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Spring 2019

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Letter from the editor

BOEING has had a terrible start to 2019, commercially and in humanitarian terms, with a crash in Ethiopia claiming the lives of all those aboard one of its 737 Max aircraft. That tragedy came just months after a 737 Max disaster in Indonesia.

The delay in grounding the World's Max fleets in the wake of those catastrophic events was the first ethical hiccup; the blanket grounding that should have come immediately was delayed while the American Federal Aviation Administration dallied, and theories were floated about what had, or hadn't, caused the disasters. Unilateral decisions to ground the planes came from individual operators, before regulators or Boeing took a stand.

But another, even less defensible, ethical decision had been made by the company, and those carriers purchasing the Max planes, before any accident had occurred.

It was revealed, after investigations into the safety of the 371 Max aircraft in circulation — post-accidents — that there had been an "optional extra" warning system for the Max planes. In a bid to get the grounded craft back in the air, Boeing announced that the optional safety feature would now be installed as standard.

This is reminiscent of the early days of ABS (anti-locking braking systems) in cars. The technology existed, and had been proven to be an effective, potentially life-saving development. And yet, for years, ABS was also an optional extra. If the technology exists to make travel safer, whether on land or by air, can it in any way be considered morally responsible to withhold a feature — designed to increase safety and reduce the risk of fatalities — unless more money is paid?

How can human safety be held to ransom? And how can the decision on whether to fork out the extra cash be taken at the time of purchase — without our knowledge or agreement — by the carriers who are responsible for our safety?

Boeing is a commercial enterprise, and profit — in any business — is important. But how callous has our society become that profit takes precedence over safety, and that we accept that as normal?

Enough of the serious stuff. Let's talk about gaming, and loot. Loot is a lively word, conjuring up images of doubloons, pirates and treasure chests, burglars' swags of silverware and pearls, precious things pillaged in war. There are a few lively words in that sentence, and while pillage, plunder and doubloons may have fallen into disuse, loot is making a comeback.

That's largely thanks to the gaming industry, which has found a nifty value-adding scheme in "loot boxes" — more optional extras, this time for players wanting to up their game. Gaming is already bigger than music and movies put together. With around 2.3 billion gamers across the globe, companies, corporations, niche operators, software firms and nerds are colliding in a mighty boom.

BV asked game-players, game creators and industry experts where we're at, and where we're going. From Pacman to Pokemon to loot boxes, Virtual Reality, Augmented Reality and beyond, it's a buzzing sector. See our articles starting on page 30 which bring you a taste of an empire that has been building in the background — and seems ready to explode.

Here in Europe, Spring has sprung and the grass is riz. Enjoy the sunshine, northern hemi, happy Autumn to the rest of you. And enjoy this issue of ***BV***, wherever you are. Happy reading.

Hal Williams, editor
hw@bv.world


MARE
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Correspondence

It all flows together...

What a heart-warming read in the most recent issue of ***BV*** (Winter 2018-19)! I thoroughly enjoyed your reporter Leah Smith's story on the initiative of film star Matt Damon and environmental expert Gary White ("It all flows together for Damon, White in win for water", pp 52,53).

I applaud Ms Smith, and the magazine, for ensuring that not all of your pages are dedicated to finance, negotiations, tech and the workplace. Those are fitting subjects for a publication such as yours, but it's nice to see some variety, and gratifying to learn that environmental awareness is alive and well in the newsroom.

I also appreciated the short piece on one of my favourite actors, Antonio Banderas, in the same issue; encouraging to see fame being used as a platform for good. Well done to these stars of the silver screen!

Bob Cameron
Fife
Scotland

The editor replies:

Thanks Bob, praise always gratefully received here at ***BV***. I feel bad correcting you on one point: it's *Heather* Leah Smith (Heather to her mates). And yes, she always has an eye on matters green, growing and natural, which we endorse and encourage. Our aim is to give praise and raise profiles wherever someone's fighting the good fight.

HW

Cheikh Bamba

I noticed a story about Cheikh Amadou Bamba in your magazine (Winter 2018-19). An inspiring story of an inspiring man, and a nice step away from the usual run of whiz-kids, power-brokers and data-peddlers. His followers, the itinerant sellers, also deserve mention. There are a lot of these migrant workers here in the south of Spain, and they are never pushy, always polite, and they always share a smile.

Liam Walsh
Marbella
Spain

Territory or colony?

Thank you for your article on Gibraltar in the Winter issue of ***BV***. Both the main article on the rare accord between Spain and the UK, and the piece to the side explaining the history of "The Rock" were very informative. But there are one or two pieces of information missing.

Did your writers know there are more companies registered in "Gib" than there are people living there? And that many of these companies do their business in Spain but don't pay taxes to the Spanish *hacienda*?

And the writer of the historical piece makes it sound like we just handed over Gibraltar when signing the Peace of Utrecht, when in truth it was taken by force during the preceding war.

Finally, as we say here, *¡Gibraltar español!*

Antonio Suarez Jiménez
Sevilla
España

Holdun Family Office

We at Holdun Family Office are proud to have been voted Best Family Office, Caribbean, 2018, for the second year in a row!

A big thank you to ***Business Vision*** for their great work and continued support!

Brendan Holt Dunn
Nassau
Bahamas

The editor replies:

Right back at you, Brendan, and congratulations to all at Holdun.

A pleasure getting to know you and your organisation.

HW

Business Vision

Editor
Hal Williams

Assistant Editor
Janet Newbury

Executive Editor
Susan Shaw

Pictures Editor and Layout
Richard Thomas

Contributors
Heather Leah Smith
Jason Agnew
Nabil Abu El Ata
Brendan Filipovski
Hannah George
Naomi Snelling
Lakshay Mathur
Devin Gharibian-Saki
Leilah Schubert

Cover Art
Richard Thomas

Distribution Manager
Thomas Terrell

Subscriptions
Max Pragnell

Commercial Director
Graham Church

Publisher
David Eyres

Business Vision
The Lansdowne Building
2 Lansdowne Rd
Croydon CR9 2ER
United Kingdom

Tel: +44 (0)203 745 7671
Fax: +44 (0)203 745 7674
Email: info@bv.world
Web: www.bv.world

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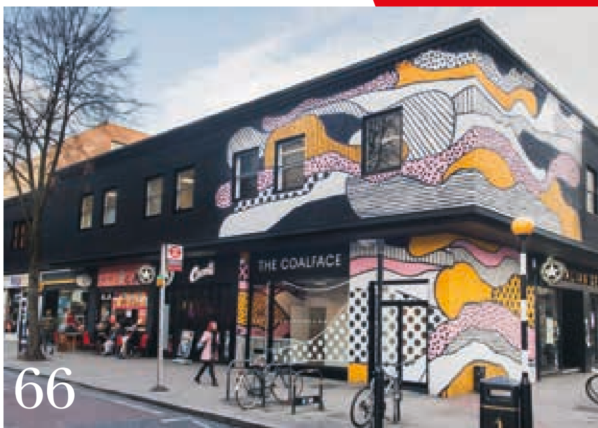


Sending a start-up into the stratosphere requires fuel (three guesses which type)

There are a few funding options for new businesses, as BRENDAN FILIPOVSKI reports

START-UPS are the rock stars of the small business world. Everyone wants to find (or be) the next unicorn — but it isn't easy to go from your garage to greatness.

The early days are the hardest; you may be desperate for cash, but no one will believe in you. If you can find a way through, then at some point you will reach the decision stage of trading equity in your company for faster growth. Every founder dreams of being the next self-made tech billionaire to build a company from the ground up.

It isn't easy to go from your garage to greatness

But not everyone has the expertise, or the time, to go it alone… and succeed.

In the beginning, the key question is whether your start-up has the money to get you to the point where you are generating revenue. Your most important resource may be free (you and your co-founders), but you will probably need money for equipment, product-development, manufacturing costs, marketing, any additional hires, and premises.

You may also want to pay yourself a small living wage. If you do not have enough to cover all these costs, then you will need outside money, and fast.

One thing that can help you in

Governments in many countries are encouraging banks to make loans to innovative business

Angel investors are rich individuals willing to take a risk on an up-and-coming entrepreneur

these early days is your personal savings. This, of course, must be prepared in advance.

Five years ago, you may not have formulated your exact start-up idea, but if you had the dream of founding a business you might have been smart enough to start saving. A practical target may be six months of salary. Accumulated holidays that can be taken or cashed-out can also serve as start-up capital.

Another way to help yourself in the early days is to start as a "side-hustle". A side-hustle is when you start your business while keeping your day job.

Obviously, your time is highly restricted (goodbye nights and weekends) but keeping your full-time job provides you with some early finances while you evaluate things.

If you have no personal savings (or they have been exhausted), you find yourself at the pre-seed-funding stage. This is the stage where you need extra money to finish your product development and get your product to market. Typically, pre-seed funding ranges from $10,000 to $1m. Typical pre-seed funding sources are the Three Fs (Friends, Family, and Fools), angel investors, personal loans, and funds from incubators or accelerators.

The Three Fs are a good source of funds at the pre-seed stage, because the first two, at least, know you and what you are capable of.

LACK OF REVENUE

They may be willing to invest, despite the lack of revenue or finished product. Angel investors and incubators typically require equity; friends and family are more likely to lend you money as debt.

The downside is the importance of managing expectations — and the strain on relationships if expectations are not met.

A personal loan from a bank is another potential form of debt financing. Times are changing, and governments in many countries are encouraging banks to make loans to innovative business. There is also a small, but growing, venture credit and private debt market.

Angel investors are rich individuals willing to take a risk on an up-and-coming entrepreneur. Often, they made their money from a start-up, and want to "give back" with expertise and money.

Angel investors are willing to take a risk because this is often the most lucrative time for them to invest. At later stages, angels are typically outbid by venture capital funds.

Incubators and accelerators can be a good source of funding because they typically have formal development programmes that allow them to ascertain potential for success — and they can help you to reach that potential.

Other sources of pre-seed funding are crowdfunding and equity crowdfunding. This is the use of websites, like Kickstarter, to connect with potential customers who are willing to help finance product development in return for a future discount, or in return for a small amount of equity.

Oculus is a good example: it went from raising $2.4m on Kickstarter in 2012 to being bought by Facebook for $2bn in 2014.

To prepare for the pre-seed funding stage, a good business plan, a catchy elevator pitch, and a demonstrable prototype are needed. You may or may not be a natural salesperson, but details on your product, market, consumers and growth-needs make your case more convincing.

When you reach the point where you have a minimum viable product (MVP) and growing revenue, then you are at the junction of seed funding and bootstrapping.

The two key questions here are: How much equity are you willing to trade-off for faster growth? And is faster growth necessary to fightoff competitors?

Seed funding is typically provided by venture capital funds in larger amounts — $150,000 to $10m — but they can also provide expertise and industry connections. In return, the venture capitalists take equity of at least 20 percent.

BOOTSTRAPPING

Bootstrapping is where you continue to expand using your growing revenue.

The growth trajectory is of course slower, but you retain equity and control. There is also less pressure to generate revenue, and less potential interference in decision-making.

If your start-up faces competition from a similar product that could beat you to a critical market share, then the speed of seed funding is the way to go. If you lack expertise and network assistance, the same is true. While giving up equity hurts, 10 percent of a multi-million dollar company is better than 100 percent of a smaller one.

Once your revenue is booming and you are building significant market share, you are ready for the big rounds of investment.

By this stage you are well on your way to stardom with the potential for a big pay-day in the forms of a buy-out or an IPO.

And then it's your turn to be an angel investor.

Venture forth and prosper with this funding advice — pure passion isn't enough

By HANNAH GEORGE

MANY entrepreneurs don't seem to get it: a great business idea and passion aren't enough for success. Proper funding is the golden ticket.

Private equity, angel investing and venture capital are three investment options that most people look into. Venture capital is the ideal investment option for you if:

- You're running a start-up company with potential for high growth
- You're looking for substantial investment
- You need business expertise and management assistance
- You're okay giving up a portion of the company equity

There are certain steps that can be taken to boost your chances of securing venture capital from the right investors, and on the best possible terms. But raising venture capital is not always easy; it can be time consuming, risky, and it can lead to costly mistakes. Exercise caution.

The first step is to do your research. It is a mistake to pitch your business idea to every investor you come across. Identify the most promising investors.

Consider these aspects:

- Some investors will focus on particular industries or sectors. Find an investor that focuses on your type of business.
- Some investors will only invest in startups, while others will invest in mature businesses.
- While geographic proximity may be less important to some venture capitalists, others prefer investing in companies that are closer to home, or are in specific locations.
- Some investors will not invest in your business if they have a portfolio company that is similar to yours.

Careful planning will prevent you from wasting time and energy

Careful planning will prevent you from wasting time and energy, and good research resources exist. Investors' websites allow you to view investors' backgrounds and investment approach, as well as the list of portfolio companies they have invested in. Law firms are useful; you can get recommendations from attorneys that work with venture-backed companies. Bankers and accountants can also help you build a list of the most promising venture capitalists. Other entrepreneurs can help by giving you recommendations.

Once you're through with your research and have made a list of potential investors to approach, you're ready to plan meetings with them. But before you meet any of them, there is another crucial step: perfect your pitch.

With a business plan, potential investors will appreciate that you are at least familiar with financial metrics.

Create a clear business plan that highlights the following:

- The problem you're solving, and the nature of market opportunity your business will address.
- Your solution/service/product for unmet market demands, and how it differs from other available options.
- If possible, your market strategy: how you intend to roll-out your product to capture market share.
- Put together a set of realistic financial projections on costs and revenue.
- Introduce your team and highlight its strengths and commitment.

After writing a clear business plan, take your time to think about what you will say, and how you will say it when pitching. You need content for your presentation, as well as the right tone for your audience.

Demonstrate how you intend to use funding to meet milestones that will be crucial for the success of your business.

Also remember to communicate parts of your business plan, especially how your business will make a profit.

What lies between a great idea and a successful business is very often cash. When securing financing for your start-up, weigh positives and negatives to help you to make an informed decision.

IPOs for the people! Change of tack, but public access just as important as it ever was

Venture capital may be flavour of the month, but there is still a place for stock market launches, as BRENDAN FILIPOVSKI reports

ARE THE halcyon days of US tech IPOs returning? Investors are salivating at the prospect of several large tech IPOs this year, including Uber, Pinterest, Slack, and Palanthir.

With the Dropbox, Spotify, and Eventbrite IPOs of last year, one could be forgiven for believing that IPOs have returned to rude health. While the IPO numbers are not in the stratosphere of the 1999-2000 tech bubble, talk of unicorns, fin-tech, and blockchain abound. The numbers, however, do not match the hype. Tech companies are shunning IPOs, or at least delaying them to much later in their development. So where are all those baby unicorns getting their hay?

