There has been much talk and hyperbole about AI and the fourth industrial revolution that it is easy to become cynical and dismiss it as just that – hype.

But when Douglas Terrier, NASA’s Chief Technology Officer, says it is “the most fundamental change in human history” and “will pass human intelligence within decades”, as he did in a recent talk at our WBS London base at The Shard, we should all sit up and take notice.

Dr Terrier also argued AI will be pivotal to any business being competitive and it is why we have launched an AI Innovation Network to bring those researching and working on the technology in academia and industry together to learn from each other.

It is not surprising, therefore, that AI forms an undercurrent to the sixth issue of our Core magazine. The fourth industrial revolution – the convergence of AI, machine learning, virtual and augmented reality, 3D printing and the internet of things into still unimagined new products, services and even industries – will affect every sector and profession.

At WBS we have identified six areas of research that transcend the school and are core to all of our activities, both now and in the future – healthcare, behavioural science, finance, strategy, entrepreneurship and innovation, and leadership.

All six areas will be affected by the rapid technological change around us. Our Data Science Lab is combining big data and behavioural science, while Panos Constantinides and Mark Skilton are looking at how AI is being used in healthcare. Finance is undergoing its own technological revolution through open banking and the rise of cryptocurrencies.

Strategists will have to steer their organisations through this revolution as will leaders, while entrepreneurs will be eying the tremendous opportunities these new technologies bring.

Away from business the ramifications for society as a whole are huge.

Bill Gates has warned that AI may dramatically eliminate jobs, including many white collar professions like accountancy and law. While legendary statesman and former US Secretary of State and National Security Advisor Henry Kissinger has called for a Presidential Commission to urgently assess the impact AI will have on a nation still in tumult from Donald Trump’s ascendency.

In this issue Maja Korica calls for the introduction of a ‘robot tax’ as a “redistribution mechanism of corporate gains from automation”. She certainly presents a compelling argument and indeed a version of it has already been implemented in South Korea. It is something more governments are looking at, especially as the potential loss of millions jobs over the next two decades will drastically reduce income tax receipts.

Korica also calls on business leaders to consider how they and their organisations can help soften the impact of AI and look at the “broader well-being”. That is something business schools should be teaching, especially in the post-crash world, and ethics is certainly at the heart of our programmes as we look to develop socially responsible graduates aiming to change the world for the better.

Our graduates will be shaping and living this brave new world. It is up to us to send them into this revolution with their eyes and minds wide open.
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Can AI cure healthcare’s ILLS?

The vast sets of digital data held by healthcare organisations are ripe for AI start-ups.

by Panos Constantinides & Simon Rasalingham
Only the AIs have it

Behold.AI, which combines convolutional neural network architectures with massive computing power to allow software programs to identify visual differences between healthy and unhealthy body parts, will be looking at each x-ray in much more detail than the human eye can – at the level of each individual pixel.

We are still not sure what it will find when it will see things at such a minute detail, but that could provide a step change in our diagnostic abilities.

Also, instead of sending people home to wait for the result of their x-ray, AI can produce it in an instant, perhaps spotting a lung problem or pneumonia that requires urgent treatment that should in no way see the patient sent home.

And think of the expense when that patient is brought back by an ambulance, the savings and improvement in care could be exponential.

Radiology has been digitising its images for a long time, which makes it a richer data set than many other departments and a good place for AI to start, but the scope of the technology means it can help clinicians and administrators.

For example, the hospital manager looking at performance data can interrogate an AI system to see how to improve nurses’ routes taking patients to A&E.

Unlike other sectors, however, where companies like Amazon and Facebook have been able to use AI in combination with data from online users’ behaviour to give us recommendations, the highly regulated healthcare industry does not grant such easy access to patient data.

Maintaining the security and confidentiality of patient data is a key priority as shown in the recent scandal involving Google DeepMind and the Royal Free London NHS Foundation Trust, which led to the transfer of identifiable patient records across the entire Trust, without explicit consent.

The General Data Protection Regulation (GDPR), introduced by the European Parliament in 2016 and brought into force in mid-2018, is aimed at addressing rising concerns with how data is accessed, stored and shared. The GDPR will have significant implications not only for EU-based organisations, but also for non-EU based organisations that conduct business in EU countries and it can be expected that a similar regulation will be implemented internationally.

Whose data is it anyway?

There is the question of who owns the data. A judge in Ohio, US, ruled in July 2017 that data from a pacemaker could be used against the man wearing it in an arson case.

GDPR is an added complication for AI start-ups holding vast amounts of patient data, but despite the challenge of ensuring the security and confidentiality of patient data, there is a strong commitment by academics, regulators and healthcare providers towards more evidence-based medicine and a drive to improve the quality of healthcare services through AI.

Speaking at the 2017 NHS Expo, NHS England Chief Executive Simon Stevens said the NHS needs to reconnect to exploiting the potential of anonymised clinical data for driving research and innovation.

The NHS is leading the way with AI with multiple trials across hospitals. Those that can show a high-level of accuracy and data security will be able to scale rapidly across the system thanks to the connected nature of the NHS.

Our research with Behold.AI will follow this process, examining the impact of AI on work productivity and the scaling up of diagnostic procedures plus how it develops professional collaborations. We will follow Behold.AI’s every step as the platform scales up to incorporate more value creation interactions in which could be a dramatic revolution for healthcare services in the UK.

Continuous improvement

AI platforms can only learn how to analyse data if they can understand when they get something right or wrong.

The more the AI platform can learn from correct and wrong answers, the better its success rate gets.

This training is a continual process, and is akin to a child learning to read. They will make mistakes, but with education and practice, become better and better.

Yet, even as adults we are still learning new words and making occasional mistakes. That is exactly the same process when training an algorithm, it will be training forever.

This training process is vital. The algorithms for AI in their rawest forms are available publicly through academic papers. The real skill is not in the algorithm but how you take the data and train the system; you have to manipulate the data to find something out of it.

These well-trained algorithms will not only create efficiencies and save the NHS money, they will also improve patient care.

This evolving pattern-recognition technology being used by Behold. AI will be able to automate a radiologist’s diagnostic task and also spot new connections, unearthing new links and patterns that can expand clinicians knowledge.

among other services. Basically anything with an ‘ology’ and a large set of data will have an application for AI and this is something at which the NHS excels.

The NHS may have made unwelcome headlines by wasting at least £300 million of taxpayers’ money when its National Programme for IT was abandoned in 2013, but its digital systems are a lot more connected and centralised today than many imagine or is seen in many other countries.

It has also been set a target by the UK Government to be paperless by 2020. All this gives the NHS a unique advantage.

It is why Behold.AI relocated from New York – where hospitals very much act independently while states have different regulations – to the UK. Plus, through demographics and its funding persuades the NHS also has a critical need for AI.

The NHS’ connected system also means more data and the key challenge for AI has always been access to more data, which needs to be trained.

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Reducing slip-ups to save lives

Overcoming barriers to the dissemination of good practice and innovation.

by Graeme Currie

In an ideal organisation, knowledge about good practice would make its way from wherever it originates, often at the frontline of service provision, to the parts of the organisation where it is useful. Unfortunately, this is rarely the case. And, while in most organisations a failure to disseminate innovation and good practice might have a negative impact on profits, business development and competitiveness, in some organisations it can mean the difference between life and death. This is certainly the case in healthcare. Yet, as our work on healthcare improvement with the Organising Health Research Network shows, through comparatively small changes in approach it is possible to make significant improvements in patient safety. Moreover, it is possible to extract lessons from our studies that can help disseminate good practice innovation outside a healthcare setting.

Patient safety

In investigating the role of hybrid middle managers in relation to knowledge brokering, we focused on the elderly and associated patient safety problem and, in particular, incidents of falls and preventing them.

The regulator monitoring Hospital A’s patient safety performance had criticised it due to the high incidence of falls and poor response in managing them. The clinical governance system is the mechanism through which this type of issue should be addressed, with ultimate responsibility resting with the Chief Executive. However, our study revealed a process that tended to become characterised by a culture of entrapment. Criticism provoked defensiveness: the governance process ground to a halt, replaced by efforts to buffer the local organisation from regulatory pressure. An unhealthy response, but not uncommon in such circumstances.

Meanwhile, on the frontline in service delivery there were eight wards, all sited relatively near to each other, experiencing high levels of falls. Closer examination uncovered good examples of local innovation aimed at reducing the incidence of falls in one of these wards; good practice that would be useful to other wards and hospitals.
Older patients were put into cohorts, with a risk assessment to assess a patient’s likelihood of falling. Patients most at risk of falling were put near to the nurse desk so that if a patient needed to move, so to get to the toilet for example, they would get a quicker response from the nurses.

Yet, despite all eight wards suffering similar problems, and despite their physical proximity, knowledge was not disseminated to one another ward. This was surprising. However, the reasons for the lack of dissemination became clearer when we interviewed staff and reviewed the archive of documents and materials amassed during the study. Those reasons were rooted in the workplace hierarchies that existed.

In some ways the hierarchies in nursing are much like in the military. Hybrid nurse middle managers in clinical governance roles draw on their status and formal position in the organisation to influence nursing activity.

Unfortunately, it is that same status and formal position that discourages the nurses delivering frontline care from sharing their knowledge and ideas about improving patient safety in the care of older people.

The evidence showed that although senior nurse managers could make demands of ward managers and expect them to comply, ward managers could not take local innovation and knowledge and ensure that it reached further up the organisation by influencing senior nursing managers. Where good practice did reach one other ward it was due to the good personal relationship between the respective ward managers.

Nurse managers also were not always in place to ameliorate the powerful hierarchical effect. Hybrid nurse middle managers had to resort to the nursing equivalent of managing by wandering around. These “patient safety rounds” were intended to circumvent hierarchy and access knowledge held by junior staff.

Hierarchy also affects the dissemination of knowledge between medical professionals where the issue is predominately one of status. This was evident in doctors. As one doctor said: “Some doctors are more equal than others.”

Take geriatricians, who commonly interact with their peers across many clinical departments where older patients are located. They deliver holistic care, are more involved with the patients than most doctors would be, and are well positioned to possess knowledge concerning patient safety improvement. However, geriatricians are also considered to be comparatively low status by other medical specialties, such as surgeons or anesthetists and, therefore, find it difficult to influence their peers regarding the adoption of new practices.

Whereas, our evidence suggests that those medical specialists in high status who would be able to bring about changes do not see patient safety as their concern. Indeed, many believed it to be the domain of nurses, with some even refusing to attend meetings about patient falls. This attitude persists, even though the specialist wards invariably have significant numbers of elderly patients.

And there was the interaction between nurse middle managers and doctors, what is known as inter-professional hierarchy. Differences in the routes into the respective professions – reinforced by elitist attitudes across hospitals that medical professionals are more important than nurses – makes brokering of knowledge from nurse to doctor difficult.

Again, many specialist doctors, other than geriatricians, tend to view patient safety as being the responsibility of nurses, and outside the compass of their role.

Both nurse managers and doctors have clinical and managerial roles, with their clinical service role impacting on the incidence of falls. The professional and managerial elements of the organisation needed to mesh and work together to be effective. But while we found that there was not necessarily tension between the two, our findings did show that the two are decoupled, managerial governance systems were not tightly enough linked to service delivery. For example, we found evidence that there was a Serious Untoward Incident (SUI), and nurse managers were progressing governance procedures, doctors were reluctant to get involved beyond signing forms.

Mending the knowledge chain

We also uncovered examples of hybrid middle managers taking positive steps to ensure that information about falls best practice was disseminated from nursing staff to the highest levels of the organisation. From the hours of interview transcripts we found that bringing people together, including frontline staff, hybrid middle managers, clinicians, motivated individuals can step in to create opportunities to champion and influence change.

Take the situation where one geriatrician set out to educate peers about the importance of proactive fall prevention for patient safety. In doing so they were careful to frame the issue of preventing falls as relevant right across the organisation – to young patients, new mothers, cardiovascular patients, and stroke patients – and not just a matter pertinent to the care of older people. At the same time they leveraged social capital acquired over 30 years of practice to co-opt a senior nurse occupying the hybrid middle manager role of clinical quality, risk and safety manager, into prioritising falls as an organisation-wide issue.

‘Champions’ can also promote more effective knowledge brokering by influencing future generations of medical professionals. We discovered examples of early career intervention where a geriatrician focused on educating junior doctors in basic patient safety practices, emphasising the “team” role of doctors working alongside nurses. He explained that this increased the motivation of doctors to engage with patient safety because it repositioned patient safety and risk as a core business.
people working in the hospitals who are to improve knowledge brokering, for Beyond theory that could create opportunities for training and development interventions performance management systems, and as a result.

Capturing such data enabled the team between initial falls and eventual deaths. In one case, for example, data was decision-making and meeting targets.

What tended not to happen were any remedial measures being acted upon, or any suggestions included in the action plan actually implemented. When doctors talk to clinical teams in front of their peers, and other well-associated professionals, they do not want to be seen as dismissing patient safety and the measures that might be taken to improve it. For example, those surgeons who might otherwise dismiss patient safety as someone else’s domain, would want to be seen as caring and at the cutting edge of the profession in terms of innovation, as that perception has an impact on their reputation among their peers and others.

It also provides an opportunity to engage evidence-driven medical profes-
sionals, such as surgeons, by presenting them with audit data, with evidence about the incidence of falls, where there had been interventions, and how those interventions had led to a decrease in the incidence of falls.

