96% of FTSE 50 and 94% of Fortune 50 companies deploying some form of matrix structure.

‘Matrix structures have become increasingly common in contemporary organisations. Evaluation of their deployment is, however, scarce. In parallel, the social and human dimensions of matrix structures are of increasing interest to scholars and practitioners, and leadership behaviour emerges as a possible factor in maximising the benefits, and minimising the downsides, of such structures,’ says Dr Sunderland.

DELIBERATE CHANGE TO STRUCTURE
Dr Sunderland has spent a number of years working at leadership level within the British Council, most recently as a director in Myanmar. The Council, founded in 1934 and incorporated by Royal Charter in 1946, seeks to promote a wider appreciation of British culture abroad. It is a non-departmental public body of the UK Foreign and Commonwealth Office and, although part of the UK government’s foreign relations infrastructure, operates at arm’s length as the UK agency for educational and cultural relations. It has a turnover of £1.1 billion (£1.18 million of which is government grant) and 8,700 staff working in over 100 countries around the world.

Like all not-for-profit organisations, the British Council has had to make dramatic changes to the way it operates and spend public money. This was partly influenced by the controversial debate over New Public Management (NPM), which was about making deliberate changes to the structures and processes of public sector organisations with the objective of getting them to run more efficiently. As a result, the British Council has been moving towards a matrix structure.

Because the Council formally adopted a matrix structure in 2012, and is experiencing many of the associated challenges as it transitions, Sunderland felt it represented an interesting case study to provide lessons for similar not-for-profit organisations. His research is a single case study drawing on data and interviews from the Council. The primary sources include a managerial practices survey, a focus group discussion and key information interviews.

These sources are complemented for triangulation purposes by secondary sources, which include such documents as corporate plans, annual reports, HR data, internal financial and non-financial data, and organisation charts, as well as publicly available government records published by the Foreign Affairs Committee and Public Accounts Committee of the UK Parliament. The sample was selected from three of the Council’s eight regions: the Middle East and North Africa (MENA); Sub-Saharan Africa (SSA); and South Asia (SA).

PERCEPTIONS OF GOOD LEADERSHIP
These regions represent around 50% of the global network in terms of number of countries and 48% of regional and senior country posts. The regions have more mixed business portfolios and, arguably, experience more aspects of matrix working. All three regions represent a mix of large, medium and small operations, which makes them ideal to offer insights into the matrix structure. These regions are culturally diverse, which provided some interesting insights into how the matrix is viewed by different national or regional groupings.

The key aim was to see if a ‘good’ matrix leadership could increase the quality of communication, make more effective use of shared resources, lead to faster decision making, increase innovation, and prevent teams from working in silos. Dr Sunderland found that, in the 200 pages of transcripts and over 80,000 words of data, there were no significant differences between perceptions of ‘good’ leadership behaviour across the regions studied. Equally, there were no substantial variances in perceptions between those in regional leadership roles, professional services or country leadership.

His research concluded that ‘good matrix leaders’ demonstrate similar patterns of behaviour irrespective of role type or geographical location. Dr Sunderland found that public sector leaders at the British Council exhibit good levels of external behaviours such as networking, which were cited as positive indicators of effective matrix structures. The British Council has an appropriate focus around people and external relationships to deploy a matrix structure successfully. This, he suggested, shows that other public sector bodies with a comparable focus base have similar potential.

However, detailed examination of primary and secondary sources highlighted that the Council is struggling to make other purported benefits associated with matrix structures. It was evident that the potential is not always realised by leadership behaviour. In fact, clear gaps exist between the most commonly observed behaviours and the behaviours associated with perceptions of ‘good’ leadership. This disparity relates primarily to empowering behaviours (consulting, delegating and developing), task-oriented behaviours (planning, making, increase innovation, and prevent teams from working in silos) and change-oriented behaviours (visioning and encouraging innovation), all of which were observed relatively less by research participants but highlighted as key behaviours of those perceived as ‘good leaders’.

86% of FTSE 50 and 94% of Fortune 50 companies deploy some form of matrix structure.

Future scholarly enquiry could build on these points and seek to further examine these constructs and attempt to determine any causal links between them.
The research showed relatively low scores for leadership behaviours associated with the effective sequencing of work, sharing of knowledge across teams, and the successful implementation of activities, despite those behaviours being tackled by research participants as those demonstrated by ‘good’ leaders.