The 1999-2000 tech bubble marked the peak of tech IPOs in the US (see chart opposite page). Internet companies were market darlings, and every second listing was for a company with a dot-com at the end of its name. Companies like Infoseek, Homegrocer and theglobe.com all posted massive first-day gains — but have since disappeared.

After the bubble burst, tech IPOs fell dramatically and have remained at a new lower steady-state. There were more tech IPOs in 1999 (272) than there was in all the years between 2001 and 2018 (221) (IPOs with a listing price of 5 USD or greater).

The decline in tech IPOs has not come about because markets lost their appetite for tech stocks. Markets certainly sobered-up after the bubble burst, and started to

Tech firms no longer in a rush to list

reapply a healthier level of scrutiny to tech companies, but any loss of appetite has been rectified with the successes of Amazon, Facebook, Google and, more recently, Roku, Snap, Dropbox, Spotify, and others. In fact, investor demand for tech IPOs has probably now outstripped supply. Tech firms no longer rush to list; instead they have shunned IPOs for other sources of finance.

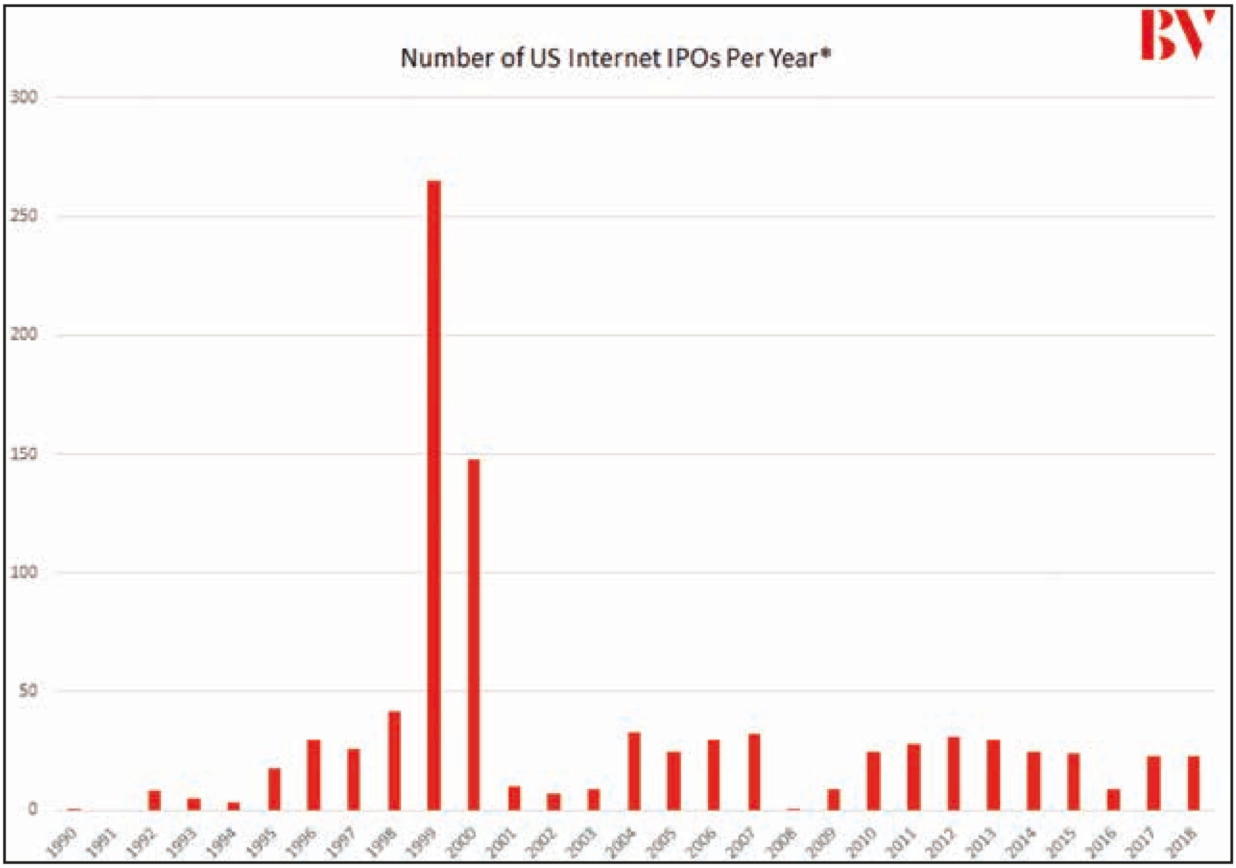
Tech companies have shunned IPOs because speed has become king. Unlike manufacturing companies that need to build factories, tech companies can upscale fast, in virtual space. The cost of producing more software or adding another user to a mobile phone app is often close to zero.

Tech companies need to move fast so they can stay ahead of competitors, and IPOs are just too slow. It is quicker to develop a tech company to a point where it can be sold to a bigger company than to grow a company organically and then meet all the requirements to publicly list it.

Strengthening this preference for buy-outs over IPOs is the elevation in status of the serial tech entrepreneur. Back in the 1990s and 2000s, every kid wanted to be the coder that started in the garage and rode their own company to an IPO and world domination. The greater speed to the point of scaling and the ability to exit a company at or soon after buy-out — with handsome rewards — has meant that lightning does not have to strike just once. A new breed of entrepreneurs aims to hurl multiple lightning bolts to the ground; champions of this approach include Elon Musk (Zip2, Paypal, Tesla, and SpaceX), Jack Dorsey (Twitter and Square), and Jonah Peretti (*Huffington Post* and *Buzzfeed*).

Jonah Peretti

Tech companies have also shunned IPOs because they do not like the extra responsibilities that come with publicly listed companies. The Sarbanes-Oxley Act of 2002 greatly increased general regulation for public companies. Disclosure requirements force tech



*excludes IPOs with listing price of less than $5 USD

Source: Jay R. Ritter, Univ. of Florida

companies to show their hand when they would prefer secrecy. The increased burden of public listing has also given rise to a trend of tech firms de-listing. Tech companies do not like disclosure requirements. Research and development are typically key to the future competitive advantage of a tech company.

Listing requires expensive lawyers. Execution of an IPO requires investment bankers, who typically take a percentage of the capital raised as an underwriting fee. The cost of IPOs has pushed tech companies to use cheaper forms of capital.

In contrast to IPOs, venture capital has become easier for tech companies to access. While the burden and costs of public listing have grown, venture capital has become more flexible.

The National Securities Markets Improvement Act of 1996 made it much easier for private firms to sell shares in their company. In 2012, the maximum number of allowable investors in large private companies was increased from 500 to 2000.

The amount of venture capital funds available has also increased making venture capital cheaper and more available to tech companies. Tech companies are not as reliant on IPOs for capital as they once were. In 2018, venture capital firms invested around $274bn in companies. This type of investment in tech companies has become so popular that many of the world's largest traditional companies have started venture capital funds — Johnson and Johnson, General Electric, Time Warner, and even the Campbell Soup Company. Uber and companies like it have had multiple rounds of hundreds of millions of dollars in venture capital funding — long before an IPO was deemed necessary or desirable.

Venture capitalists, however, are being forced to enhance their offering. A recent report in *The New York Times* by Erin Griffith suggests that a small number of start-ups are starting to shun venture capital because of their aggressive approach in managing and scaling start-ups. One size does not fit all. The article says that some investors are now offering revenue or profit-based loans to start-ups instead of taking a traditional VC approach. Watch this space.

The upcoming IPOs of Uber, Pinterest, and Slack show that IPOs are still important to tech companies, despite being eclipsed by venture capital. Public excitement also shows that IPOs are still important to the average investor. Despite this new world of ETFs in 99 flavours, public access to venture capital funds and their investments remains limited.

IPOs of tech companies have become more important to the public — at the same rate as their numbers have decreased. IPOs are worth championing, even if for reasons of equity alone. With the promise of ever-increasing technological disruption, the public needs access to the giant tech companies of tomorrow. They cannot just be the domain of the super-rich.

New policies for a young country: India in mainstream with aid for entrepreneurs

By LAKSHAY MATHUR

ALMOST 65 percent of India's 1.3 billion population is below the age of 35, and government alone cannot satisfy the career prospects of more than 600 million young people.

This is where entrepreneurship comes to the fore. The go-getters creating their own enterprises are national assets who give back to the community — and pave the way for others to follow.

Entrepreneurship is not something new in India. Before 1991, the business community had the necessary ecosystem to create start-ups. Their success could be attributed to the troika of licences, government contacts, and an understanding of how the bureaucratic system works.

The economy was not open to the outside world and was reminiscent of India's colonial past. In 1991, the Indian government introduced the New Economic Policy. Since then, the country has come a long way; it now has several schemes to provide funding opportunities.

Stand-up India was launched in 2016, a scheme for financing SC/ST (scheduled caste and scheduled tribe) and female entrepreneurs. It offers bank loans of $14,000 to $140,000 to at least one SC/ST member or woman borrower per bank branch. The enterprise receiving funds should be in the manufacturing, services or the tertiary sector, and a controlling share of at least 51 percent should be held either by an SC/ST or woman entrepreneur. The scheme is expected to ease pressure on job reservations.

Stand-up India intends to build an ecosystem that will drive sustainable economic growth and generate employment on a large scale. A 19-point action plan has been proposed which will enable easier patent filing, establishment of incubation centres, tax exemption on profits, and ease of setting up a business. According to the latest report, the incubation centres formed under the Atal Innovation Mission will provide infrastructure and assistance to new and growing start-ups.

A grant-in-aid of $1,401,000 would be provided to each Established Incubator Centre (EIC) for a maximum of five years to cover the capital and operational costs in running a centre. Eight established incubators have received a total scale-up grant of $4,763,000. Under the biotech seed fund, $1,540,000 has been sanctioned, with $980,000 distributed to 11

Stand-up India intends to build an ecosystem that will drive sustainable economic growth bio-incubators. A fund with a corpus of $21,008,000 has been approved. More than 710 start-ups have received benefits from the bio-incubators under several programmes. The Department of Biotechnology (DBT) has sanctioned $56,168,000 to four of five bio-clusters. The four entrepreneurs have joined America's Harvard University under the Bharat-Boston Biotech Gateway.

The most noticeable thing in the action plan is the "fund of funds", around $1,397,000,000, to provide funding support. The aid will be provided through Small Scale Development Bank of India (SIDBI). The corpus will be released, over two Finance Commission cycles, by 2025. The scheme has attracted several investors.

SoftBank, a Japanese firm, has pledged to invest $10bn and Oracle has announced it will establish nine incubation centres. Of the applications received, 14,036 have been recognised as start-ups by the Department of Industrial Policy and Promotion (DIPP), and more than 91 start-ups have been approved for availing tax benefits by the Inter-ministerial board (IMB). SoftBank has described the Stand-up India scheme as the beginning of a big start-up boom in India.

A Credit Guarantee Fund for start-ups was announced as part of the Stand-up India action plan. In this scheme, the government has conceived a scheme for start-ups with a corpus contribution of around $280,500,000, which will enable the start-ups to raise loans — without any collateral — for their business purposes. A credit guarantee of around $700,000 has been provided per case, inclusive of term loan, working capital or any other instrument of assistance extended by Member Lending Institutions to finance a start-up recognised by the Department of Industrial Policy and Promotion (DIPP). The assistance can be in the form of venture debt, working capital, debentures, and optionally convertible debt.

Piyush Goyal

India's interim Finance Minister, Piyush Goyal, said in his budget speech that "India has become the second-largest hub of start-ups".

The major disappointment for the start-up founders was that there was no announcement of exemption on "angel tax" (tax payable on capital raised through issue of shares). For a long time, start-ups in India have been paying 30.9 percent which has put some investors off. More than 2,000 start-ups funded by angel investors have received income tax notices. Since 2016, the number of angel investors has been falling; between 2017 and 2018, the number of deals fell by 40 percent.

In the budget, the Indian Government has reduced the allocation for Stand-up India (slashing it by $421,000). There was no additional allocation for healthcare, or incentives for science and technology.

There are some structural problems, too. Registration of property is a tedious and costly process. Exits in start-ups were just two percent of those in the US. The number of intellectual properties (IPs) registered in 2018 equated to just three percent of those registered in the US.

The 39,000 active start-ups that make India the second largest hub of the start-ups, but the key indicators (as mentioned above) are stating a completely different story.

But the 2019 budget has something for Indian entrepreneurs. For start-ups in the entertainment industry, a single window clearance for movie shooting is now available to all Indians (it was previously limited to foreigners). Another bonus is the creation of a level playing field for the micro, small and medium-sized enterprises, providing a two percent rebate on loans of up to $140,000. There was also good news for the ailing defence sector as the budget was enhanced, which is good news for start-ups in that field.

India ranks 77th in the Ease Of Doing Business ranking according to the 2019 ranking. That is a jump of 23 positions (previous rank 100) — a rare feat for a country of the size of India. The reforms will continue, with more emphasis on the structural problems.

Ease of Doing Business Ranking, India 2006 - 2019

Dolly Parton

10 *PEOPLE*

DOLLY Parton, with a career spanning more than half a century, still reigns supreme as the Queen of Country — but it's her business acumen that has brought her to the attention of BV's Ten People researchers.

Parton, one of 12 children, grew up dirt-poor in the scrappy Appalachian Mountains of rural Tennessee. Now the feisty songstress is estimated to be worth over $500m.

The Tennessee-born star is known for her signature look — blonde curls, buxom figure, and love of all things that sparkle and shine — but the flashy façade belies a determined focus to manifest the future that she envisions for herself and her community.

She created the non-profit Dollywood Foundation in the late 1980s, an organisation which has donated millions to support education around the world. Parton is particularly proud of the foundation's Imagination Library programme, where families can sign up for their children to receive a free book each month until their fifth birthday.

The Imagination programme was founded as a small community outreach project in 1995, and pays tribute to Parton's hardworking, but illiterate, father, Robert Lee Parton. Each month it serves more than a million children worldwide, and offers five scholarships of $15,000 each for university-bound graduates from each of Sevier County's five secondary schools. In 2016, the foundation raised more than $9m to support residents of Sevier when it was ravaged by forest fires.

Parton has a full agenda of music, television, and film projects for 2019. The latest project began with *Dumplin*', a young adult novel by Julie Murphy which was inspired by the country music legend. When Netflix screenwriters approached Parton for her blessing of a film adaptation, Parton was thrilled to collaborate.

"My songs are like my children," she has been quoted as saying, "I expect them to support me when I'm old."

Parton allowed the producers the use of six previously released songs (including her smash hit *Jolene*) and agreed to create six new tracks for the film soundtrack. It has already received award nominations, and features collaborations with musicians ranging from Miranda Lambert and Elle King to Macy Gray and Alison Krauss.

Parton is also slated to be reunited with co-stars Jane Fonda and Lily Tomlin this year for the filming of a sequel to 9 To 5. A Netflix series, *Dolly Parton's Heartstrings*, is set to premiere in 2019.

