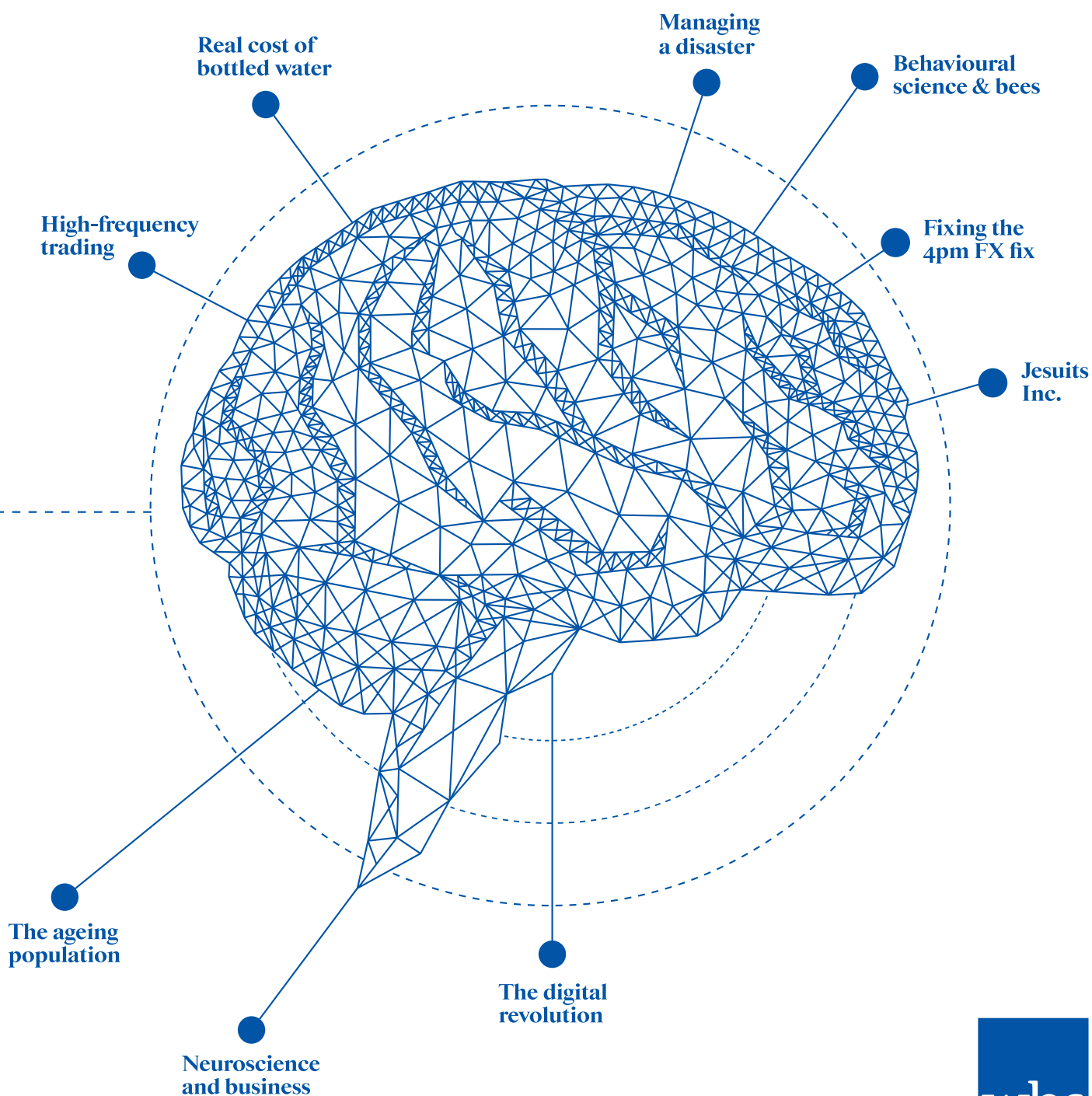


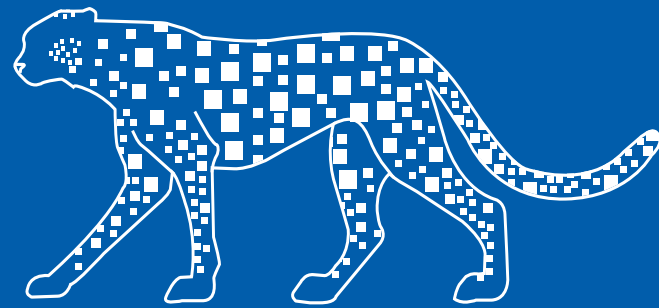
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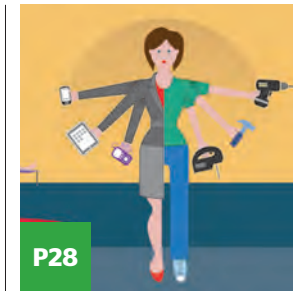
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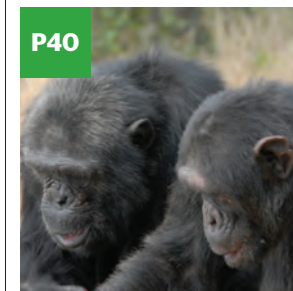
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Introduction



"I hope that you will find plenty to read in our magazine, and we'd love you to visit our website wbs.ac.uk where you can watch films and find out more about our research and teaching."

The Dean of WBS, Professor Mark Taylor has outstanding credentials both in academia and in business. He was previously Managing Director at BlackRock, the world's largest asset manager, where he led the European arm of the Global Market Strategies Group, a large global macro investment fund. He has previously been a Senior Economist at the International Monetary Fund and an Economist at the Bank of England, beginning his career as a foreign exchange trader in the City.

He has been a Professor in International Finance at Warwick since 1999 and his research on exchange rates and international financial markets has been published extensively. He is the only professor at a British business school to be listed as a Highly Cited ISI Researcher; the Repec rankings usually put him in the top one percent - making him one of the most highly cited researchers in the world.



"I'm delighted that one of my first duties as the Chair of the Warwick Business School Advisory Board is to join the Dean in introducing the second issue of the excellent WBS magazine, Core. WBS is a leading, innovative business school which reaches out to business and industry in both its research and its teaching. This edition of Core shows the range and depth of the cutting-edge work being done in the School, and how it is helping to shape the world of business and industry"

The Chair of the WBS Advisory Board, Martin Temple CBE, has extensive senior-level business and industry experience. He is currently the Chairman of EEF, the largest sectoral employers' organisation in the UK, which aims to build an environment in which manufacturing businesses can evolve, innovate and compete in a fast-changing world, as well as Chairman of the Design Council, the UK champion of world-leading design. He has wide experience covering senior roles in production, marketing, operations and strategy in an international context. He has also worked closely with many UK Government departments and in European business forums.

Embracing change is the key to business growth. This second issue of Core looks at some of the threats and opportunities brought about by our rapidly changing world.

The pressures on businesses everywhere are huge - in terms of accountability, sustainability, and leading wisely. We wonder whether a lottery system to choose a Board might hold firms more accountable (*What did the Ancient Greeks ever do for us?* p16), share the *Ten qualities that make a good non-executive director* (p47), explore a new model of leadership in *Play safe to get to the top* (p12), and consider the challenges facing the varied industry that is mining (*Mine all mine*, p36).

Allegations of coordinated fraud in finance are rife, so we look at two topical areas: the murky world of the 4pm fix in *Fixing the fix* (p14), and the milliseconds that mean millions because of high-frequency trading - *The rise of the machines* (p22).

Sustainability, in all its environmental senses, is explored in *The journey of bottled water*, (p20), while business sustainability for the automotive industry is a hot topic in *End of the road for car giants?* (p32). Harnessing the decision-making and purchasing power of women is the theme for *She who holds the purse strings* (p28).

The digital (r)evolution affects us all daily and so we consider the impact that digital innovation is having: in education, in *How MOOCs are changing education*, (p48); in the workplace (*Digital revolution hits the office*, p61);



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what cloud computing means for you (*Beware of the cloud*, p66); and how the explosion in social media is affecting responses to disasters such as terrorist attacks and extreme weather events (*How to manage a disaster*, p56).

Learning from unusual influences is a continual theme at Warwick Business School - we take our inspiration from multiple sources. Read about the evolutionary root of teamwork (*Smells like team spirit*, p40), whether neuroscience can predict management ability (*Does business and management need neuroscience?*, p64), and how we could look to the Jesuits for organisational design (*Jesuits Inc.*, p25). We also consider whether healthcare can learn from business to solve the pressures of an ageing population (*The business of making healthcare work* p08).

For career inspiration see Rory Sutherland, the unruly Ogilvy advertising guru, talking bees and behavioural science (*Dancing to a different beat*, p42), and for your leisure our *City Guides* provide an inside-take on hi-tech Hong Kong (p50) and the fascinating city of Almaty in Kazakhstan (p52).



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We also share a very personal view of favourite books with James Hayton (p54).

Stay in touch with us:

@warwickbschool



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Credits

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As medicine struggles to cope with the costs of an ageing population, **David Brindle** investigates whether organisational science could cure the world's healthcare problems

The business of making healthcare work

Across the globe, the soaring costs of healthcare are shaping up as one of the key challenges of the 21st century. The combined impact of ageing populations, rising patient expectations, and expensive drugs and technologies is driving a search for new models of care capable of delivering both better results and greater value while retaining the essential

ingredient of human compassion. As experience in the UK has shown, that can be something all too easily lost in the quest for productivity gain.

Delegates from 67 countries gathered in December 2013 in Qatar to discuss this challenge at the World Innovation Summit for Health. Lord Ara Darzi, the acclaimed surgeon and former English Health Minister

who was Executive Chair of the event, told them that innovation was the key to sustainable healthcare systems. But too often, he lamented, public policy failed to support innovation and practice struggled to keep up with it.

A principal speaker at the summit was Simon Stevens, the new Chief Executive of NHS England who was then concluding his term as President for Global Health with UnitedHealth Group, the US-based healthcare company. Intriguingly, he forecast that breakthrough innovations would in future come not so much from within the healthcare world, traditionally via bench-based medical research, but from beyond it.

Transformative opportunities

“My hunch is that it is going to be capabilities developed outside the health sector, particularly the so-called general purpose technologies, that will unleash many of our most transformative opportunities over the next decade or so,” Stevens said. “A lot of opportunities are going to come from innovation at the interface of business, engineering, and information science. We are likely to see, as a result, major change in the type of care, the place of care, and the care provider, as mobile sensors, cloud computing and data inter-operability connect.”

Business schools are ideally placed to play a major role in such a scenario. They have the potential to bring to the often insular healthcare world insights from other sectors, to forge creative partnerships with those sectors and, perhaps most significantly, to apply a practical approach to problem solving that has hitherto been lacking.

“Healthcare is not just about using clinical evidence, and arguably there's an abundance of that out there, but about how you organise and manage it more effectively and efficiently,” says Graeme Currie, Professor of Public Management at Warwick Business School (WBS) and Head of its Organising Healthcare Research Network. “The problem is getting clinical evidence into practice – I always say, moving from what you know to what you do – and that's where a business school has a clear perspective.”

Currie is leading a growing WBS involvement in healthcare, both in the UK and overseas. It's an important emerging source of work and revenue for the School, but it can also be seen as making a significant statement about values, and about business in society, in the wake of the financial crash and some of the excesses that were then exposed in the business world.

“A major part of the WBS mission is focused on social

responsibility, and health and healthcare is a key part of that,” says Currie. “It's good for the reputation, good for the brand, to be contributing to the bottom line of health outcomes as well as wealth outcomes. When you look at the ageing population, for example, we already have a good deal of knowledge. Let's play into that field and try to make a difference.”

Breaking down the silos

Penetrating the healthcare sector has not been easy, however. And that would be no surprise to critics who see it as the most siloed of any sectoral silo, resistant to overtures from the outside world and dominated by strong and fiercely defensive professional interests.

Several business gurus who have sought to take on such interests in the past have ended up in undignified retreat, licking their wounds. After a bruising attempt to initiate change at Rotherham General Hospital in South Yorkshire for a television series, former Granada Chairman Sir Gerry Robinson reflected: “Anything that involved more than two disciplines was pretty well guaranteed either not to happen or to happen very slowly.”

Eivor Oborn, Professor of Healthcare Management at WBS, might not go so far. But she observes: “People outside healthcare often don't understand the difference of the healthcare cosmos. If you walk into a hospital and talk to a surgeon, you find they are thinking differently from people on the street. They want things in neat and concise boxes – tick, tick, tick. Their training has a lot to do with it.”

Ruth McDonald, a former senior National Health Service (NHS) Manager who has recently joined WBS as Professor of Governance and Public Management, thinks this characteristic is often mistaken for resistance to change. “It's more that they don't have a mindset around systems and organisation,” she says. “I've got shelf-loads of books about

so-called medical power, but in my experience doctors often feel powerless. They can see what needs to be done, and what would make things better, but they don't know how to go about it.”

Transferable insights

The very complexity of healthcare – its professional tribes, its history and traditions, its supposed mystique – makes it an attractive proposition for academic study. As Currie argues, if you can find management approaches that work in health, they are likely to be applicable in a



“Healthcare is not just about using clinical evidence, and arguably there's an abundance of that out there, but about how you organise and manage it more effectively and efficiently”

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range of complex organisations in other settings. But research, however insightful, has typically stayed rooted to the printed page: translating findings into practice has usually proved an insurmountable barrier.

Working with healthcare managers is the key to overcoming this barrier, Currie thinks. By ‘managers’ he does not mean simply general managers, perhaps three per cent of the total staff of a hospital, but what he describes as ‘hybrid middle managers’ those who may sit within clinical groups but who exercise some budgetary or supervisory responsibility. All told, he reckons they account for about one in three hospital staff.

“They have some purchase on delivery of clinical services, though we might debate how much, but critically they have an almost unrivalled ability to share knowledge within and between healthcare organisations,” Currie says. “They have the ability to act as a two-way mirror, capable not just of assimilating top-down management knowledge but also of translating ideas arising from clinical practice back up into their organisation.”

Another, overlapping, group identified as central to efforts to affect knowledge transfer and embed change, at least in the early stages, is that of ‘boundary spanners’. These, Oborn explains, are individuals operating within professional tribes with a designated – and funded – role to mediate between those who create knowledge and those who deliver care.

Learning from Canada

Oborn has been involved in the evaluation of the Improving Access to Psychological Therapies (IAPT) programme in mental health services in England, in the implementation of which boundary spanners have often played an influential role. The concept of more formally developing the role of boundary spanners in healthcare services was developed in Canada, but was undermined there when central R&D funding ran out and local

services refused to foot the bill. The same issue dogs the model in the NHS.

“Given the budget problems that healthcare organisations currently have,” Oborn says, “in order to convince them to allow a person who is a boundary spanner to come to a meeting, say, you need to be able to say you will make up for their time. Without the funding to do that, it’s not a self-sustaining model.”

Austerity hangs heavy over this agenda. The NHS in England is focused on achieving four per cent annual efficiency savings, leaving no room in its ‘protected’ budget for the rising costs of an ageing population or technology and drugs, while healthcare spending across the 34 Organisation for Economic Co-operation and Development (OECD) countries has slowed markedly since 2008 and fell in 11 of them between 2009 and 2011. Only Israel and Japan increased spending during that period.

An ageing population

Throughout the OECD countries, however, numbers of older people – the biggest consumers of healthcare – are spiralling. The proportion of people aged 65 or over is projected almost to double from 15 per cent to 27 per cent between 2010 and 2050, with the proportion aged 80 or over projected to increase from four per cent to nine.

At least half of all hospital admissions worldwide involve older people: in England, as many as 65 per cent of admissions are of people aged 65 or over, while people aged 85 or over account for 25 per cent of bed days – and rising.

Currie keeps in mind the illustrative case of a 78-year-old who falls and breaks her hip, requiring admission through A&E for surgery at a cost in excess of £15,000. At her age, she runs a 30 per cent risk of later dying as a consequence of the trauma and about the same risk again of ending up in residential care. Reconfiguring services around her needs could help prevent the fall in the first

place, but, as he says: “If I am a hospital Chief Executive, or a powerful medical Consultant, am I going to give up resource for that?”

It’s a question very much on the mind of Annette Benny, Managing Director Delivery at Northern, Eastern and Western Devon Clinical Commissioning Group (CCG), which arranges healthcare for 890,000 people. That includes, in some localities, numbers of very elderly residents that already match the projected profile for the rest of the country 20 years hence.

“We’ve done some work around frail elderly care pathways and, as a result, non-elective admissions to hospital are holding steady,” Benny reports. “But where do we go next?” To help answer that, the CCG is working with WBS to gain a better understanding of the issues surrounding patient flows and behaviours. Because it is one of only a handful of CCGs to have retained in-house its business or commissioning support function – rather than delegated it to an NHS commissioning support unit – the analysis will be fully rounded.”

Use business intelligence

“What we want to know is how we become really slick,” says Benny. “How can we really raise our game by becoming better at using our business intelligence to add value to the commissioning process?”

Having undertaken a personal development programme at what is now the NHS Leadership Academy; Benny is comfortable with what she calls a “research-y” business school approach. “We are absolutely open-minded,” she insists.

“We are passionate that what we create here has got to be the right thing, so if what comes out is something very different, then yes, we will learn.”

Currie’s team has already completed a project with Nottingham University Hospitals NHS Trust, looking at reducing the number of falls within the hospital environment itself. Treating people who fall, which means mainly older people, costs the NHS more than £2billion a year and the trust, the fourth biggest in the UK, was dealing with 10 falls by patients every day. It had been trying for 15 years to get the numbers down.

Dr Rob Morris, Consultant Geriatrician at the Trust, says he and his colleagues had undertaken root cause analysis of the problem but were failing to convey any learning to staff working in falls “hot spots”. What the WBS intervention brought was a fresh pair of eyes on the issue and an ability to make information “edible”

by busy colleagues.

Part of the answer turned out to be much improved information analysis and dissemination, principally a system of brief, bullet-point reports on all more serious falls causing fracture, head injury or death – some 10 a month.

The simple innovation has succeeded in focusing minds on the issue. Thanks to this and other initiatives, the number of falls recorded by the trust fell in 2013 by eight per cent and, strikingly, the number causing fracture fell by as much as 35 per cent.



“So you have got a truly system-wide approach to this problem of a frail elderly person living at home on her own... That’s the dream”

in line with best principles, might not meet demand. “If you do the numbers, it doesn’t work,” warns Oborn, who believes the ultimate solution lies in us all taking more responsibility for our own health.

“It’s not just about transforming knowledge into practice; it’s about rethinking what healthcare is and about a different kind of contract between the citizen and the state,” says Oborn. “There has to be more understanding of the citizenship role. As taxpayers, we are part of the solution ourselves. We can’t leave it all to the NHS.” ■

Business is a critical friend

“The role that Graeme and his colleagues played was something of the critical friend,” says Morris. “We had lost our way a bit and were struggling to see the wood for the trees. Sometimes in healthcare settings, someone coming in with a blank sheet of paper can be really powerful.”

Back to that 78-year-old. What would a reconfigured healthcare system look like if it were to work in her best interests? “Well”, says Currie, “it would educate her about the risk of falls as part of a primary care package; it would trigger home improvements such as grab rails to boost her stability; it would arrange regular checks on her wellbeing through the social care system; and it would ensure through her local pharmacy that she was taking correctly any medication she was prescribed.

“So you have got a truly system-wide approach to this problem of a frail elderly person living at home on her own. That’s the dream.”

A dream, but perhaps still not enough. Such is the enormity of the challenge facing healthcare systems that even total and universal redesign,



Watch Graeme Currie's short film 'Business schools and healthcare' at wbs.ac.uk/go/graeame-currie

Play safe to get to the top



CEOs have become like football managers, considered stars in their own right, but Ashley Potter talks to **Christian Stadler** about a new style of leadership

Think of a business leader to emulate and you will probably think of Richard Branson, Jack Welch or Steve Jobs.

They are seen as charismatic and inspiring characters who have seemingly single-handedly created a business dynasty through their vision and determination.

Books on Branson and Jobs sell like the proverbial hot cakes, but according to Christian Stadler they are not the business leaders we should be following.

After an exhaustive study of 100-year-old European corporations, Stadler found that the CEOs and leaders who had contributed to this longstanding success were not charismatic; there was no magnetising character or inspiring words to push, drag and bully the company to the top of its industry.

No, Stadler found that the overriding trait of these people that have helped build some of the world's biggest companies was 'intelligent conservatism'. It is not the kind of revelation that will help those CEOs sell many books or even attract many headlines, but it is the kind of safe – whisper it – almost boring, characteristic that companies value and leads to success.

