AN HISTORIC MOMENT FOR SCOTLAND

The former Prime Minister Gordon Brown declares Adam Smith’s house in Edinburgh officially open again for discourse and economic debate.

MASTER AND COMMANDER
Robin Watson, Chief Executive of Wood plc, a global engineering group, recalls his time at Heriot-Watt.

A CALLING IN AFRICA
In an exclusive interview, Dame Ann Gloag talks about her philanthropic work in Africa.

OVER-THE-COUNTER REVOLUTION
Dr Jan Philipp Wintjes on building an omnichannel strategy in the global fashion industry.

OUR LEGACY OF MECHANICS
Vice-Chancellor and Principal Richard Williams salutes the founders of the world’s first institute of mechanics in 1821.
Welcome to the fourth edition of Panmure House Perspectives, the international business journal of Edinburgh Business School, the graduate school of business of Heriot-Watt University. Our aim is to ensure that you find something informative, original and useful to read for business and for pleasure.

As we move towards celebrating our bicentenary in 2021, commemorating 200 years since the foundation of Heriot-Watt as the world’s first institute of mechanics, we continue to look ahead and prepare for an exciting and uncertain future. Our Vice-Chancellor and Principal Richard Williams writes about the Scottish visionaries who created the foundations of Heriot-Watt in 1821. It’s a fascinating read.

As a university, it is our duty to prepare and equip the people who pass through our gates with the abilities to meet the multiple challenges of the world. In this issue we have exclusive interviews with two Scots who have helped shape the world around them. Dame Ann Gloag, the Scottish transport entrepreneur and creator of The Gloag Foundation, and Robin Watson, the chief executive officer of Wood, are the largest engineering group employing 60,000 people around the globe. Robin is an engineering graduate of Heriot-Watt and we are most grateful that Wood plc have chosen to become supporters of Panmure House.

Finally, our thoughts are with the family of Professor Gavin Kennedy, who died in April, age 79. Professor Gavin Kennedy, who died in April, age 79. Professor Gavin Kennedy, who died in April, age 79. Professor Gavin Kennedy, who died in April, age 79. Professor Gavin Kennedy, who died in April, age 79.

A £1PM CENTRE FOR DISCOVERY David Richardson gives a personal tour of the new GDS centre at the campus in Dubai and Malaysia.

A PASSION FOR EDUCATION In Gandhian thought, the programme director of Panmure House, offers a taste of the activities in case a Adam Smith restored home...

A CALLING IN AFRICA On an interview, talks about her philanthropic work helping young people in Tanzania.

THE PLEASURE OF INSTITUTES Vice-Chancellor and Principal Richard Williams, a veteran of all institutions who created the world’s first Institute of Mechanics, Edinburgh, which became Heriot-Watt University...

AN INSIDE JOB As the career of Sir Andrew Witty, who gained her PhD from Edinburgh Business School, emerges developing entrepreneurial experiences companies in the United Arab Emirates.

AN APPRECIATION Professor George Kendal, a scholar of Adam Smith and an inspiration for Edinburgh Business School, is remembered.

Top 10 areas of learning at Heriot-Watt University, says the modern degree-level apprenticeships are to be welcomed – and the university has already made the foundations of Heriot-Watt as a place of practical, work-related endeavour.

Let’s find the right blend across all modes of learning.

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OPEN FOR BUSINESS Former Prime Minister Gordon Brown visits the special guest at the official opening of Panmure House.

THE PANMURE HOUSE PERSPECTIVES INTERVIEW Iain MacLennan, the former owner of leading engineering group Wood, talks about his thoughts on the future of the industry.

ECONOMICS WITH THE TRUTH Professor Howard Gowling breaks at live and drive road freight towards a zero-carbon future.

THE PURSUIT OF INSTITUTES Vice-Chancellor and Principal Richard Williams, a veteran of all institutions who created the world’s first Institute of Mechanics, Edinburgh, which became Heriot-Watt University, offers a taste of the activities in case a Adam Smith restored home...

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Richardson, Heriot-Watt’s chief entrepreneurial officer, gives Panmure House Perspectives a guided preview of the new innovation hub in Edinburgh.

"We have a focus on business and enterprise and part of our vision proposition is we are bringing the physical engineering together with digital expertise," said the enterprise chief.

Entering on the first floor on the left is the flex lab which has been kitted out with engineering and testing equipment. Students, staff and industry partners will be working here together to design and manufacture innovative products. On the other side of the atrium visitors will find a network of collaboration spaces.

"We envisage a plan above that hosts a coffee space which is ideal for informal breakouts and can be found next to a state-of-the-art gamification studio on the ground floor.

Across from this is a creative studio, a highly dynamic event space that can be used for more living lab, or even a catwalk for the textile and fashion design fashion shows.

Updates, there is a large flexible computer lab with over 500 double-screen computer positions, in a space that can be customised to accommodate a competitive hackathon or collaborative project teams. All of the building is the much anticipated imagineering suite – an area equipped with a 5 m screen for augmented, virtual reality and 3D visualisation.

"We will be helping companies to access the latest, immersive technology, introducing partners, to help grow their business," Richardson continued.

On the opposite side is a partner suite with smart whiteboards and touchscreen computers where companies can brainstorm within a private setting. There is also a dedicated business enterprise hub set aside for startups to sit down desk space and screen teleconferencing facilities, including glass-screened interview rooms for sensitive discussions.

"The purpose of this space is to open up a range of different scenarios and create testbeds where people can come in and work to reach breakthroughs.

There is already a pipeline of companies interested in joining GRID at Heriot-Watt, especially with corporate venturing.

"Our new sensor technology has unique applications in robotics and the Internet of Things as an alternative to intrusive cameras and expensive LiDAR. The technology is now being used to develop an innovative smart home security solution that protects residents while automating the smart home around them."

The SIG Fresh Ideas Award means we are delighted to do us as an early-stage business, as it validates our proposition and lets us move forwards confidently on our growth journey. It has also given us the momentum we need to think big and take the new opportunities that are in front of us," said Mr. Brown.

The company plans include securing investment and expanding the team. Allen said: "We are now moving towards our first investment round and are looking to build out our team from our base in the Edinburgh Business School incubator. We are also developing our first product to be ready for the market for early 2020.

"The Lyell Centre where the visitors were sitting, was fascinating to learn more about the training and research that Heriot-Watt University does."

"Senegal faces and to explore the challenges that Senegal faces and to explore the challenges that Heriot-Watt can potentially assist."
GORDON BROWN reflects on the life and times of Adam Smith as he declares Panmure House open again as a place of discourse and debate.

OPEN FOR BUSINESS
THE OFFICIAL OPENING OF PANMURE HOUSE

A Great Day for Heriot-Watt

GORDON BROWN reflects on the life and times of Adam Smith as he declares Panmure House open again as a place of discourse and debate.

INVESTMENT IN CIVIC SOCIETY

The former premier began by saying it was a privilege to be invited to what is a ‘great day’ for Heriot Watt University, for Edinburgh and for the whole of Scotland. He congratulated everyone – including the architects, designers, building contractors and planners – involved in the Panmure House renovation. He also congratulated Heriot Watt University’s Principal Richard Williams, in attendance with his wife; Edinburgh Business School, including Professor McGregor and Lord Vallance of Tummel; and all those who had the idea that Adam Smith’s final home should not be knocked down and turned into flats but preserved as a living monument to his work. He said Panmure House was now restored at the heart of Scotland’s cultural life.