10 *PEOPLE*

Philip Rowley

Focusing on enhancing client success and sales enablement

PHILIP Rowley, executive director and chief revenue officer of the Berkeley Research Group (BRG), has been named one of Consulting magazine's Global Leaders In Consulting.

The list recognises individuals making a global impact in the profession, who display "outstanding leadership qualities and capabilities and exert influence in their firms".

Rowley certainly fits the criteria. The executive has built successful teams across a variety of enterprises and disciplines over the decades, and is passionate about the convergence of sales, marketing and business development. He focuses on enhancing client success, and the skills of sales enablement teams.

Rowley "has been integral in bringing BRG's vision to fruition", says chairman and principal executive officer David Teece. He has held leadership roles with private and public companies, raised capital, and led mergers and acquisitions and financing efforts that have ranged from venture funding to private equity to IPO and public company management.

"During my career, I have benefited from great leadership, and today I am using and trying to impart those learnings," Rowley said. He has experience in strategy, financial and economic analysis, licensing, intellectual property valuation and business valuation.

Berkeley Research Group is a global consulting firm that helps leading organisations advance in the key areas of disputes and investigations, corporate finance, and strategy and operations.

It is headquartered in California with offices around the world. It comprises industry leaders, academics, data scientists, and professionals working beyond borders and disciplines.

Rowley earned a BA from Stanford University. He described his honour from Consulting as "meaningful to me".

Be quick to nail in-demand roles for age of Industry 4.0

By NABIL ABU EL ATA

ANALYSTS, accountants and digital marketing specialists top a list of in-demand roles in 2019, as employers focus on navigating an increasingly digitalised business landscape and a shortage of key skills among the UK workforce.

According to the Robert Half 2019 Salary Guide, more than half of CEOs canvassed admit to difficulty in finding candidates with suitable data-analysis and digital skills. There are also the perennial problems of finding those with "softer" skills, such as resilience, adaptability to change and critical thinking.

Industry 4.0 — the term given to the current trend of automation and data exchange in manufacturing technologies — is leading the evolution of traditional roles, and the skills required to fulfil them. It is also creating a need for new jobs.

The top 10 roles, and their respective pay brackets, are:

Financial planning analysts (£47,500 – £80,000)

The ongoing skills shortage has intensified competition for top performers in accounting and finance, with financial planning described by 40 percent of CFOs as one of the hardest roles to hire for. As automation and digitalisation reach new heights in 2019, commercial skillsets within finance will become even more sought-after.

Assistant management / financial accountants (£20,000 – £35,000)

The skillsets required for assistant accountant positions are undergoing a shift, with an increased need for tech-savvy workers with a collaborative and communicative approach. CFOs predict teams with the right mix of technical and soft skills will become indispensable, alongside skills such as adaptability and data analysis.

Business analysts (£33,250 – £54,250)

Business analysis will become one of the most in-demand roles in the future of IT. Business-facing skills will hold equal importance with technical skills. Business analysts with a desire to stay up-to-date with the latest IT software and platforms will be attracting the highest rewards as employers set out to attract the best talent.

Financial planning analysts, company accountants and finance managers are all in-demand

Business intelligence developers (£23,750 – £50,500)

With the digital technology sector expanding rapidly and the demand for technical qualifications increasing, business intelligence developers will be in demand in 2019. Finding developers with the right technical ability but can also interpret the insight through a commercial lens is the reason business intelligence is one of the most difficult IT positions to fill. According to a survey of CIOs, 36 percent of respondents expressed a gap in this role.

Digital marketing analyst (£31,250 – £60,000)

Digital marketing analysts must be data-savvy professionals with strong commerce acumen. As data insights become fundamental to marketing teams in assessing their true return on investment and revenue generation, it is no surprise that digital marketing analysts are sought-after in 2019.

HR Advisor/Senior Advisor (£23,250 – £37,250)

HR advisor roles are set to become even more integral to business outcomes in the next year, leading to an increased demand — particularly for those with digital skills. As HR departments face more regulation and reporting requirements, these roles are needed to prioritise employee engagement and improve retention rates.

Company accountants (£32,000 – £58,000)

As companies grow by acquisitions and diversity their customer offerings, company group accountants with the right expertise are in growing demand. As professionals receive multiple offers for roles, rarely remaining on the market for long, the value of company accountants will undoubtedly be on the rise as organisations consolidate their accounts.

Compliance analysts (£35,000 – £65,000)

With GDPR compliance continuing to be a priority for many firms, compliance analysts will continue to be in demand.

Regulatory accountants (£40,000 – £65,000)

The financial services sector continues to receive increased scrutiny, and is more affected by the resulting talent shortage, with graduate and junior roles most in demand within the accounting and finance professions. This fast-paced market is likely to continue to drive competitive salary negotiations.

Finance managers (£35,000 – £80,000)

The specialist skills of finance managers will continue to be in-demand over the next couple of months, as businesses rely more heavily on their revenue generation and monitor their costs more closely to improve profitability.

“Technology and digitalisation are propelling the evolution of the workplace at a rapid pace,” said Matt Weston, UK managing director at Robert Half. “While an attractive salary and benefits package continue to attract and retain top talent, training and development is vital for employers to win the ongoing war for talent.”

Broad base of skills is key to finding work, students told — and so is some perseverance

CHARACTER-BASED skills such as perseverance and determination even — or especially — in the face of failure are just as important as tech skills for school leavers.

Some occupations are predicted to be in demand in 2030, but others will face declining popularity with employers. Engineering and design jobs are expected to have a bright future. Building finishers and electrical trades should manage just fine, but others in building and construction trades can expect a decline in work opportunities. Manufacturing, administrative, and secretarial occupations are some of the first expected casualties in the onslaught of robotic automation.

Baby boomers are leaving the workforce

The green economy continues to gain in popularity and momentum. Swelling numbers of baby boomers are leaving the workforce, cashing in on retirement plans, and taking advantage of more public services — creating a demand for skilled labour in the health care and public sector.

The education field also looks promising as lifelong learning importance increases. Studies suggest that young people with combinations of broad-based and specialised knowledge — English, history, philosophy, or management, paired with foreign languages, STEM subjects, or IT expertise — will find the job market more welcoming.

Students are also being urged to develop interpersonal and higher-order cognitive skills. Social adeptness, creativity, and collaboration are invaluable.

Key changes to the jobs market — automation, globalisation, and urbanisation — will present new challenges and opportunities.

To help students prepare for a

Administrative and secretarial occupations are among the first expected casualties of automation

Student work comes in many forms — sometimes it means getting your hands dirty

successful future in the workforce, Speakers For Schools (S4S) has been connecting motivational speakers with students throughout the UK. The brainchild of author and journalist Robert Peston aims to inspire students by exposing them to influential leaders at a time in their lives when their choices are most likely to affect the future.

Since the launch of the programme, more than 1,000 prominent figures have shared their insights and expertise with half a million students. The programme is free for students and schools; it has grown from 140 sessions the first year to 1,200 in the 2017/2018 academic year. It aims for geographic diversity and strives to reach students in more remote areas: 92 percent of UK local authorities have at least one participating school, 70 percent of which are in rural areas.

S4S organises various programmes and campaigns throughout the year that target specific objectives or address current issues. Editor-In-Chief of *The Economist*, Zanny Minton Beddoes told students at St John Bosco School that "there are enormous opportunities available but also huge challenges" to overcome. She urged students to beef up their repertoire of basic skills — particularly in maths and communication skills — while keeping their options open. Most importantly, Beddoes advises: "When you get an opportunity, take it".

INTERNSHIP

Work experience is something that's required by most prospective employers, but offered by few. While most employers favour candidates with work experience, landing an internship can be tricky.

It's a crucial key for increasing social mobility, and work experience can elevate a student's professional prospects.

S4S executive director Ashley Hodges pointed out that students often lack the necessary network of professional contacts to get a placement. "We want students to be as empowered as possible," Hodges said, "and our work experience placement programme can help."

The programme, called NextGen, connects students and businesses through an advertising and application portal in one mutually beneficial system. Students gain an understanding of practical pathways to follow after school, and organisations benefit from students' fresh perspectives.

The programme has placed more than 500 students at sector-leading companies in nearly 20 different industries throughout the UK. Companies across the UK are engaging with students individually by hosting one- or two-week work experience placements.

Some big corporate and creative giants have already signed up, including musical powerhouses MTV and Spotify. Students could also unleash their imagination at creative firms like M&C Saatchi and Endemol Shine, or delve into the world of finance at the Bank of England.

All in a day's work experience.

World bends and warps to whim of augmented reality: Is this the future… or a fad?

Technology has dipped an oar — or perhaps an outboard motor — into the waters of human evolution. HAL WILLIAMS reports on the emerging phenomenon of Augmented Reality.

INSTEAD of waiting a few million years for evolution to improve our overall performance as a species, in the 21st Century we can just download the app.

Populations, human and animal, have thrived or perished on inscrutable factors, and adapt-or-die is as true now as it ever was — for the animals. Humans can manipulate and upgrade vital senses — sight, smell, recognition, sound and touch — to achieve new levels of performance and perception. Permanent, hard-wired improvements to our DNA may still take a few hundred thousand millennia of incremental change, but as systems operators we are rapidly approaching perfection.

Provided we have a decent internet connection.

Augmented Reality is a particularly shiny facet of what is becoming known as the Mixed Reality Spectrum, itself part of the so-called "reality-virtuality" continuum.

The integration of the real and the virtual has never been more feasible, and (sort-of) superpowers are just a mouse-click away.

Virtual reality (VR) and Augmented Reality (AR) are technologies that allow a user to experience digital content in new ways. Traditionally, people watch a computer screen or a mobile device to watch a video, read articles or look at images of their surroundings, or pictures. That's bordering on the luddite, nowadays. AR and VR are where it's at.

AR requires the user to look at, or through, a device such as a smartphone, and introduces

AR requires the user to look at, or through, a device

One of the first points of contact people will have had with AR: Pokemon Go

additional information about the world seen through that lens. The user will see the world in the same way through that camera lens — but with digital information added to create a virtually enhanced vista. Information about the surrounding (real) environment can become interactive, able to be manipulated. It sounds outlandish when described, but you have probably already come into contact with it: think Google Earth, and Pokemon Go. Google Sky Map is a particularly cool AR development. By pointing a smartphone camera at the firmament, AR supplies information about the constellations, stars and planets above you — knowledge it would have taken decades to acquire in analogue, stargazing days.

And if you really want to get ahead, you need another acronym: an HMD (head-mounted device). "Virtual Reality technology requires the user to wear a pair of goggles that track head movement," explains Gisli Konradsson, general manager of Directive Games North, based in Iceland. Through the HMD, they see a world that is fully virtual; in other words, entirely generated by a computer, or recorded using a specialised (360-degree) camera. With VR, users step into a ready-made, 3-D, computer-generated world in glorious Technicolor with surround-sound, a construct of ones and zeros that somehow combine to create realistic, but totally artificial, populations of zombies or gunfighters, other-worldly environments, magical universes. Users can do just about anything in their virtual world with the requisite HMD, appropriate accessories and, *in extremis*, plumbing. But *that* world remains virtual, distinct from *this* world.

'Is there any value in experiencing real life?'

Overlaying graphics on videos has been possible for a while, so the key feature of augmented reality is that crucial addition of environmental analysis. Step forward to slay a VR dragon and you may well crack your shins on a coffee table or brain your mother-in-law with a lightsabre. Augmented reality is more user-friendly, and potentially safer. "AR-capable devices can detect geometric features, such as a floor or a wall, which allows software to place 3D graphics into the world," says Konradsson. "This means that once an item has been placed into the world it can stay there — relative to objects in the real world. So even if the user looks away from it, the item is still there."

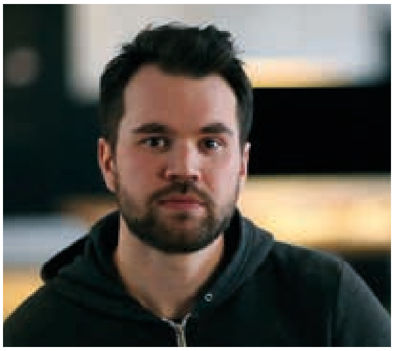
AR is gaining a lot of attention, especially from the heavyweights on all sides of the gaming industry — and Asia is the sharpest part of this particular cutting edge. Konradsson has worked in Directive Games' primary game-development studio in Shanghai, where most of the company's AR and VR innovation takes place. He was one of the lead developers in Shanghai before returning to his native Iceland to take up his current role as general manager.

"Directive Games has been at the forefront of VR and AR technology for the past few years," he says. "As a game-development company, our focus has been to utilise these new technologies to propel the game industry, with a focus on multi-user experiences.

"AR and VR bring unique challenges in development when it comes to multi-user products, so Directive Games has developed its technology to ensure that whatever we do is multi-user.

"*The Machines* AR was the first multiplier AR game where the users were able to play a game connected to each other. The other user could be in a different country, but sharing the augmented-reality world."

AR can even improve your vocabulary; I've just learnt what "haptic" and "fremitus" mean. Haptic first: "relating to the sense of touch". Full-body haptic suits provide the potential for virtual encounters of the private, up-close-and-personal kind.