Instead of following Jobs and Welch or Nike co-founder Phil Knight you should look at those bosses running established 100-year-old companies like French cement and aggregates firm Lafarge or pharmaceutical giant GlaxoSmithKline, not a sexy young tech company like Apple or Facebook.

At these corporations you will find executives like Lafarge Senior Vice President Keith Daton or Hans-Jürgen Schinzler, CEO of German insurance giant Munich Re, immersed in safe, undramatic reasoning. There won't be a list of 10 inspiring quotes from these business leaders, but there will be 10 pragmatic reasons behind their success.

Stadler, an Associate Professor of Strategic

Management at Warwick Business School, says: "The problem with somebody like Jobs is that he is one in a million. These sorts of people attract all the headlines and media interest, so it is easy to think business leaders should be charismatic, inspiring and full of great speeches.

"For a start they are hard to find and the chances of finding somebody with charisma that also possesses business acumen is relatively low.

"When we looked at the leaders of these long-term high-performing companies we didn't find many who were charismatic and they were less likely to be charismatic than those in charge of lower performing firms. These companies go for a safer bet; it is how companies behave in the long run, they are a bit careful and they don't need to be at the very leading edge.

"Occasionally a charismatic leader will pop up, but the majority of the leaders of these highly successful and enduring companies have a style of leadership that we call 'intelligent conservatism'. Those charismatic leaders can be great, but if they get it wrong people follow them because they are so convincing – like Dick Fuld."

The 'Gorilla of Wall Street' was renowned for his belligerent and militaristic style of leadership that demanded total loyalty. He dragged Lehman Brothers from nowhere, when it was spun off in 1994 from American Express, to one of the biggest players on Wall Street, making \$4.2 billion profit in 2007.

But when the financial crisis struck Fuld led Lehman Brothers into the abyss by refusing to sell assets until it was too late. As the crisis deepened CEOs were felled at rivals Bear Stearns, Merrill Lynch and Citigroup, but a Board beholden to Fuld left him to steer them into deeper trouble. With losses stacking up to \$2.8 billion for the second quarter in 2008 the US Government decided not to step in and save it, and it was forced to file for bankruptcy.

Daimler's loss of greatness



"Fuld's charisma, that had created Lehman Brothers also proved its downfall. He had become synonymous with the company and the Board failed to challenge him when things were going wrong," says Stadler.

"Charisma is very persuasive. I met Edzard Reuter, CEO of Daimler in the 1980s, in a coffee shop in Berlin. Within an hour he would convince you that the world is flat, but he made some disastrous moves with Daimler. He thought the future for luxury cars was bleak so he wanted them to diversify.

"He moved Daimler into integrated technology, aerospace, defence and consultancy. He was able to bring everybody on board to follow this plan, but it ended up landing Daimler the largest loss by any German company since the end of the Second World War of around \$4.2 billion.

"He was such a strong character, he just pushed things through. They bought companies grossly over-priced, overlooked details – it was really painful. Charisma is not a bad thing, but it has a greater risk associated with it."

Humility, plus an in-depth knowledge of their sector and company are important features of intelligent conservative leaders.

"A common theme is that they climbed the ladder, working their way to the top of the business," says Stadler. "In our study of long-lived corporations 97 per cent of CEOs were promoted from within. That is so important, because it is very lonely at the top. CEOs will have a lot of people around them trying to please them, who will simply confirm their opinion, rather than challenging it, so it is hard to have a sense of what is going on.

"Somebody who has worked their way up has the ability to reach further down in the organisation, and

they can connect with those different departments and people."

Another trait of these leaders is their ability to listen. It may take a long time, but listening to the many opinions in a company ensures everybody is on board.

"Listening means these leaders are not as reckless and take their time to research," says Stadler. "They have the ability to be humble, it is not just about their ambitions, they have the good of the corporation in mind. So they make decisions that are not the most applauded from the outside world, but it is for the long-term good of the company.

"At Lafarge we documented the determination of managers to learn from their staff as early as 1833. Léon Pavin de Lafarge, the second leader of the young corporation, for example, spent considerable time at the plant to learn more about production from the workers, a practice followed by some of his successors."

The star CEO has become like a football manager, the focal point of the corporation, who can be questioned and analysed. But Stadler's research questions whether companies really need a single person at the top in charge.

"Until 2008 Royal Dutch Shell did not have a CEO," says Stadler. "The outside world always hated that, but the fact they continued to be one of the most successful oil companies in the world, proved it was a good recipe.

"They had a brush with disaster, when Henri Deterding was solely in charge and was developing a positive view of Nazi Germany. So when they reorganised in the 1950s they decided to have a group in charge. There was much more collective decision-making and it worked very well."

So, don't think Jobs, think 'intelligent conservatism' to get the top job. ■



ANALYSIS



The financial crisis has been followed by financial scandals, and allegations of rigging the foreign exchange market could be the biggest of them all. Ashley Potter talks to former FX trader **Mark Taylor** about a solution

Fixing the fix

“Part of the folklore of the foreign exchange market, is that every day you would see the rates spike around 4pm. The spikes would last a few minutes and then go back down again,” says Taylor.

Now Dean of Warwick Business School, Taylor was a Senior Currency Manager at BlackRock for four years before becoming Dean, and says there was a widespread understanding that the markets would spike at the time of the London 4pm fix.

Over the last year a global investigation into collusion in the foreign exchange markets (FX) has centred on the London 4pm fix – a benchmark rate that clients use to buy and sell currencies. Were these spikes a natural phenomenon of the markets? Or were traders working together to push up the price in the \$5trillion (£3.13trillion) a day market to benefit themselves

and rob millions of dollars from their clients?

Regulators from around the world have suspended or fired more than 20 traders with banks as big as JP Morgan, Barclays, UBS, Deutsche Bank, and Citigroup embroiled in the growing scandal, while even the Bank of England has suspended an employee.

It follows the Libor scandal that saw banks all over the world fined millions of dollars for manipulating the inter-bank lending rate and some analysts are predicting the FX rigging probe could be even worse.

The London 4pm fix, which was set up in 1994 and run by WM Company and Reuters, is the most popular benchmark used. It is made by taking an average of the exchange rate in currency trades 30 seconds before and after 4pm in the

London market. The benchmark rate for a range of currencies – including major exchange rates like dollar-sterling, dollar-yen and dollar-euro—is used to value trillions of dollars of assets, and is the rate at which some big investors agree with their bank to exchange currencies to settle their accounts at the end of every day.

So, if the benchmark rate can be pushed up artificially, then the banks could charge their clients a higher rate than the rate at which the bank is able to cover the trade in the market a few minutes later, with the difference representing a profit for the bank. Some of the trades involved are huge – literally billions of dollars: if traders can move the benchmark rate just a tiny amount it could represent a profit of millions of dollars.

That profit is not only good for the bank but for the trader as well, as their bonus at the end of the year will be decided on by how much profit they have made, and that can run into millions of pounds.

“There is no law against trading at 4pm rather than at 3pm,” says Taylor. “It’s a grey area; there can be some quite legitimate lumpy trades around 4pm that will move the rate. The question is: were they legitimate ‘normal business’ or were they put through deliberately to affect the rate in order for the bank to make a profit from its customers? That, though, is going to be hard to prove.”

That is why regulators are sifting through thousands of emails and messages in the Bloomberg and Reuters chat rooms that traders use, to find evidence of collusion between traders. Deutsche Bank, Citigroup, Barclays, and UBS account for more than half of what is an opaque market with few regulations.

“If some of the big players in the market got together and put through some very large trades – billions of dollars each – then that could affect the market,” says Taylor.

“It would take a huge amount of money to move the market but, the way the benchmark rate is measured, you only have to move the market a small amount for a very short period in order to affect it – and that could be worth millions of dollars of profit for the banks.”

Using a fixed point in the day to decide on the price of currencies almost encourages the practice of ‘front-running’ where a trader drives up the rate with a big order or ‘banging the close’ where a high number of orders are placed around 4pm to move the price.

Bank of England Governor Mark Carney has vowed to look into how the foreign exchange market works and regulators around the world are wondering how to fix the fix.

Taylor is of the firm belief that regulations alone won’t work, because banks and traders would find a way around them; the former Bank of England Senior Economist believes taking away

the incentive to manipulate the 4pm fix would be a better route.

“Regulating this kind of behaviour would be very difficult,” says Taylor, who has also worked as a Senior Advisor for the International Monetary Fund (IMF). “As always in financial markets, it’s much better to take away the incentive to cheat rather than just regulate against the cheating.

“One solution worth investigating would be to take away the temptation to rig the benchmark rate by taking the average over an hour – so 30 minutes either side of 4pm rather than 30 seconds. It’s a simple, workable solution because it would be a lot harder, if not impossible, to move a market as big as the FX market long enough to affect the average over an hour.

“Removing the incentive to cheat is much better than regulation because of the global, decentralised nature of the foreign exchange market.

“Another method that could be explored would be to take a random one-minute interval between 3pm and 4pm over which to calculate the average to use as the 4pm benchmark rate. There is no need to tell the traders when it would be each day.

“The incentives for traders are so big, with billions of dollars involved, that it would be a surprise if they weren’t tempted to ‘front-run’ or ‘bang the close’. The London 4pm fix has pushed the behaviour of traders in this direction and we need a solution that will nudge them in a fairer direction.”

Practises like this, along with ‘hunting the stops’ – buying or selling to move the exchange rates to a level where orders to automatically sell at a certain price kick in – have long been suspected, and it is something Taylor believes the Bank of England should have acted upon before now.

“They should have clamped down on it a few years earlier,” says Taylor. “Although putting through big orders around the 4pm fix is not of itself illegal, if there was evidence found of collusion to do this specifically in order to affect the benchmark rate then that would

be illegal. That’s why chat room evidence is crucial, if there is written recorded proof of traders working together to move the 4pm fix that would be very serious.

“It would strike at the heart of business ethics and be yet another blow to the integrity of the banks. Our pension funds invest billions of pounds in the financial markets and if they are being cheated in this way then it affects every one of us.

“This needs to be tackled and so I applaud Carney’s appointment of Minouche Shafik from the IMF as the new Deputy Governor for Markets and Banking, charged with carrying out a root and branch review of how the Bank conducts due diligence in its handling of market intelligence. We awarded Dr Shafik an honorary degree in 2012 in recognition of her achievements and I expect her to get to the bottom of this issue. The markets will be watching with interest.” ■



“One solution worth investigating would be to take away the temptation to rig the benchmark rate by taking the average over an hour – so 30 minutes either side of 4pm rather than 30 seconds”

ANALYSIS

What did the Ancient Greeks ever do for us?



Flo Swann meets Hossam Zeitoun to find out why an Ancient Greek lottery method of ensuring democracy could lead the way in companies becoming more accountable



In recent years the media seems to have been full of reports of companies featuring disastrously bad governance: Lehman Brothers, News Corp, Enron, eBay, BP – even the UK's Co-operative Bank, which was set up to operate on the highest ethical principles – are companies that, along with many others, have come under fierce criticism for perceived failures to act in the best interests of their various stakeholders.

It is not surprising, therefore, that the role of the corporation in modern society has come under increasing scrutiny from business school researchers, with an emerging view that there should be a greater effort toward governing corporations well so that they become a means to protect our environment, address social problems, and create new sources of entrepreneurship and innovation.

So how do we make them well-governed? Companies are led by people; ultimately, the issues start and end with the mix of people on the Board and the decisions they make which then trickle down to the organisation and have ramifications for society at large.

Dr Hossam Zeitoun, an Assistant Professor at Warwick Business School, is researching how to create governance structures that make companies more accountable to the various stakeholders who contribute to firms' long-term success.

He says, "Such stakeholders include the providers of capital (ie shareholders and creditors), employees, and, to varying degrees, suppliers, customers and the local community."

There are different ways in which corporate governance can help protect these stakeholders' interests he explains: "One model is to involve them in the Board's decision-making. In Germany, for example, the law mandates shareholders and employees to be represented on the Boards of large corporations. Having many different stakeholders on the Board can make decision-making very challenging because these stakeholders have different interests."

But, Zeitoun adds, "While this model works



▲
Device used
by Athenian
Senate to
draw lots for
public officials

reasonably well in Germany and other European countries, it only involves shareholders and employees, and not the complete range of relevant stakeholders.”

Warming to his theme, he talks of another model, where “the Board is instituted as an autonomous fiduciary, which is insulated from the pressures of different stakeholders. The idea is that such a Board should act more like a ‘benevolent dictator’ who balances the interests of the different stakeholders and decides in the long-term interests of the corporation as a whole. A prospering corporation is in the interests of all stakeholders. However, you can never know in advance whether the Board will be such a benevolent dictator.”

Some legal scholars suggest that the model of the autonomous fiduciary is the foundation of US corporate law, whereas corporate governance in the UK tends to be more shareholder-focused.

Although many US companies are very shareholder-focused, there is also a range of other corporate governance structures.

In the UK, stock-market listed firms in particular tend to have similar shareholder-focused governance. “A disadvantage of shareholder-focused governance is that it can lead to short-termism,” says Zeitoun. “In this model, managers may look more to short-term profits rather than long-term capability development,” he says. “But on the flip-side, they tend to be more flexible and

entrepreneurial allowing the company to, for example, close old factories and build new ones to take advantage of new technologies.”

Diversity in the Board model of companies can cushion the blows of a changeable economy; in some circumstances one type of firm will perform better and in others an alternate will.

Zeitoun’s research, *Learning from Ancient Athens*, offers a novel model to help companies ensure good corporate governance.

This model, inspired by the Ancient Greeks, ensures diversity of people on the Board through the use of random selection procedures. He explains, “Political governance in Ancient Athens was based on selecting their leaders randomly among the population; each year there was an assembly of the male population where each participant placed a metal token identifying them into a box, and a random selection was pulled out.

“It wasn’t only Ancient Athens. Later the Republic of Venice and the Republic of Florence did the same thing on a limited scale for parts of the political system.”

And maybe some would be keen to be governed like that now. “I read that during the recent Egyptian troubles some young people were distributing flyers asking for a transitional government to be randomly selected from among the protesters,” he says.

But we return to the matter of corporate governance.

“The real benefit of this process was that it created a non-autocratic collective decision-making body. The only exceptions were posts where you needed to have a lot of task-specific expertise; for example the Chief of the Military couldn’t be randomly selected – he had to be appointed.”

Zeitoun also proposes a two-chamber Board of Directors where one chamber would be elected by shareholders, as they are today, but the second would be selected randomly amongst stakeholders. The two chambers would need to find common decisions.

But how can you ensure an adequate composition of the stakeholder chamber if they’re randomly selected? “The Ancient Athenians obtained a sufficient degree of representativeness by ensuring there was cultural pressure among the population so that one had to volunteer,” says Zeitoun. “Even though the governing body was formed through random selection, because there were lots of volunteers you had a representative outcome. The more volunteers there are, the more representative the outcome.”

Zeitoun cites the jury system as a source of inspiration. “When you get biased juries, research has shown that this is most often not due to a biased selection process,” he says. “It’s usually because the source list itself is biased, for example when people take source lists based on the working population which exclude unemployed people. So the first step would be for the company to communicate to stakeholders the advantages of this new approach and encourage them to participate in order to have a more representative outcome of selection.

“We can learn a lot from jury systems,” he continues. “Juries in America avoid extreme biases of people because the randomly selected jurors can be challenged. As a corporation you could appoint a neutral person who approves these challenges.”

It all sounds tricky, but Zeitoun is sure it is possible to transition from a standard model to this. “Initially, the stakeholder chamber could only suggest initiatives with the shareholder chamber only obliged to discuss them,” says Zeitoun. “After that is working well, you can move to the next step and offer the stakeholder chamber a veto right or even equal decision rights on a predefined catalogue of corporate issues.”

Some of the literature on stakeholders is based on ethical considerations which suggest that all stakeholders have to be considered simply because it’s ethical to do so. But Zeitoun believes stakeholder

involvement is actually economically important because it also helps ensure the firm’s long-term success.

“The two-chamber model increases the range of stakeholders involved in decision-making without dramatically increasing the costs of this collective decision-making process,” says Zeitoun. “It also contributes to an adequate level of expertise on the Board; and it avoids the ‘benevolent dictator’ model where the Board is insulated and can decide on its own who should benefit and who should not.”

But in who’s interest is it to implement this model? Zeitoun adds: “Shareholders of stock-market listed corporations often only have a small stake in a company.

If you improve the company’s structure other shareholders benefit as well, so you as a minority don’t have a very strong incentive to do so.”

Zeitoun suggests senior managers and directors of the company, who have long-term interests in the firm’s performance, could be the first ones to start this transition process.

“They could take the first steps, that do not require changing the corporate charter – because as soon as you change the charter you need to consult with shareholders,” says Zeitoun. “I think you could gather positive experiences through small steps, and then once it is working you could consult at a general meeting and implement it in your charter.”

He also has suggestions for law-makers. Although it has been argued that the US has a more diverse corporate governance system, it’s only partly true because even though companies are very flexible in writing their charters most of them remain with the default rules.

Zeitoun says: “If a company doesn’t write their own idiosyncratic charter then the company is governed by default rules. They’re not mandatory, but they are the

standard. You can deviate from them, but a large majority of companies stick to the default rules. If the law-makers helped to offer more menu options – including governance models based on random selection – I think this would lead to a healthy system with more diverse governance structures.”

So, who knows? Maybe, as the UK National Lottery used to say, ‘It Could Be You!’ ■

Zeitoun, H., Osterloh, M., & Frey, B. S. (2014). Learning from ancient Athens: Demarchy and corporate governance. *Academy of Management Perspectives*, 28(1): 1–14.



“We can learn a lot from jury systems... Juries in America avoid extreme biases of people because the randomly selected jurors can be challenged. As a corporation you could appoint a neutral person who approves these challenges”

The journey of bottled water



Global supply chains have given consumers in developed countries ever cheaper goods, but Ashley

Potter talks to **Mark Johnson** about the journey of bottled water that has given us a more expensive product

of Operations Management at Warwick Business School, researches supply chains and believes the case of bottled water is an example of how the globalisation of manufacturing leads to a fairly ridiculous and lengthy supply chain.

“There is a large distance travelled in the materials needed to make the bottle,” says Johnson. “That brings into question the environmental impact of our need for bottled water when in the US and other developed countries tap water is perfectly good enough to drink. In fact, in a taste test conducted by *The Guardian* of 10 tap waters and bottled waters, Severn Water’s tap water came out on top.”

Fiji Water source the plastic blanks for their plastic bottles from Allentown in Pennsylvania, US. They are shipped 7,895 miles to Rakiraki on the Fijian island of Viti Levu where the spring water originates. The plastic bottle tops come from Taichung City in Taiwan, chugging 4,815 miles across the North Pacific Ocean to Fiji. The paper labels are made in Wellington, New Zealand, before travelling the relatively short distance of 1,666 miles.

At its factory on Viti Levu, 400 workers manufacture the bottled water before the final leg of the journey, 6,602 miles to Plano in Texas from where it is distributed across the country.

A one litre bottle of Fiji Water can vary in price, between \$2–\$3, but with Johnson putting manufacturing costs at 22 cents it is a healthy return.

“It makes it more expensive than a litre of unleaded petrol,” says Johnson. “In the UK, tap water costs 0.151p a litre. It is expensive, it travels a lot of miles, and there is a lot of waste. Polyethylene terephthalate (PET) bottles can be recycled, but only about 40 per cent of them are.”

Fiji Water is just one brand in a competitive bottled water market and, though there may be concerns about the environmental impact of a product that developed countries don’t actually need, demand is growing.

The International Bottled Water Association reported a rise in

a shop and buy some water, but it is far from convenient to organise the manufacture of the product and shipping of what makes up the plastic bottle.

Of course the major cost is making the plastic bottle to contain the water. According to charity The Water Project it takes three litres of water to make the packaging for one litre of bottled water, while it estimates that 1.5 million barrels of oil a year are needed to produce the plastic for the US market.