Falls Operational Group A second key aspect of our work in the NHS Trust was our engagement with the managerial organisation in the hospital, specifically the clinical governance committee.

On governance our studies have revealed two significant flaws in existing practice. At present the climate within which the governance process took place left people feeling that they were on trial and, therefore, promoted defensiveness and reduced the prospect of knowledge dissemination. This climate needed moderating, which would involve subtle changes in the ways in which the clinical governance committee interacted with the ward manager and deputy ward

manager roles, suggesting that they would benefit from greater learning and development opportunities. The importance of effective performance management and targets were also highlighted, especially in a professional context where considerable emphasis is placed on evidence based decision-making and meeting targets. In one case, for example, data was available on fall incidence and the immediate consequences of those falls, but not on longer-term consequences. It was impossible to analyse links between initial falls and eventual deaths. Capturing such data enabled the team to construct more accurate risk scores for falls and initiate data-driven action as a result.

Thus our studies highlighted possible HR mechanisms, such as job design, performance management systems, and training and development interventions that could create opportunities for exchanging knowledge and motivate individuals to engage.

Beyond theory Note that we do not seek to impose solutions. We may suggest solutions to improve knowledge brokering, for example, but we recognise that those solutions need contextualising. It is the people working in the hospitals who are best able to identify how those solutions might be translated into practice and implemented. Prior to our intervention the process following a fall, as we observed it, was as follows. If, for example, an elderly person falls over on the ward and fractures their hip, this is recorded as an SUI; an incident that occurs in a healthcare setting, which results in unexpected or avoidable death, or moderate or serious harm to a patient. This triggers a Root Cause Analysis (RCA) report which includes an action plan for improvement; the RCA report is presented to a clinical risk committee, typically by the relevant ward manager.

Then what tended to happen was one (or more) of three things. The incident would be dealt with in a relatively tokenistic way, a tick-box exercise, going through the motions to satisfy the patient, patient carer or relative. Or everyone might conclude that it was a systems failure, and not something that anyone could really do anything about. Or a member of staff, usually the ward manager, would end up having the blame pinned on them. Which, unsurprisingly, created an extremely defensive culture.

What tended not to happen were any remedial measures being acted upon, or any suggestions included in the action plan actually implemented. Regardless of the elaborate mechanisms and processes in place to deal with SUs, despite there being a formal mechanism designed to elicit knowledge sharing and brokering, you get compliance at best. It was a governance system that had blame embedded in it.

Group meetings We took each of the eight wards involved in turn and gathered as many people together as possible who were associated with that ward and fall

prevention. The aim was to spend time discussing how issues relating to fall prevention could be addressed. What were the learning in service improvement? What are the types of innovation that could be diffused? These were two to three hour meetings.

The meetings were held in a learning centre, which was seen as a neutral space. It allowed us to gather all of the various teams together, and facilitate what are quite emotionally-laden inter-actions. With surgeons, geriatricians and nurses together, without facilitation you would be unlikely to hear every voice. In the normal work environment nurses might typically have acquiesced to the views of doctors, for example, not said anything, and then afterwards discussed it among themselves in a huddle. When that happens their insights are lost. In our meetings, nurses were allowed to have a voice and surgeons listened in a way that suspended what would typically be expected in day-to-day practice.

When doctors talk to clinical teams in front of their peers, and other well-associated professionals, they do not want to be seen as dismissing patient safety and the measures that might be taken to improve it. For example, those surgeons who might otherwise dismiss patient safety as someone else’s domain, would want to be seen as caring and at the cutting edge of the profession in terms of innovation, as that perception has an impact on their reputation among their peers and others.

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We’re all going crypto crazy

What is driving the rollercoaster price of Bitcoin and its cryptocurrency siblings?

by Daniele Bianchi
Hedge with cryptos? Is Bitcoin a good hedge? No, because it is not correlated with anything else, typically, a hedge should be negatively correlated with your portfolio. For now, it is just a risky investment. To use it as a hedge would be crazy in my view.

Cryptos are uncorrelated with the fundamentals of a market economy. So you might think you have an exposure to the UK stockmarket and you will buy Bitcoin because it is unrelated, but it is not negatively correlated — it is not correlated to anything — that is not a hedge, it’s another risk. It is very difficult to predict where it is going in terms of price, in the short term especially.

I used to work on Wall Street and the economic fundamentals of, like inflation expectation or interest rates, but I found there is no relationship. Demand is essentially driven by past prices, that is, people invest in it because they see the price going up and put momentum into it, which is why bubbles exist, though it is a rational bubble.

The data show that the majority of the currency used to buy Bitcoin was Chinese Yuan, and in 2016 the majority of the miners - the computing process where transactions are added to the blockchain and new Bitcoins created – were in China, until the crackdown of the Chinese Government.

Rational investors will stay clear of it. The people investing in these essentially are retail investors and hedge funds. Regular pensions or mutual funds are so regulated they can’t invest in the blockchain and new Bitcoins created – were in China, until the crackdown of the Chinese Government.

**Picking the new Amazon**

Hedge with cryptos?

To use it as a hedge would be crazy.

### Table: The 14 biggest cryptocurrencies as of June 2020

<table>
<thead>
<tr>
<th>NAME</th>
<th>DESCRIPTION</th>
<th>MARKET CAP</th>
<th>CIRCULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>BITSHARES</td>
<td>An open-source Financial Smart Contracts platform that enables trading of digital assets and has market pegged assets that track the value of their underlying asset.</td>
<td>$427m</td>
<td>2.6bn</td>
</tr>
<tr>
<td>BITCOIN</td>
<td>The original idea of Bitcoin was to provide a payment method with lower transaction fees, than traditional online payment systems and is operated by a consensus network. Unlike normal currencies, Bitcoins are not guaranteed by any central bank or government.</td>
<td>$115bn</td>
<td>17m</td>
</tr>
<tr>
<td>BYTECOIN</td>
<td>Launched in 2012 and the first cryptocurrency based on the CryptoNote protocol with an open source code (license MIT). It protects the user’s privacy by securing the transactions as the identities of the sender, the receiver and the amount of transaction are all concealed.</td>
<td>$736m</td>
<td>183.9m</td>
</tr>
<tr>
<td>DASH</td>
<td>An open source peer-to-peer cryptocurrency offering instant transactions (InstantSend), and private transactions (PrivateSend), with individuals and businesses paid to perform work. New blocks are created by the miners while second tier “masternodes” perform ProofStake, InstantSend, and governance functions.</td>
<td>$2bn</td>
<td>8.1m</td>
</tr>
<tr>
<td>DOGECOIN</td>
<td>Although launched as a “joke currency” in 2013, Dogecoin quickly developed its own online community. It has gained traction as a payment method in social media by which users grant Dogecoin tips to other users for providing interesting or noteworthy content on places like Twitter and Reddit.</td>
<td>$346m</td>
<td>114.9bn</td>
</tr>
<tr>
<td>ETHEREUM</td>
<td>An open-source distributed computing platform which features smart contracts, so people can exchange a contract without the need for a third party, like a lawyer, as the contract is embedded in code and is blockcable and irreversible.</td>
<td>$44.3bn</td>
<td>100.7m</td>
</tr>
<tr>
<td>FACTOM</td>
<td>An open-source blockchain protocol that allows people to store any type of data, from financial transactions to simple business analysis. It provides a document authentication solution that secures physical documents on the blockchain.</td>
<td>$107m</td>
<td>8.7m</td>
</tr>
<tr>
<td>GAME CREDITS</td>
<td>Made to let gamers and game developers buy and sell games plus in-game features fast, safely and privately through a decentralised platform. The processing time for each block is 90 seconds and miners’ reward is currently 12.5 coins.</td>
<td>$56m</td>
<td>64.3m</td>
</tr>
<tr>
<td>LITECOIN</td>
<td>Nearly identical to Bitcoin, except it has almost zero payment cost and facilitates payments faster than Bitcoin by having a decreased block generation time. It also has a higher maximum number of coins and uses a different hashing algorithm.</td>
<td>$5.5bn</td>
<td>57m</td>
</tr>
<tr>
<td>MONERO</td>
<td>Units of Monero are fungible, all coins have the same market value irrespective of time or place. Unlike public-ledger cryptocurrencies where addresses previously associated with undesired activity can be blacklisted and refused by members, Monero is totally private. It hides the sending address and the receiving address.</td>
<td>$1.95bn</td>
<td>16.1m</td>
</tr>
<tr>
<td>Ripple (XRP)</td>
<td>Launched in 2015, XRP is a private blockchain that is used to settle transactions in a distributed network. XRP is a secure asset with decreasing supply.</td>
<td>$51.3bn</td>
<td>39.2bn</td>
</tr>
<tr>
<td>SIACOIN</td>
<td>Part of the Sia network which provides decentralised, encrypted, peer-to-peer storage. Companies host their own decentralized cloud on Sia and sell storage on it in exchange for Siacon.</td>
<td>$452m</td>
<td>35.2m</td>
</tr>
<tr>
<td>STEEM</td>
<td>This is a native currency for the Steem social media platform which allows publishers to monetize their online content and community, based on battle-tested blockchain technology. Due to increasing demand pressure the inflation rate of Steem was changed to 9.5 per cent per year, reducing by 0.5 per cent a year.</td>
<td>$424m</td>
<td>262m</td>
</tr>
</tbody>
</table>

**Daniele Bianchi**

Daniele Bianchi is an Assistant Professor of Finance at Warwick Business School. He has a PhD from Bocconi University and his research interests span empirical asset pricing, Bayesian econometrics, commodity markets, and cryptocurrencies.

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You take out your smartphone and log onto Amazon to make a credit card payment, transfer some money into your ISA savings account and, as a small business owner, check your current cash flow.

While you are there, you are offered better terms on your business loan, kept up to date on your current re-mortgaging application, and reminded about a new IPO investment opportunity. It may not be reality just yet, but a revolution is underway in Europe’s retail banking sector. The innocuously named second Payment Services Directive (PSD2), that came into effect in the EU earlier this year and in the UK at the same time under the name ‘open banking’, has laid the foundations for a dramatic reshaping of retail banking.

While the phenomenon of open banking is likely to spread to the US and elsewhere, for the moment the UK, with its unique co-location of financial services centre and fintech hub in London, is probably the best example of the motivation for and mechanisms of open banking.

The introduction of open banking is intended to create a more competitive environment, forcing banks to share privately held customer information with third party providers (TPPs), under certain conditions. Easy open access to customer data should create a level playing field for the incumbent banks and any other licensed firms that wish to provide financial products and services. With customers’ consent, licensed TPPs will be able to access customer data held by banks, using standard, public and open (as opposed to proprietary, internal and private) Application Programming Interfaces (APIs) – the technology that allows one piece of software to communicate with another.

TPPs can also access other data about bank services, prices and service quality. Access to all this information improves a TPP’s ability to offer services to existing bank customers and other consumers.

Open banking is still in its infancy. The eventual effects are uncertain, and there will inevitably be reservations, around data privacy and security, for example, given the current climate. But we are sure that the retail banking experience is about to undergo a radical reinvention, and that this revolution will eventually extend to financial services more generally.

After spending well over a year interviewing the various players involved, and researching the mechanisms and market, we are able to outline some of the more important effects of this initiative, ways in which open banking will impact retail banking, financial services and the business world beyond.
Consumer convenience: At the moment individuals may bank with more than one bank account. They may use one account for day-to-day transactions, have an ISA with another bank, and a prepaid card for online purchases. Viewed from a financial services product such as a loan, open banking could mean completing multiple forms with different banks.

Opening banking APIs, allowing TPPs to provide a far more efficient, integrated, convenienct and transparent service for clients than the traditional banks can at present. A TPP can aggregate and integrate customer data from numerous different banks, present that information in an easy to understand way, and use that to provide single point access to a range of products, services and expert advice, based on analysis of that aggregated information.

The convenience of one-stop visibility on their finances will help to improve the performance of SMEs’ financial function - by enabling better business management. As open banking develops, TPPs will integrate other applications into their platforms. Just as a property search application might seamlessly include Google maps to enhance the app's utility

Clients with exclusive access to its customers' data, can offer on top of everything else. Amazon, for example, is already making loans to selected online sellers through its Amazon Lending arm.

Withings access to customers' data, revenue and expenditure details, spending habits, and repayment track record, the bank was at a significant competitive advantage when making decisions about the products and services it offers to its customers. Now the banks, along with other TPPs, will be part of a new financial services ecosystem, using open data to provide value to consumers with much less friction.

Fintechs are unlikely to provide the products and services that they offer directly, instead acting as a layer on top of the actual provider (which may be a traditional bank). By aggregating and analysing customer data, the services traditionally available from banks, such as accounts, lending, borrowing, and investment, as well as more innovative offerings, are likely to be available via Fintech TPPs with better choice, better pricing and a better consumer experience.

For example, a TPP might provide a lending platform that, using sophisticated technology to analyse customer data and make customer behaviour predictions, can offer more competitive terms, while achieving lower default rates.

A customer could give permission to access their data to a TPP which could then make investment suggestions based on the risk profile that the customer features. Pension and mortgages are other obvious services that will be affected.

Furthermore, SMEs may be able to obtain business and finance advisory services via TPPs, which would not otherwise be available due to cost. And, while individuals have long enjoyed free banking services, unlike SMEs, there are signs that open banking may create a level of free banking for SMEs too.