“This is not simply an investment in bricks and mortar; this is an investment in our culture, in our history and in civic society. This will be a centre for debate, for new ideas and new thinking, with research fellows coming from all over the world to be here. It will be as Adam Smith intended it to be and was when he lived here: a place for debate and a forum for great dialogue on the future of our society.”

The former Prime Minister said the opening was in the spirit not only of the Scottish Enlightenment but also of Heriot Watt University, formed in 1821, two years after the death of Scottish engineer James Watt, whose name is associated with it. By this time, he said, the Enlightenment, fostered by the likes of Lord Cockburn, was inspiring the flourishing of Sir Walter Scott and, later, Robert Louis Stevenson. It fitted with the development of Heriot Watt as a place of useful learning as the first mechanics institute in the world.
"Since then, it has gone on to pioneer many different things, including the first research park and the first online MBA. This is a great day for Heriot-Watt University, but it is typical of the history of a university that has been at the centre of innovation."

Mr Brown said Heriot-Watt has also helped rescue Adam Smith from what historians might call 'the condescension of posterity'. He spoke with passion about being brought up in Kirkcaldy and how, during the 1960s, the local council allowed the original Custom House building, where Adam Smith was brought up, to be demolished.

"When I was young there was a sign on the road as you entered the town which said 'Birthplace of Adam Smith'. Then that disappeared and it became 'Kirkcaldy: Twinned with Ingolstadt, Germany'. Then they undertook a poll in the town and more people thought Adam Smith was a pop singer rather than an economist," he lamented.

Kirkcaldy now, with the Adam Smith Foundation, the Adam Smith Lecture and the Adam Smith Trail, is trying to recover both the reputation of and an appreciation for Adam Smith.

"Panmure House being restored by Heriot-Watt University, and particularly by Edinburgh Business School, is a huge statement and affirmation of both our history and the importance of Adam Smith, both as an economist and a scientist of political economy."

Mr Brown said, when considering Smith's work, we must look at what he told us about the kind of economy that makes for a good society and the kind of society that makes for a good economy.

"When I was growing up in Kirkcaldy, you could see how Adam Smith developed his theory of the wealth of nations, because you looked out on a two-mile esplanade, looking out at the sea from the port of Kirkcaldy. From his Custom House window, as he grew up, he could see the ships coming in and out of the port. He could see the importance of trade, and you could see why his book The Wealth of Nations is about trade being the engine of growth and the key to future prosperity."

CIRCLE OF EMPATHY

Mr Brown also emphasised that Smith was a great moral thinker who gave us The Theory of Moral Sentiments, with lessons on how to build a society based on trust and cooperation.

"We were not simply traders and merchants, but we were communities, and his idea of moral empathy; his idea of a 'circle of empathy', his idea that we were part of a community and that there had to be a moral foundation to the economy; something that was often forgotten in the writings of the last 100 years, but it is something that is exactly at the centre of his work."

He said the writer, who spoke about the 'invisible hand' of the market, also spoke about the 'helping hand' of communities and our duties and obligations to each other. Panmure House will be celebrating the richest traditions of the Scottish Enlightenment, and not purely economics and commerce but the theory that the economy is underpinned by ethical foundations.

"I think there is a lot to tell us about the struggles and debates that we have today, particularly because we are no longer national economies with national flows of capital and goods, but global flows of capital and goods, and what Smith says about the importance of trade and commerce is critical to the functioning of the global economy. What he also says about how markets and states must work together is important for a good society."}

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I t is a drizzly and blustery afternoon in early April when I step into a modern office complex in Justice Mill Lane, off Union Street, Aberdeen. The reception area is quiet. The receptionist, a young man in a pink shirt and a blue tie, greets me. "Mr. Watson," he says, "is the Chief Executive Officer, Mr. Robin Watson." He points to a door on the left. "He should be here in a few minutes."

I walk into an office with a large window overlooking the River Dee. The floor is carpeted in a neutral shade of beige. There is a desk with a computer, a telephone, and a few files on it. Watson enters the office and sits down at his desk. He is a tall, slender man with short, dark hair. He is wearing a blue suit and a white shirt.

"I worked offshore on the Beryl field," he says. "The stuff that we did was so pioneering and I feel people have forgotten that."

Watson explains that the Beryl field, discovered in 1973, was one of the first large oil fields to be developed in the North Sea. It was a major breakthrough for the Scottish oil industry and working there was a significant moment in his career.

"When the company moved into shale gas in America, it quickly learned more about this booming sector and broadened the company's operational footprint in an innovative and emerging environment. "We went on a journey and we've grown that business. We are quite thoughtful and we're not complacent. We don't assume anything. I think that's the rigour of Scottish pioneering spirit."
During his four years in the Merchant Navy he was given a position of responsibility from an early age, with a range of deals, including a shipyard manager, and he was also responsible for the delivery of our strategy more quickly in one single deal. A class innovation is a drain on capital. It also allowed us to act strategically in the world, and the loss of 500,000 jobs, with over 100,000 of them being in western Canada, looking instead at the industrial logic is compelling. It broadens our footprint and reduces our volatility. We think it is a good operational business that needed stronger leadership. ‘’ he said.

“We determined that Amec Foster Wheeler really accelerated to the third year of a four-year honours degree in Offshore Engineering. I was eager to get out of that, and there was no way I would be an Engineer, Incorporated (NEI) Certification (PANMURE HOUSE PERSPECTIVES, ISSUE 4)

I was desperate to get offshore and back into the industrial environment. My ambition was to become a platform manager and a superintendent of this offshore. There was a technical and a managerial ladder, and at that point you didn’t have to commit to either of them.’’ He says. during 2012 and we grew this pretty rapidly. We have a common function to enter an offshore investment division of Petrofac, where he located after global assets, it was a case of where’s next? The Wood Group which has expanded extensively since then. ‘’I started speaking to Sir Ian and I was told by Bob in a robust PDS division in 2012 and we grew this pretty rapidly. “We determined that Amec Foster Wheeler really accelerated to the third year of a four-year honours degree in Offshore Engineering. I was eager to get out of that, and there was no way I would be an Engineer, Incorporated (NEI) Certification (PANMURE HOUSE PERSPECTIVES, ISSUE 4)

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As recorded on pages 6-9 in this magazine, Panmure House was formally opened by former Prime Minister Gordon Brown, who spoke frequently about its great potential as a renewed centre for the Scottish Enlightenment and its influence on a global stage.

Our range of engagement programmes is now putting this into practice. From the Adam Smith Lecture Series, which will see Nobel Laureates deliver keynote lectures of global relevance, and the Visiting Fellow Programme, which brings academics to Edinburgh for several months of research and industry collaboration, to the suite of Fringe Festival Events (see sidebar) that are making the house accessible to the public.

To inspire the next generation there is the Panmure Educational Outreach Programme, an initiative that allows schoolchildren to spend a day in the house learning about Adam Smith’s life and works. The Panmure House Prize, a prestigious academic prize of £7,500, is to be awarded for the best scholarship into long-term investing, with the prize money dedicated towards furtherance of the winning research.

The Philo Scholarship Programme will take Edinburgh schools to Panmure House to conduct the second year of their research there.