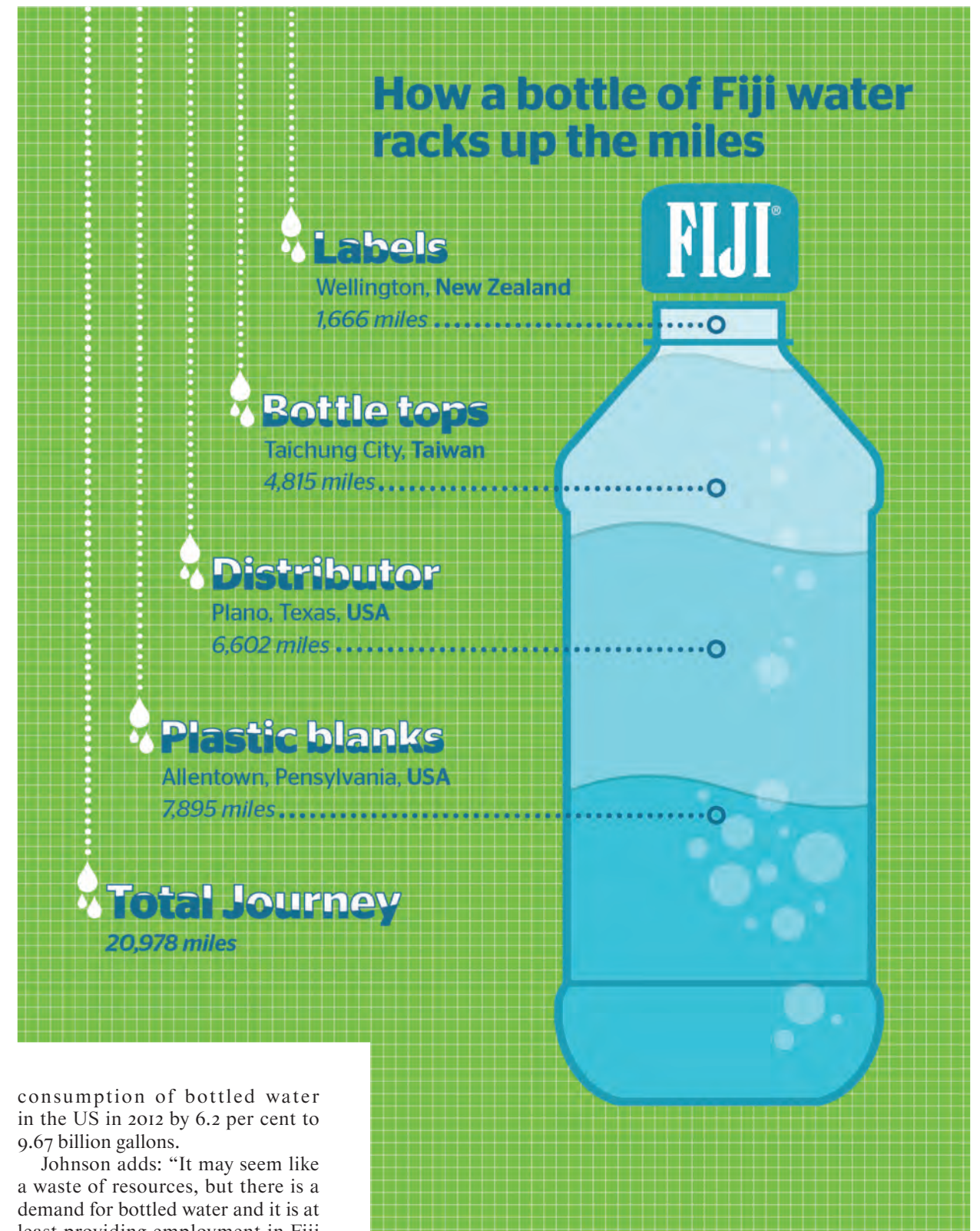
Mark Johnson, Associate Professor

It sounds easy doesn’t it? Put some water in a bottle and sell it.

But a look at the supply chain of number one US importer Fiji Water shows it is not nearly that simple and involves 20,978 miles of travel before it finds its way into the shops of downtown New York.

It involves shipping material across two continents and between four countries before being exported to the US where Fiji Water has two per cent of a bottled water market worth an estimated \$10.6 billion a year.

It might be convenient to pop into



consumption of bottled water in the US in 2012 by 6.2 per cent to 9.67 billion gallons.

Johnson adds: “It may seem like a waste of resources, but there is a demand for bottled water and it is at least providing employment in Fiji and revenue throughout the supply chain. But we must be aware of the cost that the convenience of bottled water has on the environment and our diminishing resources.” ■

Illustration: Rebecca Curtis



Watch Mark Johnson's short film 'Supply Chains' at wbs.ac.uk/go/supplychains



Ian Wylie discovers how stock markets are being taken over by super-quick computers and the dangers that could bring

The rise of the machines

ULLtraDIMM may sound like a damning insult, but the term is the talk of Silicon Valley and describes the latest generation of memory chip that can respond within the space of just five microseconds.

An irrelevance if all we need from our PCs is word processing or refreshing a Facebook page. But it means a great deal – literally – in the world of high-frequency trading (HFT) where microseconds in response time can be the difference between making and losing money on a trade.

High-frequency traders use complex algorithms and fast-responding technology to exploit micro differences in trading prices over time – not in years, months or days, but millionths of a second. And three Warwick Business School (WBS) academics are in the vanguard of exploring not the

facilitating technology but the underlying economic questions of whether the benefits of this fast-growing, automated trading outweigh the costs.

“Almost every market we trade in is turning dramatically automated, to the extent that almost three out of four trades will be run by a machine,” says Vikas Raman, Assistant Professor of Finance at WBS.

Some of us may prefer the outdated image of trading floors in the City or Wall Street where traders shout, wave and clinch deals in a raucous cacophony that concludes with the sounding of a closing bell. But, in reality, the overwhelming majority of stock trades are transacted electronically, and up to 70 per cent of all transactions are now the result of HFT.

So increasingly, the big winners in this new world of

automated stock market trading are not just those with the smartest algorithms but also those with the fastest hardware that can access the information needed to feed those algorithms. News of an event may speed from the wire to the computer network of an ‘algo-trader’ in thousandths of a second. But the difference between recognising and reacting to that data in millionths of a second can mean billions of pounds lost or gained.

It is, as one financial regulator has described it, a ‘race to zero’ as traders go to extraordinary lengths to improve their speeds of reaction, from buying dedicated internet cabling to moving their entire computer networks to be physically closer to the data centres of stock exchanges and news outlets.

Advocates of HFT claim that the automated approach makes for highly efficient and liquid markets, matching buyers and sellers almost instantaneously, while decoupling investors from their dependence on traditional stock exchanges, with the resulting windfall of lower commission prices and other transactions costs.

That view has been supported by three North American academics – Jonathan Brogaard, of the University of Washington, Terrence Hendershott, of the University of California at Berkeley, and Ryan Riordan, of the University of Ontario Institute of Technology, whose paper published by the European Central Bank concluded that high-frequency traders improve price setting and help reduce ‘noise’, or short-term volatility in markets. It warns regulators that introducing measures to curb their activities “could result in less efficient markets”.

Flash crash

However, HFT is cited by some as a major cause of market crashes and creator of volatility. Most notably, many believe the automated withdrawal of liquidity by HFT algorithms accelerated the 2010 so-called ‘flash crash’, where the Dow-Jones Industrial Average plummeted almost 1,000 points before going on to recover most of the losses in just 30 minutes.

And last August, the finger of suspicion pointed again at HFT when the NASDAQ exchange froze for three hours, and Europe’s largest derivatives market shut down for an hour.

According to Raman, HFT has significant implications for small retail investors. “These are not facilities that individuals or even most institutions can invest in,” he explains. “So the advent of HFT makes it very hard for individual retailer investors to be competitive. Secondly, most of the machine trading that happens is done by just a few banks or a few funds. HFT activity is heavily concentrated and it’s not uncommon to go to a modern market and find that 10–15 firms are accounting for 60–70 per cent of trading.”

Likewise, while individual ‘human’ traders cannot trade in multiple markets simultaneously, machines can concentrate on many markets at the same moment and make a market

in different commodities at the same point in time.

“Machines reduce attention costs which means markets are becoming more integrated,” says Raman. “That means inefficiencies and price discrepancies are removed quickly, but because markets are so tightly bound, if there is a shock, contagion will happen at a much faster pace – and that’s what regulators will find very difficult to manage.

“We need to acknowledge that HFT comes with benefits and costs and be cognizant of what are the incremental costs we are paying because of all the wonderful things we are getting from technology.

“There is clear empirical evidence that HFT makes markets more liquid and more efficient. But there is no such thing as a free lunch. We are getting that liquidity and efficiency at a cost and that cost may be that markets are becoming more fragile.”

Because they can react faster than anyone else, Raman’s research suggests algo-traders are the first people to leave a market when something goes wrong. “Our research suggests that markets with high levels of HFT activity can go from lots of liquidity to a dearth of liquidity in a very short space of time. HFT amplifies the impact.”

“HFT makes markets more liquid and more efficient. But there is no such thing as a free lunch. We are getting that liquidity and efficiency at a cost and that cost may be that markets are becoming more fragile”

Algo-traders run

Raman has co-authored a working paper, with Pradeep Yadav, of University of Oklahoma, and Michael Robe, of American University, Washington D.C, on fragility in the US crude oil market, which examines the three months prior to September 2006, just before the introduction of electronic trading and when transactions were still done ‘manually’ in pits, against a three-month period in 2011.

“There was a huge influx of automatic traders into the crude oil market after 2006 and our initial analysis suggests that markets behaved differently in periods of distress in the automated era as opposed to how they behaved in the manual era,” says Raman. “Locals increase their participation in times of market stress, whereas machines tend to withdraw and the effect is even more pronounced if the distress is long-lasting. Even during the 2008 financial crisis, the automated trading in the crude oil market reduced dramatically. Algo-traders are the markets’ friends when everything goes well, but they run to the hills when times are bad.”

For Raman’s colleague, Roman Kozhan, the fascination with high-frequency trading began in 2008 when working on a one-month project with a foreign exchange (FX) trader at an investment bank. “On the first morning I sat next to him in his office while he showed me briefly how to trade,” recalls Kozhan.

“And then he said, ‘let’s go and drink coffee, the computer is doing it for me’. So we went and drank coffee, and only returned to his desk for about 15 minutes at 12 o’clock to ‘make sure nothing bad is happening around a macro announcement’. Then we went off again to drink coffee and talk more about our project. I was really impressed!”



▲
The Trading
Floor, New
York Stock
Exchange, 1963

The dark side

Kozhan's latest piece of research looks at the relationship between toxic arbitrage and high-frequency trading in FX. Arbitrage opportunities arise when new information affects the price of one security because dealers in other related securities are slow to update their quotes. These opportunities are toxic since they can result in a trading loss for liquidity suppliers with stale quotes. With Thierry Foucault, of HEC School of Management in Paris, and Wing Wah Tham, of Erasmus University Rotterdam, Kozhan developed a measure of dealers' exposure to toxic arbitrage trades. Using data on high-frequency triangular arbitrage opportunities in the FX market, they show that an increase in dealers' exposure to toxic arbitrage trades can significantly increase trading costs. The finding suggests a possible harmful effect of high-frequency arbitrage activities.

"We are demonstrating that there is a dark side, and that we shouldn't take it for granted that HFT is always good for market liquidity," says Kozhan.

Slicing and dicing

Chen Yao, of Warwick Business School, Maureen O'Hara, of Cornell University, and Mao Ye, of University of Illinois, published research revealing that HFT was leading to more and more big US trades being 'sliced and diced' to less than 100 shares, so that they remained hidden, creating a 'two-tier market'.

They found that a significant portion of US stock trades now occur in odd-lot sizes. For decades, the trading data distributed by exchanges in the US to the public has excluded trades of fewer than 100 shares – known as 'odd lots'. These trades have been considered irrelevant because they were typically made by retail investors, small players who were buying only a few shares at a time.

But as automated trading has grown, more sophisticated

traders have begun using odd lots. "Dividing a round lot into multiple trades may be the result of firms seeking to avoid reporting requirements and may come from those with more information," says Yao.

All of this matters because trades move prices. The fact that savvier traders are using odd lots in large numbers makes that trade activity far more relevant. Following this research, US regulators have now decided that all odd lots will be included in the publicly available data so they will no longer be hidden.

Yao's latest work with Ye focuses on the relationship between HFT and 'tick sizes', the smallest increment (tick) by which the price of stocks can move. Their research argues that a one penny minimum tick size for all stocks priced above \$1 (US Securities and Exchange Commission rule) encourages high-frequency trading. However, they found that non-high-frequency traders (non-HFTers) are 2.7 times more likely than HFTers to provide best prices. Their findings suggest that recent proposals to increase tick size will not improve liquidity. Instead, they will generate further speed competition.

"Liquidity providers earn a profit by providing liquidity. Tick size constrains people from providing liquidity at better prices. For people who provide liquidity at the same price, speed determines who earns that profit," explains Yao.

HFT has become a high-profile target in recent months. In Europe there is mounting pressure from the European parliament to put measures in place to curb HFT. Italy has already begun imposing a tax of 0.02 per cent on many order changes and cancellations that occur within 0.5 seconds of the original order.

The main question now is which, if any, regulatory measures will prove effective. "Regulators do not have a clear picture about what is going on in the market – economic reasons are needed to explain the phenomenon of HFT," says Yao. "HFT is under heated debate, and our paper provides an economic mechanism underlying the phenomenon." ■

Library of Congress Prints and Photographs Division Washington, DC/O'Halloran, Thomas J.

Jesuits Inc.

Ashley Potter meets Jose Bento da Silva who believes business can learn a lot from the original multinational organisation, the Jesuits



When former nightclub bouncer Jorge Mario Bergoglio was made the 266th Pope of the Catholic Church in March 2013 the world's media spotlight was suddenly shone on the little known Society of Jesus, a Roman Catholic order of priests founded half a millennium ago.

Known as the Jesuits, Bergoglio is the first of them to be made Pope as well as being the first from the Americas, adopting the papal name Saint Francis of Assisi.

The Society of Jesus was founded by the Basque nobleman, soldier and future saint, Ignatius of Loyola, who turned to religion after a French cannonball blew part of his leg off in Pamplona in 1521. The society secured papal approval in 1540.

For more than a decade Jose Bento da Silva has been studying the Jesuits, but not as a historian. Bento da Silva's interest lies in how the Jesuits have successfully managed a global organisation for nearly 500 years, with nearly 200,000 employees spread across the globe.

It is the sort of operation from which businesses can learn, especially those wanting to put 'going global' at the core of their structure. Bento da Silva believes the Jesuits are not only the first multinational organisation but the only truly global operation, adapting their culture to fit each geographical region since their inception.

Bento da Silva, an Assistant Professor of Organisational Studies, says: "The Jesuits are truly global, not only in the

sense that they adapt locally their businesses, or that they have an international presence. The Jesuits are truly global because they have no country of origin: they are neither a Basque, nor a Spanish, Italian, French, or a Portuguese company – they are just a global organisation. What they do across the globe is, though, completely different – it's tailored to the culture. All these lessons and all this material that we teach MBA students at business schools, the Jesuits have been doing for almost 500 years in quite a natural way."

The Jesuits' relevance for the understanding of our own culture is beyond what we sometimes acknowledge or even grasp as Bento da Silva's research has discovered just how influential they are.

The first Europeans to reach the Himalayas were Jesuits; the first Europeans to cross the Mississippi River were Jesuits; the first people to cross Africa from coast to coast were Jesuits; the Brazilian city of Sao Paulo was founded by a Jesuit; Descartes, one of the fathers of

modern philosophy, trained as a Jesuit; 18 craters on the moon are named after Jesuits; our calendar was created by the Jesuits. And you could go on and on.

"Their impact on science is huge" says Bento da Silva. "So many scientific developments right up to the beginning of the 20th century came from Jesuits. Friedrich Hayek, the Nobel Prize winner, traces the emergence of liberal views on economics back to 16th century Jesuits."



Irish Jesuit Archives

But Bento da Silva's real interest is to study how the Jesuits' organisational structure has evolved and how the way they are organised might explain why they have always been so successful. "Instead of putting the emphasis on strategy, they devoted most of their first 20 years trying to devise the perfect organisational structure," says Bento da Silva.

"What is interesting about them is that they're one of the very few organisations that has never changed structure although they have grown a lot."

As the Jesuits contemplated their structure they looked to the recent past for inspiration and Venice was the obvious place. From the 13th to the 15th century the Italian port was the centre of world trade.

"Some of the key structural dimensions they took from business ventures that they knew in Venice because their founder Ignatius spent a lot of time there. His key lieutenant was the son of a Venice merchant," says Bento da Silva.

"They developed a very simple and basically network-based structure and with it they were able to rapidly spread across the globe, in a way that very few organisations can achieve; it is quite amazing. Of course from a human resources point of view they have some advantages over other organisations – it's different having a religious vow to a contract."

The structure put in place by Ignatius remains in place and when they set up a new network, they simply repeat it.

Bento da Silva adds: "The Jesuits may have 200,000 employees but not below a hierarchical structure. Instead they have mainly three hierarchical levels and they're organised along geographical regions. So they have their headquarters in Rome and then they have people managing several, what they call, 'provinces' that we would call geographical regions. Pope Francis was in charge of one of these provinces, Argentina, he was Provincial of Argentina."

The Jesuits have operations in more than 100 countries spread across six continents and though strategy is devised in its Vatican headquarters, the regions are given plenty of leeway in implementing them.

"The provincials have lots of autonomy in terms of managing the daily operations in each geographical region, but the strategy is devised at the headquarters, following the procedures of the General Congregation – the equivalent of, in the corporate world, a shareholders' assembly," says Bento da Silva. "Now below all these regions you can have lots of different businesses because they have a very simple way of approaching strategy."

"They have five key strategic principles. Education, which is their main business; intellectual activity – so

engaging with universities and higher education; China as a single market – they've been obsessed with it since the 17th century; Africa as a continent; and refugees, either war refugees, political, or urban refugees."

Education is probably the most famous of the Jesuits' missions. "Since the 17th century the Jesuits have had the biggest network of private schools in the world," says Bento da Silva. "They have lots of universities across the world and lots of high schools."

This has proved to be either a good source of funding since the 16th century, or a way of engaging with state-of-the-art knowledge, or educating those in most need. It is, therefore, for Bento da Silva, one of its most distinctive strategic endeavours.

He says: "Through education the Jesuits can spread the gospel, educate, network with other areas of knowledge rather than the religious, and help people move from poverty by giving them access to education."

With so many companies putting corporate social responsibility at the heart of their strategy, like the Anglo-Dutch multinational Unilever's plan to make sustainability commonplace, businesses could learn a thing or two from the Jesuits.

Bento da Silva is to study one particular network in the Jesuits, its refugee service, which again uses the approach of leveraging resources from all over the world while at the same time not being associated with any particular country.

"The Jesuit Refugee Service is, like the Jesuits themselves, a truly global organisation," adds Bento da Silva. "They're replicating their way of structuring an organisation, so the headquarters of the Jesuit Refugee

Service organisation is in Rome; the refugee camps are around Africa and Asia mainly, but one of their main activities there is teaching. They have a distance learning programme and in 2013 they had their first graduates on a three-year arts course, taught in the refugee camps by their network of universities in the United States.

"This is very interesting as their headquarters are in Rome, their clients in Africa and Asia, and people doing the teaching and delivering a degree from a United States university. Although this seems a very simple arrangement, it is not that easy for business corporations to replicate. If you think about it, how many organisations with around 200,000 employees spread across more than 100 countries and surviving for almost 500 years do you know? None."

With many top businessmen like Richard Branson predicting that only companies with a social conscience will be tolerated by an increasingly demanding public, the results of Bento da Silva's study of the Jesuits could have a wide impact. ■



Jesuit Refugee Service Ecuador

“They have a distance learning programme and in 2013 they had their first graduates on a three-year arts course, taught in the refugee camps by their network of universities in the United States”



Jorge Mario Bergoglio (Pope Francis), street art wall portrait

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STRATEGY



Kate Mew explores why, at a time when women have more economic power and consumer influence than they have ever had, there's mounting evidence that advertising to the female market is failing

She who holds the purse strings

Women currently control approximately \$20trillion globally in annual consumer spend. Predictions for growth range from \$22 to \$28trillion by 2020 – in aggregate, women now represent a growth market that is larger than China and India combined. 80-86 per cent of all UK and US consumer purchases are made by women; women are the biggest group of online purchasers and the most active on social media.

By 2020 there are predicted to be more female millionaires than male; currently 70 per cent of UK and US wealth is in the bank accounts of the over 65s, the majority of whom are women. A survey from American consumer insight firm GfK MRI revealed that US boomer women control a net worth of \$19trillion – and they're increasingly using that spending power online, bucking the perception that no one over 40 knows how to navigate cyberspace or operate a smartphone.

According to global market research company Forrester Research, boomers on average spent \$650 online over one three-month period, compared to \$581 for Gen X (born 1960s-80s) and \$429 for Gen Y (1980s-2000s).

Women are purchasing decision-makers

Products thought typically to be the reserve of men; cars, electronics and home improvement, are now an even split, with 50 per cent being purchased by women. Women are also the majority decision-makers when it comes to property, holidays, and financial services.