The study has been illuminating for the British Council. Organisations deploy matrix structures expecting to realise benefits such as an ability to respond to multiple priorities, improved quality of communication, more effective use of shared resources, faster decision making, access to more diverse skills, and better integration between teams. However, detailed examination of primary and secondary sources highlighted that the Council is realising few of these purported benefits. A staff survey showed limited evidence that the quality of communication had improved since the deployment of the matrix structure. This confirmed that, while the quantity of communication may increase following the implementation of a matrix structure, an increase in quality does not necessarily follow.

**FINDING THE RIGHT MINDSET**

Dr Sunderland’s conclusion was that an evolution towards ‘good’ matrix leadership is a combination of leadership approach, behaviour, traits, and skills, future scholarly enquiry could build on these points and seek to further examine these constructs and attempt to determine any causal links between them.

**SUMMARY OF MATRIX STRUCTURES**

- **Type of matrix model**
  - **Brief description**
  - **Example organisation(s)**
  - Corporate functions vs business unit
    - Matrix structure to combine corporate functions (HR, legal, finance) and business units (which may have distinct operating environments)
    - Royal Dutch Shell
  - The three-dimensional matrix
    - Matrix structure across multiple markets, or demand multiple products
    - ABB
  - The baton pass model
    - Matrix structure where ‘leadership baton’ is passed from team to team to get new products to market e.g. from R&D to marketing and then to sales divisions
    - Eli Lilly
  - The matrix within a matrix
    - Matrix structure where a project leader is also a project unit manager
    - Procter & Gamble

**SUMMARY OF COMPLEX MATRIX STRUCTURES**

- **Type of matrix model**
  - **Brief description**
  - **Example organisation(s)**
  - The three-dimensional matrix
    - A multi-dimensional matrix to account for market, product, customer and geographical segments
    - Nestlé
  - The four-dimensional matrix
    - A multi-dimensional matrix that addresses the needs of customers, products, solutions, customers, geographies, and channels
    - A six-dimensional matrix incorporating functions, products, solutions, customers, geographies and channels
    - Eli Lilly
  - The hybrid model
    - A multi-dimensional matrix structure incorporating functions, products, solutions, customers, geographies, and channels
    - BM

**LEADING THE MATRIX**

A recent meta-study can explain leadership behaviour during the transition to a new structure in the context of a meta-study commissioned by the British Council. Richard Sunderland, Director of Business and International Learning at the British Council, said of his research, ‘My study was very much within the remit of leadership literature.

**2030 and beyond: GAZING INTO THE FUTURE**

What does a university need to do to secure its future? A horizon scan project commissioned by Heriot-Watt University discovered eight themes:

- **THE WORLD IS GETTING OLDER**
- **POLITICAL/ECONOMIC STABILITY IS NOT A GIVEN**
- **TECHNOLOGY IS CHANGING HOW WE LIVE AND WORK**
- **AI WILL BE TRANSFORMATIVE**
- **SECURITY MATTERS**
- **HEALTH AND WELLBEING REQUIRE PROACTIVE CARE**
- **DIVISIONS BETWEEN OLD AND YOUNG WILL BECOME INCREASINGLY UNCONVERTIBLE**
- **THE WORLD NEEDS A LOW-CARBON FUTURE**

**MALAYSIA**

- **2030**: Population (25m) will pass
- **Malaysians aged 65+**
- **WILL PASS 37m**
- **2050**: More Malaysians aged 65+ than pre-working Malaysian aged below 15
- **PLANNING AND PREPARATION NEEDED TO ENSURE HIGHER LEVELS OF STUDENT AND STAFF MENTAL WELLBEING.**
- **OUTCOMES FOR HERIOT-WATT**
  - The university is now considering its own strategies for climate change.
- **GLOBALLY**
  - **2050**: World economy to double in size
  - **2050**: 67 economies could comprise 50% of world GDP with the G7’s share declining to around 20%
society

&

conversation,

therefore, are the most

powerful

remedies

for restoring the mind
to its tranquillity,

if, at any time, it has unfortunately lost it; as well as the best
preservatives of that equal and happy temper, which is so
necessary to self-satisfaction and enjoyment.