The democratization of banking services

Opening banking enables many providers to hold a bank account who would normally be unable to access banking services via a traditional bank. For numerous reasons - no permanent address, poor credit rating scores, international students who come to the UK for a limited period - there are many people in the UK unable to access banking services.

With open banking, TPPs can take advantage of new banking regulations where, under a certain amount of money, they can give people access to a bank account number and a prepaid card.

In order to do this the TPPs need to obtain a specific type of licence; they can then piggyback on the infrastructure of traditional banks and, using prepaid accounts, allow previously excluded people to set up a bank account.

Democratising access to financial services in this way has huge implications for the wider economy. It economically empowers segments of society who were limited in the extent to which they could actively participate in the economy. It also allows these individuals to obtain better advice relating to financial matters, possibly helping to avoid mortgage arrears or credit card underpayment, for example. And it creates business opportunities for TPPs to sell other firms that can identify and service the needs of this customer segment.

Data control

Many stories in the news, recently, have highlighted issues around data privacy and security; trading personal data for commercial gain, without the knowledge of the individuals concerned; poor implementation of technology allowing consumers and networks to infiltrate the consumer with other consumers; and hackers downloading massive datasets of personal data.

All these situations involve an individual or organisation’s loss of control over its own information. Open banking procedures from the principle that the individual customer should have power over how and control of their personal data, including that currently held by the banks they deal with. Customers can, therefore, provide or withdraw consent for access to personal data when they wish.

This may appear a trivial detail but its impact is huge. The data is the oil that lubricates the financial services market. Without customer data TPPs cannot create competitive services. Customer permission becomes currency.

Now TPPs are competing for customer permission and must factor into their business model a platform approach to engaging consumers to provide permission. This is how a modern digital economy should work.

In addition, having control over their data helps to provide consumers with peace of mind regarding data security. They know that whenever they no longer want a TPP to have access to their data, they are able to retract permission in an automated and transparent way.

Rethinking business models

Perhaps the biggest impact that open banking will have on the business world is the way that the provision of banking and financial services will be affected overall. There is every chance that the retail banking landscape, for individuals and small business at least, will be almost unrecognisable from a consumer’s perspective. So, for example, traditional banks must rethink their business models to survive. They can move to position themselves as TPPs, as more and more face changing challenges in doing so.

Customers may instinctively be reluctant for their personal data and financial arrangements to be shared among the traditional banks, rather than via new fintech TPPs.

The banks are also grappling with legacy IT systems and infrastructure compliance. Perhaps more problematic, however, is that the traditional banks may simply not be sufficiently agile, innovative, or technologically adept to compete with new entrants.

It is not clear that the traditional banks understand the scale of the threat or pace of change that is likely. If they wish to respond adequately it will require a huge shift in the traditional bank’s understanding of how it offers value and makes revenue.

The banks should no longer be thinking about selling everything to the customer themselves, but instead about sharing with others. They should be thinking of competing through platforms, creating an ecosystem of reliable trusted partners - and sharing transactions with others that those partners push to the customer. This is a move from traditional vertically integrated banking to a far more modular and networked architecture.

It is not only the traditional banks that will be threatened. Traditional service providers such as accountants, business consulting, pension advisers, and many others that obtain business through recommendation or tie-ups with banks, must find their place in the re-oriented value ecosystem - alongside new service providers.

Indeed, a wide range of companies supplying products and services may face increased competition, because of the greater transparency and choice available from TPPs offering a platform approach.

The march of the tech giants

It is not just the Fintechs and consumers that stand to benefit from open banking either. Any organisation that can combine the necessary conditions to obtain a licence can trade as a TPP.

That includes giant technology companies such as Facebook, Amazon, and Google. Combine the huge amount of personal data that these digital behemoths possess, with their data analysis capabilities, and the personal customer data they already hold, and the tech giants are well positioned to dominate financial services.

They already have a customer base of hundreds of millions of users. Even if they do not provide a financial services veneer, resting on top of everything else. Amazon, for example, is already making loans to selected online sellers through its Amazon Lending arm.

Open banking will take time to gain traction. Initially, there is likely to be a degree of destabilising, turmoil and confusion, as the market retoshs, reshapes, and reengages.

In a sense it is a race to become a platform and offer modern customer data and services veneer, resting on top of the balance sheets and infrastructure of the traditional banks and other established financial service providers.

If open banking is to deliver the benefits it promises, there are still challenges to be met. Without enough fintechs entering the market as TPPs, we may not get the competitive market envisaged.

There are risks that the tech giants may exert a monopolist-like influence on the market. People need to trust TPPs enough to provide data access permission, and many others that obtain business through recommendation or tie-ups with banks, must find their place in the re-oriented value ecosystem, alongside new service providers.

Indeed, a wide range of companies supplying products and services may face increased competition, because of the greater transparency and choice available from TPPs offering a platform approach.

There is likely to be a degree of destabilising, turmoil and confusion...
YOU ARE JUST AN ILLUSION

Still searching for the real ‘you’? It’s time to give up, you have been on a wild goose chase.

by Nick Chater
The sheer inventiveness of our minds implies that the real Anna could be interpreting and justifying her own thoughts and behaviour, in retrospect, using exactly the imaginative powers that we are using when considering her as a fictional character. The character of the imaginary work of Tolstoy himself in creating her story.

And this suggests that this very same inventiveness could underlie the stream of justifications we provide to explain our everyday lives to ourselves and each other.

I want to convince you that the mind is so complex that the very idea of mental depth is an illusion. The mind is, instead, a consummate improviser, inventing actions, and beliefs and desires to explain those actions, with wonderful fluidity.

But these momentary inventions are flimsy, fragmented and self-contradictory; they are like a film set, seeming solid when viewed through the camera, but constructed from cardboard.

An improvising mind, unmoored from stable beliefs and desires, might seem to be a recipe for mental chaos. I shall argue that the opposite is true: the very task of our improvising mind is to make our thoughts and behaviour as coherent as possible – to stay ‘in character’ as well as we are able.

To do so, our brains must strive continually to think and act in the current moment in a way that aligns as well as possible our prior thoughts and actions. We are like judges deciding each new legal case by referring to, and reinterpreting, an ever-growing body of previous cases.

So the secret of our minds lies not in supposed hidden depths, but in our remarkable ability to creatively improvise our present, on the theme of our past.

Our thought as coherent as possible – to stay ‘in character’

Our mind is continually interpreting, justifying and making sense of our own behaviour, just as we make sense of the behaviour of the people around us, or characters in fiction.

If you cross-examine me, or any other reader, about Anna’s motivations: Q: ‘Did she think that jumping under the train would mean certain death?’ A: ‘Yes.’ Q: ‘Did she believe that jumping under the train would mean she would be better off without her?’ A: ‘Possibly – yes.’

So we clearly have the ability to fabricate justifications at will, but these justifications cannot, of course, be conjectures about Anna’s mental life, because Anna, being a fictional character, has no mental life.

If Anna were real, and had survived, we could cross-examine her, in her Swiss sanatorium, with just the same questions, and she too could reply, quick as a flash. And, for that matter, were you to cross-examine me about some prosaic aspect of my own life (for example, why I took the train, rather than driving, to London), I can come back with a string of explanations (about carbon emissions, traffic congestion, parking etc.).
And, as we shall see, each momentary experience turns out to be startlingly sketchy – at any moment, we can recognize just one face, or read just one word, or identify just one object.

And when, like our imagined Anna, rehabilitating in the Alps, we begin to describe our feelings, or explain our actions, we are only creating stories, one step at a time, not exploring a pre-existing inner world of thoughts and feelings.

How do thoughts work?
The more outré ‘inner worlds’ of dreams, or mystical or drug-induced states, are similarly nothing more than streams of invention – acts of the imagination, not voyages of inner discovery. And the interpretation of dreams, far from boring deep into our psyche, is no more than one creative act set atop another.

The aim of part one of my book is to help reinterpret our intuitions about the nature of our own minds, and to undercut misconceptions that have been repeated and even amplified in many areas of philosophy, psychology, psychoanalysis, artificial intelligence and neuroscience.

But if the intuitive picture – of a rich and deep ‘inner sea’ of which our conscious thought is merely the glittering surface – is so utterly wrong, the obvious question is: what possible alternative story about human thought and behaviour could there be?

In part two, we take up this question. If the mind is flat, then our mental lives must exist purely at the ‘mental surface’. Our brain is an improviser, and it bases its current improvisations on previous improvisations: it creates new momentary thoughts and experiences by drawing not on a hidden inner world of knowledge, beliefs and motives, but on memory traces of previous momentary thoughts and experiences.

The analogy with fiction is helpful here too. Tolstoy invents Anna’s words and actions as he writes the novel. But he strives to make Anna’s words and actions as coherent as possible – she should ‘stay in character’ or her character should ‘develop’ as the novel unfolds.

And when we interpret the behaviour of other people, and of ourselves, the same aim applies: a good interpretation is one that does not just make sense of the present moment, but links it with our past actions, words, and, indeed, interpretations.

Our brain is an engine that creates momentary conscious interpretations not by drawing on hidden inner depths, but by linking the present with the past, just as writing a novel involves linking its sentences together coherently, rather than creating an entire world.

Conscious experience is, therefore, the sequence of outputs of a cycle of thought, locking onto, and imposing meaning on, aspects of the sensory world. That is, we consciously experience the meaningful interpretations of the world that our brain creates, seeing words, objects and faces, and hearing voices, tunes or sirens.

But we are never conscious either of the inputs to each mental step or each step’s internal workings. So we can report nothing to explain why we see an outcrop of rock as a pack of dogs, a fleeting facial expression as condescending or kindly, or why a line of poetry conjures up a vision of mortality or reminds us of childhood.

Each cycle of thought delivers a consciously experienced interpretation, but no explanation of where that interpretation comes from.

This is an exclusive extract from Nick Chater’s new book The Mind is Flat – The Illusion of Mental Depth and The Improvised Mind published by Penguin.

Nick Chater is Professor of Behavioural Science at Warwick Business School, co-founder of the research consultancy Decision Technology. He is on the advisory board of the Cabinet Office’s Behavioural Insights Team (BIT), popularly known as the ‘Nudge Unit’. E: Nick.Chater@wbs.ac.uk
New research by myself and colleagues Chris Olivola and David Hardity has found a well-placed zero can nudge people to be more patient and wait for the longer-later reward. Going back to the parent trying to get their child not to have a snack before dinner, what they are really talking about is the opportunity cost of eating the sweets. An alternative way of saying this is “you will be giving up the enjoyment of your future dinner by having the snack now.”

People typically do not think of the opportunity cost of missing out on the future benefit, but when this is explicitly pointed out to them our research shows people are more likely to hold on for the longer-later reward.

The power of a zero in developing patience

One experiment did this in the simplest possible way. We added zeroes to the usual money choice, which highlighted how each alternative option would cost out when the other option paid out.

It turns out that if you ask people to choose between £10 now and zero in six months or zero now and £15 in six months, they are more patient. That is, if you add two zeroes, each highlighting the opportunity cost of each option, you make people more likely to wait.

Why does this happen? We speculated that the main driver of this effect was in pointing out the opportunity cost of taking the immediate option. Perhaps pointing out the opportunity cost of the £10 now (that you won’t get £15 later) makes you more patient.

We investigated this by having groups of people choose between £10 now and £15 in six months under two additional zero conditions. In one, only the 00 opportunity cost associated with the £10 was made explicit; in the other only the 0 associated with the £15 was made explicit. The only effect was that people were more patient when the opportunity cost of the earlier £10 was made explicit.

Why is that? Well, if we look at our example of the kid reaching for a packet of sweets and the parent warning it will spoil their future dinner, the child already knows that if they wait for their dinner, this means they will not get the snack now (this is a zero outcome). Their attention is completely focused on the current snack and how tempting it is.

On the other hand, if you were to say “if you wait for your dinner you will get no snack now” they are unlikely to become more patient – the child is not even thinking about dinner.

Blind to the future

The famous Austrian economist Eugen von Bolin-Bearek observed how there is an asymmetry in how we view the present versus the future.

“The present always gets its rights,” he said. “It forces itself upon us through our senses.

To cry for food when hungry occurs even to a baby. But the future, we must anticipate and picture.”

We believe this is one reason for the effect of that zero – it makes what we will have to forego to get something now more salient.

Therefore pointing people’s attention to that future consequence of current consumption does have an effect on their thinking, but moving their attention toward the fact that if they don’t take something now they won’t have any new effect has no effect.

We changed the context, giving them real-life scenarios, such as the government has to choose between two programmes to control pollution; save 100 lives now (but save no lives 25 years from now) or save 200 lives 25 years from now (but save no lives now). It revealed the same pattern. We tried to find out if people understood the effect of the zero in the choices they made. We used a number of methods, but when we asked people to explain their choices they weren’t able to express the causal mechanism.

Just one per cent said “the reason why I chose the latter option was because I would have to give up the earlier option” and this percentage did not depend on which group they were in. They didn’t even mention the zero, so this is a classic nudge. You move your gaze towards that later option, but there is no thought about it in a conscious way, you are not really aware it is affecting your choice.

This relates to a lot of research in behavioural science, and that is highlighted by Nick Chater in his book The Mind is Flat, in that we are attending to very little of the information in the world, and are even not always aware of what information is coming in. Daniel Kahneman famously pointed out in his ground-breaking book Thinking, Fast and Slow “what you see is all there is” – we don’t fill in any gaps.