Women are no longer a niche market; they're a significant financial force. And yet in a study of 58 brands by US market research firm Insights in Marketing, not one brand did better than 49 per cent approval for effective marketing to women. According to a report by She-economy, 91 per cent of women said that advertisers don't understand them.

What's going wrong? There's never one simple solution to a problem as complex as this. The evolution of more nuanced gender roles, the demographics of those creating and commissioning campaigns, and the way digital technology has created feedback loops between consumers and producers – all of these things have an impact.

Look beyond

"[Brands] can no longer rely on quantitative data or the prescribed marketing personas of old. They need to listen to real women – online communities are important gauges of sentiment (but brands need to enter respectfully). Then they need the flexibility to react to all this. The brands that succeed are those that pay attention to what's happening culturally and look beyond clichés of femininity to understand context, what's impacting women's real lives," says Lindsay Pattison, Chief Executive, Maxus UK & CSO Maxus Global.

As few as three per cent of creative directors are female; 75 per cent of copywriters and art directors are male. That's a male bias of somewhere in the region of 86 per cent of creative roles in IPA member agencies. Add to that under-representation in senior positions in media and government: women own only 5.8 per cent of all television stations and six per cent of radio stations; women hold only three per cent of 'clout' positions in the mainstream media – telecommunications, entertainment, publishing and advertising.

The US ranks 78th in the world for number of women in national government, the UK ranks at 53, alongside Malawi, with 22.3 per cent female representation. Only three per cent of Fortune 500 CEOs are women.

Illustration: Rebecca Curtis



'Shrink it and pink it'

Without women in a position to apply their experience and knowledge it's hardly surprising that many campaigns still run on outdated gender stereotypes. The 'shrink it and pink it' methodology, or worse, are actively alienating their customers by using insulting images of women because they don't realise women *are* their customers.

Designer Marc Jacobs faced a furore over his Miley Cyrus campaign, in which a zombie-esque looking Cyrus was photographed sitting on a beach next to a model who might be 'resting' but appeared to all intents and purposes to be very dead. Female models as corpses sadly feels less shocking than it should and a natural progression of an industry which has pushed the limits of representations of women as increasingly passive whilst also incredibly sexualised and available.

See also *Vice* magazine's infamous Women of Fiction issue from 2013 that made a fashion shoot of the suicides of Dorothy Parker, Sylvia Plath, and Virginia Woolf. Or the *America's Next Top Model* murder episode in which models had to pose as victims of deadly assault and one received the highest compliment of the show, "The look on your face is just extraordinary. Very beautiful and dead."

Women marching online

Brands still appear to be struggling to accept that the old adage about any exposure being good no longer holds true. Women are more likely to rely on peer recommendation and advice from other women than they are on brands. They are also mobilised online, spending 40 per cent longer on social networks and eight per cent longer online than men.

The Miss Representation and Everyday Sexism projects, Pinkstinks, SPARK, and the Twitter campaign #NotBuyingIt are all creating public spaces for women to vent their frustration and anger, spreading the word on brands getting it wrong and encouraging consumers to boycott. Increasing numbers of women are waking up to the realisation that they hold the power in this dynamic.

Global clothing company American Apparel came under fire recently for the way it portrays women in a far more sexualised way than men in both its advertising and online store. Bloggers and designers subverted the brand's clichéd marketing by flipping the genders, exposing how ridiculous female models' poses look when imitated by men.

Gender-flipping swiftly became a meme – perhaps the most celebrated 2013 example being the feminist version of US



Model Casey Legler for Michael Bastian, 2013



Androgynous male model Andrej Pejic for Jean-Paul Gaultier, 2012

singer Robin Thicke's controversial *Blurred Lines* video. As a way of subverting stereotypes, gender-flipping is a useful exercise for brand marketing: it can expose whether your campaign suffers from clichéd, gendered thinking.

New roles – understanding the terrain

A record 40 per cent of US households with children under the age of 18 have a woman as the primary earner (Pew Research Centre), in the UK the number of stay-at-home dads has doubled in the last decade (Office for National Statistics). JWT's *The State of Men* report released last year highlighted a mass transition for men. "Today, gender conventions are blurring, and men are formulating a more nuanced idea of what it means to be a man," says Ann Mack, Director of Trendspotting at JWT.

French Connection's 2011 spring/summer campaign is emblematic of the moment. Their previous foray into gender-focused marketing was ironic – plastering assertions of 'This is The Man' across images of a rugged, unshaven and long-haired model; the present offering is more ambiguous, asking the consumer: 'Are you man?'

'The Man' stands confidently on a beach alongside a bloody animal carcass. We see him riding a floating toy duck. The contrasts are intended to raise the question 'what does it mean to be a man or women in the 21st century?' It's a deliberate and self-conscious attempt to turn contemporary gender dynamics into a marketing strategy in-and-of itself.

Hinting at a broader shift in attitudes toward beauty and gender, French model Casey Legler became the first female

model to sign exclusively as a male model in 2012 having been discovered by US photographer Cass Bird, renowned for authentic androgynous images. Legler's signing follows on from the success of Australian androgynous male model, Andrej Pejic. Increasing numbers of fashion, cosmetics and luxury brands are utilising gender neutral aesthetics in product display and packaging.

Idealised images don't work

The abiding rule in advertising has always been that it's about creating desire and that's best done through insecurity. Create an unobtainable ideal, sell in the idea that it is the only option and consumers will continue to seek out and purchase the products which promise to get them closer to it, even if doomed to fail.

But research led by Tamara Ansons, Assistant Professor at Warwick Business School, could have far reaching implications for the marketing and advertising industries as it exposes a flaw in the rule. "Attractive female models and celebrities are routinely used in advertisements and yet previous research has shown mixed reactions, some have found the effect to be positive, while others have found it to be negative."

In their paper, *Defensive reactions to slim female images in advertising: the moderating role of mode of exposure*, Ansons and her colleagues showed that idealised images of women do elicit a negative response from women viewers. What's new in Ansons' study is that who bears the brunt of that negativity (the woman herself as damage to her

WireImage | Getty Images



Marks and Spencer's Leading Ladies campaign

self-esteem, or the brand) is dependent on image proximity of the brand to the image.

"We showed that when consumers are blatantly exposed to idealised images of thin and beautiful women they are

more likely to use a defensive coping strategy to boost self-evaluation by denigrating the pictured woman.

"This can negatively affect the products these models endorse through the transfer of the negative evaluation of the model to the endorsed product.

"It certainly raises some intriguing questions for advertisers that use this potentially threatening imagery in their ad campaigns. Some brands have tapped into this.

"Dove, for example, has been using everyday females in their advertising campaigns probably to reflect the fact that they are aware of how this female imagery is unattainable and perceived as threatening by viewers."

Kill the clichés

By featuring women noted for their brains and achievements Marks & Spencer's *Leading Ladies* campaign is strategically targeting the very women who are voicing alienation.

The shoots, by Annie Leibovitz, feature actress Dame Helen

Mirren, dancer Darcey Bussell, artist Tracey Emin, Save the Children CEO Jasmine Whitbread, and burns survivor Katie Piper. The mix of ages, backgrounds, and physical types offers women a view they can relate or aspire to.

"The campaign, launched in September 2013, suggests they have gained a more refined understanding of their consumers" says Ansons, "M&S presents non-threatening female imagery that signals the diversity of successful women. In all likelihood that results in more favourable responses towards the brand. By applying this insight to its ad campaign it appears to have revitalised the brand with its core target market."

Considering the ever-growing spending power of women across all demographics, brands need to reconsider their approaches to marketing to women.

Brands holding on to a legacy view of their audience as male may need to review that supposition. In marketing terms, women are not a homogenous

group, and the quickest way for brands to alienate them is to generalise or rely on outdated stereotypes. Kill the clichés. ■

“We showed that when consumers are blatantly exposed to idealised images of thin and beautiful women they are more likely to use a defensive coping strategy to boost self-evaluation by denigrating the pictured woman”

Watch Tamara Ansons' short film 'Skinny models don't sell' at wbs.ac.uk/go/tamara



Digital applications have revolutionised the mobile phone sector, producing new business models. **Ashley Potter** finds out whether the same could be about to happen to the car industry

End of the road for car giants?

The car industry is currently mulling over the biggest transformation in its history since Henry Ford set up shop in Dearborn, Michigan. Before Ford, the automobile was an expensive plaything for the rich that had little effect on the prevalent form of transportation – horse-drawn vehicles. Ford's introduction of the mass production assembly line and product standardisation ("any colour so long as it's black") brought his

Model T car within the range of the masses, fundamentally disrupting the transport market and sending millions of horses to the knacker's yard.

Today's disruptive force is already in most people's offices, homes and pocket: digital technology. It put a man on the moon in the sixties and sacked the CD in the noughties. But just as digital technology has disrupted business models in the newspaper and music sectors, so the car industry is contemplating just

where digital technology will send it spinning.

Executives and strategists at the head offices of automobile giants such as Volkswagen and GM are trying to figure out how they will navigate their way through the digital wormhole. Will GM, Ford and Toyota step into a world full of new possibilities or onto a planet where they no longer exist?

Ola Henfridsson, Professor of Information Systems and

James Grigg/The Brickwerg

Management at Warwick Business School, has spent the last eight years consulting and researching digital innovation at GM, Volvo and Saab and, while he admits he doesn't know what they will find either, he is sure the open platform car is coming.

"It will happen," says Henfridsson (who looks more like a rock star than the traditional academic). "Why wouldn't it?"

Just as the smartphone has become a platform where users can download any apps they want and connect to the cloud, so the car could become a giant mobile version.

"If you can develop an Android community with so many useful apps, think what could happen with cars," says Henfridsson.

"Much of the value of today's car and the cost of developing it is related to the digital technology. When it comes to lowering fuel consumption or new safety features it is very much about the digital infrastructure, which requires a totally new skill set for the people developing the car.

"It used to be that competition within the car industry was locked into the boundaries of the car manufacturers, but suddenly there are non-automotive companies taking parts of the markets. Microsoft are heading into it along with Google and others. Why is it that Google has 10 driverless cars on the streets of California? Because they are imagining a future where a car communicates with its environment, where what will be important in a car's functionality is not something that GM or Volkswagen can deliver.

"Suddenly, you can see that the car industry needs to engage with the 'crowd', where anybody with £300 and a good idea can become an entrepreneur."

In the world of open platform cars a kid in a bedroom could become the next giant car company. Just as Mark Zuckerberg has taken over the internet with Facebook, so the next major car development could come from a dormitory at a US university rather than the R&D department of BMW. And that is what is worrying the manufacturers; opening up their cars to third-party developers could see them lose

control of their own products.

Car executives are nervous, but they are now dipping their toes in the digital waters. Apps are in cars now, and in January Ford launched its open mobile app developer programmer for iOS and Android. But it is limiting developers to its car's entertainment systems and developers will have to submit an app to Ford for review by its engineers. Once it's been approved, developers get a distribution license so the app can be submitted to the relevant app stores.



◀ Just as the smartphone has become a platform where users can download any apps they want and connect to the cloud, so the car could become a giant mobile version ▶

More interesting is Google's tie-up with Audi, GM, Honda and Hyundai in the Open Automotive Alliance (OAA) to develop a common platform for Android apps on their cars. It was something that Helen Falkås was working on at Saab until it filed for bankruptcy in 2011.

Falkås, who is now Senior Project Manager at Nordiska Interaktionsbyrån, a leading interaction design agency in the Scandinavian car industry, says: "We were talking about a two-sided market where you have to give the

developers the possibility to have some business benefits with a large customer base and the customers are looking for good content, rather than the proprietary market that the car industry has used. We were looking to lower the threshold of entry for developers to open up a standard Application Programming Interface (API) so data could be accessed to create the open space.

"There were several research projects we were discussing with Google, as you need somebody of that size to push the industry into this open space, but they said they will go into the car industry once they have done tablets and TV.

"Now they have brought in several car manufacturers as they always said they were looking for more volume. It will be very interesting to see whether they can standardise an open platform across several car manufacturers, because there is a lot of traditional thinking in the automotive industry. We are seeing semi-open platforms for infotainment, but we were looking at the engine management system and other digital systems in the car. After all, there are 500 signals which are pretty similar in all cars. They have different protocols and different systems of language, but if it was standardised you would have greater potential to create new apps. But this will take time. It took 15 years to introduce ABS brakes in large scale, so that gives you an idea of how slowly the car industry moves."

A project Falkås worked on with Saab and the Swedish road authority gives some idea of the potential value of connecting all makes of cars across a digital platform.

"Icy roads are a big issue in Sweden, so we developed an app where you would know exactly where and when a road was slippery and even in what direction cars were sliding," says Falkås. "That information is available in cars today. These cars would relay instantly to the authority which road was slippery and how slippery so they could pinpoint their efforts, because it is very expensive to keep roads safe in the winter and salt is bad for the environment."

That was with just 50 Saabs, but



▲ 'Johnny Cab' driverless car, a glimpse at what the future holds. *Total Recall*, 1990

◀ Futuristic dashboard, KITT from *Knight Rider*. Peter Nelson's Motor Museum, 2011

▼ Advanced robotic car KITT (Knight Industries Two Thousand), *Knight Rider*, 1982-1986



CaroCo/Tristar / The Kobal Collection | Universal TV / The Kobal Collection | Barcroft Media via Getty Images

imagine if all cars were relaying this information to the Highways Agency and to drivers as well in real time, it would surely help make roads safer. Falkås' only problem was the business model as it produced cost savings for the road authority but little value for the car manufacturer.

But Henfridsson argues that is one of the points of opening up access to cars' data – third-party developers will work out business models and apps we can't even dream of, as happened with smartphones.

These developers will be focused on the drivers and the user experience more so than car manufacturers would be, after all they have been fiddling around with suspensions for decades.

"In the past if you wanted to be successful in the car industry you needed a huge amount of investment," says Henfridsson. "The car industry has been so focused on scale, that it is only a few companies who own those resources who have been controlling what has been going into the car. Now, we will see the birth of customer-driven DIY developments in the car. An app store for cars, that is what is coming, anyone can design apps for cars.

"Instead of one navigation system you might have 10, or some navigation aid nobody has thought about before and you might be able to sell advertising through this app. Plus opening up to the crowd addresses some of the customisation issues car manufacturers make for local markets. Traditionally they want to minimise them because it drives up cost, but this turns it around, as a small app developer in each country can do those adaptations and it won't cost the car manufacturer a penny.

"Also, normally in the car industry you need a four or six-year cycle in car development to get your investment back, but this will change. Software can be reproduced at a minimal cost, at the point when you share with the Android community.

"GM asked a company to develop a new navigation system. It took them 18 months – it's an expensive process and would then be expensive for the customers. The Android community contains up to 20 navigation systems

at the moment, it can very easily be adapted for a bigger screen for the car. So, now, your development costs can be so much lower and quicker."

Other industries would love to get their hands on car data, one obvious one being insurance companies.

"Very soon we will have insurance companies setting up deals with customers to gain information on how they drive," says Henfridsson. "You would be able to have lower fees for those that drive carefully, but at the point you speed you would lose that deal, and it would be personalised to each individual.

“... in the Android world developments are being pushed out and customers are testing it for you. The car industry is totally different where it has to be perfect for the customer before it is on the market”

"This will cut across industries, because digitalising the car means it becomes another sensor within a huge network. Google might not want to sell cars, but it definitely sees them as another source of information that they can use to become even better in digitising the world. How is the traffic situation in Los Angeles? Search Google cars and find out.

"Also, in the Android world developments are being pushed out and customers are testing it for you. The car industry is totally different where it has to be perfect for the customer before it is on the market, but releasing a new patch for the software doesn't cost anything."

It could be the end of all those costly recalls to adjust the steering system or throttle, just send out a system update and it would be done – though repairs done digitally could have a serious impact on car dealerships, a relationship that car manufacturers would be loath to hurt. And talk of app developers being

allowed into the engine, suspension, and brakes of a car must send many car executives into convulsions. Who is liable if something goes wrong if there is a crash? Is the insurance company going to turn to the app developer or the car manufacturer?

Falkås reveals how Saab planned to open the engine management system to developers in stages.

"You could select certain sensors and data to publish as 'read only'," says Falkås. "The next step for selected third-party companies with whom the car manufacturer is in partnership is to give them the ability to write into the system, as you would still have liability. There would then be possibilities to have a bundle for something like additional horsepower; it would be a gradual process."

Liability is one issue that has to be resolved, but Henfridsson is sure it will be and believes whoever moves first to totally open up their car will have a big advantage.

The biggest worry for the car manufacturers is that if they don't do it somebody else will, somebody of the scale of Google or Apple. They could make a standard car and then send it out as an open platform vehicle, transforming the industry and potentially killing off some of the big manufacturers.

"An app that can tune your engine could have been done 10 years ago," says Henfridsson. "At the point GM or Audi allows third-party developers to design apps to tune their engine there would be hundreds of them. They may not allow access to the braking system, engine, or power train immediately, but it will soon come. There is a middle ground, where you can have 60 or 70 trusted vendors. But why not have other people innovate on your platform? That is what you want to be, a platform owner like Facebook. It is very old fashioned to sell a whole product these days.

"This is coming, car manufacturers know it and they can't stop it. We will see a totally new car industry when digital takes over.

"It will change everything, there will be new brands that might be connected to Google rather than a car manufacturer. It is a do-or-die issue for the car industry." ■

Mine all mine



Mining big data might be all the rage these days, but Diana Holton asks industry insiders **Howard Marsden**, Mining Executive at Petra Diamonds, and **Bill Scotting**, CEO

of ArcelorMittal Mining, how the original mining – digging into and below the earth’s surface – plays a vital role in sustaining the world’s economies and trade, and even life itself

Diana Holton (DH): The top 25 mining companies in the world total are valued at \$1,947billion on the world’s stock exchanges, but mining is a hugely diverse industry. Tell us about your role at your particular company
Howard Marsden (HM), Mining Executive at Petra Diamonds:

I’ve recently moved back to South Africa after a seven-year stint in Botswana working for Gem Diamonds, where I was the Operations Manager establishing a new mine in the desert.

My role in Petra has been two-fold, initially I was involved in some corporate M&A activity. Unfortunately, after several months, the deal was called off. However, it was a good opportunity to use the lessons and experience I learnt while studying for the Warwick MBA.

I have now moved into a Mining Executive role where I am responsible for five of Petra’s South African diamond mining operations. Petra’s revenue in 2012 was \$317million and it is the world’s largest diamond producer by value, owning two of the world’s biggest diamond mines

Bill Scotting (BS), CEO of ArcelorMittal Mining:

I have been in the metals and mining industry for 25 years, becoming CEO of ArcelorMittal in 2013. ArcelorMittal is the world’s leading steel and mining company, and I am responsible for our global mining business segment, which has 16 operating business units with mines in operation and development.

We’re among the largest iron ore producers in the world, with activities in Algeria, Brazil, Bosnia, Canada, Kazakhstan, Liberia, Mexico, Ukraine and the United States. In 2013, we produced 58.4 million tonnes of iron ore and 8.1 million tonnes of coal, with sales of \$5.8billion and operating income of \$1.2billion.

DH: What are the challenges and how are the various issues managed in these different but related mining sectors?

HM: Being in South Africa, there are numerous political and social issues. There are some 80,000 miners on strike

in the platinum mining sector; daily violent service delivery protests in the provincial area; a lot of associated politicking by the trade unions and political parties with a continued threat of nationalisation; and one of the highest youth unemployment rates in the world.

The mining industry has a notoriously bad reputation as far as safety performance and environmental management is concerned. We have a diverse workforce, with relatively low education levels, doing a wide range of tasks from purely manual labour to highly specialised, cutting-edge technology, and the mines are remotely located and so attracting key skills to the operations is a concern.

In terms of managing all of these issues, I wish there was a handbook. All we know is that the environment is constantly changing and so we need to continually balance the technical constraints with the business imperatives and the social aspects.

Unfortunately these are often conflicting. For example, ideally we would mechanise the mining method as this would improve the business case and the safety performance, but that would result in lower levels of employment.

So my daily routine involves making the best decisions at that moment, while trying to take all of these challenges into account. Inevitably each decision will have a negative consequence in some sphere and the art lies in keeping these minimal, while managing the expectation of these stakeholders.

BS: Mining is a strategically important and growing business in ArcelorMittal. Supported by multi-billion dollar investments in Canada and Liberia, we are targeting 84 million tonnes of iron ore production capacity by 2015.