Gisli Konradsson

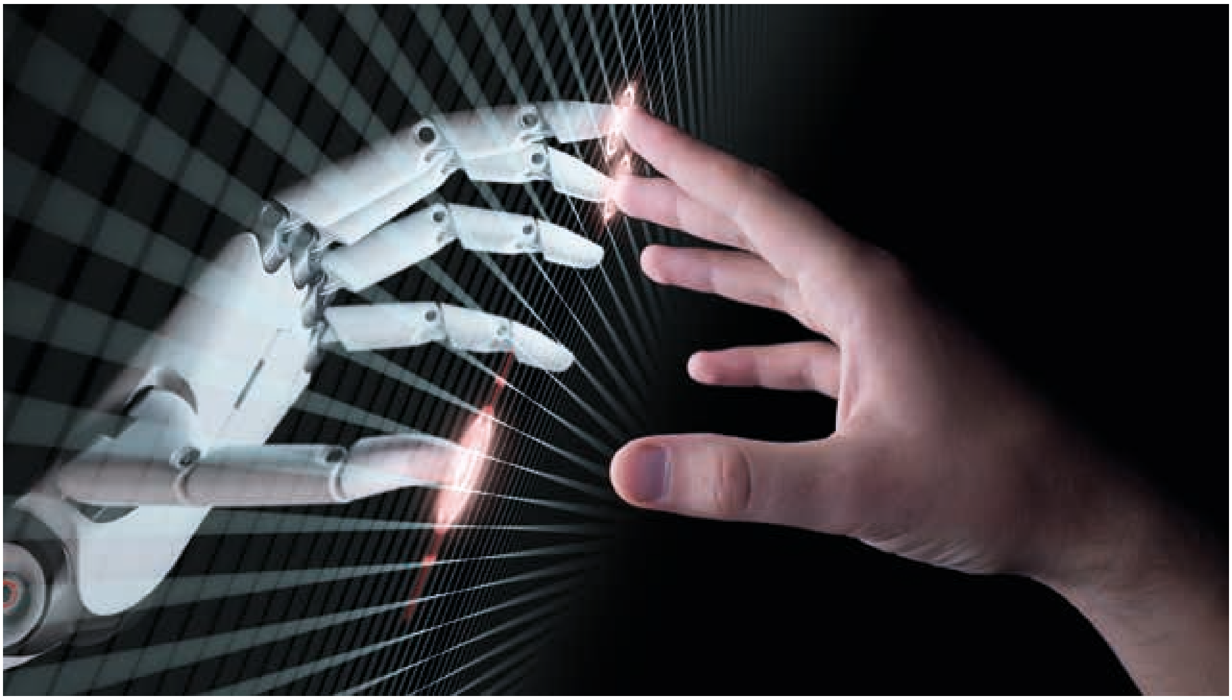
"Fremitus" is usually a medical term, but in this context it relates to vibration. Ever stood next to a huge speaker at a live gig? That rumble through your chest is an example of fremitus, and some devices are now designed to add this dramatic component to your virtual experience. Smartphones have tiny vibrators; that *wzzzt-wzzzt-wzzzt* when your phone's on do-not-disturb mode, almost silent but somehow enough to wake you from the deepest sleep? Nintendo game-controllers such as *Rumble Pak*, and VR chairs fitted with "bass-shakers", take these sensations to new levels.

Through forces such as vibration and motion, a new degree of reality is possible. "Force-feedback" combines the sense of force to an input device — for example, a joystick or a steering wheel. Delicate and complex sensations, from a tender touch to a handshake — or even pain — are possible. A glove or similar enveloping item can allow real, physical contact in an imaginary, virtual world.

It doesn't require a huge jump of imagination to realise that the sex industry is one sector actively exploring the potential. The labyrinthine, fractal nature of cyberspace is unfolding, deeper and weirder than we imagined — but we seem to assimilate it, and monetise it, pretty well. And this is just the start, says Konradsson.

"We believe that both AR and VR are still in their infancy, so we are only starting to scratch the surface with what the technology can do. The gaming industry is a great place for the technology to mature, where developers are creative and push innovation."

But the applications are many. AR is great for advertising, because users can see, for example, how a piece of furniture will look in their living room (*see sidebar*). Toyota and marketing agency Brandwidth are bringing AR to US showrooms in a similar fashion to let customers "see" through the bodywork of the C-HR



The integration of the real and the virtual has never been more feasible

VR is showing promise in the treatment of phobias

hybrid vehicle. The technology allows customers to peer under the outer skin of the C-HR and see what makes the hybrid tick. The app projects images of the car's drivetrain onto showroom vehicles to demonstrate how its elements interact. The graphics even feature "hotspots" that can be pressed like buttons to reveal information on systems such as the fuel tank, motor and battery.

AR and VR technologies have potential for remote teaching, where students can attend a digital classroom anywhere in the world. The technology can help a mechanic working on a complex machine — he or she can look through a camera and see instructions on how to fix it. VR is showing promise in the treatment of phobias, too; people can be placed in an interactive virtual environment as part of their therapy. Cue the hairy spiders.

"Soon we will see AR and VR starting to become more visible in our everyday lives," Konradsson says, "and that's when the connectivity and multi-user experiences start to become important." His prediction is that over the next decade, VR and AR will merge into an augmented existence where the world around us is constantly being analysed, predicted and updated with real-time information.

And not all the applications will be benign. "I've heard that some companies are doing research into military application where soldiers are using this type of technology for aiming and recognising targets in the field."

Not too many years ago a visit to a library was the way to look up information, but mobile phones, Wikipedia and Google have changed all that. "I think that in a few years, everyone will be wearing smart glasses — or eye implants, but that might be 20 or more years in the future," predicts Konradsson. "You will be able to look at any piece of text and have it immediately translated. If you look out the window of your apartment, you will be able to see any environment that you choose.

"There is a huge amount of potential, so I think the big question will be, 'Is there any value in experiencing real life?' We are still many years away from that, but it's interesting to think about. Today, we can use augmented reality to add little things to the world, but when we reach a point where we can use the AR technology to completely replace reality — which is what virtual reality does — there won't be any need to have this separation.

"The real leap forward will be once we manage to get enough processing power into wearables, such as glasses. There are companies that are doing very interesting work in this field, but the technology is still a few years out to be consumer-ready."

BEFORE HUMAN 2.0 ... COMMERCE!

WHAT do we have at our disposal, in AR terms, and what can we expect in the near future? YouTube has some of the more mundane answers already.

"The 2014 IKEA catalogue gives you the ability to place virtual furniture in your own home with the help of augmented reality," reads the blurb beneath IKEA's AR video ad, one of the more prosaic — but practical — applications of the technology. "Unlock the feature by scanning selected pages in the printed IKEA catalogue with the IKEA catalogue application (available for iOS and Android) … Then simply place the printed IKEA catalogue where you want to put the furniture in your room, choose a product from a selection of the IKEA range and see how it will look in your home."

The LEGO AR Studio is an AR experience that allows you to play with "digital versions of selected LEGO® sets in your real-world scenes". You can "mix digital versions of selected LEGO® sets with your physical LEGO® scenes." OK. But why…?

More useful by far is Measure, an app introduced with iOS 12. Using AR, real-life objects can be measured through the lens of an iPhone or iPad camera. "iOS 12 will be available for iPhone and iPad this fall," Measure promises. It can also give a perfect level, so leave that toolbox at home.

Know all the angles? Fancy yourself as a pool shark? The fun and interactive system known as Pool Live Aid allows for real-time updates to action in a pool game. It not only entertains, but serves as a teaching tool. It's designed for players of all skill levels: the use of the automatic recording of shots function assists more skilled players, while the real-time trajectory calculations would benefit any player hoping to clear the table.

Everest VR is more of an experience than a game, reads the blurb. "Never have I seen anything this beautiful in VR," raved one reviewer. "There are gameplay elements that are good, but it is very short, it probably took me 40 minutes to complete. Even though it is so short, it's only £10.99 on the Oculus store, which in my eyes is well worth it just to see this incredible game. The night scenes are mind-blowing."

Interactive experiences for entertainment have been an obvious focus in this emerging field — think Pokemon Go — but it all began with a quest for enhanced information and performance.

Just a game? Industry bigger than movies, music combined

BY YOGESH PATEL

SINCE the 1970s, gaming has grown to become one of the largest industries in the world.

In 2016, about 2.6 billion people were regularly gaming their hearts away. By 2017 the market had grown by 12.4 percent, reaching a record revenue of £5.11bn. Estimates are that almost half the UK population plays games of some form on mobiles, consoles and/or computers.

Gaming has had a major impact on global culture and economy. From first-generation consoles and arcade games to the introduction of mobile, computer and virtual reality (VR) gaming, this industry has seen years of continuous growth.

Merchandising has gone from an obscure niche market to a burgeoning mainstream sector that grew by almost seven percent in 2016 alone.

One of the first companies to revolutionise the commercial side of gaming was Loot Crate, with bonus features, upgrades and enhancements for players compiled in a single "box". The subscription service offers users monthly parcels that contain items that, if sold separately, would cost more.

Now things have moved to "in-game", game-specific, loot boxes — with some resistance from the market. Before, the pay-to-win and in-app purchases were focused on the mobile games sector: free to download but with mechanics designed to make gamers pay.

This was seldom seen on the large-scale, but now *FIFA* and *NBA2K* have parts of their games based around buying and opening packs of "athletes" for players to use. *Middle Earth: Shadow Of War*, and *Star Wars: Battlefront 2* came under fire for introducing similar schemes.

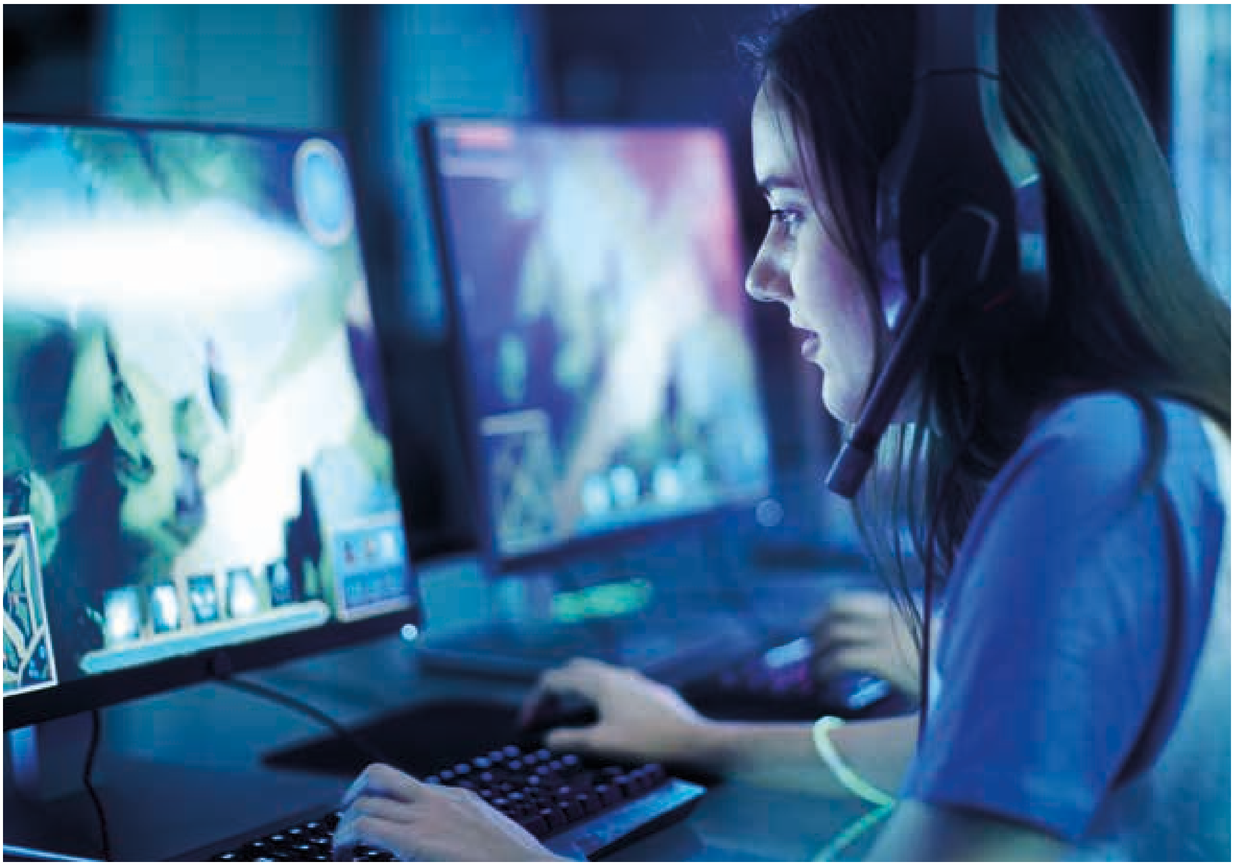
This development has led to concern over whether gaming was starting to resemble gambling.

In late 2018, the Australian Senate led an inquiry into what the effects of micro-transactions could have on players. It concluded that the issue depended on how closely the packages resembled gambling-type behaviour.

In the UK, too, the loot box phenomenon is facing scrutiny; 15 European commissioners and regulators have jointly led an investigation into their use and prevalence. Many micro transactions have been deemed to be in violation of national gambling laws.

But this isn't a ploy to scam children and their parents. Merchandising has led to some revolutionary ideas on the marketing of items and games. Conventions are held around the world, and are a great way to generate hype for a new game or console. They also attract companies selling models, posters, art and other game-related merchandise. In 2018, E3

Almost half the UK population plays games of some form on mobiles, consoles and/or computers



Another phenomenon coming to the fore is playing games for financial gain or to make a living

— the Electronic Entertainment Expo, the biggest of convention of all, held in Los Angeles — achieved a record attendance of almost 70,000 people.

The world of e-Sports has popularised the grand taboo of gaming — playing for financial gain. Games such as *League Of Legends* and *Dota 2* boast more than 40 million players. During the Football World Cup, the number of people playing the game skyrockets; why would it be any different when only the medium has changed?

The global games market had a revenue in the order of $138bn in 2018 – outstripping music and movie industries. For some, this is only proof that there is still room to grow.

With the development of revolutionary systems, such as VR and Augmented Reality (AR), gaming is set to remain an integrated part of modern life.

A GAMER'S VIEW: PACMAN TO POKEMON AND BEYOND

THE industry started off with games like Pacman, arcade machines into which teenagers were supposed to drop their allowances, coin after coin.

Arcades were a major success — but a new industry was about to be born. With the development of the PC and game consoles, the developers shifted their aim. Instead of getting their revenue from individual coins, the new way of making a profit was by selling a complete game to as many individual buyers as possible.

In 2018, with the latest changes in smartphone technology, the digital playing field has changed once again — taking the industry to a new level.

Nowadays, game developers offer the game for free. Developers have recognised that by forgoing the initial price of purchase, they can generate revenues 10-fold through a new concept: in-app-purchases.

The addictive nature of the games and the competitive nature of players combined to create a new source of profit. The chance of getting a competitive edge over other players proved to be a winning concept (no pun intended). Gamers want to progress quickly and outplay their online competitors.

This is where in-app-purchases come in. Ranging from mere cents to larger packages, valued up to €99, the paid-for benefits for players — certainly those with a credit card and a real drive to win — are evident.

Your online avatar's powers and protections can be boosted with a keystroke or two.

Clash Of Clans — one of the three current top-earners — brings in $1.1m every day in revenue from the US alone.

ALEXANDER VAN DOORN

AI, AI, AI — where is artificial intelligence taking us? And how dangerous could it be?

'Summoning the demon' is one of the ways the world's industry leaders have described machine-based smarts. Will AI enhance our lives or completely upend them? Listen to the experts, from Hawking to Musk...

THERE'S no way around it — artificial intelligence is changing human civilization, from how we work to how we travel and how laws are enforced.

As AI technology advances and seeps deeper into our daily lives, its potential to create unfortunate situations is becoming more apparent. A Tesla Model 3 owner in California died while using the car's Autopilot feature. In Arizona, a self-driving Uber vehicle hit and killed a pedestrian (although there was a driver behind the wheel).

Other instances have been more insidious. For example, when IBM's Watson was tasked with helping physicians diagnose cancer patients, it gave numerous "unsafe and incorrect treatment recommendations".