Very often we make very momentous life decisions without realising it. For instance, imagine a 20 year-old decides to spend £200 on a new TV. If that money was invested at slightly over three per cent a year until they retired they would have £2,000 extra to spend on that TV. So in buying that TV they are committing themselves to being significantly poorer when they retire, but it is doubtful that anyone is thinking about this when deciding about the TV.

But if the price ticket was framed as a choice between a TV now and £0 at age 65, or no TV now and £2,000 spent on your retirement, it is likely that fewer TVs would be sold.

This may seem like a radical solution, but it is very similar to the calorie labelling on food. The label there is to remind you of the opportunity cost of consuming the yummy food, and I believe it would be useful to remind people of the opportunity cost of their purchases. The “zero nudge” is one way of drawing attention to opportunity costs, but not the only way. Highlighting the opportunity cost even with something as small as a well-placed zero can make people more patient. It won’t stop global warming, but interventions like these are one piece of the larger puzzle. Once again the evidence is clear we should always listen to our parents.
In male-dominated professions like engineering 40 per cent of women leave. Here is what firms can do to help close the gender gap.

by Dulini Fernando

“This is a man’s world,” sang James Brown, as he celebrated men’s achievements in automotive, locomotive, marine and electrical engineering. And, while women have made substantial inroads into the world of work and organisational hierarchies since Brown first sang that refrain half a century ago, many Science, Technology, Engineering and Maths (STEM) related fields such as engineering, still appear stubbornly resistant to gender diversity. Even from the perspective of many of the women who actually work in these industries.
It is important that women are offered opportunities to test existing skill levels and micro-environment. There were four areas where line managers played a key role in contributing to that positive micro-environment for women in their everyday work. There were several areas in particular where help could be decisive. However, there are women who manage to forge successful careers, over many years, in work environments dominated by men, including engineering. Together with my research colleagues, Laurie Cohen and Joanne Duberley, we decided to get closer to the problem, and actually listen to these women and learn from their experiences. We hoped that we might uncover insights to help organisations facing a similar challenge and improve gender diversity over the long term. Rather than talking to organisations about company-wide initiatives, we interviewed 34 women engineers in two FTSE 100 firms (10 early in their careers, 19 in mid-career and five in late-career). The organisations that these women work for are male-dominated with entrenched masculine cultures. However, they had good intentions, they wanted to increase the number of women engineers. Yet, regardless of the policies the employers introduced, women were reluctant to stay.

We tried to understand the factors that helped women to stay in their organisations. Our intention was to build a rounded, holistic understanding of the interviewees as individuals. The main finding to emerge was the significance of the micro-environment – the immediate surroundings – that the women worked in. This might involve, for example, the line manager, the team that a woman engineer worked with on a day-to-day basis, the culture in that notional space. In turn, interaction with and perception of that micro-environment affected the way that the women thought, felt and acted. So, for example, there might be aspects of work that an individual interpreted as exclusion at the broad organisational level. A woman engineer may well be unhappy with the way that their organisation is run in that respect. They may even be part of an effort to change that. And, if that broader macro-organisational environment is the main influence on the way that individuals think, feel and act, then they may not stay in the organisation.

However, if the micro-climate, and the micro-environment are sufficiently positive; if the individual gets on well with their line manager and any mentors they have; if they have co-operative supportive and interesting colleagues; if there is a positive nurturing micro-climate, all this can act as a buffer against negative forces in the broader organisation. It was clear from our conversations that the women found engineering a challenging space, but with the right help early in their careers, they were willing to remain. There were several areas in particular where help could be decisive. These areas, in the majority of cases, concerned actions and initiatives that helped to create a positive micro-environment for women in their everyday work. There were also four areas where line managers played a key role in contributing to that micro-environment.

1 Opening up opportunities

It is important that women are offered opportunities to test existing skill levels and build confidence in their own abilities and, in doing so, to create the kind of internal visibility necessary to advance their careers. It was clear from our conversations that perceptions of competence were an issue. This was partly about men lacking confidence in the competence of female employees, but primarily women expressing doubts invariably unfounded about their own competence.

This lack of confidence in their own abilities may be due to gender-based micro-aggression in the workplace, or workplace isolation from important networks, for example. Whatever the reasons, these doubts prevent women from seeking out and seizing opportunities to advance their careers, making them less adept at self-promotion.

While women may consider confidence an inherent trait, our studies suggest that confidence is partly the product of social experiences in the workplace and, as such, needs to be built. Line managers can take action by offering opportunities that will help women boost their confidence. They can offer ‘stretch’ assignments and other opportunities that test existing skill levels, or they might suggest standing in for them or another colleague with more senior responsibilities, temporarily assuming a position of higher leadership. Moreover, if women are reluctant to accept higher level work, line managers can provide the necessary encouragement and support that enables women to accept these opportunities. Successfully completing these types of assignments then creates positive reinforcement.

Another part of what line managers are doing here is helping to create visibility. For women who are fearful of being visible, who are not putting themselves forward, possibly because of a lack of self-confidence, line managers can help to create a platform. In doing so line managers promote career-enhancing visibility and access to higher level networks.

2 Personalised feedback

Another area where line managers can help is with the provision of feedback. Most line managers provide feedback in one form or another, but the women we spoke to were very specific about the kind of feedback that made a real difference. This feedback addressed a number of issues that the women engineers had, around how best to approach a task or finding the right technical area to specialise in, for example. The feedback that they needed was personalised, constructive, and regular. It was not an institutional routine tick-box exercise, mandated by the organisation, but something that line managers took upon themselves to do.

It was feedback from line managers that demonstrated an interest in the individual engineer’s work, and signalled that the manager had taken time to understand the engineer’s strengths and weaknesses. This understanding allowed line managers to discuss knowledge gaps and learning needs in order to help female engineers improve performance. For the recipient the feedback was invaluable in terms of providing specific tailored advice. It gave the recipient a sense of direction, of where they were, how they could progress, and what they needed to work on in order to improve.

A common issue for women working in STEM professions is that the career path is not always obvious. However, the line manager offering guidance about possible routes forward, helps to inspire confidence and reinforce the idea that career longevity is possible.
Building a listening culture

Anna Barsby

3 Peer support
Beyond personalised feedback and help with identified project and task opportunities, women found general peer support useful. Again this was something that happened in the micro-environment.

Women valued support from line managers and colleagues creating an inclusive workplace in which the employees feel about the organisation that they work in. The women we interviewed appreciated support from their immediate work group if something had gone wrong – it engendered a feeling of being valued and cared for. It was also relevant when women encountered threatening or difficult situations. In such male-dominated environments this might for women who have successfully combined an engineering career and a family exist in the organisation at some level.

Organisations can be proactive, making role models more visible. Role models should be able to tell their story, to challenge stereotypes by relating their experiences, to explain how they have coped, in order to make the aspiration of combining a respected career in engineering with motherhood and family life seem something that is both tangible and achievable.

Listening to the underrepresented
Organisations can take advantage of the insights provided by the many female engineers that we spoke to, by institutionalising these insights as part of their HR practices.

Line managers can be trained to recognise intervention opportunities that relate to the factors detailed above. Organisations might also include incentive good practice by recognising and rewarding employees who demonstrate supportive behaviour, in their line managers and peers – and not just from senior management directives and mandarins. Many of the women stressed that positive action from their line managers was the most important part of the team; that they were working on it and we as leaders need to be seen as a role model.

Managers in STEM-related professions, especially engineers, who want to promote better gender diversity, can start by considering the role of the micro-environment and focusing on the key factors that emerged from our study.

Dulini Fernando
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How would you describe your style of leadership?
I would describe my style as genuine, people-centric and results – I cope well with change and enjoy looking for ways to improve things and fast! I really believe in teamwork, so listening to customers and colleagues is fundamental to my approach.

What role did your Art History graduate (which is a CID – not a traditional path, but I think my background helped me develop as a leader) and a technologist second?

What essential qualities does an effective leader possess?
As Morrisons, we have our ‘Ways of Working’ and the one that relates to the factors is ‘listening hard and responding quickly.’ Creating a listening culture is vital for customers and colleagues – their insight is invaluable.

Being authentic is also important. An effective leader generally cares for others, their ambitions, their development and their welfare – it cannot be faked either.

It is important to emphasise that the approachable and not the afraid to be seen as a ‘real’ human being with the same work-life balance issues as everyone else. Share your story, tell people when you are leaving early for the school play. People follow, so be the role model you wish you had had. The ability to see where you want to go, setting challenging but achievable goals, communicating this is also essential as a leader. Be clear and consistent.

In your career what has been the most valuable experiences in helping you develop as a leader?
I believe in watching and listening to those around me to see what works and, just as importantly, what doesn’t. I try to work for two very different leaders – one who was an extrovert and brilliant at engaging an room full of colleagues and another who was an introvert, great at engaging one to one but really didn’t enjoy speaking to a large audience. Both were excellent in their own way, but with very different styles. I hope that I don’t have to be like the mould of a typical leader. It’s about being your own style of leader, being authentic and playing to your strengths.

I always do the things that make me uncomfortable as it’s the best way to learn. For example, I remember having to go to Scotland to meet different parts of the team I was working with and we as leaders didn’t really told the truth on the phone. I didn’t really fancy the trip. But I learnt that face to face meetings are invaluable at creating relationships and ensuring that messages aren’t misunderstood.

Clearly nowadays, FaceTime and Hangouts can be used too, but it’s a reason I’ve careered with – I don’t email you and meet someone in person.

Self-awareness has also been key. I understand my own values, my strengths and the areas where I’m not as strong and need a colleagues’ skill set. Simply for support.

I believe we should develop our strengths and become great at them, rather than spending time on our development areas and only becoming average at those. I’ve always been good at seeing the bigger picture and being able to work with a vision, but I’m not as good as checking at detail, so I have to ensure my team set out on survival.”

Anna Barsby is Chief Technology Director at supermarket giant Morrisons after being named the UK’s top Chief Information Officer by CIO magazine while CIO at Halfords. With more than 130,000 employees and 498 stores Barsby, who completed her MBA at WBS, is using her leadership skills in a documentary to escape the real world!

Who has influenced you in your career and how?
My mum influenced me in that she made it feel very normal for a woman to have a career. She has always supported me, especially in my role as a single mum. I am also heavily influenced by colleagues around me, coaching and guiding me. I’m not really someone who looks up to people I don’t know – it just feels like my life I’ll do things my way. My biggest influences, though, are my two daughters. They are the most important part of my life and I would do anything for them. I hope I’m showing them that it’s possible to love your job, be a success and balance the other things that means to you and earn enough to give you choices. That is what really matters to me.

What are the most important decisions you have to make and how do you make them?
In my role I have to keep our operation safe and our customers happy. This is by helping manage the availability of our food, keeping our stores open and delivering goods to customers. Mistakes happen and we aim to learn from them.

In my role as an mums as well as a CIO, I really have to balance my busy work schedule. I take the girls to school twice a week, make the lunch and try to get home for dinner. I take a step back from the office, is really important and it is also key that I support my colleagues as they try to manage their own. It also helps me build resilience to keep it working at once.

How do you make sure staff are able to learn from mistakes rather than be punished for them?
We are a very supportive team. One another of Morrisons’ way of working is ‘Freedom within a Framework,’ to give colleagues enough room to make things happen while providing a supportive environment with coaching and mentoring. Mistakes happen and we aim to learn from them.

What piece of advice would you give to somebody aspiring to be in a leadership position?
My advice would be to do it your own way be authentic, listen to your colleagues, learn from those around you, respect leaders and be respectful. Mostly though, be present and enjoy the journey, if you wait until you are at the destination you will have missed so much.
PICTURE AN EFFECTIVE LEADER. IT’S NOT ALWAYS WHAT YOU THINK.

Asking people to draw a leader has revealed just how much leadership theory is based on cultural assumptions.

by Tina Kiefer
Chances are you are picturing a person, most likely a male, featuring a number of different attributes describing the person’s characteristics, skills and behaviours. If this is your image, then you have a lot in common with the majority of UK and North American executives and students that have participated in this exercise over the years – and, not coincidentally, with the mainstream textbook understanding of leadership.

But, your image may be very different. You may have pictured a tree or a ship navigating the high seas or an animal. And maybe, your picture even included followers?

I have collected hundreds of drawings over the past 15 years, with participants representing different cultures, professions and generations. In this exercise, participants are asked to first reflect on their personal experiences with an effective leader and then to discuss the nature of those leaders in groups. They are then asked to draw an effective leader that represents the group’s view. The instruction is always the same, but the drawings produced can vary significantly.

Regardless of whether the groups’ drawings correspond with an image of a person or capture an entirely different metaphor, many participants are surprised to learn that their image may not be as unique as they thought.

And participants are equally surprised about how very different those images can be, depending on the cultural or professional composition of the group. One explanation is that we tend not to be aware of how strongly our assumptions about leadership are rooted in our cultural values. And participants are not always prepared to readily accept other groups’ representations of what effective leaders are. While the actual attributes are never questioned, participants have taken exception to the underlying message of the purpose of leadership and whom it serves.

Apart from being a playful way to explore an age-old question, what do the drawings tell us? Asking people to draw an effective leader, rather than produce a list of bullet points, moves people away from textbook answers and taps into their implicit and cultural assumptions, revealing different beliefs and values attached to leadership, beyond the view that has permeated throughout much of the leadership research.

These drawings reveal who and what we believe effective leaders to be, their characteristics and typical behaviours. But for some cultures the drawings also depict how leaders are embedded in their leadership context and the role they play within the organisation and in society.