Finally, of course, there are the summits, seminars and debates, the livelihood of Panmure’s day-to-day life, bringing together academics, industry and politics to debate and find solutions to today’s biggest issues. These are all supported by the Founder Sponsors Programme, made up of our selected corporate and governmental partners, which include the Scottish Government and six global businesses to date.

Finally, there is the Society of Panmure House – the annual membership platform for supporters of our mission. Members have privileged access to news and events at the house, as well as a subscription to Panmure House Perspectives.

For readers who would like further information on any of the above, or to join the Society of Panmure House, please visit www.panmurehouse.org, or call me, Caroline Howitt, on 0131 451 3999.

Panmure House prepares to welcome you all

The UK government has committed in law to reducing CO2 emissions by 80% by 2050 compared to 1990 levels. Recently, many have become sceptical of the validity of this commitment. It is not enough, and that the UK must commit to net zero carbon emissions by 2050.

While there are many areas of economic activity that contribute to CO2 emissions, the biggest contribution is made by transport. This sets the scene for the latest initiative ‘Road to Zero’, which outlines potential pathways to net zero emissions from road freight.

Road freight can be differentiated from passenger cars because it involves a driver who is usually paid, and furthermore, it is concerned with moving large weights or volumes over long distances. This makes road freight an energy-intensive business, and for the last 10 years, the overwhelming majority of road freight vehicles have been powered by diesel. Internal combustion engines. Although diesel has an attractive energy density, it also generates large volumes of CO2, and is, as such, not suitable for our future needs as a decarbonised society.

Logistics are currently constrained by time (both in terms of the lead leaving the warehouse and the preferred customer delivery time), the need to minimise inventory in the supply chain, and vehicle capacity. When considered together, these constraints provide a context for the planning of transport and warehouse operations; these limitations will change when vehicle charging times and reduced vehicle range are subsequently considered.

Electrification Peaks

Despite this, electrification is generally accepted as the long-term solution to improving road transport, this is because clean electricity generation is the only way to achieve the necessary 95% reduction, and even then, the cost of electricity generation will also be a determining factor.

In short, the need to electrify road freight will require the development of new vehicle designs that incorporate energy storage, which will require trade-offs between vehicle payload and the weight of batteries or other energy storage solutions. In any event, the development of sustainable infrastructure presents a significant challenge.

The cost of an electric freight vehicle is currently around double that of its diesel equivalent, and while the electric costs associated with carbon-free electricity generation are lower than those associated with diesel, the electric costs of operating the electric vehicle are higher than approximately 20% of the overall operating costs, because the driver accounts for approximately 60% of these costs. In broad terms, there is no economic case to make road freight electric vehicles, and therefore in the absence of government regulation and policy we can anticipate low adoption rates for electric freight vehicles. This will not address the environmental imperative.

However, this narrative can be reshaped if we consider the opportunity of autonomous vehicles and their impact on cost structures. By removing the cost of the driver, we decrease the operational costs of freight vehicles, but if that vehicle is electric we increase its capital costs; over a seven-year life, the total cost of ownership will approximate to that of a current diesel truck. In essence, the lowest cost way of delivering the UK government’s ‘Road to Zero’ is to accelerate the development of autonomous electric freight vehicles.

This will drive a revolution in material handling concepts, particularly in those parts of the supply chain that currently rely on the driver to provide the means of loading and unloading the vehicle. Electrification of road freight presents many challenges, but offers the elixir of decarbonisation, and a new competitive landscape in which some organisations will adapt to thrive and others will fail.

Panmure House Perspectives

ISSUE 4  Panmure House Perspectives

DR CAROLINE HOWITT, the programme director of Panmure House, gives a taste of the seminars, symposia, Festival events and other activities bringing Adam Smith’s house back to intellectual life.

Panmure House Edinburgh Fringe Festival Programme 2019

The Future of Money?

Dominic Frisby presents Adam Smith: The Invisible Hand

For readers who would like further information on any of the above, or to join the Society of Panmure House, please visit www.panmurehouse.org. Alternatively, email panmurehouse@hw.ac.uk, or call me, Caroline Howitt, on 0131 451 3999.
There are an estimated two million women and girls in Africa suffering from obstetric fistula often condemning them to a painful life of shame and isolation. DAME ANN GLOAG, the Scottish entrepreneur and co-founder of Stagecoach and a former nurse, has devoted a large part of her energy and fortune over the last 30 years to helping women in Africa. KENNY KEMP meets Dame Ann in her Edinburgh office.

Indeed her charitable entry point in Kenya nearly 30 years ago remains a watershed for Ann Gloag, Stagecoach, the Scottish-based bus company which she set up with her brother Sir Brian Souter, expanded its business operating coach and bus services in Kenya as it grew its global roadmap. She learned about the nation and grew to love its dynamism and people.

"Fourteen years ago there was a major drought and we were made aware of all these children who were dying. We went out to the Masai Mara plains to see a local chief, Mr Shah, who had 12 wives. He and the men were cattle breeders whose herds had died through lack of grazing. The kids were in a terrible state. We took look into our orphanage. He had 78 children. I spoke to him and assured him we would send his children food and for 18 months we fed the children.

The village was sent maize and beans each week which prevented starvation.

"It never surprises me now how quickly this situation moves from inable subsistence to drought and famine," she said.

At the end of the drought, she returned to see Mr Shah in the middle of the Mara plains in his baked earthen house. He thanked her for her support and said, "What can I now do for you?" Ann Gloag replied she would like to rescue some of the girls from FGM.

"We had a discussion about education. I said we could start small, with a pilot scheme, educating the women, which would be better for the chief in the long term. We talked about the economic benefit. You have to be cognizant of the cultural issues. He understood this and because we had led him through the drought, he knew I was not saying this for any similar reasons. I had taken care of the girls for a couple of years and he could see the differences in their lives."

She said she would build a Masai school, which is what was done. The chief, who could not read or write, used a thumb to press a stamp to agree a deal and gathered the whole family around to celebrate.

"I don't speak Masai but I was curious when he got up and brought back this little girl. She was 13 years old...but, as a circumcised woman, I do not have a penis."

"It is the worst thing that has happened to a child, who is 12 or 13 years by then and he could see the difference in their lives."

She thanked her for her support and said, "What can I now do for you?"

"I carried her around thinking it was only for a while and she would be returned to her mother. But it became clear she wanted me to have Aleshia. I thought, 'I cannot get into the car and take this child', but I did not want to offend the chief."

"It never surprises me now how quickly this situation moves from inable subsistence to drought and famine," she said.

Nevertheless, the subject of FGM in Sierra Leone, a topic she is still trying to read and write about, is not easily forgotten. She mentioned the gift of "Aleshia" who was later returned to her mother.

"I said I would take care of Aleshia financially and she went to school and stay in her community with her mother.

"I cannot talk against FGM financially and she went to school. It is a different one because this is a cultural issue."

"Aleshia is a new young woman who has gone to school and is able to read, write and count."

"Nevertheless, the subject of FGM in Sierra Leone, West Africa remains a hot political issue. In a recent television interview, Fatma Madaa Bio, the First Lady of Sierra Leone, spoke about how gender issues – particularly the issue of men with multiple wives – should be tackled first.

"I cannot talk against FGM in a circumcision-obsessed country. I have seen the consequences of what early marriage does to children and how it has destroyed people's lives. I have seen the worst things that have happened to a child, who is 12 or 13 years old...but, as a circumcised woman, I do not have a problem with FGM. I have four children. One has died but my programs have been very successful."