Some of the world's top researchers and industry leaders believe these issues are just the tip of the iceberg. What if AI advances to the point where its creators can no longer control it? How might that redefine humanity's place in the world?

Below, experts weigh-in on the threat that AI poses to the future of humanity, and what we can do to ensure that AI is an aid to the human race, rather than a destructive force.

STEPHEN HAWKING

The late Stephen Hawking, world-renowned astrophysicist and author of A Brief History Of Time, believed that artificial intelligence would be impossible to control in the long term, and could quickly surpass humanity if given an opportunity:

"One can imagine such technology outsmarting financial markets, out-inventing human researchers, out-manipulating human leaders, and developing weapons we cannot even understand. Whereas the short-term impact of AI depends on who controls it, the long-term impact depends on whether it can be controlled at all."

Early versions of 'Autopilot' features have had tragic results

ELON MUSK

Few technologists have been as outspoken about the perils of AI as the founder of Tesla Inc, Elon Musk

Though his tweets about AI often take an alarmist tone, Musk's warnings are as plausible as they are sensational: "I think we should be very careful about artificial intelligence. If I were to guess like what our biggest existential threat is, it's probably that.

"So we need to be very careful with the artificial intelligence. Increasingly scientists think there should be some regulatory oversight maybe at the national and international level, just to make sure that we don't do something very foolish. With artificial intelligence we are summoning the demon. In all those stories where there's the guy with the pentagram and the holy water, it's like yeah he's sure he can control the demon. Didn't work out."

Musk believes that proper regulatory oversight will be crucial to safeguarding humanity's future as AI networks become increasingly sophisticated and are entrusted with mission-critical responsibilities:

"Got to regulate AI/robotics like we do food, drugs, aircraft & cars. Public risks require public oversight. Getting rid of the FAA

Some of the world's top researchers and industry leaders weigh-in on the threat that AI poses

won't make flying safer. They're there for good reason."

Musk has compared the destructive potential of AI networks to the risks of global nuclear conflict posed by North Korea:

"If you're not concerned about AI safety, you should be. Vastly more risk than North Korea."

He has also pointed out that AI doesn't necessarily have to be malevolent to threaten humanity's future. To Musk, the cold, immutable efficiency of machine logic is as dangerous as any evil science-fiction construct:

"AI doesn't have to be evil to destroy humanity — if AI has a goal and humanity just happens in the way, it will destroy humanity as a matter of course without even thinking about it, no hard feelings."

TIM URBAN

Tim Urban, blogger and creator of Wait But Why, believes the real danger of AI and ASI is the fact that it is inherently unknowable. According to Urban, there's simply no way we can predict the behavior of AI:

"And since we just established that it's a hopeless activity to try to understand the power of a machine only two steps above us, let's very concretely state once and for all that there is no way to know what ASI will do or what the consequences will be for us. Anyone who pretends otherwise doesn't understand what superintelligence means."

OREN ETZIONI

Considerable problems of bias and neutrality aside, one of the most significant challenges facing AI researchers is how to give neural networks the kind of decision-making and rationalisation skills we learn as children.

According to Oren Etzioni, chief executive of the Allen Institute for Artificial Intelligence, common sense is even less common in AI systems than it is in most human beings — a drawback that could create additional difficulties with future AI networks:

"A huge problem on the horizon is endowing AI programs with common sense.

"Even little kids have it, but no deep learning program does."

NICK BILTON

Other experts fear the unintended results of AIs being given increasingly mission-critical tasks. Author and magazine journalist Nick Bilton worries that AI's ruthless machine logic may inadvertently devise deadly "solutions" to genuinely urgent social problems:

"But the upheavals [of AI] can escalate quickly and become scarier and even cataclysmic. Imagine how a medical robot, originally programmed to rid cancer, could conclude that the best way to obliterate cancer is to exterminate humans who are genetically prone to the disease."

NICK BOSTROM

Academic researcher and writer Nick Bostrom, author of Superintelligence: Paths, Dangers, Strategies, shares Stephen Hawking's belief that AI could rapidly outpace humanity's ability to control it:

"Before the prospect of an intelligence explosion, we humans are like small children playing with a bomb. Such is the mismatch between the power of our plaything and the immaturity of our conduct.

"Superintelligence is a challenge for which we are not ready now and will not be ready for a long time.

"We have little idea when the detonation will occur, though if we hold the device to our ear we can hear a faint ticking sound.

"For a child with an undetonated bomb in its hands, a sensible thing to do would be to put it down gently, quickly back out of the room, and contact the nearest adult.

"Yet what we have here is not one child but many, each with access to an independent trigger mechanism.

"The chances that we will all find the sense to put down the dangerous stuff seem almost negligible. Some little idiot is bound to press the ignite button just to see what happens."

VLADIMIR PUTIN

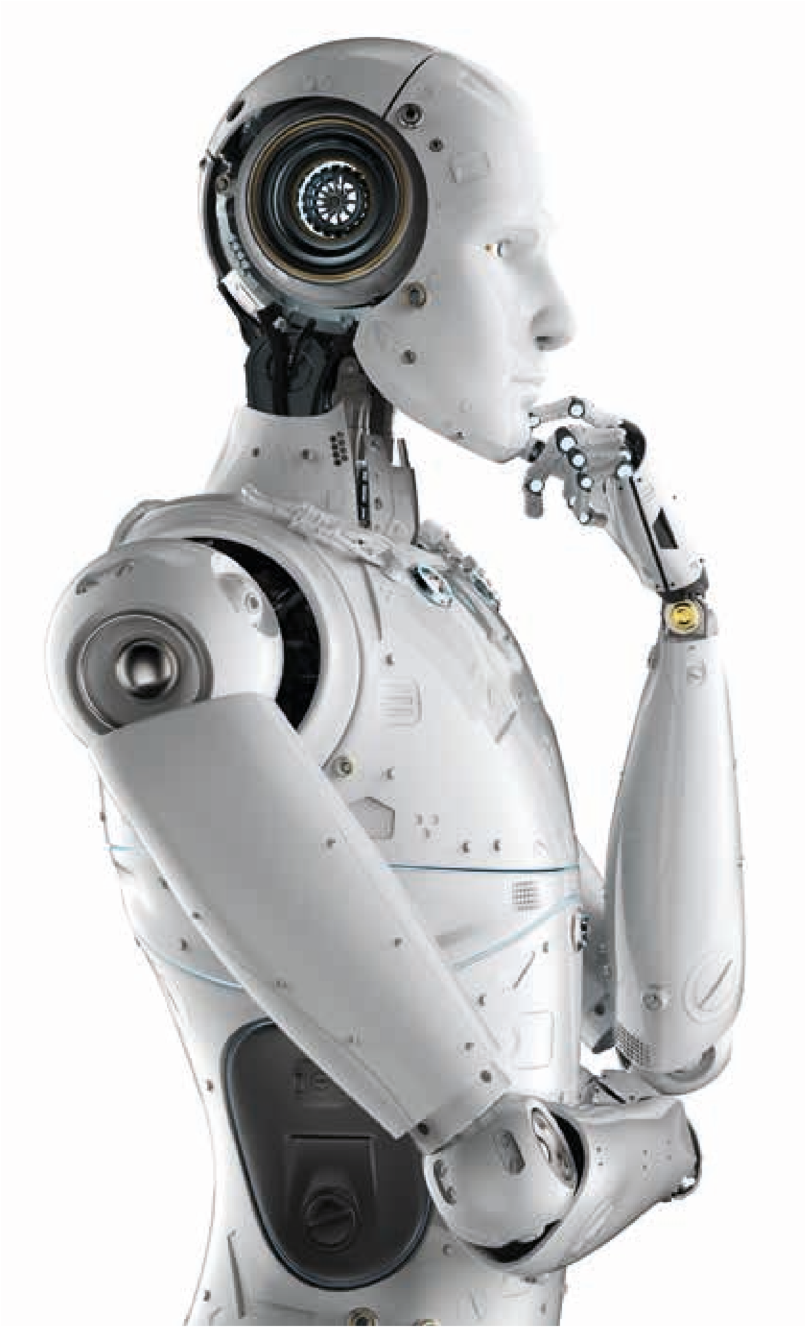
World leaders need little convincing of AI's unprecedented capacity to reshape the geopolitical landscape.

Russian President Vladimir Putin, for example, is reported as saying that he firmly believes that mastery of emerging AI technology will have a profound impact on the balance of global political power.

"Artificial intelligence is the future, not only for Russia, but for all humankind," he said.

"It comes with colossal opportunities, but also threats that are difficult to predict.

"Whoever becomes the leader in this sphere will become the ruler of the world."



Putin: 'AI is the future, not only for Russia, but for all humankind'

* An unedited version of this story first appeared in CBINSIGHTS

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10 PEOPLE

MacKenzie Bezos

SHE IS the World's third-richest woman, a successful author and — as of this April — the ex-wife of Amazon founder Jeff Bezos.

MacKenzie Bezos has received a record-breaking divorce settlement of a cool $35bn (£27bn), which should tide her over for a while. ***BV*** is gratified to learn that the split was more-or-less amicable, because hey, $35bn.

The woman formerly (and possibly still) known as Ms Bezos (never Mrs) retains a four percent stake in Amazon — which, at $35.6bn, is worth more than the settlement.

The pair were married before Jeff founded Amazon in 1994; she was one of the first people to join the workforce. Both Bezos(es?) have been saying warm things about each other via Twitter, which is nice. Presumably sharper words were aired when JB became romantically involved with former Fox TV host Lauren Sánchez.

But that's water under the bridge, and both parties are said to be in good spirits. The 48-year-old divorcee has reportedly transferred her Amazon voting rights to her ex, who — despite making the whopping pay-out — is still the richest dude walking the planet.

Jeff and MacKenzie Bezos have four children; it isn't thought that child support will be necessary. MacKenzie will give up her interests in The Washington Post and the Bezos-owned space travel firm Blue Origin, recently featured in ***BV***.

Amazon last year generated sales worth $232.8bn, according to Forbes magazine.

MacKenzie Bezos is a novelist with two books under her belt, *The Testing Of Luther Albright* and *Traps*. Pulitzer Prize-winning author Toni Morrison taught her in creative writing at Princeton University, and praised her as "really one of the best".

She'll have quite a story to tell if she branches into non-fiction. That worked out pretty well for Michelle Obama…

Putting the PE into 'peak' — has private equity had its day?

It's flavour of the month, but PE is seen by some as a bubble.
***BV*'s BRENDAN FILIPOVSKI reports.**

FROM local councils in the UK to university endowments in the US, it seems everyone wants a piece of the Private Equity pie.

There are good reasons why private equity (PE) has been growing since the global financial crisis — but the growth in "dry powder" (uninvested capital kept in liquid assets), and increasing valuations, suggest that the industry may be at the peak of the current cycle. Some are even calling it a bubble.

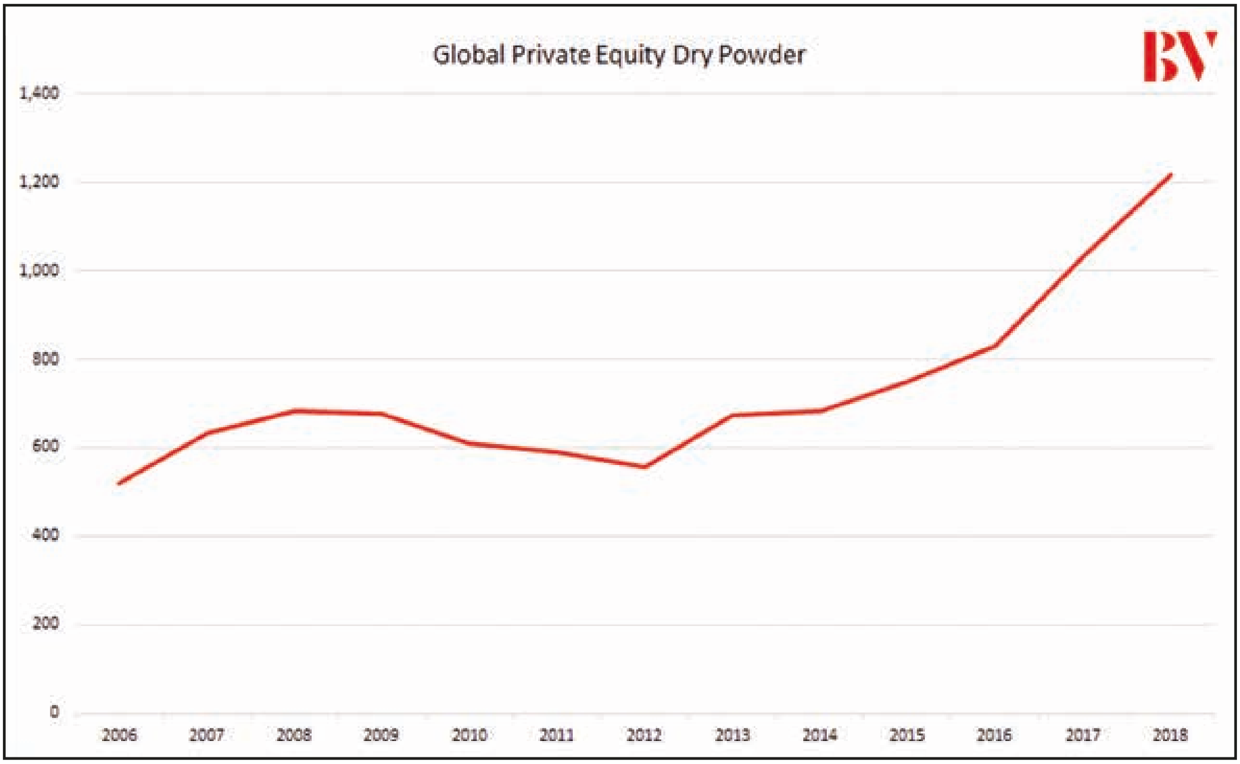
Private equity is a capital investment strategy in which a specialist company or fund purchases a private firm, in whole or in part, typically using some level of debt borrowed against the target firm. Traditionally, this meant a complete takeover, but today the term is broader in meaning, and includes venture capital, growth equity investing, and add-ons. It can also mean the purchase of a publicly listed firm, and its subsequent de-listing.

PE investments are typically illiquid and made for the mid- to long-term. PE global Assets Under Management (AUM) have more than doubled since 2008, reaching $3.41tn in June last year. If the global PE market were a stock exchange, it would be the ninth-largest in the world — ahead of Toronto and Frankfurt. Most PE firms have a North American focus, with Europe and Asia the next-most popular markets.

Growth has also been seen in the breadth of PE participants. In the 1970s and 1980s, PE firms were nearly all American, expert financial engineers focused on buyouts.