Drawings one and two are good examples of how the majority of US/UK drawings show an individual person, often a male, sometimes gender neutral, and only occasionally female (mainly drawn by an all-female group). The images contain personal characteristics and traits, represented by a range of symbols, such as a heart for passion or caring.

In some drawings it is hard to distinguish between the leaders and followers, with the role of followers seen as much more integral to an effective leader.

1. A drawing of Winston Churchill by a UK group of students
2. This North American group drew the typical symbols of a good leader
3. Latin students drew their leader in a boat full of followers
4. Asian students drew a leader with an umbrella to illustrate how leaders have a responsibility to look after the wider community in which their organisation belongs

How would you draw an effective leader?
ears for being a good listener, muscles for being strong, scales for justice or balance. While the majority of drawings only show positive characteristics, some acknowledge that leaders may need to be tough and display negative characteristics in order to be effective.

This view corresponds with the mainstream leadership literature, which is dominated by this idea that what makes effective leaders is inherent in the person, regardless of whether we follow a ‘big man’ (or ‘big woman’) theory or a transformational/transactional leadership, person-oriented or task-oriented leadership style approach. Ultimately, it is about personal attributes of a leader, and it is not surprising that followers rarely feature in those representations.

What catches the eye when comparing drawings from different backgrounds, is not only that some contain followers, while others do not, but the different ways in which followers are portrayed, ranging from subordinates to crucial players. While we often find similar leader characteristics – passion, vision, etc. – the answer to the question ‘what makes an effective leader’ can also (at least partly) be followers and the way leaders and followers interact in a specific context.

In some drawings – such as number three – it is hard to distinguish between the leaders and followers, with the role of followers seen as much more integral to an effective leader. Those drawings may emphasise the role of leaders in relation to followers or even depict leaders within a wider societal function. The group that drew an umbrella in picture four, for example, explained how an effective leader also holds a vital function within society and how the organisational and societal functions are entwined, a message that one Western participant in the seminar took very strong offence to.

Moving even further away from the mainstream US/UK view of an effective leader, some drawings, often produced by Far-East Asian groups, do not depict people, but effective leaders as part of a process. The tree in drawing eight symbolises that the leader is part of an organisational process, with resources from the environment flowing up and down, growing and producing fruit (including a few bad apples). Drawings from Chinese public sector leaders explained that to understand effective leaders, we needed to understand their journey; from where they were born, how they were raised, their first job, their whole life story.

Cultural representations of effective leaders are not limited to national culture, but tend to include different sub-cultural values and expectations between sectors, different professions or even within an organisation. Drawings from public sector participants in various countries demonstrate a more process-focused perspective, illustrating how leaders and followers have to work across boundaries to lead an organisation or department successfully. But different professional groups within the same organisation also tend to draw different representations of their effective leader – for example support staff, nurses or physicians within a hospital. Drawing five is driven by nurses and six by physicians at the same hospital.

Different styles or characteristics can be seen as effective in one particular culture but ineffective in another. This may appear obvious, but while cultural differences are acknowledged in leadership theory and practice – for example in terms of different styles or gender differences – very little of the existing mainstream literature challenges its implicit assumptions.

Why does it matter whether and how those drawings vary?

To do so is important because much of the existing leadership theory and research is driven by a particular cultural view, which re-establishes its own implicit assumptions without being aware of it in writing, training or HR procedures. These drawings can open up the debate on not just what makes leaders successful, but more widely what leadership is perceived to be within a certain context. And the answer depends very much on the existing culture and its values.

Sheryl Sandberg, COO of Facebook is famously quoted to have said: “We cannot change what we are unaware of, and once we are aware, we cannot help but change.”

Hence, the drawings can help surface our values, beliefs and assumptions that implicitly guide our actions. This can help to break down traditional leader images, and make way for a different, more diverse pool of leaders who may approach the task with a fresh perspective.

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I n May 2018, Jes Staley, CEO of Barclays, the multina-

tional investment bank and financial services firm, was 

fined by the Financial Conduct Authority and Prudential 

Commissioners for failing to act quickly, thus risking unneeded 

confidence in the company’s whistleblowing procedures. 

His behaviour fell short of “the standard of due skill, care 

diligence expected.” He also repaid a substantial part 

of his bonus, while Barclays was required to provide details of 

its whistleblowing procedures to regulators on an annual basis. 

The inadequate measures taken by regulators in recent years, 

and the procedures adopted by organisations, implementing effective speak-up procedures remains a challenge for 

organisations. Over the last five years, together with research colleagues Kate Kenny and Wim Van de Ven, I have researched 

whistleblowing, studying its benefits, the plight of whistleblow-

ers, the efficacy of speak-up procedures and much more. 

We have developed evidence-based guidelines and recommendations that senior managers, HR professionals, 

and compliance officers can use to design and implement effective speak-up arrangements. 

The benefits of speaking-up 

Whistleblowing is encouraged and protected in many 

jurisdictions because it is considered to be beneficial for 

organisations and society. Without protection, the fate of the 

whistleblower is bleak. They can be easily alarmed, 

discredited and vilified, suffering economically and ill-health. 

Whistleblowers, in the main, are not narcissistic attention- 

seekers, betraying their colleagues. Instead, our research shows 

that they tend to be people who have a regulatory obligation to 

report, or feel a strong duty to the norms of their profession. 

They act out of a desire to stop wrongdoing and prevent it 

from recurring. And they do so, often, with great concern 

about whether their actions will harm their colleagues, or the 

organisation. They might, for example, where the matter is not 

responded to in a timely and effective manner, where possible. 

Effective speak-up arrangements ensure that concerns are 

handled 

Responsiveness and feedback 

Effective speak-up arrangements ensure that concerns are 

handled in an average of more than $3 million each in losses. While 

the 2017–2018 Global Fraud and Risk Report by global 

risk consultants, Kroll, shows that insiders were the most frequent 

reporters of fraud incidents, according to internal audit 

or management were the most effective means of 

uncovering fraud, exposing 47 per cent of fraud incidents. 

Adopting robust procedures can help organisations avoid 

the reputational damage that accompanies a situation where 

a whistleblower feels compelled to take a public matter. 

Organisations need to go beyond paying lip service to 

the notion of enabling and protecting whistleblowing and 

implement genuinely effective speak-up arrangements. 

Organisations must be prepared to identify and respond to both grievance and 

wrongdoing. It is important, therefore, for organisations to 

be prepared to identify and respond to both grievance and 

wrongdoing related concerns. 

Equally, organisations must be capable of dealing with 

an increase in the volume of concerns raised. That might be 

due to examples of whistleblowing and wrongdoing being 

publicised in the media, or changes in attitude towards 
certain types of behaviour in society such as less tolerance 
of wrongdoing and increased transparency thanks to social media and the internet. 

Organisations should also be aware of possible barriers 
to responsiveness. Perceptions around responsiveness are 

especially important. For example, there may be legal 

limitations to what can be communicated or organisations 
can take steps to manage expectations by explaining about 

legality and providing indicative timescales for follow-up actions. 

It may be difficult for organisations to see the benefit of 

responding. Responses, such as sanctions taken against 

individuals, may lack visibility for a variety of reasons. Here, 

companies can create a generalised perception of a responsive organisation. They might, for example, where the matter is not 

a compliance issue, try to include the person who raised the concern in efforts to design a solution. Organisations need to 

continuously stress to managers that responding to concerns is 

part of their role. 

Providing this information in annual reports will 

demonstrate the company’s responsiveness in dealing with 

concern raised and commitment to protecting those who 

raise them.

Trust and transparency 

There are several ways that organisations can help create 

the trust and transparency essential for effective speak-up 

arrangements. For example, including the HR function as 

well as compliance can encourage people to perceive speak-up 

arrangements as being about well-being and engagement, 

not simply policing and compliance. 

Even the act of implementing effective speak-up practices 

itself can build trust, or involving competent independent 

specialists to help with speak-up events and 

including speak-up data in organisational reporting. Senior 

managers might, for example, publish aggregate numbers in 

the annual report and report performance against a best 

practice framework. 

Speak-up champions 

The recommendations we make in our paper are a great 

start for organisations determined to implement good practices 

around speak-up arrangements. However, although necessary, 

these measures are not sufficient alone to embed good 

practices systematically. 

In the same way that business accepted the need 

for good CSR practices, we need leaders to step 

forward as speak-up champions, to set and maintain 

standards; to evidence the evaluation and process 

of speak-up; to publicise the benefits of effective 

speak-up arrangements. And not just the obvious 

economic benefits, but also the benefits in terms 
of becoming a more attractive employer and building 

better stakeholder relationships, for example. 

Through their leadership, other organisations will follow 

these pioneers. 

Powerful signalling that policymakers and regulators understand the importance 
of whistleblowing and have the resolve necessary to encourage, enable, and protect, the practice of 
speak-up will also help this. This will help create a society fit for the 21st century. A society where 

we can be confident that the vast majority of 

organisations are not only good places to go to work, but 

institutions that we can be proud of.

Further reading: 


PSSST...!

Marcella Fotaki is Professor of Business Ethics at Warwick Business School and a Senior Editor for Organisation Studies.
The sharing economy trend is growing fast, but its big players are finding it hard to find a strategy that fits every country.

by Pinar Ozcan & Mareike Möhlmann

There has been a 60 per cent increase in people using the sharing economy in the UK in the 18 months between January 2016 and July 2017, our survey revealed.

It is a phenomenal rise in the use of sharing platforms like Uber, Airbnb, TaskRabbit, JustPark and MindSharing, to name a few, and there is reason to believe this trend will carry on.

With the help of our colleague Chandy Krishnamorthy, our UK representative survey of 1,220 people found that 78 per cent of 18 to 24 year-olds have already used sharing platforms at least once before, providing evidence of how Millennials are eschewing possessions.

It points to a future where everything will be shared – cars, bikes, spare bedrooms, food, clothes even solar energy; possessions will be a luxury most people can do without.

Proponents of the sharing economy say it drives more efficient use of resources. A prime example are platforms like JustPark and Your Parking Space, which allow people to rent out their drive while they are at work and so reduce the burden on local authorities to build parking spaces. Similarly, renting out spare rooms is a more efficient use of space, allowing towns and cities to grow organically with less demand for new houses.

It can also reduce overcrowding in city centres. Studies show that Airbnb apartments are a lot more dispersed than traditional hotels, which are usually located in the centre of cities, so different parts of a city or town also become available to tourists, evening out income generation from tourism and boosting business opportunities in those areas.

It has also been argued that some sharing economy businesses allow people to access work more easily, for example becoming an Uber driver with other opportunities for people to further supplement their income through platforms like TaskRabbit.

Indeed, our survey found that 84 per cent of those earning under £40,000 per year said they used sharing platforms to save money and, for many, it has become a lifestyle choice with many using multiple platforms every month.

It shows the sharing economy is engrained in the lives of many people and it is not just those looking to make or save money, environmental concerns are another reason, particularly providers of services and for women. Interestingly, educated people are also more likely to use sharing economy services.

It alludes to a booming new opportunity, with the evidence from our survey showing demand for sharing economy services is only going to grow.

At the same time, the arrival of sharing economy platforms has been met with plenty of resistance around the world, causing tensions, conflict, protests and costly court cases – as Uber can testify.

“Keep Chicago Uber. Join us in advocating for more economic opportunity, choice and competition – sign the petition today! Ask the Chicago City Council to reject Alderman Anthony Beale’s anti-consumer plan.”

This was one of the many emails sent to Uber customers around the world in 2016 to put pressure on local lawmakers to allow Uber to operate.

Similarly, consider the 6.2 magnitude earthquake on August 23, 2016, which completely destroyed several small villages in central Italy. Shortly after, Airbnb activated its disaster response programme that waived all service fees for hundreds of hosts in the region, making it easy to offer free shelter to disaster victims.

Such community-building initiatives helped Airbnb further legitimise and solidify its place in the hospitality sector.

Meanwhile, a woman in Egypt who rated an Uber driver poorly upon experiencing sexual harassment in the vehicle was contacted 30 minutes after the incident by Uber Egypt’s head of operations, who apologised, explained the procedure Uber had taken with the driver, refunded her trip, and gave her extra ride credits. Within 72 hours this was the most shared story on Egyptian social media and Uber rides skyrocketed.
The effective management of government regulations and public perception is no less important to organisational performance than business success in the marketplace. Uber and Airbnb purposely and strategically shape their institutional environment to improve their chances of success in different countries. However, while these strategies are effective in helping Uber and Airbnb legitimise their services and grow in these particular countries, it is unclear whether they work equally well in all country settings.

In a research paper with colleagues at Utrecht University, one of the authors, Professor Ozcan, contrasted countries with well-developed and functioning infrastructural conditions, such as an efficient public transport system – as seen in the UK and Netherlands for example - to those with significant institutional voids, like Egypt, to find out how the country context influences the type and effectiveness of the strategies employed by Uber and Airbnb.

Let us first start with the striking success of Uber in Egypt. Would you expect in a country with only two per cent of the population carrying credit cards, poor transportation infrastructure and limited GPS coverage that a company like Uber would be successful?

If the company is able to tackle some of these societal challenges, then the answer is, yes. The findings show that Egypt has no established taxi stations or on-demand cab services, and some areas do not have access to public transportation at all. Combined with high unemployment rates, this provided Uber with the opportunity to address these problems and leverage the power it gained to transform institutions to their advantage.

An Egyptian parliament member told us that the most important challenge Uber addressed in Egypt was public safety and, in particular, the sexual harassment of women – 81 per cent of women report frequent harassment while using public transportation – unemployment and access to public transportation.