"She asked why people from the West come to her nation and talk about FGM but not polygamy."

Ann Gloag, who had just returned from Kenya a few days earlier...
We are fortunate that obstetric fistulas are very rare in Britain today. They have been eradicated in most countries since the 1930s.

Ann Gloag might be petite in stature but she is feisty, candid and not easily intimidated, and she can laugh off being offered a marriage necklace after helping another tribal leader who had 12 wives. “That would be the biggest mistake he ever made— I still have the necklace and choices, so let’s not forget I have an opportunity,” she jokes heartily.

Sierra Leone’s First Lady has a valid point: most young girls are married to an older man with many wives. “FGM has come up the political agenda recently. It is an injustice to the women. They are married to an older man with many wives. For them, their lives are over and they are baby machines,” she explained Ann Gloag. “So it is about educating them and giving them understanding of which gender they are going to be.”

“Probably the worst thing that can happen in your life is becoming an orphan. Right from the start you are so protected. No-one would ever make – I still have the necklace and choices, so let’s not forget I have an opportunity,” she jokes heartily.

Many women and girls, especially in sub-Saharan Africa, present with fistulas as a result of obstructed labour during pregnancy. The condition is preventable, and in many countries, obstetric fistula is preventable provided adequate antenatal care is received and obstructed labour is identified and dealt with promptly.

For nearly 30 years, Mercy Ships has been working to eradicate fistula in Africa. In Madagascar, when the Ebola outbreak struck the mainland, AHNIECA (the Fistula Unit) was opened in 2002 and offers a primary education for orphans from three until 14. The Jonathan Gloag Academy, named after the husband of the organisation’s founder, is open to both boys and girls living in the local community. The school has a high pupil-teacher ratio: 1:10, which is 10 times the national average, giving the children an excellent educational grounding.

During the ship’s arrival in 2007, 50,000 women had this fistula problem. So the Mercy Ships medical team surprised them with joy when they were told that Mercy Ships always undertakes a land project, so they decided to refit one of the wings of the local hospital, and create a fistula centre. I was called and asked if I would take it over, which I did not.

Since the launch of the Africa Mercy in 2007, Mercy Ships has provided medical care to more than 400,000 people, averaging 4,000 patients per year. In 2017, Mercy Ships will double their capacity with the construction of a second hospital ship, the Africa Osprey. Mercy Ships is a non-denominational Christian humanitarian organisation which since 1979 has operated the world’s largest civilian hospital ship.

In Africa, where there is little or no trained medical help, women suffering from fistula experience other complications, such as infections, deep scars, and sometimes even death. A fistula is a hole through the wall between the bladder and the vagina, or between the rectum and the vagina, which leads to incontinence, severe infections and infertility.

We are fortunate that obstetric fistulas are very rare in Britain today. They have been eradicated in most countries since the 1930s.

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We are fortunate that obstetric fistulas are very rare in Britain today. They have been eradicated in most countries since the 1930s.

Many women and girls, especially in sub-Saharan Africa, present with fistulas as a result of obstructed labour during pregnancy. The condition is preventable, and in many countries, obstetric fistula is preventable provided adequate antenatal care is received and obstructed labour is identified and dealt with promptly.

For nearly 30 years, Mercy Ships has been working to eradicate fistula in Africa. In Madagascar, when the Ebola outbreak struck the mainland, AHNIECA (the Fistula Unit) was opened in 2002 and offers a primary education for orphans from three until 14. The Jonathan Gloag Academy, named after the husband of the organisation’s founder, is open to both boys and girls living in the local community. The school has a high pupil-teacher ratio: 1:10, which is 10 times the national average, giving the children an excellent educational grounding.

During the ship’s arrival in 2007, 50,000 women had this fistula problem. So the Mercy Ships medical team surprised them with joy when they were told that Mercy Ships always undertakes a land project, so they decided to refit one of the wings of the local hospital, and create a fistula centre. I was called and asked if I would take it over, which I did not.

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Physicists from Heriot-Watt University, together with their international partners, have created a device consisting of just a few sheets of atoms that can load single particles, such as electrons, one-by-one. Researchers around the world are investigating materials which could be used in 'hardware' for future technologies which exploit the bizarre properties of quantum mechanics.

Control of quantum particles – down to a single particle – is an important step towards processing, storing, and communicating quantum information with this emerging technological platform.

The Heriot-Watt research team found a single sheet of atoms offers the ultimate limit in miniaturisation of flexible electronic and photonic devices. Beyond just physical size, two-dimensional (2D) crystals are intriguing due to highly unique optical, electronic, and mechanical properties.

How does this research fit into the wider picture of quantum communications?

Professor Gerardot explained: “A quantum communication network will enable communication which cannot be hacked, protected by the laws of quantum mechanics. To realise this over distances larger than a few kilometres requires one to build a so-called quantum repeater, in which flying particles of light (called photons) can be linked quantum mechanically (or entangled) to stationary particles like electrons – in particular their spin-degree of freedom.”

He told Panmure House Perspectives: “Engineering such a spin-photon interface is very challenging, and our result shows that this may be possible in a new type of material system based on single sheets of atoms which we combine to make a device just a few layers of atoms thick!”

The work has been carried out by the Quantum Photonics Laboratory at Heriot-Watt University by Mauro Brotons-Gisbert, Artur Branny, Santosh Kumar, Raphael Picard, Raphael Proux, and Professor Brian Gerardot from the Institute of Photonics and Quantum Sciences.

Professor Gerardot, added: “Our results show that we can make such devices at the quantum level – controlling a single trapped particle in a deterministic way.”

What kind of applications might this work lead to? “Similar to how electronic transistors followed Moore’s Law over the last 50 years and enabled pervasive computing in society, a similar revolution will occur with light. In addition, these integrated photonic chips will enable technologies based on single particles of light (photons) which can harness the bizarre properties of quantum physics for a range of new quantum enhanced technologies.”

The researchers believe these quantum photonic technologies could transform cyber security, drug discovery, machine learning, communications systems, magnetometry, navigation, and more.

This research is likely to surpass the much-vaunted arrival of 5G communications, heralding the Internet of All Things.”

The team collaborated with Mason Gray and Kenneth Burch from Boston College in the US and Kenji Watanabe and Takashi Taniguchi from the National Institute for Materials Science in Japan.

Dr Mauro Brotons-Gisbert explains: “According to quantum mechanics, when the quantum tunnelling is highly likely, a single particle’s position can be described by a probability that it is located on both sides of a solid barrier. In our device the solid barrier or ‘wall’ was a single sheet of atoms, so the probability by that it could be on both sides was very high, and we were able to tune this simply by changing a voltage to a device. This led to dramatic effects when the light was emitted from the quantum dot.”

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The year 2021 will mark the 200th anniversary of the first Institute of Mechanics, first known as the Edinburgh School of Arts. This pioneering educational institution, which later became Heriot-Watt University, has transformed the world in a way that is barely perceived today. For Heriot-Watt, the pioneering global reach of the first Institute of Mechanics and its focus on widening access to education remain embedded values.

THE CLOCK-MAKING GENIUS: Robert Bryson joined self-taught Leonard Horner in the foundation of an educational institution for mechanics. This portrait was taken by photography pioneers David Octavius Hill and Robert Adamson and is part of the Edinburgh Photographic Society Collection, gifted in 1987 to the National Galleries of Scotland.