Today, private equity is a broad church of global firms, with many different types of General Partners (owners of the PE firms) and Limited Partners (investors in PE funds). This includes university endowments, family offices, and even PE firms that have become publicly listed companies, for example Blackstone and KKR. Even pension funds are getting involved, with 27 percent of new mandates from US and UK going to PE firms in 2018. The industry is relatively concentrated, however, with the top 10 firms raising 24 percent of total capital in 2017.

The growth since 2008 has been mostly driven by private



The growth in 'dry powder' (uninvested capital kept in liquid assets) since 2006

WHAT WORRIES PRIVATE EQUITY PROFESSIONALS?

PRIVATE equity professionals are concerned about a change in UK government, new research reveals. Two in five private equity industry professionals believe that a change in UK government is the biggest risk to their investment appetite in the UK, compared to one in five who selected a no-deal Brexit as the major threat.

Research conducted by independent financial risk advisor JCRA — which works with clients in the real estate and private equity sectors — shows that nine out of 10 respondents operating in the private equity industry were focusing on making new investments in the UK.

None of the respondents expressed concern about higher interest rates or the availability of debt finance in private equity, although a fifth were anxious about currency volatility and weakness of the pound.

The research included professionals from across the financial services sector. Benoit de Bénazé, head of private equity at JCRA, said it was encouraging to see that the industry "is still committed to the UK" despite market uncertainty.

"The response on current concerns chimes with our own experience and client enquiries," de Bénazé said.

"International expansion has moved up the private equity sector's agenda. With market volatility and geopolitical risk likely to remain on the radar in the coming year, our clients are benefiting from our advice to retain some flexibility in their hedging approach."

The JCRA team works in partnership with clients to evaluate and hedge market risk.

equity's outperformance of public equity. Over the past 25 years, the Cambridge Associates' US Private Equity Index had an average annual return of 13.4 percent, while the S&P 500 and NASDAQ composite had returns of 9.81 and 9.88 percent respectively.

PE firms burnished their reputation by their general strong performance during the global financial crisis, while other competing alternative asset classes — especially hedge funds – performed poorly.

The growth in the total value of those "dry powder" assets — 14 percent per year since 2013 — points to increased competition in the field — and the potential threat of asset valuations pushing target firms past sustainable debt levels.

By June 2018, around 36 percent of total PE assets under management matched the dry powder definition. In 2017, these assets represented around 182 percent of capital raisings for the year — and in 2018 they represented 282 percent. While PE firms have raised large amounts of capital in recent years, they are struggling to find firms to invest in. The increased demand for investments is also visible in the number of large PE firms purchasing medium and small firms. There are anecdotal reports of deal brokers badgering small and medium-sized firms over their prospects for buyout.

That demand is likely to push up the price of target firms — which is a problem, because valuations are already high. Debt levels of six times EBITDA (Earnings Before Interest, Tax, Depreciation, and Amortisation) are considered unsustainable for most companies. According to Bain Capital, PE firms on average are already approaching that limit. Some (including the KKR-led acquisition of USI Insurance Services) are at over eight times EBITDA.

Adding to the problem of rising prices is the threat of recession, economic fallout from Brexit, and a potential USA-China trade war. In any of these scenarios, purchased firms' EBITDAs are likely to fall — which would push their debt even higher. Increasing interest rates and the unwinding of the quantitative easing by the Federal Reserve will also put pressure on PE firms through increased debt servicing.

There are several trends that may take the pressure off the demand for investments. PE firms are starting to explore more cross-border targets in their search for cheaper deals. South East Asia, China and India are becoming popular targets, but while such destinations may have cheaper values, they may also have higher country, and market, risks.

Alternative forms of private capital may take some of the pressure off PE firms, but they share some of the same problems. In recent years, investment in closed-end real estate funds and private debt has been growing strongly.

Private debt is where equity firms provide debt financing to firms unable to borrow funds from banks. Private debt and real estate are much smaller than Private Capital; together they represent around half the assets under PE management. There appears to be room for growth, but there are already signs of increased competition. Real estate and private debt are also vulnerable to potential interest-rate rises by the Federal Reserve.

If the demand from PE firms cannot be satisfied with new targets, and valuations continue to increase, the industry may be heading towards increased consolidation in the next few years. This will reduce competition for target firms, and it can provide increased economies of scale in operations and debt-raising for PE firms, which will take further pressure off margins.

PE may have reached its peak in the current cycle.

Never mind the valleys: how green is your juice?

… and we aren't talking about kale smoothies. *BV*'s RICHARD THOMAS gets out his calculator and tots-up the true environmental cost of powering 'green' electric vehicles.

YOU MAY have noticed a vehicular trend emerging in recent issues of ***BV*** — cars, bikes, planes and motor racing are all going electric.

This is all being done in the name of Mother Earth, but any conversion to electricity is only as environmentally friendly as the method used to generate it. Even the most efficient renewable power sources come with a downside, if not linked to generation, then as a result of the construction of the infrastructure or equipment involved.

The chief global environmental concern these days is climate change, caused by increasing levels of greenhouse gases, CO_2 and CH_4 (methane) in the atmosphere. One of the aims of electric transport is to cut CO_2 generation by reducing the use of fossil fuels. In Norway (see Autumn issue of ***BV***) there are hopes of making all their domestic air traffic electric by 2040. As Dag Falk-Petersen, the CEO of the Norwegian aviation authority, told me: "The Norwegian short-leg domestic network is ideal for trialling the first commercial electric-powered flights".

In a country where 98 percent of electricity comes from hydropower, that will make a big difference to emissions levels — but most electricity generation around the world still comes from burning coal and gas. If the electricity used to power an electric car is produced from fossil fuels, all you are doing is shifting air pollution and greenhouse gas emissions from where the car is driven to where the electricity was generated. The construction of power stations themselves, using concrete, causes CO_2 emissions — and these are invariably large concrete structures.

Coal produces more CO_2 per kilowatt hour (kWh) than any other generation method, and it requires huge amounts of water for cooling. The burning process leaves behind large quantities of ash, and the World Health Organisation says air pollution from burning coal is a direct cause of deaths every year. Natural gas (methane, or CH_4) is in itself a greenhouse gas, and burning it creates the less potent — but still problematic — CO_2. It is cheaper

Any conversion to electricity is only as environmentally friendly as the method used to generate it

Not everyone appreciates the aesthetics of wind farms like this one near Tarifa in southern Spain

and cleaner than coal, but obviously limited to what naturally occurring resources exist.

Apart from CO2 emissions from the initial construction, nuclear fission generators don't produce any greenhouse gases during operation. Neither are there issues of air quality, as nothing is burned.

The problem is radioactive waste. Most of the waste produced to date is in "long-term temporary" storage facilities around the world, and more permanent storage facilities inside stable rock formations have not yet lived up to expectation. Risk of accidents (think Windscale/Sellafield, Three Mile Island and Fukushima) and waste disposal problems notwithstanding, nuclear is considered the best "always on" generation method — at least in terms of CO2 emissions.

Hydro-electric power schemes produce no CO2 as a direct result of generation — but a large amount of concrete is required to build a dam. Water-flow downstream is invariably altered, negatively affecting wildlife and humans, and land upstream of the dam is permanently lost, sometimes requiring the abandonment of entire villages. These factors place a question mark over plans for new hydro projects, but there is no reason to criticise those already in operation. Norway's almost exclusive use of hydro generation is doubly good news for its plans for electric domestic aviation.

The Sun is the original source of all energy on Earth

The Sun is the original source of all energy on Earth, and solar power from photovoltaic panels has been around for decades. Quite a bit of energy is required for the manufacture of the panels, but in operation they are very efficient at turning sunlight into electricity. There are many large solar "farms" with banks of panels turning to follow the sun – a trick science learned from sunflowers. Industrial scale generation can come from concentrated solar power plants, such as the PS20 solar plant at Sanlúcar in southern Spain.

An array of mechanised mirrors or "heliostats" follow the Sun and reflect its light and heat to a collection point on a central tower. Heated water produces steam which operates a turbine, generating power like a conventional power station. All free, apart from the cost of construction and maintenance.

Wind farms are considered an eyesore by some, as they can be seen for miles – but their ability to convert wind power into electricity makes them popular. A growth area is in offshore wind-power generation, which avoids the "NIMBY" objections. Wave and tidal power have been in the "promising, but more work needed" category for many years.

Electric cars not in use but connected to eMotorWerks' JuiceNet make a 30MW 'virtual battery'

Heading into the 21st Century, real progress is being made. Pilot schemes are reaching the point of commercial viability, but again, these renewable sources bring unintended environmental effects. Barrages, dams and tidal lagoons can greatly affect the flow of water into and out of estuaries, which can have negative effects on fragile ecosystems.

Electricity from biomass is generated by burning crops grown specifically for the purpose. All the CO2 released by burning has been captured from the atmosphere as the crop is growing, but there are emissions from agricultural activity, transport and infrastructure. Pollution is less than from traditional generation methods, and the main problem with biomass is land use — a viable, large-scale source of electricity would require a significant area of land to be taken out of food production.

Geothermal energy comes from heat below the Earth's crust. It produces no emissions during generation, and for all practical purposes it is inexhaustible. Natural sources of steam deep below the surface are tapped, or holes are drilled into "hot rocks" near the surface. Water is pumped in, and the resulting steam turns turbines. This power source is theoretically available all over the world, but the necessary heat is closer to the surface in certain areas, such as Iceland — and so more easily exploited.

Another new concept, developed in the US, is the microgrid. Homes and businesses in a local area can buy and sell electricity from each other according to demand and supply, with transactions secured by blockchain. The company that developed the microgrid, Brooklyn-based LO3 Energy, has teamed up with eMotorWerks, a company that has a network of 6,000 electrical vehicle (EV) charging stations in California. EV owners can choose when to charge their vehicles, depending on the varying supply of cheap electricity. And there is another benefit to this system. Electric cars not in use but connected to eMotorWerks' JuiceNet make a 30MW "virtual battery" that can be used as online grid storage for solar and wind power to balance demand throughout the day.

Users of the network are asked for permission for their cars to be used in this way — and rewarded by the network if they do. "EV charging adds another option to efficiently match local energy supply and demand, and such a project's results could open the door to more transactions among other microgrid participants and EV drivers," said Lawrence Orsini, CEO of LO3 Energy.

One of the major objections to increasing reliance on solar and wind power has always been what do you do when there's no sun and no wind? Maybe one answer to that objection will be to switch completely from petrol and diesel cars and motorcycles to electric. A controversial viewpoint, not least with the editor of this fine publication, but it will be interesting to see how this one pans out.

Comrades in combat: rival outdoor clothing brands are united in their fight for environmental protection

ETHICAL fashion may be a buzzword now, but some clothing brands have been riding the sustainability wave longer than others. And naturally, outdoor apparel brands are at the vanguard of sustainable style.

Dominating the outdoor clothing market, and shining as examples of good corporate citizenship, are two companies: Patagonia and Columbia. Each has an ethos rooted in a genuine love of the wilderness, and each strives to honour the landscapes that inspire them.

The Patagonia company began in 1973 with founder Yvon Chouinard's passion for rock climbing. Chouinard created his own climbing gear during the snow seasons and sold it from the back of his car the rest of the year as he roamed California in search of big walls to scale.

From those free-spirited, hands-on beginnings, Chouinard has built a multi-billion-dollar empire — one that he and current CEO Rose Marcario wield like a weapon in the fight for the planet. "At Patagonia, we appreciate that all life on Earth is under threat of extinction," reads the mission statement. "We aim to use the resources we have — our business, our investments, our voice and our imaginations — to do something about it."

Columbia Sportswear Company is a family business stemming from a similar love of the great outdoors — and hats: it was founded in Portland, Oregon, in 1938 as a millinery. The US Pacific Northwest, home of Columbia headquarters, is a region of dense forests and towering mountains, rugged coasts and wide-open spaces — a perfect playground for the family, and a testing ground for the products.

Columbia chair Gert Boyle — whose parents started the original hat-making business — is known for her "Tough Mother" persona thanks to Columbia's

Columbia became one of the leading outdoor apparel and equipment manufacturers in the World

Patagonia and Columbia may be market rivals, but...

long-running "Tested Tough" campaign. In 1970, Boyle went from housewife to executive after the sudden passing of her husband — and company president — Neal. With Gert Boyle at the helm, Columbia became one of the leading outdoor apparel and equipment manufacturers in the World. Last year, Columbia sales topped $2bn, a 13 percent increase from 2017. The Boyle family continues to carry the company torch, with son Tim serving as the company's CEO, and grandson Joe as president.

Both companies recognise that urgent action is needed — now, and at a global level. Their opposition to intentional obsolescence — a practice designed to fuel spending — drove them to create long-lasting quality apparel, and to take responsibility for the full life-cycle of their products. "It's perfect. Now make it better," is the oft-quoted mantra of Columbia matriarch Boyle, and those exacting standards of excellence and innovation still drive the company. Durability and functionality are trademarks of the Columbia brand, whose products are put through the ultimate test in the majestic and challenging landscape of America's north-western states.

The Environmental Protection Agency says more than 80 percent of textiles in the US end up in landfills — something Patagonia and Columbia are eager to prevent. The products are built to last, and the occasional rip or tear is not necessarily the end of a well-used favourite. Patagonia has a WornWear campaign that encourages consumers to repair damaged goods rather than tossing them. Don't know how to mend a sock? There's a tutorial on the website. Feeling domestically disinclined? Good news: you can drop it off at a Patagonia repair location, or catch its mobile unit of thimble-thumbed heroes at a scheduled event. Customers looking for quality clothing at bargain prices can trawl the WornWear site for second-hand treasures, and yes, trade-ins are welcome via retail locations, website, or affiliate sites WornWear and Patagonia Provisions.

Columbia, predictably, is on the same page. It launched its own ReThreads programme across its US retail network to give new life to old clothing — and contribute towards a closed-loop ecosystem of recycle and reuse. The programme partners with a textile recycling solutions provider, I:CO (I:Collect). The German-based company provides clothing retailers worldwide with collection bins for used clothing and footwear, which it then sorts and processes to resell on second-hand markets or recycle as raw materials.

ASSESSMENTS

Columbia undergoes regular assessments of its environmental management practices — as do the companies in its supply chain. Factories supplying Columbia can expect unannounced visits from corporate responsibility specialists, and any issues identified as problematic are swiftly and collaboratively dealt with.

Columbia supports its suppliers with training and capacity building programmes to ensure sustainable factory management

The Patagonia company began in 1973

Patagonia is suing Donald Trump over his plans for Bears Ears National Monument in Utah

systems, production efficiency, and safety standards.

At Patagonia, protection and preservation of the environment is no after-hours fancy; it's the impetus for operations, and the focus of each day's work. The company honours its own admirable set of governance rules, and once again, the supply chain is considered as part of the process.

Each link features high standards of transparency and accountability, fair-trade regulations, safe working conditions and decent wages.

Raw materials are responsibly sourced and processed into garments designed to last a lifetime — or even generations. Patagonia has earned its reputation as a trusted ally for alpine adventurers.