With continuing pricing pressures in the mining industry, our operational focus in 2014 is on operational excellence to ensure that our unit costs come down as our production volumes increase. Liberia and Canada, which are the focus of our growth efforts, have two very different environments, each with their own operational challenges. In Liberia, we’re in the second phase of our investment to raise production from four million tonnes to 15 million tonnes a year.



ArcelorMittal:
Iron ore mine
in Yekepa



Petra
Diamonds:
The Finsch
mine in
South Africa

As the country's largest international investor, we're very proud of our achievements to date – having played a major role in revitalising the country's mining industry after years of civil war. As a responsible investor, we also have a significant corporate responsibility programme underway.

Our mines border the East Nimba Nature Reserve, which as part of the Nimba Mountains is one of the most important areas in Africa for biodiversity. We work closely with local communities, non-governmental organisations and Government stakeholders to establish a development plan for East Nimba and its communities.

The biodiversity programme was hailed as one of the best in the industry following the publication of a landmark report. Our proactive stakeholder engagement received special recognition from the United Nations Global Compact in its September 2013 publication.

We also have an exciting project in Canada's Arctic, where we are preparing to mine iron ore in Baffin Island, in a joint venture with a Canadian company, Nunavut Iron Ore.

The project is one of the largest mining developments planned in Canada, and one of the most significant developments ever planned above the Arctic Circle.

The Mary River Project will contribute to the development of infrastructure, skills training, and employment and business opportunities for the people of Nunavut and we are working very closely with the Baffin Island communities in this respect. For example, we sponsor the Arctic College's Environmental Technology Program in Pond Inlet and we have a programme in place to offer a free laptop computer to all students from Baffin Island communities who graduate from high school.

DH: How do companies maintain or grow their business while managing the environment and workforce safely?

HM: This is relatively simple in terms of developing the concept. We have a policy of 'Zero Harm', a drive on appropriate designs to mitigate impacts, and focused training to address human behaviour. However, it is quite another issue to manage in reality.

For example, our Kimberly mines have been operating since the 1860s and there are a number of legacy issues, such as technical designs that cannot be easily be changed. So we need to align the growth and systems around existing infrastructure, which often ends up with suboptimal technical solutions being implemented.

These can be managed, but the biggest challenge is aligning the human attitude of 'Zero Harm' on the mine to that of the employee's life at home. There is often a higher risk outside the mine than inside and hence the safety programmes for the mine need to reach out deep into the communities.

We need to ensure the mine's plan is aligned with the

Group's growth strategy, that it has the resources to achieve this plan, and measure the performance to ensure the resources are effectively and efficiently utilised. This includes the structures and systems to deal with and 'buffer' the core production from these key external challenges.

BS: ArcelorMittal's number one priority is health and safety and we remain firmly committed to becoming the safest business in the metals and mining industry. With the introduction of our Courageous Leadership programme for the mining business, we have improved our safety performance for five years in a row.

Courageous Leadership is designed to encourage safety-first thinking at all times and empower people to speak out if they feel anything is wrong. In 2013, our lost time injury

frequency rate once again improved – from 0.7 per million hours worked to 0.6. We are trending towards world class levels and this year, we are striving to further reduce this rate – with the ultimate goal of zero injuries, zero fatalities, and zero occupational illnesses.

DH: What are your hopes and fears for the future of mining?

HM: My hopes and fears are relatively simple. I hope the mining industry can regain its status as a proud primary industry and perform to the extent that significant employment is created while at the same time ensuring that it embraces sustainability at a national level and contributes to the society in which it operates.

My fears are that the mines will become the playground for political

power struggles, resulting in the early closure of many mines and creating further unemployment. We published a paper called *Resolving the Exposure Puzzle*, in which we show something that people had suspected for some time – that companies are hedging. That's really hard to show because stock returns encapsulate a lot of effects. So we had to look below the level of the stock return to understand what was going on.

BS: Clearly mining plays an important role in providing the raw materials required for the infrastructure and manufacturing that modern life has become to depend upon.

Meeting society's future needs as economies develop is both an opportunity and a challenge for the sector. It provides opportunities for growth meaning investment and employment in the local communities.

The challenge the sector faces is that to meet the growing demand will require us to move into new areas and this creates an additional challenge of meeting the expectations of various stakeholders.

It is a capital intensive industry and it takes many years to develop a large mining project. Bringing such developments to fruition will require foresight and strong stakeholder interaction, but I believe the industry is up to the challenge. ■

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Arctic College
Environmental
Technology
Program



Petra sponsored
SMME Project
Koffiefontein:
Youth Hostel
Food Tunnels

Smells like team spirit



Ashley Potter meets **Alicia Melis** to find out why studying chimpanzees is something a business school should be interested in

At the Ol Pejeta Conservancy near Nanyuki in Kenya, Sultana plays with the other chimpanzees at the Sweetwaters Sanctuary along the Ewaso Nyiro River. She was brought to the sanctuary, which provides lifelong refuge to orphaned chimpanzees, rescued from the illegal pet trade and from being used as ‘bushmeat’ after being found chained to a tree.

When she first arrived she was terrified of the other chimpanzees, clinging to her keepers, but now she mixes happily amongst them and is a proud mother with two grandchildren.

Alicia Melis knows Sultana and the sanctuary well. She has been travelling to Kenya regularly to study how the chimpanzees cooperate, collaborate, and work together. Back in her office at Warwick Business School on a cold mid-winter’s morning, the heat and dust of Africa couldn’t be further away. After working at the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany just why is Melis now Assistant Professor of Behavioural Science at a business school?

“In understanding how humans make decisions and behave we need to look at the mechanisms that underlie human behaviour, by doing that better we will be able to inform areas of research,” says Melis. “I am interested in cooperation and really all human interactions are based on some form of cooperation, even though it is difficult and can break down easily. The better we know our natural tendencies the more we will understand how cooperation works in different contexts.”

An evolutionary root for teamwork

Chimpanzees – or Pan troglodytes – are one of the closest living relatives to humans, sharing approximately 98

per cent of the human genetic blueprint. So finding a common behaviour between chimpanzees and humans points to an evolutionary root for what we might have thought was something unique to us.

Professor Nick Chater brought Melis to Warwick and believes her research can play a significant role in a more thorough understanding of the biases and idiosyncrasies of human behaviour.

Chater says: “Understanding human cooperation, coordination and communication are central to understanding how humans have constructed a spectacularly complex culture, including teams, organisations, businesses, and legal and financial systems.

“What are the biological foundations that make this possible? Alicia’s work focuses on some of the deepest questions about what makes humans unique, through exploring comparisons with our closest relative, the chimpanzee.”

Through a series of trials at Sweetwaters, Melis has found that teamwork does have a biological past, and that it has been passed on in our evolution. In one study pairs of chimpanzees were given tools to get grapes out of a box. They had to work together with a tool each to get the food out. Melis found that the chimpanzees would solve the problem together, even swapping tools, to pull the food out.

Melis says: “The study provides the first evidence that one of our closest primate relatives not only intentionally coordinate actions with each other, but that they even understand the necessity to help a partner perform her role in order to achieve the common goal. These skills are shared by both chimpanzees and humans, so such skills may have been present in our common ancestor before we evolved our own complex forms of collaboration.”

Melis feels more research looking at the role evolution



Chimpanzees at Sweetwaters Sanctuary in Nanyuki, Kenya

has had in the way we cooperate can help organisations who need to collaborate at a much larger scale, especially in public policy where coordinating collaboration between communities and countries is essential.

“Everything involves cooperation in business and public policy,” says Melis. “You have cooperation in nature, but there is no other species like humans with cooperation at such a large scale, who cooperate between societies and between people who don’t know each other in so many different contexts. The key is to understand better what promotes and what stops cooperation. The larger the group the more difficult it is to control cheating. We have so many different mechanisms to control cheating, using reciprocity, punishment, or reputation – talking badly about somebody if they don’t cooperate can give them a bad reputation.”

Instinctive behaviour

Research in business tends to involve surveys, questionnaires, or focus groups, but behavioural science has already shown that people tend to post-rationalise their decisions. They often don’t know why they did something and have to make up a reason after the event. This instinctive behaviour is where Melis’ research is digging down, finding that cooperation is almost instinctive could be a powerful insight for organisations

and governments.

Melis has delved into this by looking at cooperation among three-year-old children and found that a sense of fairness is already more evident when it comes to sharing out the rewards from a team task.

She says: “We found primates are very strategic in their cooperation techniques, so they understand that only if they work together are they all going to profit, but when it comes to distribution of resources at the end they don’t have the mechanisms that humans have at a young age. Sharing in a more egalitarian way comes more naturally for children from a very young age, than it does for the chimpanzees.

“With chimpanzees, dominant subjects try to monopolise the resources at the end. Compare that to young children; they don’t always share – if you give them a present they don’t share – but if they worked together with another child, they somehow understand that their partner also deserves some of the spoils.

“We seem to have mechanisms in place that support collaborative interactions, but how these resources were obtained plays an important role. We have this tendency to share more when we feel we have done things together, so this can be used to promote more sharing, to promote the thinking that we are all working together to reach this goal.” ■



Dancing to a different beat

Behavioural science is the next revolution says [Ogilvy guru Rory Sutherland](#). Ashley Potter meets marketing's biggest voice

Rory Sutherland is talking about bees; he has wandered off on another amazing tangent. For somebody involved in the world of marketing, Sutherland has a wonderful breadth of knowledge. Sometimes it seems he has so much packed into his brain he can't quite contain it all, thoughts pop up mid-sentence and suddenly we're off – talking about bees.

"Some bees ignore the 'waggle dance'," says Sutherland. "A few people were surprised by this: 'surely it would be more efficient if all the bees complied with their instructions so the hive could maximise pollen collection'. Then they discovered if it weren't for these rogue bees, the hive would eventually starve to death, because it would get trapped in a local maximum and be unable to adapt to changing environmental conditions in the distribution of pollen."

Sutherland seems to be one of those bees who have been ignoring the 'waggle dance'; he has something of the maverick spirit about him.

"I am not violently rebellious," says Sutherland, an Honorary Professor of Behavioural Economics at Warwick Business School. "It is more my nature to sit back and surreptitiously sow mischief and subversion."

He once asked in his Wiki Man column for *The Spectator* for all graduates with a 2:2 to apply to Ogilvy

after railing against companies only taking people with at least a 2:1 – which, by definition, wastes 50 per cent of the UK's graduate talent. "Google did the maths and there is no correlation between degree class and job performance," he says. "Which raises some rather tough questions about education – is it largely a signalling competition?"

The son of an entrepreneur and property developer, Sutherland was brought up in Usk, a small town in Monmouthshire. After doing Latin, Greek and Maths at A level at Haberdashers' Monmouth School, Sutherland

studied Classics at the University of Cambridge. He earned – wait for it – a 2:2. Sutherland's only thought after graduating was to avoid going into accountancy, and so he chose teaching. But he then had a "minor panic attack" that if he went straight into teaching from university he would spend his entire life in education establishments.

So in September 1988 he left his job teaching Latin and joined Ogilvy & Mather Direct, the direct marketing arm of the marketing and advertising agency. He was there for 18 months as an "account man" before becoming a Planner and then falling out with his boss. So he left, simultaneously applying for a job as a Junior Copywriter in Ogilvy's creative department. Two days later he was back.

Anyway, about those bees.

◀ Sutherland seems to be one of those bees who have been ignoring the 'waggle dance'; he has something of the maverick spirit about him ▶

“In a sense those bees are the R&D budget for the hive,” says Sutherland, who quickly rose to Head of Copy in 1995 and then Creative Director at Ogilvy in 1997. “I do worry about business in that the drive for short-term efficiency gains (efficiency is the only true virtue that economists and finance folk understand) may come at the price of adaptability or diversity – as Nassim Taleb would say, ‘efficiency fragilises’. Economists would say ‘we don’t want all those bees wandering off, we want to maximise pollen production and have all bees follow the waggle dance’. Evolution hasn’t done that: it understands the trade-off between short-term gains and long-term survival so has continued to ensure that some of the bees just go off and do their own thing. Otherwise you will never adapt when the environment changes; you’re just stuffed.”

There you go, a warning on the short-termism of the shareholder value movement from biology’s study of bees. It is that sort of abstract thinking that crosses boundaries, which has made the self-styled ‘fat bloke at Ogilvy’ one of the most influential and intellectual voices in marketing, advertising, and increasingly beyond.

Not many advertising executives appear in *Wired* and one of Sutherland’s TED talks now on YouTube *Life lessons from an ad man* has had more than two million views. He was also in the news after spending 24 hours in a Qatari prison for smoking an e-cigarette on a plane. So he is that kind of eccentric intellectual, somebody that would fit seamlessly into the academic world and he certainly dresses like one, with his fondness for a cravat seeing him voted as the worst dressed person in British advertising by *Campaign* magazine in 2008.

“I prefer business,” says Sutherland vaping on his e-cigarette. “Business is a more scientific place in many respects than academia, because it is easier to make progress. In academia you have to be right; in business you merely have to be less stupid than your competitors, so it is an evolutionary process, more so than science.”

For somebody who prefers business, Sutherland seems to have a strange dislike of economists or perhaps, after the post-crash world we live in, a perfectly normal and rational disdain for them depending on your view. Sutherland delivers a stinging critique.

“If you imagine a world where you have a series of individual anonymous actors engaging in standalone transactions in an atmosphere of perfect information and perfect trust with stable transitive preference blah, blah, blah – the assumptions just go on and on,” starts Sutherland. “In that case you have just imagined a world where marketing needn’t exist. Then you suddenly

understand why finance people instinctively hate marketing people – because they have a fetishised world where there isn’t any.”

Marketing does exist and does a roaring trade. WPP, which owns Ogilvy & Mather, has a market capitalisation of more than £13billion.

“Brands provide consumers with the benefit of the doubt,” continues Sutherland. “Trust is something brands contribute to, they enable purchases to happen when otherwise they wouldn’t. They enable companies to innovate more, as consumers will be much readier to adopt the innovation from brands they know and trust. Yet conventional economics hates marketing. *The Economist* finds it almost impossible to write an article on marketing without getting ‘snarky’. Economics is basically

suggesting the ideal state of humanity is a weird, individualistic, autism, but we are a much more interesting species than that.”

Sutherland’s doubts about the normal economic models of consumers ‘maximising utility’ started before the 2007 financial crash. He could see it working in direct marketing.

“That side of the business tends to be more ‘behavioural’,” says the 48-year-old. “You had adverts to which people replied by phoning or by sending in a coupon, or now going to a website. It gave you results, we saw how advertisements varied wildly in terms of their effectiveness in garnering a response.

“It showed there was something going on in human behaviour, where conventional research or economic theory did not have a valid explanation. You might send somebody an invitation to take up a credit card and the biggest determinant of response wasn’t the APR but how the application form was laid out. We instinctively knew there was

something important going on that had not been categorised.”

But it was not until a bout of flu that Sutherland was able to discover just what his instincts were telling him.

Sutherland says: “I was stuck in bed so I read a few economics books: *The Armchair Economist* by Steven Landsburg; Tim Harford’s first book; and also a couple of books by Robert Frank, *The Darwin Economy* and *The Economic Naturalist*. That particularly interested me because I am also obsessed with evolutionary theory. It is strange and faintly ridiculous that one of the great theories of ‘everything’, doesn’t have more influence on everything from business to economics and politics.”

He buzzes off on another tangent, but it is worth following.

“We have this unhelpful narrative that we are some sort of lusty, vulgar, deeply flawed and hideous chimp which



“In academia you have to be right; in business you merely have to be less stupid than your competitors, so it is an evolutionary process, more so than science”



is barely kept on the rails by the power of pure reason” says Sutherland. “I look at it the other way round, because evolution is cleverer than all of us. We are actually a rather magnificent ape with spectacular instinctive ability and a frankly rather inadequate calculator that is basically sellotaped to our forehead. I am very sceptical of the conflation of the idea of neo-classical economics’ rationality with real rationality; you can only make that claim when you have a very shallow, individualistic and short-sighted view of what rationality really is.

“Anyway, I was very taken by the best of this economic writing – especially *The Economic Naturalist*, where you view markets as an eco-system rather than a physical mechanism and I was hooked. I thought this was a tremendously useful way of looking at the world.

“I was also very taken by more conventional economic theory – and the neo-classical model is certainly beguilingly elegant – but at the same time I had this nagging doubt that... that it was kind of rubbish.”

It didn’t chime with what Sutherland had seen at Ogilvy. He had seen many times how small changes to a website or to an advert produced huge responses, he calls them ‘butterfly effects’. Economics was still not explaining these phenomena.

“We have known in direct marketing for years that there are butterfly effects,” says Sutherland. “The assumption in marketing that the scale of the effect is proportionate to the scale of and expense of the intervention, was causing us to miss the search for the cause of these butterfly effects. Instead a good

marketer should continually experiment with small things, low cost experiments, with low maximum downside and a potentially limitless upside.”

Sutherland’s second epiphany came when he read *Nudge* by Richard Thaler and Cass Sunstein.

“It wasn’t published in the UK so in a rash act I ordered it from the US by FedEx,” says Sutherland.

“I ended up with effectively the first copy of *Nudge* in the UK, other than the one that was given to the Prime Minister.”

Sutherland had discovered behavioural science, or behavioural economics, where the irrational decisions and biases by humans that have evaded traditional economic theory are explored and explained.

“When we at Ogilvy discovered behavioural science we had never heard of ‘decision-making under uncertainty’ or ‘bounded rationality’,” says Sutherland. “When we read *Nudge* and those people like Daniel Kahneman we said: ‘Phew, here is a scientific discipline around that thing that had no name’. Looking back at the people who worked with me in direct marketing in the 1980s and 1990s, we were all amateur behavioural scientists before our time.”

As well as proving his instincts right, behavioural science gave Sutherland a language and an academically researched field to put over his arguments to clients, the Board of Ogilvy and the rest of the marketing industry. Having risen through the ranks at Ogilvy to become Vice-Chairman of Ogilvy Group UK, this eureka moment also coincided with Sutherland becoming Chairman of the

Institute of Practitioners in Advertising (IPA), so he told the industry about behavioural science.

Sutherland has become something of a behavioural science evangelist, arguing “there is no point in being 90 per cent of buggar all, we would rather be 10 per cent of a growing, thriving business”. And believes it is the next revolution after the internet.

“Very importantly, behavioural economics has re-branded psychology,” says Sutherland, “because how we humans behave is not objective or always rational according to economic theory. Engineers, medical people, and scientific people, have an obsession with solving the problems of reality, when actually once you reach a basic level of wealth in society, most problems are problems of perception.

“You have to ask whether most businesses and policymakers are making assumptions about human behaviour based on very flawed models. One is market research; the idea that people can explain and predict their own actions – when we know that a large proportion of our action is conducted outside the realm of conscious introspection. Behavioural testing should play a much bigger part and research a smaller part in finding how people choose.

“Also, marketing and innovation are two sides of the same coin. If we can work out ways in which we can encourage the adoption of worthwhile innovation through better psychology that is as valuable as the innovation itself. Anybody can invent something, getting it widely adopted is the tough task.”

Sutherland reveals Ogilvy have a whole department testing and experimenting on what makes consumers choose, while it has partnerships with academics and people like web psychologist Nathalie Nahai and he trawls through the latest behavioural science research papers for ideas.

“Our slogan at OgilvyOne is ‘dare to be trivial’,” says Sutherland. “We test small things, as they may be really important and we test things that are counter-intuitive, because your assumptions of what are important to people might be totally wrong. Try putting the price up – after all behavioural science has shown in experiments that our perception of the quality of a product rises with the price.”

Sutherland’s best example of daring to be trivial is a story from User Interface Engineering, a US website consultancy, who simply replaced a ‘registration’ button with a ‘continue’ button and saw a major e-commerce company’s sales rise by \$300million in a year.

“We do get cases where our return on investment is 150:1,” says Sutherland. “You make a change to a website and the return is genuinely spectacular. Understanding how we actually make decisions and behave rather than how we think we decide and behave is really important for business and through behavioural science we have a language to attract the boardroom and policymakers.”

Thanks to Sutherland those that have not been watching the ‘waggle dance’ in the boardroom can now make a difference to every business. ■

■ Read like Rory

◆ Nassim Taleb – *The Black Swan: The Impact of the Highly Improbable*

Famed for predicting banks’ fragility and the 2007 financial crisis, the book focuses on the extreme impact of certain kinds of rare and unpredictable events and humans’ tendency to find simplistic explanations for these events retrospectively. The ‘black swan’ is now a theory in its own right. Only by accepting what we don’t know, Taleb shows, can we see the world as it really is.