As President of the Geological Society of London he took great delight in geological field work and the discoveries made in earth and natural sciences. He is also known as the first wrangler of the University of London. His life has been the subject of several accounts, most notably the biography by Patrick O’Farrell (Leonard Horner: Pioneering Reformer, 2010) of Heriot-Watt University’s Edinburgh Business School.

I draw attention to Horner’s passion and journey as a backdrop to my assertion that the development of the first Institute of Mechanics arose from a warmth and concern for the development of human talent to meet local business needs, not from a political or religious movement or other external drivers. Horner has been described as a force that set out to humanise urban capitalism – and indeed from my reading this describes him well. It was this intense passion that became ignited on the meeting of Horner and Edinburgh clockmaker Robert Bryson.

When Horner called into 8 South Bridge Street in Edinburgh’s Old Town he spoke to the owner Robert Bryson about his relatively new clockmaking business. Bryson was an inventor of scientific instruments and an horologist. They had much in common since Bryson had an interest in the cosmos and had designed a sidereal clock used to enable astronomers to locate celestial objects at the Calton Hill Royal Observatory in Edinburgh. He knew about the deployment of gravity using mercury, weighted wind-up clocks and novel clocks such as the rolling-ball clock. He had an eye for precision and also developed compact pressure barometers in the family business.

Horner and Bryson talked of the difficulty of developing mathematical skills in employees, since knowledge of physics and maths was so important to the design and manufacture of these technical objects. There were two issues: the cost for the individuals and also the timing of existing classes in mathematical education. As Horner developed the concept, Bryson was highly supportive of the notion of a new night school for technical arts.

THE FIRST PUBLIC CHEMISTRY LECTURE

Within just a few weeks Horner had developed the plan with a wider group that met on 19 April 1821. They then published a prospectus for fundraising.

Leonard Horner was one of those truly extraordinary individuals who did not complete a formal university education, was largely self-taught and acquired deep knowledge of society, geology and significant proficiency in French, Dutch, German, Italian and Latin.

The notion of a ‘formal’ education needs to be seen in the context that in the late 1700s students paid to attend lectures by professors, and they were in effect offered great choice and many pathways of study. Whilst at Edinburgh, Horner took great pleasure in learning chemistry, mathematics and philosophy, but left aged 19 to join the family business.

This was a period when science was expanding horizons and feeding intellectual and practical endeavours. Horner was an avid reader and debater and in 1804 was well acquainted with Adam Smith’s book The Wealth of Nations and associated debates of this enlightenment period that was such a feature of life in Edinburgh. He was soon to move to London but returned to Scotland after some ten years, subsequently travelling widely over Europe in part as an underwriter for Lloyd’s Insurance and later as a linen trader. Horner’s legacy was to be profound not only in the establishment of inaugural Institutes of Mechanics in Scotland and England, but also as a driver of education and industry and a geologist of repute. His passion for education ensured that the Industrial Revolution, giving rise to manufacturing factories across the UK, was not executed at the expense of child labour. He was the overseer of the Factory Act (1833) for over a quarter of a century.
The spirit of the business plan was to enable wide access to a scientific education but with students being expected to contribute something towards the cost and the wider business community providing the start-up and some operational funds. The prospectus was published and through the network of the enlightenment a strong list of subscribers emerged, supported by wealthy Edinburgh citizens such as the Walter Scott, Lord Cockburn, Robert Stevenson, Alexander Naismith, William Playfair and theCraig family of Riccarton. Many agreed to give annual subscriptions to help pay for the cost of classes and so to set up evening classes with fees that working men could afford. It is interesting to scan some of the well-known names in the full list of subscribers provided in the first Annual Report in May 1822. One might also comment that such reports were very full in length and detail, suggesting the voracious appetite for and dedication to reading in that era. Following the rapid raising of funds, notices appeared advertising the new classes. Prospective students purchased tickets in instalments (from Bryson’s shop) and within a month over 450 had enrolled. The institute had been established in just a few months!

So on 16 October 1822 the Edinburgh School of Arts, or the instruction of mechanics in such branches of physical science as are of practical application in the art called Mechanics, was opened in the Old Town, the home of the Grand Lodge of the Freemasons of Scotland. It was indeed a grand location for the new students. The curriculum was resolutely focused on mechanics, physics and chemistry (that included earth sciences). Later it included a broad range of mathematics. Students could also board here. This first Mechanics Institute had a simple curriculum that focused on a scientific syllabus. Some have commented that it was ‘just appliqué’ based on ‘speculative philosophy’. For this reason the Edinburgh institute has been called the parent exposition of the original idea of a Mechanics Institute. My examination of the curriculum would draw a slightly different conclusion since, with subjects such as astronomy, anatomy and the motion of machines, they were all issues of direct relevance to the emerging life of the Industrial Revolution. The education was focused on practical professions. Whatever the topography was clear the instruction had an impact. Within 30 years there were 700 Mechanics Institutes in Britain.

The FLourishing of an Institute

Over the years the syllabus was extended to include English, French and drawing. Other significant developments included the first working-class examinations and the inclusion of courses for non-graduate men. The first Mechanics Institute gave rise to a whole school system that flourished. The number of subscribing members increased rapidly, and the Mechanics Institute’s name was changed in 1851 to the Watt Institute and School of Arts. Watt had become a world-renowned name for his work on power systems and engines. His work was very visible in the inaugural years of the School of Arts, as almost powerful in paintings that depict his work, in the极大的 port of Leith, in a sailing ship that is being tugged into the port. In contrast, Watt’s work is shown in more solemn form from serious backgrounds, but there were some wealthy scholars such as James Naismith, son of landscape and portrait painter Alexander Naismith James Naismith was one of the first students of the Watt Institute and later invented the steam hammer. As the School of Arts developed, it became clear that there was one main reason to be there. Pioneering local engineer Mary Burton led a successful campaign to attract women in 1869. The Watt Institute was well over 20 years old as a place of activity and opportunity, where women were only allowed to graduate following an Act of Parliament in 1889. This heritage for widening access and equality of opportunity remains a strong value for the university.

Further financial difficulties were encountered by the Institution following widespread city redevelopment, including the demolition of Adam Square and an enforced move to premises in Chambers Street. In 1873 the directors of the Institution agreed a merger with the George Heriot’s School for Boys to form the Heriot-Watt College, with an original Board of Directors and a Life Governor of (the latterly named) Heriot-Watt College. Over the years the syllabus was extended to include English, French and drawing. Whatever the taxonomy, it was clear the education had an impact. Within 30 years the new famous UK government committee chaired by Lord Biddulph made momentous proposals for the expansion of higher education. In 1964 the government announced that Heriot Watt was to be one of the first of a ‘new breed of technological universities’. The University gained its Royal Charter in 1966. With this new status, the College Principal Hugh Nisbet became Heriot-Watt University’s first Principal and Vice-Chancellor. In line with the significant status change, but also in the historical spirit of the Institution’s pioneering approach, a new degree with the prefix Computing Science was launched. It was the first in Scotland and had a profound impact on the economy and global digital industry. Like so many things, the University was pioneering in the frontier programmes it offered. Further expansion continued, including the opening of the Mounth懦旧 building in the Grassmarket in 1968 for Electrical engineering, Management, Languages and a ground breaking new television centre. But there was precious little room in the crowded Edinburgh city centre to build new research and teaching laboratories. A new campus commitment was made to the southern Edinburgh region, with new campuses in Edinburgh, Leith, in a sailing ship that is being tugged into the port. A further example of the University’s intent on outreach and connectivity was the purchase and care of a famous building, Playfair House. Here were housed the economist and moral philosopher Adam Smith, just off the Royal Mile in the Edinburgh Old Town. It is now refurbished to its almost original splendour, a place of international outreach and education for Edinburgh Business School. 