Furthermore, Uber is currently investing approximately $27.9 million to optimise the quality of the GPS system in Egypt.

In comparison, softer and more additive strategies, as used by Airbnb, allow for more opportunities to co-develop strategies that provide more sustainable legitimacy gains. And yet there is a limit to applying additive institutional strategies. As firms grow over time, other non-market stakeholders – such as Amsterdam residents protesting at a housing shortage because so many landlords had put their apartments on Airbnb – may be affected negatively.

If firms do not adequately address such misalignments in their value proposition, they risk losing legitimacy.

Finally, the research found that despite acting locally and addressing the needs of the community to gain legitimisation, market penetration largely depends on the action of the national government regarding the regulation of the new service or product.

When governments play a more proactive role, as the UK is doing, politically active industry associations and lobbying various higher institutional actors, such as ministers, offer additional opportunities to gain legitimacy and influence regulation.

These institutional strategies also provide sharing economy firms with better opportunities to pre-empt or counter resistance by other stakeholders.

In conclusion, the sharing economy is not just a fad, but well on its way to making a difference in society. This road is not free of obstacles, however, as obtaining the awareness and trust of citizens is not easy for sharing platforms, particularly when news about negative experiences are diffused so quickly in today’s digital world.

As outlined above, sharing platforms need to keep up and adjust their strategy to their local environment to reach acceptance. Time will tell whether these platforms will get absorbed into existing industries with hotel chains offering homes as several recent acquisitions, such as AccorHotels’ takeover of Onefinestay, have shown.

What is clear is that consumers will have more options to share rather than to own in the future, which, considering the overpopulation and global warming issues facing planet Earth, is certainly a good thing.

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Keeping your partner in the dark

R&D partnerships are a great way of accelerating innovation, but they come with risks and the chance rivals will learn your secrets.

by Jeff Reuer

In industries where it is a race to the next innovation, partnerships in one form or another are highly attractive. But in these industries, such as biotechnology, pharmaceutical or technology, forming collaborations is a risky business.

Knowledge can easily leak and not just to the partner firm. That’s why many firms choose not to enter into partnerships or instead seek companies which are not direct rivals, sit outside their industry but have expertise and knowledge that can transfer, such as Microsoft and Toyota working together on cutting energy consumption.

But even when this is done, knowledge can still leak to your rivals, especially when you look at the location of your partner and the cluster of firms around it.

Most companies sit in clusters, surrounded by firms in the same industry, direct rivals even, such as banking with clusters in London and New York, or technology with its huge and famous cluster in Silicon Valley or around Cambridge University.

And policymakers, indeed economists, often see clusters as a good thing, helping the flow of knowledge in the industry. Clusters are sought after as, according to ‘economies of agglomeration’, more knowledge spills over the more firms are located together.

Moreover, the theory and supporting research suggests partnering with a firm in one of these clusters can help you benefit from that pool of knowledge. But that also brings competitive implications for your business, something firms should understand before entering a partnership.

Partnering with a firm in one of these clusters brings the risk of your secrets spreading to another rival, perhaps your biggest - just several doors away.

After all, people talk, especially at conferences, network gatherings, and social functions. These interactions are impossible to control and even worse, in the future your partner could join up with a rival because they are nearby or be acquired by one, with studies showing that geographic location increases the likelihood of both.

Also the risk of knowledge spilling over to nearby rivals increases as the partner is surrounded by more and stronger rivals of your firm. So when partnering with a firm in a geographic location with a high density of firms from the same industry – ie a cluster – then that is an inherent risk.

Information about your company’s strategy and future direction, benchmarking data, and other vital statistics might become known and even key employees might be hired away once contractual details emerge.

Such ‘indirect’ knowledge leakages can also occur through venture capitalists, research has found. VCs want all their start-ups to succeed so sharing knowledge with them is an obvious ploy, but that may include a direct rival. Studies have also shown this can occur through board members as well, a partner’s board member may have involvement with a rival directly or through their network.

The chain of connections to rivals should be something that is considered before entering a collaboration.

These risks may persuade your firm that a collaboration is not the right route, maybe an acquisition is the best option to not only bring that knowledge in-house, but move it from the cluster to your headquarters in a different location.

But if collaboration or a joint venture is the route you are taking, how do you stop valuable knowledge leaking?

We looked at 639 R&D alliances between 2007 and 2013 and formed by 114 US pharmaceutical firms and 481 US biotechnology ventures.

The US biotech industry is renowned for the concentration of similar firms in one location. Typically, it involves a large pharma company joining up with a smaller biotech firm, which is not focused on downstream activities like manufacturing, marketing or selling the final product in the market.
In a world where uncertainty and the pace of change is increasing, companies have to become agile, but how do you turn an oil tanker quickly? by Lozisos Herculeous

Agility has become de rigueur. Firms in all industries, from insurance and finance companies to aeroplane and vehicle manufacturers have agility programmes embedded. The problem, however, is that nobody seems to know exactly what agility is. In one sense, this is to be expected given agility’s diversity of origins. Agility began on the scene as a way to organize software programming efforts across teams in a flexible as well as efficient and scalable way. A cornerstone doctrine of the Agile Manifesto of 2001, then codified some of the principles these efforts employed, such as “people over processes and tools”, “respond to change rather than following a plan”, and “working prototypes over excessive documentation”. These principles may be good advice, but also can sound cryptic and nebulous to any executive pondering how agile a company is.

In my work with organisations including NASA’s Johnson Space Center, I have developed an applied framework that can help pin down agility for strategics and leaders.

From a strategic perspective, agility at its core, is the ability to adapt the organisation in accordance with external conditions. This involves the leadership capability to sense, judge and adjust accordingly, and to align activities with the strategic direction. The three key components in this view therefore are: sensing, relationship and strategy. Each of these components, by itself, is necessary, but on its own insufficient, component to accomplishing agility. The three elements, when they work together, can help a company hit the bullseye of agility.

Agile leaders are not only those who can sense signals in the environment, but also those who seriously explore the implications of these signals and then organize their organisation forward. A host of organisational processes such as routines, established worldviews and sunk costs work against this. Moreover, the leaders who are more likely to see and seize opportunities are champions of questioning the established truths.

Elon Musk may be the archetype of an agile leader. His initiatives in space exploration, electronic vehicles and even tunnel-building are testament to his ability to read signals of what is needed, evaluate the implications and do what’s needed, most often in novel ways to take things forward. At a strategic level, agile companies are able to overcome inertia and adapt their business models as needed, balance speed and stability, and build inter-organisational networks to push forward learning and shape their environment. IBM’s shifts from a hardware producer to a solutions provider, Google’s (Google Glass, Dodgeball), some go on to create new multi-billion dollar markets (Google Search, Google Play), and some are still emerging, with immense promise (DeepMind, with all the adjacent offshoots that artificial intelligence will enable). The organisation shuts down experiments that don’t work and reallocates resources to those that do. At any time, many flowers are allowed to bloom, and some of those populate the valley.

Using the framework (below) a company can evaluate its agility level and pinpoint where it should focus its attention based on where the scores are lower. The framework can support strategic conversations about agility by asking the right questions and directing attention to capabilities that count.

Agility as a jigsaw puzzle. Take one element out, and the potency of agility is diffused. The synergy across these components is what will give results. This framework boils down a number of ideas about agility to their essence, in a way that can help leaders evaluate their organisation’s agility quotient and take action.

Agility practices

Leadership: Sensing environmental signals
Leadership: Evaluating, engaging
Leadership: Taking initiative, driving forward
Leadership: Average score

Organizational: Experimenting, learning, collaborating
Organizational: Reallocating resources as needed
Organizational: Actively reducing inertia (unlearning)
Organizational: Average score

Strategic: Adapting business model
Strategic: Creating value through networks
Strategic: Balancing speed and stability
Strategic: Average score

Average total score

Score (1-6)

Further reading:
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Partnerships are a great way to accelerate innovation and develop new ideas, but they can also jeopardise competitive advantage

The firm can defuse these issues before resorting to expensive lawyers, which often ruptures the alliance indefinitely. If there is a split over an issue, each party can have the casting vote on different aspects of the partnership. Committees are very effective at reducing information barriers, but they are also used to regulate the flow of knowledge.

We have found when the two firms are working in the same technological area, strategic meetings are often used as the formal channel through which documents, blueprints, test data and any other commercially sensitive information flows.

Instead of informal meetings being the channel where there is little oversight, a committee sets the ground rules of how information and knowledge is exchanged, giving both sides more control.

Partnerships are a great way to accelerate innovation and develop new ideas, but without adopting one of these methods they can also jeopardise its competitive advantage through unintended transfers of knowledge, particularly to competitors.

For example, a drug for the same disease in the same therapeutic area may be used to stop knowledge leaking:

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If there is a split over an issue, each party can have the casting vote on different aspects of the partnership. Committees are very effective at reducing information barriers, but they are also used to regulate the flow of knowledge.
Family businesses might seem unfashionable in the era of VCs and angel investors, but they provide some useful lessons for companies driven by the quarterly report.

**FOUR TAKEAWAYS FROM KEEPING IT IN THE FAMILY**

by Christian Stadler

At its height in the 1980s, more than 27 million Americans tuned in to watch the trials and travails of a fictional Texas oil family called the Ewings in the hit TV show Dallas. Clearly, family-run businesses can be rich with drama, but they can also provide lessons for other companies.

Despite the inherent risks associated with succession and non-business issues disrupting operations, family businesses remain a force to be reckoned with. In fact, 90 per cent of the world's companies are family firms. Many of them are mom-and-pop shops, but according to the Boston Consulting Group, 30 per cent of all companies with revenues above $1 billion are family businesses. This does not necessarily mean they own the company outright, but they at least hold a stake, which allows them to influence important decisions, such as the appointment of the CEO and chairman.

In the US, household names such as Wal-Mart, Ford and Sears are among them. Internationally, car giant Volkswagen in Germany, French luxury goods conglomerate LVMH, and India's Tata also come to mind. Besides the really big players, there are also hidden champions, who dominate niche markets. In Germany, they are seen as the main engine of growth.

The debate on how well family businesses perform is still ongoing. In a 2012 Harvard Business Review article, Nicolas Kachaner, George Stalk, and Alain Bloch argued that they outperform their peers in tough times, but under-perform when the economy is booming. This suggests that family firms are more resilient, an attractive feature as we currently face so much uncertainty in many economies.

To identify some useful lessons for non-family firms, I looked at the world's 100 largest family businesses, and relied on a database of 450 German companies that I built together with Kurt Matzler, Julia Hautz, and Viktoria Veider, all from the University of Innsbruck. Here are four lessons that all businesses can learn from:

1. **Top management**
   How do you align the interest of shareholders and managers? In the 1990s, stock options became popular. The idea was that CEOs would benefit from the option when the stock price stayed above its strike price. In theory, that sounds great, but in practice, it led to a series of malpractices, such as options backdating and the manipulation of accounts, not to mention short-termism.

   Family firms often avoid conflicts between managers and owners altogether by choosing a CEO who is a member of the family. But what happens if they have...
selected an outsider as chief executive? They tend to stick to the one they appoint. While the average tenure of CEOs in large US companies is 4.6 years, those currently in charge of one of the 100 largest family businesses have already served 13 years on average. Their median tenure – perhaps a better indi- cator considering that in some exceptional cases family CEOs stay for several decades – is closer to 40 years. The commitment to give a CEO sufficient time to implement his ideas creates a sort of loyalty that financial incentives cannot achieve.

In a study of companies listed on the stockmarket for more than 50 years, I found that CEO tenure at successful companies was two years longer than at comparable compa- nies. Historically, the tenure at top companies was 11 years, while more recently it has fallen to just under seven years. This matches the median tenure of CEOs in family firms. No one is born a CEO. Despite having similar jobs before- hand, nothing can fully prepare a person for the demands of the role. Judging a CEO after a short adjustment period is neither fair nor sensible. Only with the benefit of time are they able to truly develop their own agenda. Family firms get this right. Loyalty bears short-term performance.

2 Strategy

One of the most interesting features of family businesses is their strategic patience. Even when the chosen strategy does not deliver in the short-term, they tend to stick to it. This avoids confusion among staff and customers. Take Hermès, a French luxury goods producer. In the 1970s, their focus on craftsmanship, top quality finishing, and exquisite materials seemed outdated. Still, Hermès resisted the temptation to change direction and start mass manufactur- ing products. It was prepared to fight fiercely for its way.

In 2010, for example, Hermès faced off a hostile takeover bid from LVMH as its leading competitor. To resist the take-over, which would force them to make compro- mises. In the long-run, this patience (you might also call it stubbornness) paid off. Customers are prepared to wait up to 10 years for some leather bags. Both revenues and operating incomes have grown steadily over the last decade – even during the financial crisis – while return on capital employed was 57 per cent in 2017.

While the Hermès story highlights the benefits of patience, we also need to recognize that this can be a real obstacle. Unfortunately, there is no magic formula to discard strategies that don’t work immediately, but a glance at some of the most successful family businesses helps to illustrate why they should resist. Patience is a virtue when it comes to strategy.

3 Finances

Mega-mergers are back in fashion. But will family businesses participate? Probably not. Kachaner, Stalk and Bloch found that family businesses are substantially more conservative in their regard to family’s financial wealth. The top companies in my study on long-term success were substantially more steady than successful non-family companies. In the 1920s, Siemens, for example, valued its assets in a much more conservative manner than AEG, allowing it to handle the Great Depression better.