◆ Steven Landsburg – *The Armchair Economist: Economics & Everyday Life*

Air bags cause accidents; well-protected drivers take more risks. This well-documented truth comes as a surprise to most people, but not to economists, who have learned to take seriously the proposition that people respond to incentives. Landsburg shows how the laws of economics reveal themselves in everyday experience and illuminate the entire range of human behaviour, though some even economics fails to fathom.

◆ Robert Frank – *The Economic Naturalist: Why Economics Explains Almost Everything*

The Cornell University Professor takes some amusing examples to show how economics can explain some of our stranger behaviours, decisions and everyday life. Using economic principles Frank attempts to explain why such puzzling decisions, like why soft drink cans are round and milk cartons square, why brown eggs are more expensive than white ones and why female models earn lots more than male models, are in fact perfectly sensible according to economic logic and the fundamental law – the cost-benefit principle.

◆ Tim Harford – *The Undercover Economist*

A rare treat, a book on economics that is captivating. The book provides an introduction to principles of economics, including demand-supply interactions, market failures, externalities, globalisation, international trade and comparative advantage. It also explains why poor countries remain poor and how China has grown so rich.

◆ Richard Thaler and Cass Sunstein – *Nudge: Improving decisions about health, wealth and happiness*

The book that spawned a UK Government department – the Behavioural Insights Team or Nudge Unit. Every day we make decisions: about what we eat, about investments, or our children’s health and education. Unfortunately, we often choose poorly. This book shows that by knowing how people really think, we can make it easier for them to choose what is best for them, their families and society. Using dozens of illuminating examples Thaler and Sunstein show how to nudge us in the right direction.

◆ Daniel Kahneman – *Thinking, Fast and Slow*

Considered by many as the father of behavioural science, Kahneman’s work on the psychology of judgement and decision-making developed many of the theories that form the basis of the field. In *Thinking, Fast and Slow* Kahneman explains his half a century of research that saw him crowned with the 2002 Nobel Prize in Economics. ■



Ten qualities *that make a good non-executive director*



A good director is worth their weight in gold, a bad one can destroy a company with one single handed blow. Professor John Lyon explains what it takes to be a successful non-executive director – somebody who is not part of the day-to-day running of the business but is involved in high-level planning and policy making

Quality 1: Bring complementary expertise

A blend of skills on a Board is important to enable appropriate decision-making in a timely manner, and to be able to ascertain when external advice is required. All directors are responsible for decision-making but if a director has professional skills in a certain area, he or she is expected to possess more advanced knowledge of that area of expertise.

Quality 2: Facilitate the strategy

The Board is responsible for aligning its decision-making with the adopted strategy (if indeed one has been adopted). So decision-making should not just be about what each director thinks but also must take account of ‘the bigger picture’ and hence doing right by all shareholders at all times. It is critically important that new directors can align themselves with the existing strategy unless the Board tables a discussion to consider a change in strategy along with the management team.

Quality 3: Embrace corporate governance

Corporate governance is key to ensuring legal, appropriate and timely processes are adopted by the company, and now embraces many aspects of business. Corporate manslaughter and other legislation means the limited veil of incorporation may not protect directors if they have been shown to be liable in certain aspects. It is highly recommended that any directors already on Boards should go through initial training in these

aspects and continuing professional education to keep themselves refreshed.

Quality 4: Strike a balance

Small and medium enterprises (SMEs) on the whole differ from large corporations in that there are ‘gaps’ in knowledge, expertise and process. Directors in very small or virtual companies often need to ‘roll their sleeves up’ and assist in these areas when needed. This is an area of contention – where does the role and responsibility of director stop and the role of management commence? A separate consultancy agreement may be a useful way forward between company and director to clarify this separation, where possible.

Quality 5: Want to make a difference

It is all too easy to sit on Boards, make a few comments and take a fee. Companies need their directors to make a difference and each director should be appraised on an annual basis as to their value added and whether they merit another term.

Quality 6: Have all-round business knowledge

The art of being a good general manager is to know (outside of your core skill) enough about all business areas and to know what you do not know – you can then call on others to come alongside for certain decisions. All directors should have adequate general management training and update this training annually. For example, chartered accountants should understand sales and marketing. (The author is a chartered accountant!).

Quality 7: Be a team player

Believe it or not, egos can get in the way and it is not unheard of for mergers and acquisitions to fall through due to the ego of one CEO not yielding to the correct decision. It might even be that he or she wants the headquarters of the enlarged commercial entity in their home location, and that becomes a deal breaker. Unfortunately, there are also more than a few examples of non-executive directors destroying teams and not building them.

Quality 8: Empathise

Decision-making is more effective when Board members can make sense of the world around them and they are able to give more level-headed direction once such sense-making has occurred. The process of making sense of often ambiguous data and confusing situations is not trivial and awareness of the process is invaluable to new and time served Board members.

Quality 9: Bear the scars of experience

We learn some things experientially and there is no substitute for ‘having been there and got the t-shirt’, even if the t-shirt is blood stained and battle worn. You know when someone has been in a place often when they recount their experience, and it is these stories that are invaluable in impressing the do’s and don’ts on others that are following on the journey.

Quality 10: Be a skilled negotiator

The Chair needs to be the ultimate in blending solutions from Board opinions and then to encourage goal congruence with ‘ducks aligned in a row’. This often entails conversations outside of the boardroom and the Chair needs to be able to counterbalance overly dominant positions and to encourage understated recessive arguments, in order to form a balanced view that is in the interest of all shareholders. Something that is at times not at all easy or straightforward. ■

How MOOCs are changing education



Stephen Hoare investigates how free online courses are revolutionising the way we learn

Lauded for breaking the centuries old mould of higher education, and reaching untapped global markets, Massive Open Online Courses (MOOCs) are changing the landscape for universities and business schools.

In April 2012, US web platform Coursera launched with free high quality content and today boasts six million online learners worldwide. Learners can choose from over 400 courses created by 85 universities in 16 countries. Its rivals not-for-profit edX, set up by MIT and Harvard University, and Udacity, inspired by Stanford University, lay claim to around two

million and one million respectively.

In the UK, the Open University launched FutureLearn which brings together 23 of the UK's top universities with three leading overseas universities, Monash, Auckland and Trinity College, Dublin. The British Museum, British Library and British Council have also joined FutureLearn as content partners. "At the OU we made a very quick decision that MOOCs were not a passing fad and were in fact worth pursuing. We felt we had to have a UK response to what the US universities were doing and that it was important to be represented strongly in the MOOCs market,"

says Mark Lester, Global Head of Partnerships at FutureLearn.

Many universities see MOOCs as a marketing tool to promote their brand worldwide or as a means of widening participation. A MOOC could be used, for example, to deliver a foundation programme leading on to a degree. Warwick Business School (WBS) is looking at the possibility of reaching out to sixth formers.

"We want to build a bridge with young people who may not have considered higher education. We are planning to launch a Year 0 'front-end' to our existing three-year undergraduate degrees in 2015-16 and

an online course could be part of that year-long qualifying programme," says Professor Peter Corvi, Associate Dean (Widening Participation) at WBS.

Market research has uncovered a strong demand for some form of validation as many online learners say they are studying to boost their own professional development. But so far, as with respect to widening participation, initial market research carried out by FutureLearn shows that take-up has been mainly from existing graduates right across the age spectrum. "Many graduates are looking for targeted short courses as part of their ongoing career development," says Lester.

New business models are emerging as MOOCs begin to monetise their activities. Coursera, a venture-capital backed commercial company, generates revenue from certification fees, introducing students to potential employers, and sponsorship. In September 2013, Coursera announced that it had earned more than \$1million from verified completion certificates. It returns a percentage of this money raised to universities supplying free courses as well as 20 per cent of gross profits.

FutureLearn is adopting the Coursera model but is taking things slowly. It plans to raise revenue by offering £20 certificates of participation to anyone who completes a MOOC course. Where stronger proof is needed, FutureLearn has said it will introduce £150 statements of attainment based on invigilated online exams verified by biometric proof of identity.

There are potential profits to be made from delivering executive education to global companies using MOOCs as a vehicle. FutureLearn sponsors, BT and the Institution of Engineering and Technology (IET), are intending to use the MOOC as a platform to supplement professional training. "BT wants to use us to deliver employee training as part of their commitment to offer more STEM (science, technology, engineering and mathematics) apprenticeships," says Lester.

Joining a MOOC makes economic sense for a university that wants a platform for promoting its degrees

to a wider global market or to boost an existing online programme overseas. The risk is that a badly designed MOOC might put off potential students.

Overwhelmingly positive online feedback posted to the first MOOC from WBS, *The Mind is Flat*, is a reputation-building word-of-mouth endorsement that the Dean of WBS, Professor Mark Taylor, reckons will help them compete in an expanding global market.

"If Warwick is not giving potential students a 'try before you buy' offering while our competitors are, then it is likely we will lose out to US rivals in the long run," says Taylor.

The University of London signed an agreement with Coursera to provide four six-week MOOCs on subjects ranging from *Programming for Mobile Devices* to *An Introduction to English Common Law*.

"If Warwick is not giving potential students a 'try before you buy' offering while our competitors are, then it is likely we will lose out to US rivals in the long run"

"We had over 200,000 registrations and, of those, 93,000 were fully active and engaged with our material," says Mike Kerrison, Director of Academic Development. Over 150 students went on to enrol for our online courses from areas we don't normally reach like the US, Brazil, and India." The University also shared income from Coursera's 'Signature Track' authentication certificate, a biometric protected validation of an individual's completion of online study.

"It was a good result for us as we are involved in flexible learning, but more traditional universities need to think carefully before investing in MOOCs," says Kerrison.

A commercial model for the MOOC also exists in the form of small private online courses, or SPOCs, for which universities charge

a commercial rate for online tuition. This would suit the delivery of executive education and WBS is likely to be an early adopter.

So could MOOCs sound the death knell of the traditional taught degree with entire degree programmes online at vastly lower cost?

"MOOCs are part of the future, but I don't think that this is the 'Napster moment' and that higher education will collapse as we know it," says Taylor.

Lester adds: "We've been pedagogy-led rather than technology-driven. And we've brought the experience of the Open University in terms of supported distance learning to create a truly world-class online learning experience for our learners.

"There are two strands to our approach, social constructivism – people learning together in groups – and conversational learning, where people are having meaningful discussion around context."

FutureLearn says individual courses attract in excess of five figures and are set to grow significantly in 2014 as marketing shifts from social media word-of-mouth to TV coverage. Popular courses with a broad appeal like Warwick's *The Mind is Flat* tick these boxes.

"When we advertised our course on FutureLearn all the places were filled within 36 hours," says WBS Head of Behavioural Science Professor Nick Chater, who devised the MOOC.

Student visa restrictions are hindering expansion of UK HEIs, and there are high costs of entry in establishing overseas campuses, online courses look to be a good way of extending market reach. Online delivery is gaining in popularity; data from the General Management Admissions Council shows that the number of students taking online MBAs grew by 20 per cent between July 2011 and June 2012.

Getting their online strategy right will allow universities to grow student numbers, turnover, and faculty while requiring smaller growth in physical infrastructure. Success at playing the MOOCs game has the potential to enable universities and business schools to become truly global. ■

City guide

Hong Kong



KK Mui, MBA (Warwick), Chairman of Key Wines, shares some of his favourite haunts in one of the most dynamic and cosmopolitan cities in Asia



Hong Kong is a glorious Global City, ranking alongside London, New York, Paris, and Tokyo as one of the world's most interconnected cities – an engine of growth for their country and a gateway to the resources of their region. Its famed skyscraper-heavy skyline, featuring over a third of the world's 100 tallest buildings, is also one of the world's leading international financial centres and home to over seven million people. But alongside the modernist architecture and bustling business life you can still find plenty of traditional culture.

Best time of the year to visit

January / February sees the Chinese Lunar New Year decorating everywhere with red signs symbolising good luck, health, and wealth. **May – October** is Summer in HK and a great time to enjoy the beaches and smaller surrounding islands, with June bringing the spectacular Dragon Boat Carnival. **November / December** sees all the big shopping malls with Christmas displays and one of the biggest and most unforgettable decorations is at the main entrance of Harbour City.

◇ www.harbourcity.com.hk

Where to shop

Hong Kong is a brand-name shopper's paradise, packed with malls of all sizes for tax-free shopping fun. But there are many local shopping spots to give you a taste of the real Hong Kong:

Ladies Market in Mongkok and **Stanley Market** 1 are great, with Central and Soho areas offering art galleries and specialist boutiques like my own – **The Hub by Key Wines** 2 in Wyndham whose spacious shop is a blend of fine art and fine wine.



1



2

◇ www.ladies-market.hk
◇ www.hk-stanley-market.com
◇ www.key-wines.com

Where to eat

Enjoy the city skyline from **Water Mark** or enjoy a juicy steak overlooking Happy Valley Racecourse at **Woolloomooloo** 3. **Liberty of Exchange** sees investment bankers enjoy a pint

flickr.com/photos/mojobaron/7980819023



3

and a pizza, and for the best seafood visit **Aberdeen** in the South of HK Island. For traditional Hong Kong food go to **Kau Kee Restaurant**, famed for their long-braised beef brisket noodles, **Sing Heung Yuen** for traditional dai pai dong, or take a dim sum brunch at **Luk Yu Tea House**. **Lab Made** in Tai Hang offers ice cream with a fun twist, having been the first to introduce liquid nitrogen ice cream to Hong Kong – pick a flavour, watch it being frozen in under two minutes, enjoy your freshly-made ice cream!

◇ www.cafedecogroup.com
◇ www.wooloo-mooloo.com
◇ www.lex.hk
◇ www.labmade.com.hk

Where to take in the views

Standing over 552 metres above sea level, **Victoria Peak** is my number one spot to take in Hong Kong's most captivating view.

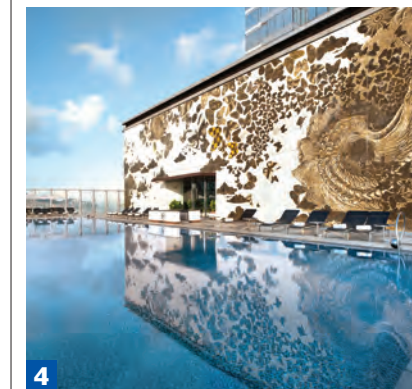
Wait for the sky to turn dark and the buildings to light up – it's absolutely breath taking. A ferry ride from Central to **Tsim Sha Tsui** Waterfront offers an unobstructed across Victoria Harbour, and the Waterfront also features the **Avenue of Stars** honouring celebrities of Hong Kong's film industry. Visit **Lantau Island** and you can access the **Tian Tan Buddha** by cable car. Or you could take the two-hour walk too! Other nice walks are in **Discovery Bay** or at the **Hong Kong Wetland Park**.

◇ www.thepeak.com.hk
◇ www.avenueofstars.com.hk
◇ www.dbay.com.hk
◇ www.wetlandpark.gov.hk

Where to stay

One of the many joys of visiting Hong Kong is that there are so many hotel options, from lavish palatial stays to backpackers'

dorms. **W Hong Kong** 4 has a fabulous rooftop outdoor pool while **The Peninsula** has some of the best spa facilities on HK. **Luxe** offers amazing themed suites, while for the brave there is always **Chung King Mansions**, which contains the largest number of guest houses in HK in one building; offering nearly 2,000 rooms it's probably the cheapest accommodation in HK.



4

◇ www.starwoodhotels.com
◇ www.peninsula.com
◇ www.theluxemanor.com
◇ www.chungkingmansions.com.hk

City guide

Almaty



Assel Kulybelova MBA (Warwick), VP Commercial Operations at Aria Petroleum CY, gives us the lowdown on why you should visit this spectacular part of the world



Almaty was the capital of Kazakhstan until 1997 when the title moved to Astana. However, as the country's most populous city, it remains the centre of commerce for the world's ninth largest country with the stock exchange and largest banks still located there. Almaty in winter is packed with winter sport activities but it is a wonderful destination all year round with beautiful scenery and a very cosmopolitan feel. Many people coming here for the first time are surprised by the mix of population – over two dozen nationalities and ethnic groups – and the European spirit of the city.



Where to eat

Almaty has many European restaurants and fast-food joints but for proper Kazakh fare head down to **Gakku** where you can try beshparmak (pasta with meat or, nearer to the Caspian sea, fish), plov (Central Asian paella), or samsa (little pies stuffed with meat). Wash it down with wine from **Arba Wines Collection**, a local wine producer. **Alasha** is



2

also excellent with its rope-walkers and belly-dancers to entertain you while you eat. **Raketa** (the Rocket Bar) is a great place to start your evening with a space cocktail, or if beer is your thing, try one of the two Line Brews with their in-house breweries.

- ◇ www.gakku.kz
- ◇ www.alasha.kz
- ◇ www.raketabark.kz

What to eat

At the **Green Bazaar 1** – the oldest market in town – you can sample all sorts of traditional food and often see stallholders hand-making items. I love **irimshik**, a Kazakh cheese which comes in variety – it can be dry and soft, and sometimes sweet eaten as a dessert with Kazakh tea. You should definitely sample **kumys**, a drink made from horse-milk and delicious in the Spring when the grass is young and full of juice, or **shubat** made from camel milk. Other regional delicacies include **kazy** and **shuzhyk** – horse-meat sausages. Why not picnic at a fishing farm, just outside the city,

Getty Images/Christopher Herwig | Getty Images/Eric Gregory Powell

where you can cook your trout on an open fire. And no picnic would be complete without an Almaty Aport apple – the best apple on the planet and the symbol of the city.

How to get around

Almaty's new **metro system 2** might only just be being modernised, but its stations are works of art in themselves. Some have decorations in the style of Kazakh national ornaments while others are done in the modern style, like Baikonur station named and styled after Kazakhstan's space testing and research centre.

- ◇ www.almatymetro.kz

Where to shop

For high-end shopping choose **Esentai Mall** with its Saks Fifth Avenue department store and other luxury brand boutiques including LV and Dolce & Gabbana as well as pop ups from local designers. There is also a fast food court, good brasserie, and IMAX cinema there. Nice souvenirs can be found in the lobby of **Alma-Ata hotel**, including hand-made carpets and pashminas as well as traditional Kazakh jewellery.

- ◇ www.esentaimall.com

Where to stay

Almaty is still a work in progress as a tourist destination, but that is part of its charm. Here, you can still find accommodation that will meet the requirements of both your soul and wallet. If you want five star accommodation, the new **Ritz-Carlton 3** in Esentai and the



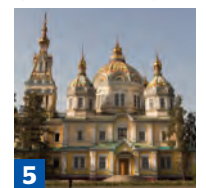
3

Rixos are both well located. For a less expensive stay located in the heart of the city, try the **Dostyk Hotel**, the **Worldhotel Saltanat**, or the **Mildom Apartments**.

- ◇ www.ritzcarlton.com
- ◇ www.rixos.com
- ◇ www.dostyk.kz
- ◇ www.worldhotelsaltanat.com
- ◇ www.mildomhotel.kz

Sights not to miss

Almaty is famous for its mountains, **4** and our people give indications or explain locations using two directions: up, which means towards the mountains, and down, which means the opposite. If you are not using these directions you will be outed as a tourist! Just 10 minutes' drive 'up' from Almaty Centre you can take the cable car to **Shymbulak** mountain and skiing resort. Down from Shymbulak there is the **Medeu** speed skating and bandy rink – the highest, at an altitude of 1,700 metres, as well as the largest



5

ice rink in the world. **Panfilov Park** makes a lovely day out, and is near to the beautiful **Zenkov Cathedral, 5** which is also stunning inside. This Russian Orthodox cathedral is built entirely of wood, one of only eight in the world. Bath-houses and saunas are very popular in Kazakhstan and three types of bath are available at the impressive piece of Soviet architecture that is the **Arasan**. Russian, Finnish, and Turkish.

- ◇ www.shymbulak.com
- ◇ www.medey.kz
- ◇ www.arasan-spa.kz



4



Five books I love

Professor James Hayton

In my profession, books surround me. However, only a small number are likely to have an enduring influence. Here are five that have influenced me...



My choice of five books reflect my preferences for synthesis and integration across domains, from evolutionary psychology to workplace anthropology, from human cognition to business organisation, and from laboratory experiments to ethnographies. Not only is the product of instrumental value, but as indicated by my choice of fiction, the process of arriving at synthesis is itself a source of pleasure.

Professor Hayton's research focuses on how human resource management practices foster organisations' capacity for entrepreneurship and strategic renewal, and explores how cultural and psychological factors impact upon entrepreneurial behaviour. His research has been published in many prestigious publications and he is a member of the American Psychological Association as well as of the Academy of Management. In 2009, he received a Distinguished Service Award from the Human Resources Division.