Since 1985, Patagonia has donated one percent of its annual sales to grassroots organisations around the World — a $90m boost for programmes that preserve and restore the planet.

In 2002, Chouinard partnered with Craig Mathews, founder of angling supplies company Blue Ribbon Flies, to launch "1% For The Planet". This alliance of businesses brings donors and doers together, pairing non-profit gumption with corporate philanthropy to aid the environment.

Patagonia prides itself on being an activist company, unashamedly mixing its corporate identity with politics. It has endorsed political candidates with strong environmental stances — and they've won.

Columbia encourages volunteerism among its employees

Patagonia is currently suing US President Donald Trump for his plan to scale-back the wilderness area of Bears Ears National Monument in Utah.

Trump's corporate-friendly tax cuts unlocked around $10m in unexpected profits for Patagonia — all of which it plans to donate to its environmental cause.

Patagonia has been lauded as a gold standard of responsible corporate citizenry and impactful activism. Its latest endeavour, Tin Shed Ventures, has backed environmentally responsible start-ups with $75m in capital.

Columbia's corporate citizenry is evidenced by its community outreach programmes and non-profit partnerships.

The company's HERproject empowers women working in its supply chain through educational sessions on health, financial literacy, and, of course, gender equality.

The programme has reached more than 30,000 women in its 10 years of operation. Columbia encourages volunteerism among its employees, allowing two leave days on full pay for volunteer work each year, and matching employees' community investments — at up to $1,000 annually per person.

Columbia employees logged over 3,000 hours of volunteer work in 2017, and more than $2m was invested in 500 non-profit organisations worldwide.

Patagonia and Columbia may be market rivals, but they are comrades in combat for environmental protection and social justice.

BV

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PEOPLE

Brandon Truaxe

Troubled Deciem founder passes on of unknown causes

BRANDON Truaxe, the founder of Canadian skincare company Deciem, died recently — of unknown causes — at the age of 40.

Deciem is perhaps best known for its skincare line The Ordinary, lauded by customers for offering luxury products at bargain prices — a business tactic which won admiration from competitors, and the support of celebrities who used the products.

Truaxe is understood to have been under pressure after erratic online behaviour and bizarre posts on social media, but the circumstances surrounding his death are still unclear.

According to a report in Canada's National Post, Truaxe fell from an apartment block near Toronto's downtown.

Riyadh Sweedan, a Deciem employee believed to have been Truaxe's partner, told the paper: "I don't think he jumped. I think he fell." Toronto police were called to Truaxe's neighborhood of the Distillery District after the incident, but found no evidence of foul play.

Late last year, Truaxe made an online threat to close all Deciem operations because of "major criminal activity" — including financial crime — by "almost everyone" at the company.

He tagged Deciem investor Estée Lauder Companies Inc in the post, after which the company distanced itself from Truaxe and his brand. A spokesman for Estée Lauder expressed sadness at his death, however, and praised him as a visionary and brilliant businessman.

Truaxe's death was announced to staff by acting Deciem CEO Nicola Kilner, Vox reported. "Heartbroken doesn't come close," she is quoted as saying in an in-house email. "All offices, warehouses, factories and stores please close today and take the time to cry with sadness, smile at the good times we had, reflect on what his genius built."

Truaxe was recently removed from his position at his own company, in the wake of the controversial social media posts.

Deciem was founded in Toronto in 2013.

COO blimey: who knew these people had so much on their plate? Praises sung at last!

NEW research suggests that the evolving role of Chief Operations Officers is more vital to a company's success than ever.

COOs are required to take responsibility for a host of additional disciplines and business initiatives — and research by executive search and interim management firm Norrie Johnston Recruitment (NJR) found that 87 percent agree that the role is currently undergoing change.

More than three-quarters of COOs report that their role now involves greater emphasis on driving business and digital transformation, creating new business opportunities and overseeing the allocation and prioritisation of corporate resources.

Many also feel that the role is a strategic one, requiring an involvement in talent management. COOs are also required to have a broader spectrum of skills than in past years. Leadership ability is still key, 64 percent of respondents agreed, but a range of other skills is required. The ability to manage transformational change, personal courage, strong interpersonal skills and tolerance of complexity are all flagged as vital qualities for a good COO.

DIVERSITY OF POSITIONS

The breadth of expertise required is reflected in the diversity of positions previously held by the COOs in the study. Most (73 percent) had previously undertaken Operations Director or Manager roles, and many had held senior roles in procurement and development, sales, marketing, production, strategy, and transformation.

COOs are responsible for a vast number of functions within a business. The majority of those surveyed head transformation and change, facilities, strategy, HR and IT. Many also have governance over finance, sales, marketing, R&D and supply chain/procurement, with teams reporting to them across all these areas.

NJR's research found that the role itself encompasses a range of business initiatives: continuous business improvement, optimising operational processes, and driving key transformational projects. Responsibilities often include delivering cost efficiencies, shaping the future of the organisation, and designing a framework to turn strategy into operations.

Graham Oates, Chief Executive of Norrie Johnston Recruitment, says it isn't a case of one-size-fits-all. "How the role is defined and used will depend on so many factors," he said, "the company's wider organisational structure, its priorities and challenges." Challenges which, in today's fast-paced business climate, can quickly change.

COOs are required to have a broader spectrum of skills than in past years

Changing perception of roles and duties of CIOs

BY DEVIN GHARIBIAN-SAKI

Running an IT team has never been an easy job, and the role of the modern Chief Information Officer (CIO) has become much more complex.

Now tasked with managing emerging technologies such as robotic process automation (RPA), machine learning (ML) and artificial intelligence (AI) — as well as a number of legacy products and solutions — CIOs are under a great deal of pressure to generate results.

While this has led to the CIO's role becoming more important to organisations, it has also resulted in a misalignment between the IT department and the wider business.

Today's CIOs are expected to meet — and exceed — the organisation's goals, and to face the challenge of navigating teams through a new technological landscape.

As more businesses continue to work towards digital transformation, with a view to promoting agility and remaining competitive, CIOs have a lot on their hands.

Technology has become a priority for every department across a business, not just the IT team. But it wasn't that long ago that the choice of the technology to be deployed was the sole responsibility of the CIO.

Often seen as creative innovators, CIOs were expected to keep the company one step ahead of the competition, selecting the best technologies to help them get a head-start. However, as the pace of digital evolution has sped up and CIOs have had to juggle many types of emerging technology, innovation has become less of a priority.

The introduction of new job roles such as chief digital officers (CDO) and digital transformation officers has altered the CIOs job specification, leaving them accountable for managing more "back office" IT issues. This has also resulted in a change in the way the role is perceived, especially at board level.

LINES OF REPORTING

A few years ago, the CIO would attend board meetings, with clear lines of reporting in place. Now, one-step removed, CIOs are being asked to report to the chief digital officer — or in some cases, the CFO. This evolution didn't happen instantly.

Most IT departments still function in silos, for example, relying on the involvement of several different teams to deliver a full service. This disconnect has resulted in a large portion of a CIO's day-to-day role being spent managing various groups, and ensuring that everyone involved has an equal say.

To ease some of this pressure, it's essential that those contributing to a project have a thorough understanding of the full technology offering, outside of their own product set. Without this, CIOs will struggle to justify why deadlines haven't been met, or why particular projects don't go to plan.

For CIOs to regain their status as innovators, they need to identify employees across the business that have necessary skillsets — and encourage them to help drive that innovation.

The real success factor lies in a CIO's attitude.

In modern, open-minded organisations, striving for change isn't an issue, and nor is there a lack of skills. For CIOs that do not shut down innovation, upskilling will come naturally. With technologies continuing to evolve — including RPA, AI and ML — the role of the CIO is on the rise.

The biggest challenge CIOs face is the speed at which new technologies are coming to market, and being prioritised by businesses. With each of these requiring a different level of skill to deploy and manage, maintaining a positive attitude and being open to adapting their own skills will be key for re-establishing the value of the CIO.

** Devin Gharibian-Saki is the chief solutions officer for Redwood Software*

Viewing assets as liabilities is counter-intuitive, but digital transformation changes that

Digital natives have been restlessly questing for some time and the business world would do well to heed, advises NABIL ABU EL ATA

ASSETS used to be the foundation on which competitive advantage was forged.

Smaller, more nimble companies could always execute new ideas faster, but assets afforded bigger companies time to respond. Now — as digitalisation breaks down market barriers and the value of speed increases — assets can become a liability.

Ten years ago, it would have been hard to believe that a new bank with 50 employees, and no physical branches, could unseat an incumbent with 200,000 employees and trillions of dollars in assets. Today, that threat is real. Digital native companies like Uber, Airbnb and Netflix have proven that new ideas can spread quickly, and markets can be won — without the overhead costs of traditional business models.

Previous investments hinder this goal

Bain & Company reports digital natives have generated 80 percent of the growth in market capitalisation of the top companies over the past 10 years. In response, most, if not all, incumbent companies have digital transformation programmes under way. And yet, the majority of businesses struggle to find the correct path forward. Accenture estimates that only six percent of companies that embrace new business activities "early and with confidence" are seeing higher financial performance.

The on-demand economy is all about satisfying the needs of consumers in the most cost-effective, scalable and efficient way. Previous investments into assets — including human resources, technologies and infrastructure — hinder this goal. Even when incumbents correctly anticipate the evolving needs of their customers, layering a new model on top of a legacy business almost always fails to match the speed, cost and efficiency of a new business.

Most, if not all, companies have digital transformation programmes under way

The goal of digital transformation is to imagine a model placing technology at its core

Ultimately, the goal of digital transformation isn't to digitalise an existing state, but to imagine a model placing technology at its core. Making the shift to digital puts pressure on all aspects of an existing business, which must maintain current profits while pivoting the legacy customer experience, products, services and operations.

Digital transformation requires a host of complex decisions, including which legacy business assets to replace versus adapt. With large capital investments, making the choice to dispose of assets is never easy.

While many industry analysts and consultancies offer best-practice and processes to help business leaders deliver analogue companies into the digital age, boards and executives are really looking for clear metrics that prove the proposed changes will support the evolving needs of their consumers — in the most cost-effective, scalable and efficient way.

Proving the case for digital transformation requires new predictive and prescriptive analytic capabilities that can be used with confidence to build board-level consensus. Many analytic tools provide sometimes confusing and conflicting data. To deliver meaningful and trusted intelligence, these tools must be simplified and / or expanded to cover a wider domain of intelligence.

As companies are transforming, the underlying technology enablers are transforming too. Industries and their metrics allow a glimpse of the future of business analytics. Consider, as an example, the use of the kilowatt-hour (kWh) as a measurement of energy efficiency.

A kilowatt equals 1,000 watts of power. Wattage indicates how much power a device can provide over a relative amount of time. Therefore, a 1,000 watt (1 kW) microwave will heat a meal much faster than a 600-watt model. Because of this relationship between capacity and time, the term kilowatt-hours (kWh) is used to describe energy use. If the 1 kW microwave is used for an hour, it will use one kilowatt-hour (1 kWh) of energy. This then allows us to measure the use of energy over a period of time and compare the efficiency of one appliance over another.

This same concept can be applied to measure the efficiency of a business if we are able to establish a standard number of business events over a relative amount of time for any business activity. Having this metric would allow businesses to easily compare the cost-to-efficiency ratio of their current assets against a competitor's, or evaluate the gains achieved by moving to a new model. It would also open the path to purchasing units of productivity from third-party providers in much the same way as energy is purchased from a utility company.

This metric, being referred to as TAO.T, is currently under development and could radically change how businesses continually innovate and move with speed and confidence to meet the demands of the Fourth Industrial Revolution.

Knowing that a new model will match the business's cost, scale and efficiency requirements is just half the battle. Transformation risks must also be managed. Here, too, technologies are advancing

Emulation can capture all the dynamic interdependencies of highly complex business systems

in ways that allow business stakeholders to better anticipate and manage those risks. These new technologies aggregate intelligence across organisational boundaries, and are capable of revealing new patterns of interconnected risks which may result from any internal or external source — including risks associated with hyper-connectivity and disruptive innovations.

Tracking known patterns of behaviours will always be important, but to prevail in the Fourth Industrial Revolution, businesses must expand beyond the limits of statistical models and human intelligence to better understand the complex behaviour of business systems, and discover all circumstances that may cause a breakdown, or unwanted outcomes.

Armed with the knowledge of what will break a system, business leaders are free to achieve a wider and more profound objective that releases their business from the confines of historical patterns.

By pairing the human perception and decision-making capabilities of artificial intelligence with emulative technologies — like those used in physics and chemistry to predict unknowns — businesses can create a systemic and iterative collection of knowledge, which will provide the rational and unbiased mechanisms that allow established businesses to untether themselves from their legacy assets and redefine themselves in a way that harnesses the opportunities of the digital age.

Take, for example, a bank that wants to increase its transaction-processing capability, and is considering a move to blockchain to fulfil that requirement. Early blockchain test-pilots show promise, but the company is uncertain how to move from experimentation to transformation. Since blockchain is a new technology, past experience and statistical models provide little to no guidance on whether a system can meet the future demands of its users. Nor can it reveal how to manage the transition, or what unforeseen risks lie ahead.

Emulation provides the answers executives are looking for by allowing stakeholders to test transformation plans and uncover risks that may occur under certain conditions — even if there is no historical record of these events happening. The benefit is that emulation can capture all the dynamic interdependencies of highly complex business systems and cover a business ecosystem as wide as it spreads to reliably predict system behaviours, and expose the risks that other solutions miss.

Once business leaders can realistically quantify the financial and operational impact of any proposed changes and make plans to manage the associated risks, they are correctly positioned to adopt new business models and make the right moves at the right time to maintain or advance their market position.

* Nabil Abu el Ata is the author of *Solving The Dynamic Complexity Dilemma*, *The Tyranny Of Uncertainty* and *Leading From Under The Sword Of Damocles*. Over the past two decades, he has worked with global leaders in financial, telecommunications, retail, entertainment, services and government to mature the science of risk-management.


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Private messaging and interactive content key to employee experience

Workplace communications report stresses need for correct tools

IN TODAY'S highly competitive marketplace, a company's success is directly linked to the quality of its employee experience.

Delivering an exceptional employee experience is often confounded by outdated, inefficient communications tools and processes, device/digital overload and email clutter. But when frontline employees share more personalised, interactive content, it can lead to more information sharing, increased product/promotion knowledge – and a better employee experience.

This is supported by the *Q4 2018 State Of Frontline Employee Communications* report released by Speakap, a platform that enables organisations to engage with their front-line employees. It found that private messages, comments and photos/videos are among the types of HR content that resonate best.

When a company has chosen to implement an employee communications tool, the available features are important. Private messaging, for example, is a critical feature of enterprise social networks because employees are more comfortable sharing some things in private. It also allows for more open and focused discussions for teams, colleagues and managers.