4 Innovation

The reluctance of family businesses to engage in risky under- takings is also reflected in their innovation activities. In a study of German companies between 2000 and 2009, Matzler, Niessen, Hentschel, and I found that family firms invest less in R&D than non-family firms. At the same time, they were better at exploiting their findings. Three factors are at play here. First, family firms tend to stick to more narrowly defined niches. This is particularly true for Germany’s mid-sized companies, such as Kärcher, a producer of high-pressure cleaners and window cleaners, or Robert Bosch, a producer of car components. In these niche markets, they combine technical expertise with customer knowledge. Second, the flagd of family firms filters down into R&D. Researchers know they should concentrate only on ideas that can be implemented. Third, most family managers spend the best part of their career with the company. This gives them a better understanding of the business and hence an edge where they need to decide which ideas they want to invest in.

The family approach towards innovation has its benefits, but also comes with a downside: it is less likely to produce breakthrough innovations. Considering how high the failure rate is in implementing innovation, it is quite understandable. The overall lesson is quite simple: be more conservative and stick with the people you choose. You might miss some of the opportunities of more risk-taking strategies, but if you want to still be in business a decade from now, family businesses show that playing safe is the way to go.

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The idea for VirtualSpeech – a professional development platform that combines online courses with practice in virtual reality – came from our fear of public speaking. My partner Christian, Damien Barnard, and I had doing public talks and thought VR could help us practice. So we built the app for fun, and put it on the app stores.

We had no intention of turning it into a business at first – just testing whether VR would be a good way to get over our fear of public speaking, not realizing that loads of other people have this fear as well.

VR is the perfect solution to get over this fear and practice in immersive environments that are as close to the real thing as you can get. We found a common problem and built a new and much better solution with VR.

From a VR app that has expanded into an online education platform with courses in public speaking, job interview preparation, business networking, B2B sales training, and more.

In just two years we have grown the idea and business model so we are now a profitable business, one of the few in the VR space able to say that. It has been hard work, with many lessons learned along the way. Here are some tips on setting up a digital business:

1 Tell the press

We were really lucky with our press coverage. We were first to market, and the press picked us up. Some tech websites found us and reviewed the app, I think. The Next Web covered us first, and then it snow- balled from there and even The New York Times picked us up. We didn’t realize at the time how amazing it was to be in The New York Times. Everybody has used us since; “how did you get an article in The New York Times”? But we didn’t do anything different!

That press coverage really helped, and we reached 100,000 downloads in a few months, which was unheard of in the VR industry at the time.

We quickly learnt the value of good press, so sending a press release to the media is something you should do straight away when launching your app or business, and even some local press coverage can really help.

2 Plan monetising from the start

Looking back, I think we should have started charging for the app from the start, even if it was just $1. After the stores take their cut, it still could give us a good revenue base.

Once we put it on the stores for free, we couldn’t change it and go back to charging. We experimented with in-app purchases, where people could unlock other rooms or scenes for a fee, but you can’t charge that much because of the perceived value of the app.

We also weren’t going to produce recurring revenue to give us a sustainable business model. We had the same problem with a subscription model too, because people would use it for a specific speaking event and then cancel their subscription.

We then started to combine VR with online courses, to become an online communications training company. Now, consumers and businesses pay for online courses in communication, which are integrated with VR training and practice.

The thing with public speaking, and most communication skills, is that you have to practice to get better. VR also allows people to do the course and watch examples before going into the app to practice themselves.

The app uses real time voice analysis and they’re able to view and track their progress for eye contact, speed, pitch, and other verbal skills. It’s much more effective than just taking a course and waiting for a real speech or pitch to try out what you’ve learnt. With VR, there are no real world consequences.

3 Innovate fast

Technology changes so fast and we have experimented a lot, but looking back, I think we did too many things and try them quickly. It is better to know quickly whether they work or not, wait for six months, and then try something else.

We have experimented not just with the VR and what services we offer, but also with the business model. We were told that a business should not straddle B2C and B2B, but we have found it works for us.

The B2C side provides our monthly recurring revenue that keeps us in profit each month, while our B2B customers are long term projects that involve a lot of discussion, customisation and paperwork – the sales cycle is so long that we wouldn’t have been in profit for the last year if we had concentrated solely on B2B.

4 Do content marketing

We’ve tried Google ads and Facebook ads, but most of our leads have been inbound thanks to content marketing and writing high quality blogs. Since we started writing blogs we have had a 35 per cent increase in our email list.

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I’ve read that you have to make six touch points before people buy a purchase of that value. That’s why remarketing has been our most effective strategy on Facebook – it adds another touch point. But really, companies are finding us because of our SEO, so we haven’t had to do any hard selling.

5 Apply to incubators
We were lucky in that we were asked to apply for Boost VC’s start-up acceleration programme in Silicon Valley after they discovered our app. However, you should definitely actively look for incubators to apply to. It really benefited us and helped us become a business rather than a side project – it was at Boost VC that we experimented with our pricing model.

I have done an MSc International Business, which gave me general business acumen and strategic insight after my Theology degree, and I worked at a social media agency for a bit.

Our time at the incubator, however, really added practical knowledge; we learned a lot from the other start-ups and mentors, and gained valuable insight into how the whole start-up process works, the funding rounds, what VCs are looking for, and how to be a successful entrepreneur.

6 Rounds of investment funding are not the only route
After getting some funding from Boost VC and Innovate UK, we decided not to raise a formal round of funding. This was partly because raising a round is like a full-time job in itself – it takes a lot of time and resources, and we don’t have the people capacity to do that.

A lot of investors we spoke to were also based in the US and wanted us to move there, but it costs a lot more to hire engineers there than over here in the UK.

You also have to give up part of your company in return for investment and we wanted to retain complete control over our direction.

We decided to grow organically and aim to make a profit as quickly as possible – if you raise £1 million, you find ways of spending it and two years later you could still not be making a profit, and we didn’t want that. We’re focused on revenue and building a sustainable business model and, at the moment, we’re one of the few revenue-positive VR companies.

7 Keep costs low
With the wonders of the internet you don’t need all your employees to be in the same place or to pay for a big, fancy office space.

I live in Warwickshire, but my business partner Dom is in London. I am moving to London, because that’s where the tech scene is in the UK, but Dom is then going to Amsterdam for a few months.

He does all the coding and engineering, while I work on the more customer-facing side of things – marketing, sales, and strategy.

We employ two other engineers, one in Russia and one in London, while our content writer is also in London.

We all communicate a lot through Skype and Google hangouts so everyone is kept up to date.

8 Know your worth
Do not be afraid to say no. Once you’ve set your price, stick to it. People always try to cut it down and when you’re starting out and you just want your first customers, it’s so tempting to charge peanuts just to get them to use your product.

But at Boost VC they often reminded us to never undersell yourself – whatever you are thinking of charging then add a bit more because start-ups often undervalue what they’re selling.

Pricing is difficult with a new technology because there is nothing to compare it to and trying to get research on the VR sector is very difficult.

You need to be confident in every aspect of being a founder as, in tech, the chances are that what you are doing is very new, so it is your job to convince people why it works and it is worth investing in.

If you are not confident in your product, they aren’t going to be. As a 24-year-old woman, I often have meetings with 50-year-old men in suits, and two years ago when we first started, that was really intimidating for me. But you have to be confident and believe in your product, or nobody else will.

Are you ready for the fourth industrial revolution?

by Mark Skilton

The next industrial revolution is upon us and is predicted to bring huge changes for society and business.
We are fortunate to live in such exciting times, but the opportunities also carry threats – even for the winners.

So what is machine learning and why is everyone getting so animated about it? Machine learning is a field of computer science that uses statistical techniques to provide feedback loops that give computer systems the ability to progressively improve their performance of a given task – in other words to effectively ‘learn’ over time. This has huge implications for other technologies too.

Inventions previously only imagined in science fiction, such as virtual and augmented reality, 3D printing, robotics, blockchain, quantum computing, nano-technology and bioengineering are now a reality – changing how materials, money, products and services are made, exchanged and consumed. The World Economic Forum (WEF) has named these technologies collectively as the fourth industrial revolution because they represent a new paradigm, changing productivity through automation.

WEF founder Klaus Schwab described it as a culmination of emerging technologies, arguing that this revolution is different in scale, scope and complexity from any that have come before.

It is characterised by a range of new technologies that are integrating the physical, digital and biological worlds, affecting all disciplines, economies, industries and governments, and even challenging ideas about what it means to be human.

Already, they are changing how we live, work and consume through new industry processes, smart cities, connected homes, driverless cars, wearable devices, and new approaches to healthcare. In the future, they will disrupt and reinvent business, jobs and every other aspect of our lives.


take for granted many of the technological advances of recent years. We listen to music streaming on wireless devices with barely a second thought. We Skype or Facetime friends and colleagues thousands of miles away with devices that fit comfortably into our pockets. We barely raise an eyebrow when our favourite stores track our online behaviour.

Yet all of these activities are marvels of connectivity and automation requiring multiple networks and technologies. Streaming music, for example, relies on Wi-Fi to the local home network that passes through an internet gateway through the Internet Service Provider (ISP) and to the music streaming service hosted on the subscribed service cloud datacentre. The return connection passes from the mobile phone to the Bluetooth device in milliseconds.

In the background, the smartphone is also managing battery energy through algorithms that make intelligent decisions to optimise battery life and update GPS location tracking. And on and on it goes.

If we choose to move to another room or building, the connection automatically switches to a new cellular connection service provider and the music continues uninterrupted. All the while the mobile application is making recommendations alongside each music track, suggesting alternative artists to suit the listener’s musical tastes, using matching techniques that rely on so-called machine learning.

This is a tiny example of what machines are now capable of. Machine learning is the term on everyone’s lips at the moment (along with its close relative Artificial Intelligence).

We are fortunate to live in such exciting times, but the opportunities also carry threats – even for the winners.

1 Long time coming

The first thing to say is that the concept of the thinking machine is not new – its origins can be traced all the way back to the Second World War and the likes of Alan Turing, deciphering the Enigma code at Bletchley Park (most of the new technologies of the fourth industrial revolution are hidden in plain view if you know where to look).

The term machine learning was coined by Arthur Samuel as long ago as 1959, and evolved from pattern recognition combined with AI.

Machine learning uses algorithms that can learn from and make predictions based on data and is now used in a growing number of applications – everything from predicting what you might want to buy from Amazon to using facial identification to screen for terrorists at airports or bookies at football matches. It is the ability to improve performance rapidly – and process data much faster than the human brain that excites the techies.

But the world didn’t change over night: many of the breakthrough technologies that underpin the fourth industrial revolution have origins that can be traced back through several evolutionary steps before moving into the mainstream. The big difference now is that these technologies have reached critical mass. They are acting in union.

2 Commercial fusion

It is important to take a holistic view. Machine learning should not be seen in isolation. It is not the only show in town. A cluster of new (and not so new) technologies is entering the mainstream at the same time. These include: cloud computing, mobile platforms, the Internet of Things (IoT), virtual and augmented reality, blockchain, and nanotechnology, to name but a few. What we are witnessing is the coming together of these technologies.

The technological and commercial planets are now aligned. It is the ‘fusion’ of the physical, digital, and biological – through the integration of existing technologies that is powering the new revolution. The companies that win will be the ones that integrate them most imaginatively and effectively.

For example, 3D printing, also called additive manufacturing, represents a new digital to physical fusion of technology, printing and materials design and fabrication. It originated from stereolithography dating back to 1989. The speed and choice of materials is increasing rapidly to the point where ‘3D printing machinery is now embedded into mainstream flexible and reconfigurable manufacturing processes, including General Electric’s printing jet engine parts and medical breakthroughs for human tissues.

Biological fusion is also coming of age. Miniaturised IoT sensors can be attached to the human body, ingested or implanted with organs, enabling biological monitoring and augmentation. These devices now play a vital role in mHealth and eHealth solutions, including mobile monitoring and measurement of medical and wellbeing status. Biological fusion also includes plant, animal and bioprocess monitoring used in automated agriculture and hydroponics.

So how can you position your business to survive and thrive in this brave new world? There are four key lessons:

3 Think big, but also think small

The revolution is at the macro and micro levels. There’s been a lot of talk about big data and the ability of machines to crunch huge amounts of data. When coupled with supercomputers, this treasure trove of data will provide unprecedented ‘big picture’ insights.

But the fourth paradigm is just as much about ‘small data’ – personalisation information about an individual, and the ability to conduct commerce on a one-to-one basis.

Today, for example, the combination of cloud computing and digital platforming strategies, such as the multi-sided platforms (MSPs) that can service multiple markets and customer types, as well as facility sharing and co-owning of the platform, is changing the face of business.

Commerce is being democratised through a multitude of platforms, from eBay and Alibaba, to Uber, PayPal and Spotify, and social media platforms like Facebook and Twitter. Even small community platforms are getting in on the act, enabling the residents of a small town or village to buy and sell goods and services virtually.

This is the shift to the so-called ‘gig-economy’, which relies on mass and on demand infrastructure for exchange, collaboration and trading.

It is now possible to conduct business one-to-one with individuals on the other side of the world without the requirement of an international company or bank.

Fuelling this market are ubiquitous technologies such as smartphones and apps that allow a readily available platform for on-demand with pays-as-you-go services.