A complex and moving novel

Magister Ludi/The Glass Bead Game
Hermann Hesse



I first read this novel in the Summer prior to beginning my doctoral studies. It is set in the future, in an imaginary European state, where the Castalian Order is found. The main purpose of the Order is to educate young men and to play what is called the 'Glass Bead Game'. The mysterious game involves the identification and synthesis of links across the arts and sciences. The allusions to the ivory tower are immediately apparent. This beautiful book contains many levels of allegory as it explores the education and development of the central character. The arc of the story provides opportunities for the protagonist to engage in discourse on the relations between the arts and sciences, on the intrinsic value of knowledge, and the possibility of an intellectual institution that exists apart from the secular world. Hesse was an esotericist and captures Jungian analytical psychology as well as Vedantic philosophical perspectives in the sweep of the novel. Since first reading the book I have always carried it with me, even as other books were sold or given away. The search for integration is a theme that runs deep throughout this book, and the relationship between that search and the very meaning of academia is one that is close to my heart. ■

A seminal work

Organizations
James March & Herbert Simon



Organizations is a remarkable synthesis of the contemporary understandings of administrative organisation, humanist theories of motivation, and cognitive psychology. It is probably best known for its presentation of the concept of bounded rationality, for which Simon was awarded a Nobel Prize. However, it contains a number of important insights that have influenced subsequent thinking in organisational behaviour, human resource management, organisational theory and decision-making. I was introduced to this book in my first year PhD seminar in Organization Theory. The sheer volume of readings meant that I slept just six nights a week for the ten weeks of the seminar! As with most texts from that seminar mine was a dog-eared stack of photocopied pages. My predecessors in the doctoral programme helped the incoming students by allowing us to photocopy their own copies. The added bonus being that we 'inherited' all the margin notes and underlines from the prior generations, to the point that it was very easy to identify the most important sections of the text by the sheer volume of associated scribbling. Years later I eventually bought a copy, as I did with all of my photocopied texts from graduate school, although I miss the added wisdom of those margin notes. ■

A book that has led me to think differently

Talking about machines: An ethnography of a modern job
Julian Orr



This book is one of those rare pieces of academic work that tells both an interesting story and makes a single, very important, point. It describes a study of Xerox Copier Repair Technicians maintaining leased photocopier equipment. At the time of the research most corporate photocopying needs were met through leased machines. These were electro-mechanical, so in addition to integrated circuits they depended upon a complex array of vacuum tubes and mechanical belts. Breakdowns were common, and individual machines developed their own unique temperaments. The great insight of Orr's work is that in order to accomplish their work, technicians had to come to know these machines as individuals. They could not rely upon the explicit knowledge in the printed manuals and guides. Instead they had to communicate with and learn from one another. The machines were fixed by way of sharing war stories and analogies. Orr was not the first to study the intersection between the technological and social worlds, but his work highlights the importance of this understanding in the context of 'knowledge work'. The ethnography draws out the importance of informal networks, communities of practice, language and situated learning for the solution to technological challenges. This book is seminal in contemporary understanding of the social nature of knowledge in organisations. ■

A book that helped me understand emotion

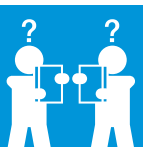
The emotional brain
Joseph LeDoux



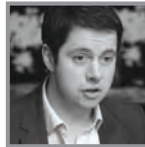
What does it mean to feel an emotion? Is it right to assume that emotional decisions are bad decisions? What would happen to decision-making if we could remove the capacity to feel? It seems strange to think that only relatively recently has it been considered scientifically legitimate to study emotions. However, over the last few decades a number of scholarly disciplines have begun to shine a strong light on this central aspect of the human experience. The importance of LeDoux's book is that we get a feel for the physiological underpinnings of this softest of psychological subjects. Since Darwin, evolutionary theory has held a place for emotions as a functional system that supports survival. LeDoux narrates the story so far, starting with Darwin's early observations of the apparent expression of emotions in animals. He clearly summarises the competing theoretical perspectives of early psychologists such as William James and Walter Cannon, and the experimental contributions of the behaviorists. Building on these LeDoux discusses the most recent discoveries in neuroscience as he effectively unpicks the mechanisms for emotional experiences such as fear and describes the ways that emotions influence memories, decisions and actions. Read alongside Antonio Damasio's equally informative *Descartes' Error*, this book provides a wonderful primer to a complex but very contemporary body of work. ■

A novel that makes me second-guess myself

Foucault's Pendulum
Umberto Eco



Umberto Eco has been described as 'the thinking man's Dan Brown', which may be accurate although is perhaps the only time the two names should be mentioned together in a sentence. *Foucault's Pendulum* is the product of its author, a semiotician and the book is saturated with meaning-rich detail. Its beauty is found in the multiple levels of irony, and the trails of hope that Eco creates for the characters, and by extension the reader, seeking to connect the unconnected. The book is a mystery, but also a crypto-biography. There are numerous clues embedded throughout which suggest the early life experiences of the author, growing up in a region of Europe first ravaged by the war, and then by civil strife. The book is also an allegory for the ways in which our minds automatically seek a coherent and meaningful narrative, even in the absence of genuine connections among disparate facts. Most importantly, the stories that we create can become true, whether intended or not. I bought my used first edition copy in New York in 1991 when I was living in that city. This fact is significant only because I was unable to read the text for over twenty years, until finally reading it while on holiday in Piedmont. By coincidence, I found myself riding my bicycle in the very hills where Eco had spent his youth and to which he refers in the novel. True to the theme of *Foucault's Pendulum* I have derived great pleasure in seeking meaning in that strange coincidence. ■



Ian Wylie finds out how, in the age of 24 hour news channels and social media, governments can plan and manage the panic caused by terrorist attacks and natural catastrophes

How to manage a disaster

The 2014 winter floods stretched UK emergency services to the limits, with Royal Marine Commandoes drafted in to support police, fire crews, and Environment Agency workers in rain-lashed regions around the UK.

But what if volunteers could be marshalled more effectively to assist in rescue and recovery work? What if the same methods could be used to prevent or alleviate suffering during disasters around the world, from tsunamis and earthquakes to terror attacks or nuclear meltdowns?

And what could be achieved if the social media chatter and rumour mill that now accompanies all disasters and emergencies could be channelled into a force for positive action in times of crisis.

These are some of the themes being explored at Warwick Business School by academics from a range of disciplines. For example, Duncan Shaw, Professor of Operational Research and Critical Systems, has won funding from the UK's Department for Environment, Food and Rural

Image courtesy of WK Interact/Copyright © WK 2014 | AFP/Getty Images

Affairs (Defra) to investigate the role of volunteers during major floods. The project aims to identify and explore what emergency planners should consider when deciding whether or not to embed 'convergent volunteers' – those who converge at the scene of an emergency offering to help – into their official response.

At present there is no official guidance on the involvement of convergent volunteers during emergencies. Some volunteers may have undertaken suitable training for the tasks they perform, because they already volunteer with, for example, the Red Cross or RNLI.

But many others may not be deemed suitably qualified or experienced. So what should emergency services – and policy makers – do with them?

"The emphasis in times of emergency used to be that the police will do this, and the fire service will do that on your behalf," says Shaw. "But the emphasis is changing to, 'we're prepared, are you?' More emphasis is being placed on the public to provide help and complementary support during incidents.

"I don't think it's about cutbacks in resources. I think it's about using all the resources we have at hand to ensure that no lives are lost."

Converging volunteers

It became apparent in 2011 that UK emergency services had no consistent method for handling convergent volunteers when the Government ran Operation Watermark – the largest flood defence exercise ever held in the UK which came out of an official review by Sir Michael Pitt into the 2007 floods that devastated parts of Yorkshire, the Midlands, and the West Country.

"At the moment, a volunteer with a dinghy offering his services during a flood might get turned away by a police officer because his boat isn't deemed seaworthy," says Shaw. "But another police officer in another town might decide differently.

"At present there is no consistency and if someone dies as a result of that decision to deploy a volunteer, is the weight of the law going to come down on the volunteer, the policeman or nobody? Governments may wish to make decisions on these issues if they are to make the most effective use of volunteers."

The first stage of Shaw's research is to discover the operational challenges associated with involving volunteers in emergency responses. But he is hopeful that it may be possible to create a framework that allows dynamic risk assessment of convergent volunteers, and that this can become the basis of an international standard that could be adopted around the world and implemented within planning for all kinds of disasters and emergencies.

"I'm interested in how you help emergency planners make

better decisions, how to support decision-makers when they need to figure out when, for example, to evacuate a city.

My expertise is in the preparedness and planning stage, rather than when a disaster happens – it's almost too late then. Every local authority has a group of people who help prepare their region for these sorts of incidents. It's the same in central Government, so I'm interested in what should these plans include in order to better prepare the UK to respond."



Little girl in radiation screening unit. Fukushima, 2011

“Former Prime Minister Naoto Kan admitted in a newspaper interview that while he feared the Fukushima disaster would leave the capital uninhabitable, he believed evacuating the city would have been "impossible"”

nuclear accident of 2012. A report into the handling of the crisis revealed that Japanese leaders secretly considered the possibility of evacuating Tokyo, even as they tried to play down the risks in public.

However, after he left office, former Prime Minister Naoto Kan admitted in a newspaper interview that while he feared the Fukushima disaster would leave the capital uninhabitable, he believed evacuating the city would have been "impossible". He said the "spine-chilling thought" of a deserted capital was a major factor in convincing him to scrap nuclear power.

The new international standard, Shaw hopes, will be as applicable to evacuating millions of people from Tokyo before a tsunami as it is to evacuating 800 people in Iceland during a volcano eruption.

"Specific threats inform the latest government thinking," concedes Shaw. "So the New Dimension equipment was in response to 9/11, and now the emphasis is on flooding. But you've got to build a general resilience."

His research into the use of volunteers has prompted Shaw to think more widely about how governments might

9/11 aftermath

Shaw's research interest in this area began with a Communities and Local Government project for the Office of the Deputy Prime Minister in the aftermath of the attacks of 9/11. The UK Government had decided to set aside £340million for preparing fire and rescue services should similar attacks occur here, and the resultant 'New Dimensions' project examined how best that money should be spent and how search and rescue equipment should be deployed in the event of single or multiple attacks around the country. Shaw also helped build analytical tools to investigate decontamination of a population. These models have now been transferred to Australia's emergency services.

More recently, the evacuation of cities and countries has been the subject of a three-year EU project across 10 countries and Shaw, the principal investigator, has recently returned from Cape Town completing work on an international standard for evacuation responsiveness of government organisations.

The need for such a standard was highlighted in the wake of Japan's



make better use of a broad range of existing capabilities and resources. Shaw says: “The UK is able, for example, to bundle field hospital equipment and resources together to send to a disaster in Haiti. But how could we use that same capability to provide support within the UK? Similarly with evacuations, how can we use the people who are already there and harness them differently to use them to help alleviate the situation?”

Involving digital data

Making better use of existing resources and, in particular, digital data in times of crisis is also a focus for Warwick Business School duo Tobias Preis, Associate Professor of Behavioural Science and Finance and Suzy Moat, Assistant Professor of Behavioural Science, who believes there is a variety of applications arising from the ‘digital traces’ left by people when searching and sharing information on the internet and social media before, during and after an unexpected incident.

Preis and Moat have co-authored a series of papers that link digital interactions on Google, Wikipedia and Flickr with real world occurrences.

Their latest research asks whether information about photographs shared online can tell us something about emergency response and how people feel during a disaster event.

The project funded by Intelligence Advanced Research Projects Activity (IARPA), a research agency that reports to the Director of National Intelligence in the US, investigated user attention to the Hurricane Sandy disaster, analysing data from Flickr, a popular photosharing website.

Plotting Sandy in pictures

Hurricane Sandy was the second-costliest hurricane to ever hit the US. In October 2012, at least 286 people were killed as Sandy wreaked havoc across seven countries. By 29 October, Sandy had curved north-northwest and then moved ashore as it became a post-tropical cyclone with hurricane-force winds.

By counting the number of pictures tagged either ‘Hurricane Sandy’, ‘hurricane’ or ‘sandy’ between 20 October and 20 November, 2012, the researchers found a strong link to atmospheric pressure dropping in New Jersey.

“We found that the number of photos being shared peaked at exactly the same hour Sandy made landfall,” explains Preis, who believes such information could be useful to policy-

makers and other businesses and organisations charged with emergency crisis management.

Such correlations could be of interest to, for example, insurance companies seeking a more cost-effective alternative to the lengthy and manual process of evaluating claims.

But Preis believes the links between real-world events and the information and data shared online could also assist emergency services to allocate resources quicker and more effectively to the areas where they are needed most.

“This was proof of the concept that online behavior can tell us about what’s going on in the real world,” Preis explains. “The value of these data sets is that

they’re generated in a distributed fashion – everyone with a smartphone can release and generate news. And that creates a huge sensor network that can tell us in real time what is going on, from epidemics to stock market crashes.”

Flickr map © Preis & Moat 2012 / AFP/Getty Images

Identify the pattern

Preis and Moat have already provided evidence that patterns in searches for financial information on Wikipedia and Google may offer clues to subsequent stock market moves.

“The sheer volume of these big data sets enables us to identify patterns that have repeated in the past so we can anticipate better what will happen in the future,” says Moat.

“We also see great potential to gain information about what is happening right now in a quicker and cheaper way.

“From this sort of human behavioural data we can’t predict where the next natural disaster will happen, but such rapid and expansive data may help decision-makers make better decisions quicker during times of crisis.”

According to Preis, their work has generated a great deal of interest and contact from political advisors, regulators and central banks.

“We are lucky to live in this decade of increasing information and greater availability of data sources that enable more of our behaviour to be analysed,” he argues. The IARPA-funded Open Source Indicators Programme aims to develop these methods for continuous, automated analysis of publicly available data.

Preis and Moat are hopeful that their research will help governments and authorities anticipate and detect a wide range of significant societal events, from political and humanitarian crises, mass violence, riots and mass migrations to disease outbreaks, economic instability, resource shortages, and responses to natural disasters.

Controlling the Twitterati

The sharing of information about a crisis via social media is a topic that also fascinates Onook Oh, an Assistant Professor of Information Systems and Management group at Warwick Business School.

But Oh’s research is concerned with countering the negative and sometimes disastrous effects of incorrect or misleading information that can spread rapidly when people at the centre of a crisis are desperately seeking and exchanging situation information.

During disasters, whether earthquake or tsunami, conventional communication systems are often destroyed, but mobile networks allow people with smartphones at the scene to share and break news via social media, often with accompanying photographs.

Collaboration

“During a disaster people tend to begin working collaboratively with each other,” says Oh. “When an unplanned, unexpected

disaster strikes, many people try first to obtain information through mainstream media. But if those mainstream channels of information are not available, or are giving only general information when people are looking for much more local information, they tend to turn to their friends and colleagues through social media sites such as Twitter and Facebook.”

And then, using the unofficial information that they gather through the social network, they begin to fill the gap of the

official information, with what University of California academic Tom Shibutani first described 50 years ago as “improvised news”.

Shibutani demonstrated that rumours are not merely the result of faulty communication. In “ambiguous” situations, people often respond like pragmatic problem-solvers, pooling their intellectual resources, including accurate data, guesses, beliefs, speculation – performing collective sense-making and defining the unfolding situation by using whatever resources that are available in their local community.

And fast-forwarding to 2014, aggregating the data generated by social media can provide a real time picture of an unfolding situation. Social media users often act as self-organising agents who fill the gaps in mainstream media, broadcasting real time information to the outside world.

Downside of social media

So far, so good. But Oh’s research considers the downside of social media during disasters and emergencies.

In the immediate aftermath of catastrophic events such as the Mumbai attacks or the Japanese tsunami, partial accounts, accurate and inaccurate facts,

rumour and speculation now can be very rapidly disseminated across the globe, often ahead of official announcements and formal news reporting.

Often in such situations rumours take hold, and continue to characterise events even after a more complete, more accurate picture eventually emerges.

The minute news broke of the terrorist attacks on Mumbai in India, for example, social media sites like Twitter were inundated with a huge volume of messages.

Over one million unique users posted more than 2.7 million tweets in just three days following the triple bomb blasts that struck Mumbai in 2008. Out of these, more than 68,000 tweets were ‘original tweets’ (in contrast to retweets) and related to the bombings.

Some tweeted information about helplines and contact numbers for those who had friends and relatives caught up in the attacks. Tweeters were also mobilised to help with transcribing a list of the dead and injured from hospitals, which were quickly posted online.



“Over one million unique users posted more than 2.7 million tweets in just three days following the triple bomb blasts that struck Mumbai”

Using rumour theory

However misinformation related to the blasts also spread through Twitter. For example, rumours began to circulate about a fourth bomb going off – some tweets even specified a location. False rumours about hospital blood banks needing donations were also propagated via Twitter.

Another rumour claimed that the Indian Government was asking tweeters to stop live updates to avoid compromising its security efforts – a rumour that was then given credence by at least one major news organisation, which posted the tweet on its live update.

Likewise, the story of Hurricane Sandy unfolded quickly on social media: a poignant photo of soldiers standing guard at the Tomb of the Unknowns; a picture of a giant wave slamming into the Statue of Liberty; a TV report that three feet of water had flooded the New York Stock Exchange; energy firm Con Edison was shutting down power to all of Manhattan; New York Governor Andrew Cuomo was trapped in his office.

None of these stories were true. The Statue of Liberty shot was actually from the promotional poster for Hollywood blockbuster *The Day After Tomorrow*.

Citizen-driven information

Using rumour theory, Oh has studied citizen-driven information processing through Twitter services using data from three social crises: the Mumbai terrorist attacks in 2008, the Toyota recall in 2010, and the Seattle café shooting incident in 2012. “Rumour is not necessarily bad – people are desperately looking for information when certain information is lacking, and they try to interpret ambiguous situations so that they can take proper action,” says Oh. “But the threat of incorrect information needs to be managed.”

Oh has expanded a rumour model developed during World War II to the new context of social media, suggesting that rumour is a function of information ambiguity and the importance to people of the issues about which they are seeking information.

“Once a rumour emerges, it travels very fast thanks to social media. So to counter the rumour, you need to inject certain information rapidly via social media to stop the rumour-mill.

“It’s about converting the energy of social media into positive energy,” explains Oh, who points out that the rumour problem became so significant during Hurricane Sandy that the Federal Emergency Management Agency set up a dedicated rumour control centre.

Injecting information

According to Oh, governments and their response agencies should all have robust emergency communication plans so that they can refute rumours through multiple communication channels from social media and SMS through to email and TV broadcast.

Given that the main motivation of rumour sharing is to understand the ambiguous situation of disasters, Oh suggests,

the timely injection of certain information by authorities with trusted external links might help the collective sense-making and decision-making processes of online users who are suffering from the extreme condition of the disaster. He is now writing another paper, trying to understand through which hardware and software rumour is spread during a crisis.

In August 2012, tens of thousands of people from the north-east region of Assam fled from India’s southern cities of Mumbai, Pune, Hyderabad, and Bangalore after they received text messages threatening retribution for ethnic violence.

Railway authorities reported that at least eight trains carrying as many as 30,000 people had left for the north east of the country in just three days. That rumour was spread mostly through SMS and Oh is keen to discover why. “It’s likely that most of the information people receive on their mobile phones comes from family or friends.

Trusted information

“The mobile phone and SMS are tools they use to communicate with people they know very well. And they are much more likely to trust information that comes from their family and friends,” says Oh.

“So in circumstances of extreme information ambiguity, they look to mainstream media first, and then they turn to friends and family, before turning to their contacts on social media or to seeking information via their laptops and desktop computers.”

The winter floods in the UK showed how hard it is to plan for disasters but by harnessing the power of the crowd in the digital and real world authorities can at least give themselves a head start. ■



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“The story of Hurricane Sandy unfolded quickly on social media: a picture of a giant wave slamming into the Statue of Liberty... three feet of water had flooded the New York Stock Exchange... None of these stories were true”



Digital revolution hits the office



Mark Piesing investigates if the office will even exist in a future dominated by social media and the internet

On 18 December 2010 the first of the so-called Facebook revolutions broke out in Tunisia. Twenty-eight days later the Government fell. Revolution soon broke out in Egypt and Libya.

Now, companies – pushed by employees – are experimenting with bringing social media inside the corporate firewall in order to harness the same raw power of the crowd to enhance creativity, foster innovation and create a new culture based on collaboration.

While firms may have paid for the tools that enable collaboration and open participation, they often don’t ‘get’ social media.

Instead, blogs and online forums have become just another way of conducting business as usual, with no comments allowed. Their employees use email at work and share in open communities at home.