In 1955 the University of Edinburgh and the Edinburgh College of Art merged to become Heriot-Watt University. The College had also forged academic partnerships with Edinburgh University. This included teaching Mining, Electrical and Chemical Engineering, and delivering Building Science courses to the architect students at the Edinburgh College of Art. Over time the College moved its focus to degree level and postgraduate studies. The original department moved to Napier College in 1964, signalling the end of an era, and the evolution from college to university was almost complete. In 1963 the new famous UK government act named (the latterly named) Heriot-Watt College.

TICK TALK

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ON THE PATH TO LEADERSHIP

MICHIELI LIU, who graduated with her MBA from Edinburgh Business School, Heriot-Watt University, last November, talks about her inspiring journey and the challenges of working and studying in Dubai.

Interview by KENNY KEMP

Her move to Dubai, her first trip outside of her homeland, was inspired by a former college friend who pointed out a job opportunity for her.

"There was a company in Dubai recruiting from China, and I encouraged me to try. I wasn't that interested in the beginning because I wasn't familiar with Middle Eastern countries or culture. However, I was young and ambitious and my friend said there was no harm in trying.

Michelle landed the job and thought it was too good a chance to pass up. "I thought I'd give it a try and if it didn't work out, I could always return to China. I worked for the British fashion brand Burberry in the Middle East for a while but learned that retail was not for me. I started looking around and uploaded my CV online, then a television station called me. I went for the interview and got an offer to join the City 7 English TV channel in Dubai."

Michelle became a news presenter on City 7's Mandarin channel. "I was on camera five days a week. I had a good time and I liked my colleagues a lot. I presented a news programme for two years and it was a great experience until I got a call from my current organisation. I made the move from media into education. It sounds like a big jump. For me, education is more meaningful and sustainable."

"I decided to study one of the subjects in China and also appreciate the multiple benefits of completing a degree there. Originally from Sichuan province, China, she has lived in Dubai for over six years and took the decision to enrol with Heriot-Watt University in Dubai. She already had an undergraduate degree in English translation from Sichuan, the Sichuan International University.

"My first job was working for a packaging company in Hong Kong and I was travelling back and forth within China."

Michelle believes everyone should have equal access to education and if there is one thing she could change about the world, it would be education systems and professional development courses, as well as offering "equal access to education for refugees."

Michelle added: "I currently work in the education industry, and by nature, it is a meaningful field – I hope I’m already making a positive difference to the communities that I serve."

"One day I want to be a leader. I didn’t know before my EBS journey that there were courses on leadership. But after studying it I feel I already have some of the skills. There are some aspects I don’t have yet, but there is a way to form such skills to become a good leader."

Michelle is involved in building governmental relationships between China and Dubai.

"We are here to make people aware that Dubai is a study destination. I’m basically involved in a programme called Developing the Future Acrobat. These initiatives are run by the Dubai government to make the country the most innovative place in the world.

Michelle is also involved in the Dubai Wellbeing Census with KEEDA partnering with the South Australian government to carry out censuses across all private schools in Dubai to improve wellbeing.

She enrolled at Heriot-Watt in Dubai in 2016 and her postgraduate journey began.

"The hardest part was accounting and finance. I finished eight subjects on my own without too much difficulty, although I was concerned with the Heriot-Watt tutors. But it was all too easy to fail, so I studied with a group of my classmates. I also spent extra time studying in the university libraries. Our group are still all in touch, I become good friends with three classmates in particular, who really helped me a lot. She said.

Michelle Liu believes self-discipline and determination helped her to achieve her goals.

"It was not as easy as I thought it might be. In the beginning, I took it very lightly, but I soon realised how important this was to me. I studied for two and a half hours without a proper break," Michelle said.

"I don’t need to have the degree and it adds value to my career. For Forbes ‘Best University’ at the Middle East Higher Education Awards 2019. The University and the Business School are absolutely delighted to achieve this benchmark with our students and graduates and we are proud of our results."

Michelle is currently working in the education industry and by nature, it is a meaningful field – I hope I’m already making a positive difference to the communities that I serve."
Technology has changed the way we shop but how do retailers respond? Using Tommy Hilfiger as a case study, Dr Jan Philipp Wintjes, a DBA from Edinburgh Business School, proposes a 10-point plan on how to build an omnichannel strategy in the global fashion industry. KENNY KEMP reports.

Technology and fashion: a recipe for success

The global apparel retail industry might be massive – worth an estimated £1,300 billion in 2019 – but it is in the throes of a revolution. The rapid march of digital technologies, which include shopping via smartphones and tablets, is changing consumer behaviour beyond all recognition. In today’s retail environment, praiseworthy consumers are increasingly influenced by Facebook, Twitter and Instagram, and hop between brands and between off- and online distribution channels without pre-defining which store they will eventually use. Consequently, retailers are having a rough time. They are struggling to know how best to respond to the needs and wants of each individual consumer. Companies need to provide their consumers with new channels of information and purchasing in order to stay in touch.

Demanding consumers now expect all retailers to offer an omnichannel shopping experience, which delivers seamlessly across mobile, online and in-store merchandising platforms. But how does the fashion-conscious apparel industry, characterised by short product life cycles, numerous product varieties and unpredictable consumer demand, respond with any degree of agility?

The retail fashion industry is not only fast moving but also complex and continuously affected by numerous multidirectional challenges and changes. It relies on a global supply chain consisting of the textile industry that develops the raw materials and supplies the garment-making design and distribution sector, and the retail distribution to the consumer. Vertical integration means many brands and retailers are involved in every step of this chain, from design concepts and manufacturing through to sales in their own retail outlets.

Dr Jan Philipp Wintjes, who worked at Tommy Hilfiger, was granted permission to use the omnichannel strategy he developed at the fashion apparel giant, which is being implemented and can be assessed in the future.

An omnichannel retailing fashion brand must aim to engage consumers everywhere via integrated, seamless experiences.

What exactly is omnichannel?

Omnichannel has become a fashionable buzzword but how does a fashion brand implement a strategy?

The topic of omnichannel is gaining greater attention from practitioners and researchers alike. However, many retailers still struggle to transform their focus purely towards omnichannel. As Dr Wintjes notes, “fashion retailers have focused special attention to the research question of ‘What is the best way to build an effective and holistic omnichannel management strategy for fashion retail brands?’”

An omnichannel retailing fashion brand must aim to engage consumers everywhere via integrated, seamless experiences.

For example, Tommy Hilfiger’s stated goals for 2020 include piloting services for ‘click and collect’, which enables consumers to order from the Tommy.com online shop and collect items from one of its brick-and-mortar stores, and shop ‘online-offline’, which allows consumers to check online if certain items are available offline. Other pilot services include store-in-store, enabling shoppers to buy products from anywhere in-store and have orders shipped to their store or their home.