4 New questions

The final point to realise is that the fourth industrial revolution doesn’t only pose technological quandaries; it asks new questions about how we manage our organisations and communities – society as a whole.

The new kinds of automation made possible by advances in AI and the other technologies require a re-evaluation of leadership and new ways of thinking.

The opportunities made possible by the fourth industrial revolution are as infinite as the human imagination. We are fortunate to live in such exciting times, but the opportunities also carry threats – even for the winners.

Concerns about cybersecurity have become a major crosscutting feature of fourth industrial era technology and will continue to be. And we are only just beginning to consider the ethical and philosophical implications.

The leaders of Facebook, Uber, Google and Tesla have all found themselves in the dock of public opinion lately, answering questions about everything from the use of personal data, to warfare, and driverless cars.

They will not be the last business leaders to feel the heat from the fourth industrial revolution.

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The problem is that calculation is no longer appropriate for the modern world. You can fly under the radar and beat the best, but already we can see some of these things having well-publicised broader social and political consequences. Nations, publics are increasingly living those consequences, so losing patience with the old way of thinking. It is clear that here investor interest doesn’t match the interest of the public, nor of nations or governments, certainly not in the longer term.

C: What are some of the suggested solutions to this challenge?

K: There are a few. One that I have researched and written about is the ‘robot tax’. The idea is to use tax as a disincentive for automation or, more realistically, as a redistribution mechanism of corporate gains from automation. Of course, some policy-makers and business leaders object it is a levy against progress. Here, the argument goes that technological advances are inevitable and essential, but we need to avoid any kind of tax that would make business less likely to invest in AI and automation. However, in a world where nations would be at a competitive disadvantage if they levied such a tax.

C: But isn’t the ‘don’t tax progress’ argument then we bow to the inevitability of ever greater wealth inequality?

K: Well, the capturing of wealth created by automation has been clearly shown to go almost entirely to business owners in recent years, certainly in countries like the UK and US. And it is not really being redistributed. Not to employees through increased employer ownership options, for example, nor more broadly. For many average workers in such companies, their wages have stagnated or fallen over time. Whole communities struggle to find work. Social structures begin to buckle, especially if, at the same time, government policies and incentives are targeted work at a particular group, so as to bring about the change we need to train people to face a different set of realities for different futures. Do your staff have the capacity to create imaginative realities for different futures? Do they have the means to break through the ceiling of information that surrounds every executive without reducing complexity? Are they continually asking critical questions about the business model that supports them?

C: So to go back to the robot tax, that sounds like a bit of a temporary patch. These types of measure are merely a prelude to a fundamental rethink of what a company and corporate model should look like?

K: Absolutely. For me, the question is who owns the gains and the losses? We need to train people to face a different kind of reality or for a future with less work. How are we going to do that? And who pays? And even if we figure out the payment element, what does that do to our individual identity and meaning? We talk about dignity of labour. Today’s work is already short on dignity for many. What happens if we lose the labour part too? What will we do? And who will we be? Some of these are the fundamental questions we need to answer and pretty soon too.

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Entrepreneurs aren’t fearless, they learn to live with fear with it being an inhibitor and a motivator.

by Gabriella Cacciotti & James Hayton

Fear stalks the world of the entrepreneur. For them failure and the fear of failure are facts of life – whether it be losing a client, not being paid, an inability to deliver on schedule, out of control cash flow, or not spending enough time with their family. For them courage is not the absence of fear, but the ability to take action to achieve a worthy goal in spite of the presence of fear.

We asked Hamid Ulukaya, the Turkish-born founder and CEO of yoghurt company Chobani, whether he was ever afraid of failure, because the bird doesn’t come by, but a few times it does.”

“As an entrepreneur you have to feel like you can jump out of the plane if it’s going to nose dive,” he replied. “The worry got bigger and bigger as you planned the leap. But you have to believe in what you’re doing and that it’s going to work. The bird doesn’t come by, but a few times it does.”

Hastings’ first entrepreneurial venture was Pure Software. At one point he actually asked the company to replace him as CEO. They refused. He went on to be co-founder of Netflix, a business which he began with no idea whether customers would buy what it was offering or not.

Entrepreneurs have a paradoxical and complicated relationship with failure. On one hand, they are frequently advised that failure is a good thing. Business legend is replete with stories of entrepreneurs whose ideas failed and then failed again until one day they became a success. Fail fast and often is the constant refrain of the lean start-up movement and many others.

And yet, fear of failure is natural. Nobody really wants to fail. Failure has many ramifications which it would be foolish to overlook or downplay: potential bankruptcy, re-possession of your home, social stigma, the loss of people’s livelihoods and more.

This is a constant in the life of any business. Fear of failure is usually identified as an inhibitor to people starting a business. The inhibiting force of the fear of failure has been a dominant focus in research. Of course, fear does inhibit start-up activity, but that does not mean that only the fearless actually become entrepreneurs.

Our research shows that fear of failure remains omnipresent as a new business develops. There is no escape. This is the paradox of the fear of failure: it can inhibit and motivate. Rather than simply stopping people from being enterprising, fearful failure can also motivate greater striving for success; you are always nearer by not keeping still.

To better understand the relationship of entrepreneurs with failure, we interviewed 65 of them in the UK and Canada. Some had established businesses, others were in the early stages of developing their business.

We define fear of failure as a temporary cognitive and emotional reaction to environmental stimuli that results in potential achievement. Fear of failure is a state rather than a trait. Rather than a characteristic that some people have, and others do not, fear of failure is a state that is widely shared but dealt with in different ways.

Entrepreneurs are not distinguished from non-entrepreneurs by an absence of the trait. What we found is a stronger relationship which entrepreneurs have with failure: it is much more complex than that portrayed by success stories. Failure and the fear of failure is managed and multi-faceted.

The research identified seven sources of fear. These were repeatedly raised by the 65 entrepreneurs and have been validated by further research:

- Financial security
- Ability to fund the venture
- Personal ability/self-esteem
- Potential of the idea
- Threats to social esteem
- The venture’s ability to execute
- Opportunity costs

Not all fears are created equal. The source of the fear is important. Our research found a positive association between the worries concerning opportunity costs and an entrepreneur’s perseverance in pursuing their goals.

In other words, when entrepreneurs contemplated the choice they had made in pursuing their venture and how this might necessitated missing out on other opportunities, whether in the immediate or personal lives, they were more motivated to carry on with the venture.

In contrast, when entrepreneurs worried about either the possibility of failure or their inability to develop a successful venture, then they tended to be affected more negatively. They became less proactive. The fear of failure leads to self fight or stress behaviours. “It just makes me more aggressive to get this thing going as fast as I can,” one interviewee commented. Such defiance confirms the definition of courage: taking action in the face of fear.

For others, fear of failure has an impact on how people engage with tasks and how they make decisions.

“Instead of being on the phone trying to get a customer, you are sitting there talking about why we need to call more customers or why we don’t call customers anymore, why we should start emailing them. So, you are talking about it and not doing it,” one entrepreneur confided.

Procrastination can become commonplace. Numbers are crushed remorselessly resulting in paralysis through analysis. Decision-making is slowed down as all possible data is sought and the avoidance of making a wrong decision becomes the primary driver. In other ventures, a fixation on specific threats becomes the sole focus, creating target-fixation where that one thing matters and only that one thing.

Experiencing the fear of failure can change the nature of goals that entrepreneurs set for themselves. Where fear of failure is greater, they may select either easier, more readily achievable, or, wisely impossible goals.

Ironically, selecting impossible goals allows us to more easily rationalise our failure to achieve them. Either way, fear has the effect of undermining effective personal goal-setting. One of the most valuable self-management tools that entrepreneurs have available to them.

A further outcome we heard from entrepreneurs was the tendency to escalate commitment to specific goals, at the expense of other activities and sometimes in the face of evidence that a path should be abandoned. Once a path had been chosen, negative feedback could actually lead to increasing investments in what otherwise might be considered losing propositions.

So, how can and should entrepreneurs respond to the fear of failure? Our research revealed four key strategies that enable entrepreneurs to ensure fear of failure works positively.

1 Emotional self-monitoring and control

Author: JK Rowling was rejected multiple times before the Harry Potter series was signed up by Bloomsbury. She has described this as a process of “scribbling away of the insens
tial”. It enabled her to focus on what mattered. She said: “I was set free, because my greatest fear had been realised.”

Emotional intelligence involves not only having an awareness of one’s emotional states, but also being able to control the influence of those states upon thought and behaviour. As a result, entrepreneurs were highly emotionally self-aware.

“If I’m in a lower mood one week and I look at my projects I see only negative things and reasons why it can’t happen,” said one entrepreneur “I started to learn that that’s actually not associated with the projects but it’s associated with my emotions.”

Another said: “I’ve actually recently been learning to separate that anxiety out because I’ve learnt that it’s just transient.”

Entrepreneurs may wish to adopt tools from sports psychology to cope with the fear of failure. In terms of winning gold medals, British Cycling has become the most successful sporting programme in British Olympic history. One of their keys to success has been a programme of work, led by psychiatrist Steve Peters, to help athletes manage their emotions during competitions.

Emotional self-awareness is a skill that can be learned, and involves becoming aware of the signs of emotions intruding upon consciousness through feelings and moods, anticipating their impact on thoughts, and using this conscious awareness to limit their effects upon decision and action in competition.
The potential risk here is that through engaging in constant self-reflection, the entrepreneur develops neuroses which impede their own ability to act. In athletes, the effective self-monitoring tactics are developed and rehearsed off-line, rather than ‘on the job’. Once in action, the enhanced awareness becomes more automatic and natural, allowing an action orientation which doesn’t slow down real-time decision speeds.

Working to increase self-awareness is very powerful for entrepreneurs. Self-awareness can help curb the potent influences of negative emotions on goal-setting and decision-making.

2 Problem solving

“Anxiety helped in the sense that I would try and figure out every single flaw there was in my business – because all of them have flaws – so I was trying to figure out where is the hole?” one entrepreneur told us.

Actively seeking out flaws and weaknesses and doing something about them is a powerful means of reducing the fear of failure.

Intuition is a potent source of information, and research has demonstrated that among experts, tacit knowledge, and gut instinct lead to rapid and effective decision-making. Such instincts are often associated with feelings rather than specific thoughts.

Feelings of fear driven by concerns over the idea, for example, can offer important signals that work is needed. When treated as such a signal and acted upon, rather than repressed or ignored, these emotional flags can actually help entrepreneurs eliminate weaknesses and flaws in their venture idea. A proactive, problem-solving response to feelings of fear arising from the idea itself can help reduce fear. Paradoxically, our research also shows that such initiative-taking does tend to be inhibited when the idea itself is the cause of the fear of failure.

This suggests that taking a deliberately action-oriented approach, overcoming the desire to repress or ignore the problem, will be especially important. Of course, all weaknesses can never be eliminated. For any entrepreneur, perfectionism is potentially dangerous.

3 Learning

“Fear pushes me to work harder and to take more care of what I am doing, and to educate myself to be the best I can as I am developing these businesses,” said one entrepreneur.

Entrepreneurs told us one of the ways in which they overcome the feelings of fear was through learning and information seeking. This might be for core knowledge, such as computer coding skills on the part of the software entrepreneur seeking finance, or for learning to cope with the high pace of activities that most entrepreneurs experience.

Entrepreneurs relied upon a wide variety of sources of knowledge and information in their search for learning. This included formal education and training, although more often involved learning focused upon extensive information seeking, reflection, and importantly, social learning through networks and mentors.

Education, training and information seeking are a powerful antidote to the fear of failure. Learning can help mitigate fears resulting from doubts over personal abilities directly by increasing key capabilities. Through enhanced capacity, learning can also indirectly assuage fears concerning the ability to obtain finance, and the venture’s capacity to execute, as well as fears associated with letting others down.

But uncertainty is real and constant. Uncertainty and ambiguity are defining features of the challenge of entrepreneurship. There are always unknown unknowns out there, and so a willingness to continue to learn, gather information and insight from diverse sources can help to mitigate the fear of failure.

4 Support seeking

“A mentor is someone who allows you to see the hope inside yourself,” says Oprah Winfrey. For entrepreneurs in a constant battle with fear of failure, identifying mentors and utilising networks can be a vital source of reassurance.

Mentors and social supports are beneficial because they support the three prior activities of learning, problem solving and even self-awareness. Mentors are an important source of learning.

“Reaching out to mentors that are directly related to the business you are starting is really key and really helpful,” said one of our entrepreneurs.

Speaking of the impact of the fear of failure on her problem solving, one entrepreneur said: “[fear of failure] just fuelled me to learn more; talk to more people and figure out why I was wrong in the first place.”

Another said: “Fear of failure forces you to come up with... better ideas and look for people that are going to give you constructive criticism along the process.”

Social forms of learning, from those who have been-there-done-that seems to be a particularly powerful antidote to the experience of negative thoughts and feelings among entrepreneurs.

Early stage entrepreneurs frequently benefit from local communities and networks, providing formal or informal access to mentoring from those with more experience. Through this process they learn that feelings of uncertainty and worry are commonplace, as well as what issues are deserving of attention and which problems will fix themselves over time.

Our research suggests the fear of failure is widespread and has both negative and positive effects on motivation, decision-making and behaviour.

One important outcome that should not be overlooked: motivation from fear can bring higher levels of stress, with potentially negative health consequences as well as undermining the life satisfaction of entrepreneurs.

While all may experience it, the ability to anticipate and manage fear is likely to have positive benefits for an entrepreneur’s quality of life and wellbeing.

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