They are aware that, as with any revolution, there will be disruption – to managers whose roles are challenged or even bypassed, and to employees used to ‘cover my back’

emails – and even the risk, in the age of whistleblower Edward Snowden, of the loss of control of sensitive corporate data once the share icon has been clicked.

Yet it is a risk some are willing to take as a new generation of digital natives, who won’t be happy with a desk, a PC and a potted plant, enter the workplace. They won’t be happy either with the grey office block and the nine-to-five when the tools exist for them to work where and when they want. This intersection between technology and work has been labelled as ‘digital work’

and evangelists believe that it will blur the boundaries of corporations themselves as well as work and home, transform the design of offices, and even kill off ‘the office’ altogether.

However, in some organisations digital work is so controversial that managers are reluctant to even consider it in the first place. John Baptista, Associate Professor of Information Systems at Warwick Business School, is “not surprised” that the speed of adoption of social media in business has been much slower than among consumers.

“Social media is not just a case of plug and play,” says Baptista. “It can be disruptive to the established patterns of communications, silo thinking, and hierarchies. It can even challenge policies, strategies, and governance much more than many people realise. It can take years for companies to adapt.”

Baptista, who ran an internet café before working on IT projects at the World Expo in Lisbon in 1998, and for the Conservative Party in the UK, has seen too many technology projects fail to deliver what they were supposed to because of the politics of the organisation. Now he explores what creates the attrition in the first place, even if senior management really want the project, and then consider the technical solutions.

For Jimmy Huang, Associate Professor of Information Systems at Warwick Business School, the poor use of social media is very common in the UK, with CEOs in some companies having bi-weekly blogs and podcasts without inviting any kind of response. Huang asks: “So what’s the difference from what we had before?”

Then there is the opposite danger, he believes. “Social media lets the workers feel they are taking part by letting them share and even co-produce, but by giving the appearance of power it raises questions on how much they can really be involved,” says Huang.

For Baptista, a successful campaign to embed social media in a company comes down to approaching it as you would do a consumer product that you want to market, in particular by using the persuasive language of the campaign.

It is then about empowering the

‘super connectors’, those influential people who set the tone and drive adoption of social networks. As his research at the French multinational IT services corporation ATOS showed, successfully introducing social media involved changing the culture of the whole company so that workers understood that they were part of a ‘bigger thing’. At ATOS this involved a three-year global campaign known as ‘Zero Email’.

Huang argues that the wider culture within which the organisation is located is critical. As he says: “In some countries like China you wouldn’t dare say anything in front of your leaders even if you were told that you could.”

“Social media is not just a case of plug and play... It can be disruptive to the established patterns of communications, silo thinking, and hierarchies. It can even challenge policies, strategies, and governance...”

Huang adds that Chinese staff working for UK companies in China will “always say nice things” on social media because they don’t want to appear to be negative.

Culture shapes attitudes to privacy as well. So stricter privacy laws in different countries may make it harder to identify who are the great connectors in a company’s social network, compromising speed and a more managed approach to adoption.

According to Baptista, employees will not flock to social media because they are told it will save costs or for fame and glory, the success of social media adoption often requires senior management to lead by example.

Baptista and Huang argue that digital working may redefine how and where work happens, including “reconfiguring physical spaces to complement and support digital

activities, and not the other way around as it has been in the last century”.

Modern organisations have revamped office space to be more collaborative and creative, because people are questioning the need to come to an office now that they can work from anywhere. “If they have to commute hours it better be worth it,” Baptista says.

Virgin Media is a case in point. Three years ago Leon Benjamin was asked to lead an adoption project at Virgin Media to introduce flexible working practices to its 20,000 staff.

His success was based on making social media fun and useful to every day activities of employees, not senior management. Benjamin, who now runs his own social business consulting firm Sei Mani, approaches social media adoption in the workplace similarly to how he has seen it working with consumers.

According to Benjamin, a successful adoption campaign “shouldn’t be rocket science, but it is if one expects it to work without effort and dedication”. He compares the methodology he uses to the rider and the elephant. The rider is the logical left side of the brain; the elephant is the emotional right side.

“So huge programmes of change in large organisations only tend to speak to the rider not to the elephant, instead we want to speak to the elephant,” says Benjamin.

In the case of Virgin Media, rather than writing an email to staff saying “please use WebEx to save time and money”, Benjamin wrote one targeted at the elephant. Its first line was: “Imagine that you could put two more hours back in the day and you could do whatever you want with those hours, even go home for dinner with the family.”

Then he ‘ripped up’ the usual terms and conditions staff had to sign before they could go on the company intranet and replaced the legalese with a set of simple, very light, rules for people to follow when they collaborated. He considers this is the key to making any kind of collective intelligence work. The first rule? “Be nice.”

After which, it was all about persuading senior leaders to give their

staff the time to be social, since the initial effort to build up communities can be very great; and even to give people credit for sharing on the social networks like they do on Facebook at home. “It was as simple as that, as everyone wants praise,” says Benjamin.

In February 2011 ATOS announced it was going to go for zero internal email in an attempt to make staff more efficient and comfortable by reducing time wasted dealing with emails.

However Jean Corbel, Group Chief Change Officer at ATOS, says “it was never really about getting rid of emails” it was more about “the way we work together”, turning managers into both leaders and collaborators. Email use was merely the “vector of behavioural change”.

Nearly 350 digital ambassadors were used to sell the dream to the other employees. ATOS used its own blueKiwi and Lync from Microsoft, which together, says Corbel, had “a huge impact” and decreased significantly the amount of emails. The company went from 70 emails a day per person in 2011, to 20 to 30 a week now.

Corbel believes the first driver of cultural change was the desire for a better way of working together. This was supported by “redesigning the leadership development programme”, to identify five roles that an ATOS manager would need in the future: community leader, coach, entrepreneur, deliverer and visionary.

The result at ATOS was 7,000 mostly open peer-to-peer communities in a collaborative digital environment; including one called ‘The Watercooler’ that anyone could join and is only lightly moderated.

ATOS is, Corbel believes, moving from ‘push’ communication, where it is the person who sends out the information who decides who sees it (not always correctly), to ‘pull’, where information is posted into the community for everyone to see and colleagues are trusted to give it value.

“I think this is really beautiful,” says Corbel.

He thinks ATOS is at the beginning of a journey on which they will increasingly see themselves as collaborators, even to the extent of collaborative relationships with

Illustration: Rebecca Curtis



clients to create innovation.

Paul Miller, founder and CEO of the Digital Workplace Group (DWG), has been a driving force in helping many large global companies transition from managing intranets to embrace the wider needs of a digital workplace.

Miller ended all physical offices in his organisation, and instead DWG uses virtual tools to keep the business going. He understands the need for staying in touch face-to-face though, and believes that time spent in person is now more special than ever. It is “sacred” he says.

The next step, says Miller, is to extend this beyond the firewall. Embracing social media will make it an “antiquated idea” that an organisation ends with its employees, as there will be collaboration and innovation with the supply chain and customers.

Ultimately, like Baptista and Huang, Miller sees it as the beginning of the end of “the office paradigm” as workers will have “physical freedom”, no longer needing to go to work in a centralised office.

“Where you do your work will be your choice,” says Miller.

However to reap the benefits of this new world of work individuals and organisations need to respond to changes that go deep to the functioning

of organisations. For example, Baptista and Huang argue that expanding volume of feedback and “multi-voice” in organisations challenges established patterns of communication and may subvert hierarchies.

This is worrying many senior leaders who don’t know how to manage open disagreement and conflicting perspectives with their staff online about, for example, a restructuring programme or a takeover target.

Baptista thinks that leading by influence and persuasion, and not hierarchical authority, is a new skill that requires a new mindset for effective leadership in organisations.

Another worry is the fear that increasing digitisation of formal and informal communication may contribute to employees leaking sensitive data like Snowden.

However Baptista believes if the company doesn’t adapt and provide the tools itself, employees will use external services, so exposing the company to even higher risks.

“It is not an option for modern organisations whether to go digital or not... the issue is how they create the right environment to appropriate the benefits and minimise the new risks of this new digital way of working.” ■

Does business and management need neuroscience?



Gerard P Hodgkinson, Professor of Strategic Management and Behavioural Science at Warwick Business School, is concerned that neuroscience

is becoming ‘fetishised’ and that claims that it can identify potential leaders are premature

Imagine a future where a key part of the management selection process entailed candidates lying in a brain scanner while the flow of blood to their brains was measured as they made decisions. Were you to find yourself in this situation, you needn’t worry: if you didn’t quite make the grade in the brain scanner, you could pop a pill that would enhance your memory, boost your human reasoning and put you in better control of your emotions, improving greatly your prospects of becoming the ideal candidate.

According to some commentators, advances in the burgeoning field of behavioural neuroscience are such that this seemingly unlikely fantasy might well become reality, and far sooner than we might desire. Others, however, including Michael Gazzaniga, who, together with Roger Sperry, received the Nobel Prize for his work that pioneered the phenomenon of ‘split-brain surgery’ in the late 1950s as a way of alleviating epileptic seizures, maintain that such scenarios will never occur.

The idea of using the insights of neuroscience to improve understanding of how leaders and managers make decisions first rose to prominence in the mid-1970s. Ironically, it was Gazzaniga and Sperry’s pioneering work that provided the impetus for those developments. Their surgical procedure, used in only the most extreme medical cases, involved severing the corpus callosum, the band of white matter that connects the cerebral hemispheres, where the principal structures associated with many of the brain’s so-called higher mental functions are located.

In the wake of post-operative studies, demonstrating that the left and right hemispheres are specialised in a variety of different tasks, academic and popular writers

alike moved all too quickly, (mis)applying the insights of this work to the analysis of management and leadership processes. Hence, the popular ‘neuromyth’ of the left-brain versus right-brain manager was born; according to which, some managers make decisions primarily using the left side of their brains, supposedly the seat of logical, analytical and objective behaviour, whereas others draw largely on the right side, supposedly the locus of intuitive and related processes that lie beyond conscious awareness. Gazzaniga himself was so concerned by this fundamental misapplication of his work that in 2006 he published an article in the highly influential *Harvard Business Review*, in which he denounced past and present attempts to advance the cause of neuroscience in management and leadership.

The fascination with neuroscience in business and management has gathered a new momentum over recent years, following the development of improved techniques for studying the interplay of brain activity and behaviour. In particular, the use of Functional Magnetic Resonance Imaging (fMRI), which entails measuring the flow of oxygenated blood to selected areas of the brain while research participants perform various tasks, is revealing remarkable new insights into how people make decisions in a wide range of contexts. Perhaps the most surprising finding is just how prominent the brain’s emotion centres are in many aspects of human decision-making, from every day economic decisions to social and political decisions. These developments have potentially far-reaching implications for many areas of business and management and it is this potential that is dividing academic communities and those seeking to apply the

insights of this work.

Some believe that learning how successful leaders’ brains work will enable the development of training interventions and possibly even new drugs and that will enhance leadership and management effectiveness. Others, however, see these developments as a dangerous and unwelcome distraction, voicing philosophical, ethical and economic concerns that need to be taken seriously.

One such important philosophical concern is the problem of reductionism: the fallacy of seeking to explain phenomena that more properly reside at higher levels of abstraction (eg workplace inequalities perpetuated by power relations and social structures) by recourse to lower level mechanisms (eg basic biology). A prime ethical concern is that neuroscience could ultimately dehumanise the workplace, supporting practices underpinned by an overly mechanistic conception of managers and employees. The overriding economic concern is that at a time when resources for research are at an all-time premium, is the relative expense of brain scanning technology justifiable?

The work I am conducting, in collaboration with colleagues and research students at Warwick and elsewhere, demonstrates that none of these problems need prevent the advancement of neuroscience and the insights it brings to the benefit of all stakeholders of business and society. The pioneers of this type of research are looking for very precise characteristics such as the neuropsychological foundations of particular mind sets that separate potential entrepreneurs from managers from leaders. The thinking behind such work is that the findings will be used to select people whose brain activity will make them more effective.

However, using medically-based tests on job candidates to assess their fitness for particular roles, without taking account of the higher level factors that shape personal and organisational effectiveness (not least, how work is designed, the structure of the organisation, and what is happening culturally in wider society) oversimplifies human behaviour in ways that can only generate misleading insights.

The solution to this problem of reductionism is to

configure management and organisational neuroscience more appropriately, as part of a wider multidisciplinary endeavour, incorporating the insights of anthropology, economics, sociology, and psychology, among other disciplines.

We must never lose sight of the fact that the causes of effectiveness in this, as in any, social setting, are multi-level, extending well beyond individuals’ brains. Only then will it be possible to redress the ethical problem of dehumanisation, using the insights of these other disciplines to re-envision a management and organisational neuroscience that benefits all stakeholders of the enterprise.

Although fMRI studies have provided some interesting insights for business and management, they are highly expensive and are not yet proven to be entirely reliable. Indeed, neuroscience itself is advancing so rapidly that we run the risk of investing a lot of money in pioneering new practices only to find that the neuroscience foundations on which they are based are overturned all too quickly.

Hence, techniques such as fMRI need to be used sparingly, alongside more traditional techniques such as behavioural observation, interviews, and psychological tests. More fundamentally, we need to agree which issues warrant the labour intensity and expense of behavioural neuroscience techniques. In short, we need to proceed with caution, developing ways of discerning which aspects of neuroscience are here for the long-term and which are only short-term trends.

On their own neuroscience techniques cannot ever provide the much-needed answers to the many pressing behavioural and social problems visibly confronting us all with a stake in the world economy. Thankfully, we are a long way from taking a pill and all of a sudden becoming an entrepreneur or

charismatic leader.

For the time being, however, the popularity of neuroscience in management theory and practice looks set to keep on growing. Whether we see boardrooms of the future fitted with fMRI scanners and doctors prescribing management wonder drugs is another matter; but their headline grabbing power will doubtlessly continue to prove all too irresistible for many academics and self-help book popularisers. ■



“Some believe that learning how successful leaders’ brains work will enable the development of training interventions and possibly even new drugs and that will enhance leadership and management effectiveness”

Beware of the cloud



The Cloud is coming to a company near you. Mark Piesing meets **Mark Skilton** to find out what that means for our security

The Cloud is changing the way our lives work, but few of us have thought through its implications, according to Mark Skilton, former Global Director at Capgemini with more than 30 years' experience in the IT industry, now Professor of Practice at WBS. "Its most worrying aspect," he warns, "is the NSA (US National Security Agency)."

Remote hosting

The Cloud is an umbrella term referring to a product or service that is hosted remotely from the customer and without the need to have expensive hardware and software. The growth of the Cloud has depended on the spread of internet connectivity, coupled with the ability to store vast amounts of data cheaply and then share it quickly on a global scale.

"The world passed one zettabyte of global online storage in 2010," says Skilton. The figures may be huge but the data stored is personal. Data can't care who owns it or what is done with it – but you should do. "Cloud computing has consequences," says Skilton. Data stored in the Cloud can be recorded, even rewritten, and shared around the world phenomenally quickly.

Skilton believes we should be asking "what don't we know about our data that we should?" Do we actually know where our data is being stored? Do we know how to retrieve it if it goes missing? The answers to these questions, Skilton believes, are going to change the way businesses behave and are governed. "It will change employment law," says Skilton.

"Rather than being a policeman, the law will have to be an enabler of innovation."

Data protection

Andrew Joint, Commercial Technology Partner at technology law firm Kemp Little, argues employers need "stronger guidance on data protection issues". He believes companies should be asking exactly the kind of questions that Skilton highlights, since the concept of the "layering of provider" means that even if your contract for cloud data storage is with one supplier it is probably in fact running on, say, Amazon with apps provided by a third party.

Joint also says the standard contract "is rather one-sided" in the supplier's favour, and can be summed up as "we are not responsible". Joint believes employers have to be wary of promises to employees about where data will be held and who has access to it.

It is just not sensible, Joint says, to throw data into the Cloud without due diligence, which includes checking "what grade the data is" and whether

it is more suitable for a public cloud, where data is shared over a network open to the public, a private cloud that is just for members of an organisation, or a hybrid cloud, where private and public clouds are bundled together but remain separate entities.

Implications for employers

However, what is really driving employers to think about these issues is the attitudes of their employees. According to Kathryn Dooks, Employment Partner at Kemp Little, while more and more employers are comfortable with storing personnel data in the Cloud, they didn't expect employees to raise it as an issue.

"People are much more aware than they thought," says Dooks. "If you are transferring data then you need everyone's express consent if it has not been covered in the employment contract."

For employees any accidental data loss may come down to embarrassment or stress rather than financial loss and, so far, Dooks believes, cloud hackings have been confined to online gaming rather than employee data – "at least in public".

For Joint, the law is going to catch up and "the future is more regulation". Since the NSA leaks from whistleblower Edward Snowden industry – certainly in Europe – has been losing the fight for self-regulation, and a new European data protection directive is on its way.

In the end, Skilton believes, nothing can stop the growth of the Cloud as the economics are irresistible. All we can do is be more concerned with "the ethics of the Cloud" and how it is used. ■



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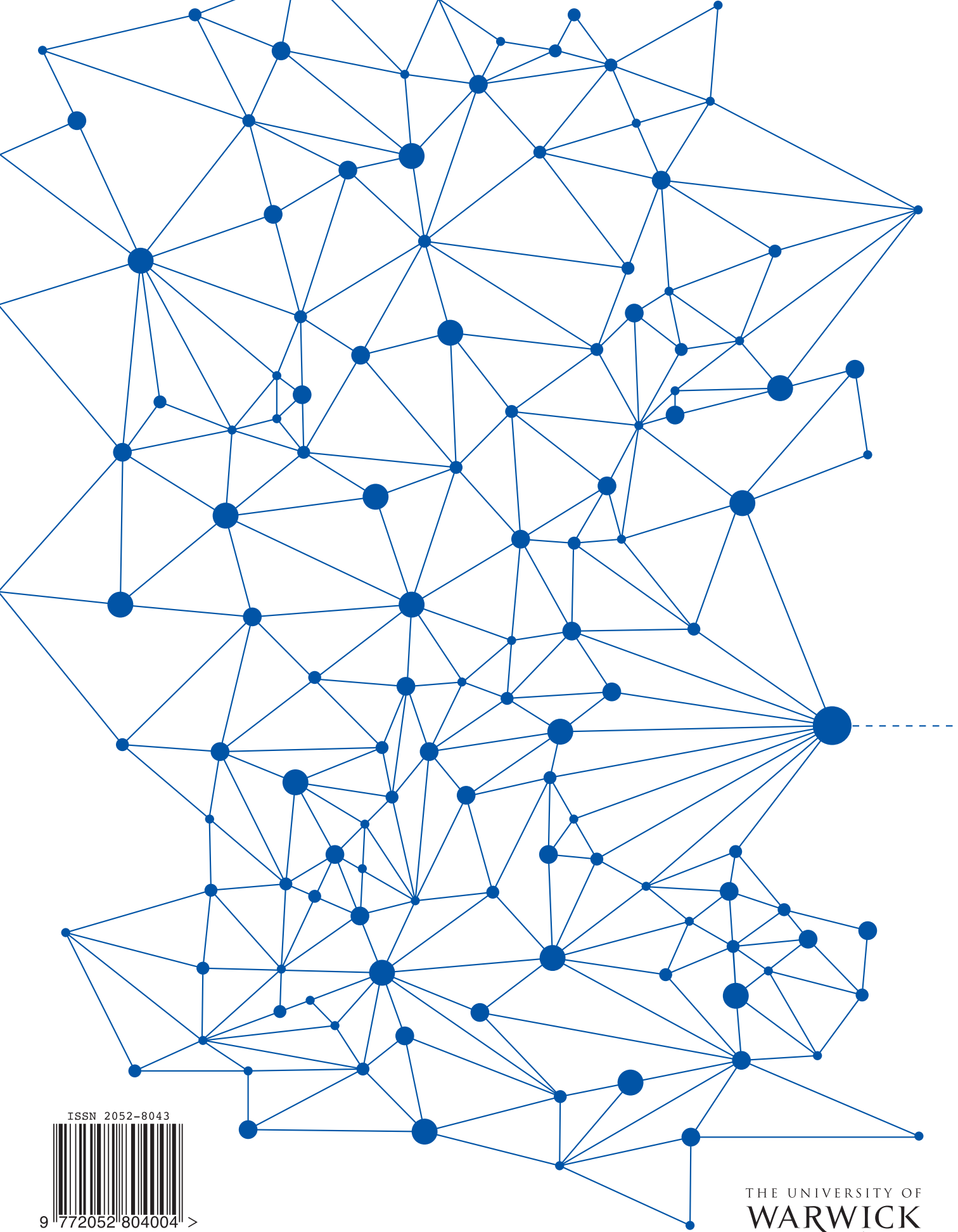
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