Additional services include allowing consumers to return online purchases to physical stores, to reserve items in-store from the online shop via ‘click and reserve’, and to fulfil orders from physical stores in order to shorten lead times.

To remain competitive in the digital age, traditional brick-and-mortar retailers face the challenge of reading to ever-changing consumer behaviours.

“Omnichannel management is one of the major topics discussed in current literature; studies focus on single facets only but rarely on the big picture. Accordingly, there are hardly any process models that guide organisations in determining an appropriate omnichannel strategy,” argues Dr Wintjes.

His research question of ‘what is the best way to build an effective and holistic omnichannel management strategy for fashion retail brands?’ resulted in a 10-step guide on how to achieve omnichannel implementation. Key focus areas included consumer focus, omnichannel definition, retailisation statement, channel strategy, IT infrastructure, change management, strategy implementation, organisational set-up, wholesale business, and omnichannel test field.

Tommy Hilfiger is set up as a matrix organisation, structured in terms of regions, divisions and support functions. The regions include Europe, which contributed 45% of global sales, the Americas and Asia, while the divisions are separated into Tommy Hilfiger men’s, women’s, accessories, licenses, Tommy Icons, and Collection. Support functions include the departments of HR, marketing and communications, retail and E-Commerce, legal, logistics, IT, finance, and central operations.

In 2015, 59% of Tommy Hilfiger’s European net sales were generated through its wholesale distribution channels, 36% through its operated retail business, and 5% through the brand’s own online shop, Tommy.com.

The future of global retail: Revolution

The fashion apparel industry is characterised by complex decision-making processes at its various stages. These include decisions concerning where and when to produce, the planning of scheduling operations, forecasting of production as well as the ongoing analysis of fashion trends. The request for short bulks of production, rapidly changing demand and squeezed costs pushed by an increasing demand of just-in-time production lead to an even more complex and difficult process of decision making,” said Dr Wintjes.

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The research involved both formal and informal interviews with key team members and departments within Tommy Hilfiger who were working on the omnichannel strategy. A series of questions was also formulated asking about the considerations involved in deciding to go omnichannel. It was clear from respondents that this is interpreted differently by different stakeholders, even within the same organisation; however, all agreed that the business had to be consumer centric and focused on delivering change.

Tommy Hilfiger concluded that secondary initiatives such as click and collect can only be decided on if companies have a clear definition of their strategy. Yet, fashion industry companies need to respond rapidly to customer demands and are therefore often pushed towards short-term implementation of something online as soon as possible. Fashion retail brands have little choice but to proceed with their solution, often without conducting a readiness check.

As one respondent said: “If fashion retail brands do not offer advanced omnichannel services and innovations, they miss the chance to stay relevant and run the danger that they disappear.”

Pointing out that all companies should analyse their processes and systems, Dr Wintjes asked what kind of analysis Tommy Hilfiger undertook before deciding to go omnichannel. Again, it was shown that in such a fast-moving industry, it was not possible to have an exact return on investment (ROI) calculation. Several respondents said an ROI calculation was difficult because there were too many assumptions and a clear return was not easy to calculate. As one respondent emphasised, “Staying relevant was more important than calculating ROI.”

The Imperatives of IT and Data

Furthermore, it was argued that all IT systems and processes needed to be aligned to implement omnichannel initiatives. Using big data wisely can help develop better decision making. One respondent said good project management preparation is the key for omnichannel success. Companies need to set up and implement an omnichannel strategy across the company and between all departments, a strong team or person with a direct link to the CED is needed. This team or person is responsible for overviewing all processes and coordinates and manages the entire transformation across the company.

The Omnichannel Study

Dr Wintjes also developed a road map for Tommy Hilfiger who wishes to move towards being experiential. They have decided to implement an omnichannel strategy. Once the strategy is clearly defined, an action plan is required. In Tommy Hilfiger’s discussion took place about what such a plan should look like. One view was that there was no magic formula which companies can copy and paste in order to make an omnichannel strategy work for them.

“Companies need to try, try, test and learn and adjust and repeat.”

According to one person it is put: “There is no cookbook Consumers change all the time. You need to trial and error. Companies need to find and create an environment that allows them to try different initiatives and to analyse what works. They should not be reluctant to start without having a full strategic plan in place. Rather, they need to be able to jump in.

In this case, stress, workarounds, and it is certainly no ideal situation or set-up, but it is part of dealing with the fast-changing environment.”

However, there was also a need to make assumptions and analyse the potential of the established omnichannel initiative. It was important not to stop so quickly because in time, you will change.

Dr Wintjes used his findings to identify 10 key stages in creating an omnichannel strategy.

**1. Consumer Focus**

Findings confirm advancement of consumer shopping behaviour towards being experiential. Consumers change all the time. You need to trial and error. Companies need to find and create an environment that allows them to try different initiatives and to analyse what works. They should not be reluctant to start without having a full strategic plan in place. Rather, they need to be able to jump in.

**2. Omnichannel Definition**

Findings discover need to expand any omnichannel strategy approach by a clear and common definition. An omnichannel is pushed by digitisation, the definition should incorporate digital focus.

**3. Rolling Vision Statement**

Findings confirm need for formulating and selling out vision statement. Findings refine approach by asserting need for creating a rolling vision statement.

**4. Role of the Channel Strategy**

Findings confirm need to define channel-specific strategies. Findings offer strategic theories by adding importance of holistic omnichannel view.

**5. IT Infrastructure**

Findings confirm functional business process system as prerequisite for successful implementation. Findings add detail of efficient master data management to be key prerequisite.

**6. Change Management**

Findings confirm top management involvement as essential. Findings expand approach by combining change management and common target setting.

**7. Strategy Implementation**

Findings confirm customer adoption as being prerequisite for implementation. Findings add a role of strategy as prerequisite.

**8. Organisational Setup**

Findings confirm need to establish core team to follow successful and efficient strategy. Findings outline organisational setup within any organisation.

**9. Wholesale Business**

Findings recommend expansion of any theoretical model. Fashion integrating the distribution channel of wholesalers.

**10. Omnichannel Test Field**

Findings confirm need for implementing by introducing towards an omnichannel test field.
The study of entrepreneurship within existing organisations is highly relevant today. Around the globe, businesses and organisations are seeking to release more innovation and value from their existing workforces. This is particularly true for the Middle East and for the entrepreneurial region of the United Arab Emirates, where the economies have been among the fastest growing in the world over the past 25 years. Yet how do companies’ emphasis on entrepreneurship and individualism agree with the dominant collectivist culture in the Gulf region?

This consortium attracted the academic interest of Marina Arnaut, who was deputy director in the Dubai office of Swiss textile company Paul Reinhart AG from 2000 until 2006. Previously she had been working in the company’s Turkmenistan office.

“I was involved in various contract negotiations and building public relations with local and international authorities, as well as working on expanding visibility of the company in the region and building customer loyalty,” she explained.

Marina Arnaut was one of the first students to complete a Master of Science at Heriot-Watt University’s Dubai campus in 2008. She decided to continue her academic journey and enrolled on the MSc programme in Strategic Project Planning.

“I initially thought that this would help me with my career growth but it has opened up a new academic road for me,” she said.

“I have a BA and MA from Turkmen State University, which is part of the former Soviet Union. Then I worked in quite a few foreign companies such as the Turkish construction company Ucgen and the Argentinian construction company Libra, before joining the Turkish construction company Ucgen and the Turkish construction company Libra. It has been a good decision to work in quite a few foreign companies such as the Turkish construction company Ucgen and the Argentinian construction company Libra. It has been a good experience to work in different cultural worlds. Research suggests that companies trying to develop their business ideas in the organisations’ mosaic of cultures.”

Marina Arnaut then decided to pursue a PhD, dedicated to her two children, Alexey and Amina.

“I truly enjoyed studying at Heriot-Watt. Despite the hard times and pressure, the level of education and knowledge I obtained from my tutors, in particular my dissertation supervisor Dr Tim Chadwick, and my PhD supervisor Dr Umit Bicici, has played a big role in my deeper understanding of the competitive business environment such as the UAE. Dr Arnaut said that the balance between induced and autonomous strategic behaviours. The autonomous strategy process involves an individual or a group of individuals, who create a new business entity or bring about innovation inside the organisation but who are not always best suited for collaborative entrepreneurship within large corporate organisations. In looking at the economic complex of the UAE states, it was clear that the early development was driven by political will and powerful elites, with a monarchy based on the traditions of Islam. For many years the UAE had made it possible for expatriates to work in the UAE context. The UAE’s government is taking steps to establish and promote entrepreneurial activities among Emirati nationals, and to encouraging companies to hire them.

However, the demographic imbalance shaped by the country’s previous labour economics created a number of constraints for entrepreneurship at the corporate level. Navigating through complexities in laws, cultures, languages, ethnicities and customs is a daunting task for the UAE companies trying to develop their business ideas in the organisations’ mosaic of cultures.”

The growth and dissemination of knowledge, innovative monopolistic competition, free trade, external and internal environmental factors have all influenced innovation and the entrepreneurial talent of an individual. The term intrapreneur was coined in 1985 for a person within a large corporation who takes direct responsibility for turning an idea into a profitable, finished product through assertive risk taking and innovation. However, Dr Arnaut argued that an intrapreneur is generally an independent and isolated person who is not always best suited for collaborative entrepreneurship with large corporate organisations.

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Entrepreneurship in the Gulf

Multinational companies are increasingly seeking to unlock entrepreneurial activity from their existing workforces. Dr Marina Arnaut, who gained her PhD from Edinburgh Business School, worked for 11 years with several companies in the United Arab Emirates (UAE) and found that the creation of the right business culture was central to success. KENNY KEMP reports.
To address such an eventuality, some companies accolades are seen as poor remuneration for non-interaction on different marketing platforms and active impact on sales when individuals are given freedom to choose the right environment to accomplish their work autonomy and decision making coupled with limited work autonomy and inflexible project failure and learning from previous mistakes. However, the inflexible structure also hinders the autonomy of middle managers to balance the company-top down induced entrepreneurial behaviour with the autonomous behavior of creatively minded employees. The result is, in contemporary business environments, is stifled the entrepreneurship process. The issue originates from a centralised structure common in the UAE, but GCC (GCC Council) states. Organisations that are successful have tended to develop new business models where the hierarchical structure of rules and procedures, which can easily constraint entrepreneurial activity within the workforce, has been steadily improved and amended. Complicated and unilaterally rules, regulations, most of which were observed in structure-related documentation, caused ineffective decision making and hindered entrepreneurial initiatives.

5. THE ESTABLISHMENT OF A FLUID HIERARCHY
Centralised organisational structures greatly benefit employees to provide security and protect them from unnecessary risks. However, the infrastructure also has its flaws, making it harder for middle managers to balance the company-top down induced entrepreneurial behaviour with the autonomous behavior of creatively minded employees. As a result, in contemporary business environments, entrepreneurship is stifled the entrepreneurship process. The issue originates from a centralised structure common in the UAE, but GCC (GCC Council) states. Organisations that are successful have tended to develop new business models where the hierarchical structure of rules and procedures, which can easily constraint entrepreneurial activity within the workforce, has been steadily improved and amended. Complicated and unilaterally rules, regulations, most of which were observed in structure-related documentation, caused ineffective decision making and hindered entrepreneurial initiatives.

5. THE CHANCE TO PROBLEM-SOLVE AS AN INDIVIDUAL
Middle managers use a problem-solving approach to find a balance between a hierarchical structure and low bureaucratic maturity and their role responsible for the assigned tasks to a situation where problems can be solved locally by the members of the department. In conclusion, Dr Arnaut said: “A well-placed promotional system opens an opportunity for middle managers to act more autonomously and to have greater freedom in decision-making. The freedom of information and open communication across all levels of the organization encourages entrepreneurship and the sharing of new ideas. Reward programmes which are well defined are one of the strongest constructs for motivation of entrepreneurial ideas among middle managers.”

Dr Arnaut pointed out that there are tensions between reduced bureaucratic and entrepreneurial behaviour. She said companies must also be aware of the influence of national local culture on organisational culture and entrepreneurial intentions in a multinational context. Among her recommendations, she stated: “Ensure that HR policies are in place such as clear job descriptions and the procedures establishing working hours, and describing under which particular circumstances and to what extent middle managers must be free to pursue entrepreneurial initiatives.”

In the foreword, she stated that special attention must be paid to corporate governance and culture. Companies with a global presence have a more diversified workforce and their company are recognized and generously rewarded by well-established globally-competitive organisational culture. All managers agreed that various rewards and recognitions significantly motivate them to pursue a career path in middle management. Taking the middle managers’ side, there are five points to achieve a balance between autonomy and induced entrepreneurship in a well-managed and structured environment of idiosyncrasy and diversity:

1. THE SUPPORT OF THE BOSS: Middle managers achieve more agile networking structures where boundaries are still tightly defined and compliance with the rules and regulations is expected but where they can also capitalize on and experiment with prototypes. All managers in the sampled UAE companies embrace diversity and hire people from different nationalities and with different expertise in order to create new business models. To pursue new business strategies, National culture has a strong effect on corporate culture, influencing employees not to admit their mistakes. Where the national culture had not been balanced for failure and successful decision-making due to its historical tendency towards hierarchy, but was supportive of entrepreneurial initiative as a new programme initiated by the government.

2. THE MOTIVATION OF REWARDS: Middle managers pursue innovative ideas knowing in advance what rewards they will get on their ideas are approved.

3. THE ABILITY TO MAKE OWN DECISIONS: When middle managers have freedom to set their own goals and objectives for innovation, approved by senior management, this is perceived as a vital mechanism for promoting entrepreneurship.

4. THE OPPORTUNITY TO SET OWN-TIME: Most middle managers are about 10% of their time to develop personal contacts, networking and outside office business meetings. Other managers use about four to six extra hours after work or at weekends to develop innovative ideas and to think beyond the confines of their jobs.

5. THE CHANCE TO PROBLEM-SOLVE AS AN INDIVIDUAL: Middle managers use a problem-solving approach to find a balance between a hierarchical structure and low bureaucratic maturity and their role responsible for the assigned tasks to a situation where problems can be solved locally by the members of the department.

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"The qualities most useful to ourselves are, first of all, superior reason and understanding, by which we are capable of discerning the remote consequences of all our actions, and of foreseeing the advantage or detriment which is likely to result from them; and, secondly, self-command, by which we are enabled to abstain from present pleasure or to endure present pain, in order to obtain a greater pleasure or to avoid a greater pain in some future time."