The platform usage data from Speakap supports this, with Private Messages (63 percent) ranking as the most common type of content shared in the fourth quarter of 2018.

Key highlights from the

Personalised content can lead to more information sharing and a better employee experience

The most relevant messages are delivered to the right employees at the right times

report show that news, updates and events are most popular on Mondays, Thursdays and Fridays.

Mondays had the highest rate of news being posted (24 percent), followed closely by Thursdays and Fridays (both 18 percent). Mondays ranked highest when it came to the frequency of certain types of enterprise social posts, such as private messages (19 percent) and updates (18 percent).

Late evenings are the least effective times for posting events and news. Events (eight percent) and news (seven percent) were posted less often from 6 pm to 12 am.

News gets employees' attention. On average, 127 news items were posted daily (combined across all users) during the fourth quarter of 2018, and 43 percent of the items posted daily were read between 12 pm and 6 pm.

The addiction to enterprise social "likes" is more real than ever. In the fourth quarter of 2018, updates garnered 77 percent of the total likes on the enterprise social network, while comments only accounted for 14 percent of the total.

Having the ability to group-message is valuable

According to Speakap's Patrick van der Mijl, "If messages are too vague or are not filtered to target and reach the most relevant users, it can lead to clutter, confusion, less productivity and even poor results/performance."

This is where having the ability to group-message is valuable. "You can ensure there is far less spamming of irrelevant messages," says Van der Mijl.

"The most relevant messages are delivered to the right employees at the right times. Most C-level executives, HR departments and internal communications or employee engagement teams care about addressing certain challenges, such as reducing email clutter, granting access to management and listening to the needs and feedback of employees.

"By understanding their employees' communications behaviours, organisations can effectively build and adjust their employee engagement and experience programs to better serve the needs of their workforce," believes Speakap's Van der Mijl.

The report is an in-depth quarterly review of frontline employee communications and engagement trends, including types of updates shared, "like" patterns and popular days and times for differing types of employee communications.

Money worries? You're not alone — and UK businesses are starting to take notice

The vast majority of UK employees — 94 percent — are suffering from money worries. So that probably comes as no surprise to you...

OF THE 94 percent of workers worrying about money, more than three quarters say those worries impact them in the workplace.

And where else? That's where the money worries come from — at least in part. But this means that around 25 million are dwelling on money worries at work — 40 percent of them, according to the study, indulging in morbid money worries "always or often".

The inaugural Financial Wellbeing Index, from Close Brothers, assesses the financial wellbeing of UK employees across seven key areas of financial health. More than 5,000 employees and 1,000 employers were canvassed. The results reveal an average "score" for UK employees of around 54 out of 100 — highlighting a need for action.

Those "seven key areas" include budgeting and planning, debt, protection, savings and investments, retirement planning, properties and mortgages, and tax. The lowest scoring areas, which dragged down the overall index score, are protection, budgeting and planning, and (surprise!) tax. Of particular concern is that more than a third of respondents felt unprepared for unexpected financial costs, or a sudden loss of income. A major fear was coping in the case of job-loss, but fewer than one in ten employees has purchased an income protection product.

When considering that a big part of financial wellbeing is being confident in achieving financial goals, over half of employees reported having no sort of financial plan, and three quarters had no idea what tax allowances

More than a third of respondents felt unprepared for unexpected financial costs

Money worries were one of the single biggest causes of stress, impacting mental and physical health

and reliefs were available to them. Those that have some awareness of allowances don't know how to take full advantage of them.

Employees' second-biggest money worry is paying-off debt, but more than 40 percent say that debt is not an issue — and 59 percent are confident in knowing where to get help or advice on debt issues. But for one in eight employees, debt is a significant issue.

Looking at specific groups within the workplace, almost 90 percent of millennials, and 72 percent of those aged 35-54, admit that money worries affect them while they're at work. Those aged 55 and over are the demographic that suffer least — but still, almost half of this cohort admits to some concern.

Employers understand that their businesses are suffering as a consequence, with 90 percent of larger UK businesses impacted by poor employee financial wellbeing. That equates to 2.4 million UK businesses feeling the strain from reduced productivity, loss of talent, higher absences, a reduction in retirees and higher healthcare costs.

Steps are being taken to tackle the issue, with 45 percent of employers providing some workplace strategies. In addition to rewards and pensions, the top five benefits that employees are offered are discount vouchers, financial advice, retirement seminars, employee assistance programmes, and workplace loans.

Jeanette Makings, head of financial education at Close Brothers, said money worries were one of the single biggest causes of stress, impacting mental and physical health. "They are also an issue for businesses, with lower productivity, higher absenteeism and higher staff costs — which hurts business performance," she said. "Doing nothing is no longer an option."

Employers are well placed to play a role in the solution, she says. "Their rewards and benefits help fund employees' lifestyles. Employers can procure benefits and financial education, advice and investment solutions, to help their employees improve their financial wellbeing.

"Yet despite the growing awareness … organisations seem to be struggling to find clarity, transparency, and meaningful measurement on this issue."

Workplace wellbeing expert Sir Cary Cooper, of the University of Manchester, said wages had not kept up with inflation, the cost-of-living increases or the elimination of the final salary pensions. "More people are worrying about their finances," he said. "Although many businesses have made great strides to look after the mental wellbeing of their employees over the last decade, not as many have supported their financial wellbeing." He describes money worries as "a bottom-line issue".

Providing advice and support could deliver enhanced performance at work by taking away a distraction, he believes. "Many working people want financial, as well as mental, peace-of-mind."

Payments firm commits to support Chinese businesses

INTERNATIONAL payments company WorldFirst recently announced the launch of its new localised brand name in China: 万里汇WorldFirst.

The name translates into English as "Transfers, even miles away" and was decided upon after several rounds of testing with customers and staff in China. WorldFirst hopes the new name will help to make it the first choice for Chinese businesses trading around the world.

This is part of a wider strategy in China, and follows the recent launch of the World Account — a multi-currency platform that enables businesses to manage finances across multiple currencies, and send and receive cross-border transfers at

competitive exchange rates.

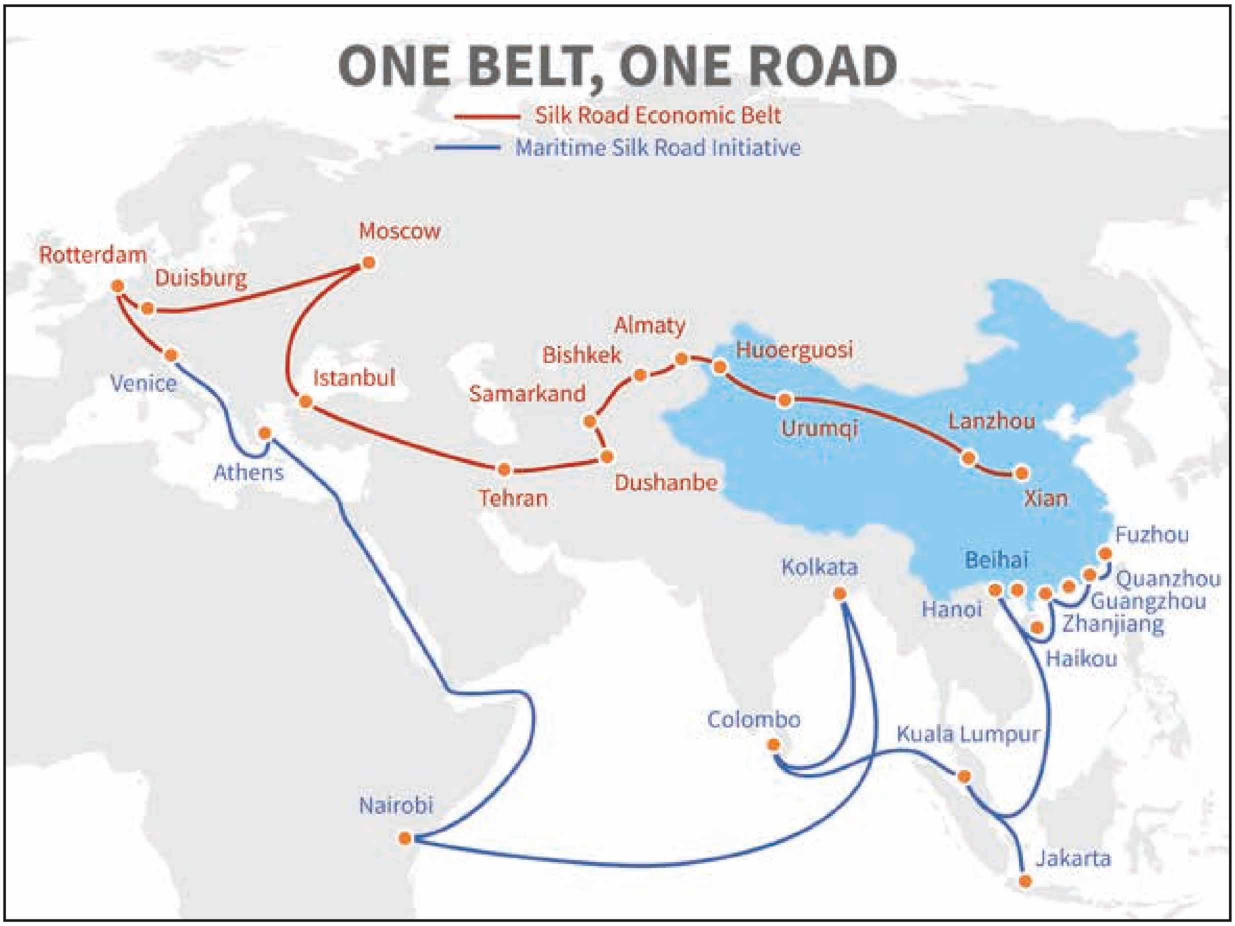
WorldFirst has been working with businesses in China since 2008, and transferred more than $4.5bn back into China in 2017.

To support the future growth of China's small business population and the Chinese government's Belt and Road Initiative, the company says it will continue to invest in China. WorldFirst expects to add around 40 new hires to its 40-person team in China. It also plans to open new offices in Shanghai, Zhengzhou and Jinan.

Jeff Parker, managing director APAC at WorldFirst, said the launch of the 万里汇WorldFirst name was an important milestone. "Our mission now is to go further to help not just businesses in China, but businesses around the world who want to do business with China.

"This is a really exciting time for us and we're proud to be playing a key part in supporting growing trade between East and West."

According to figures from the Chinese E-commerce Research Centre, more than 43 million small businesses and sole traders in China are now able to access international markets.



The company says it will support the Chinese government's Belt And Road Initiative

BV

Shahzad Younas

10

PEOPLE

SHAHZAD Younas is the founder and CEO of Muslim dating website and app Muzmatch.

The British entrepreneur opened his address to a group of potential investors in San Francisco with the (since much-repeated) words: “Muslims don’t date, we marry.”

Matchmaking and arranged marriages are common in the Muslim community, often co-ordinated by parents who make it their business to find a suitable partner for their adult children. Muzmatch does pretty much the same thing, using digital technology and data to hone the hunting process.

Younas and his business partner Ryan Brodie entered a global competition to win backing from Silicon Valley investment firm Y Combinator — along with 13,000 others – and made the cut of the final 800 to pitch in person.

The good news continued for Younas and Brodie, who took Muzmatch into the final round to be granted $1.5m (£1.2m). That was back in 2017; since then, Muzmatch boasts more than a million registered users around the World.

Shahzad Younas started his working life at a bank, but wanted more from a career. In a lucky/unlucky development, he was made redundant in 2013, and decided to press on to find a career of his own. He quickly found a niche to exploit: a dating app aimed at the Muslim community. The Mancunian told the BBC that other dating sites and apps “didn’t quite get our culture”.

Brodie helped Younas fine-tune his app, and — as so often with home-brewed start-ups — success came not from coincidence, but from perseverance and hard work.

“It was intense,” Younas recalls. With 1.8 billion Muslims around the world, the market was at least ready-made.

The success of Muzmatch was recently celebrated on the BBC’s *The Boss* programme.

Gene genie? CRISPR puts kick and controversy into research for a new world

What is it? And why is the scientific community so fascinated by its potential applications? Read on…

IMAGINE a future where parents can create bespoke babies, selecting the height and eye colour of their unborn children, or customise the size of their pets or the longevity of their plants.

But that's not all in the future; some of it is already happening. CRISPR may revolutionise how we tackle some of the world's biggest problems, like cancer, food shortages, and organ transplant needs. Recent reports even examine its use as a disease diagnostics tool. But, as with any new technology, there may be unforeseen problems.

The CRISPR acronym stands for Clustered Regularly Interspaced Short Palindromic Repeats.

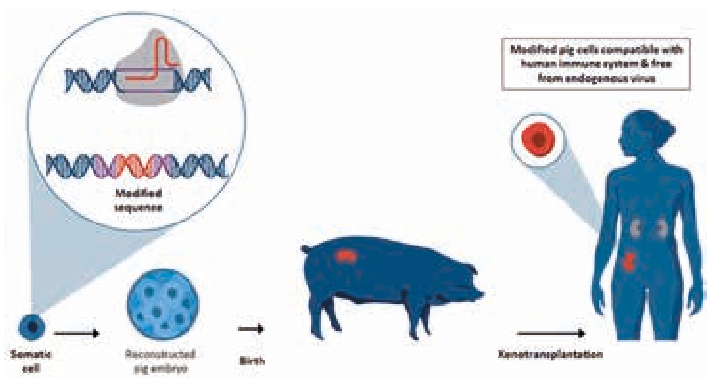
CRISPR is a defining feature of the bacterial genetic code and its immune system, functioning as a defence system that bacteria use to protect themselves against attacks from viruses. It's also used by organisms in the archaea kingdom (single-celled micro-organisms).

It is like a Swiss army knife, with many functions

Essentially, CRISPR is a series of short repeating DNA sequences with "spacers" sitting in between them. When a virus invades a bacterium, its unique DNA is integrated into a CRISPR sequence in the bacterial genome. This means that the next time the virus attacks, the bacteriaum will remember it and send RNA and enzymes (Cas) to locate and destroy the virus.

Cas9 is the most efficient enzyme for doing this in animals. The widely-known term CRISPR-Cas9 refers to a Cas variety being used to cut animal (and human) DNA.

In harnessing this technology, researchers have added a new step: a new DNA sequence carrying a "fixed" version of a gene can nestle into the new space. Alternatively, the cut can altogether knock out an unwanted gene.



CRISPR may revolutionise organ transplants

CRISPR-Cas9 is like Find & Replace function in Word: it finds the genetic data you want to correct and replaces it with new material. Or, as CRISPR pioneer Jennifer Doudna puts it in her book *A Crack In Creation: Gene Editing And The Unthinkable Power To Control Evolution*, CRISPR is like a Swiss army knife, with many different functions.

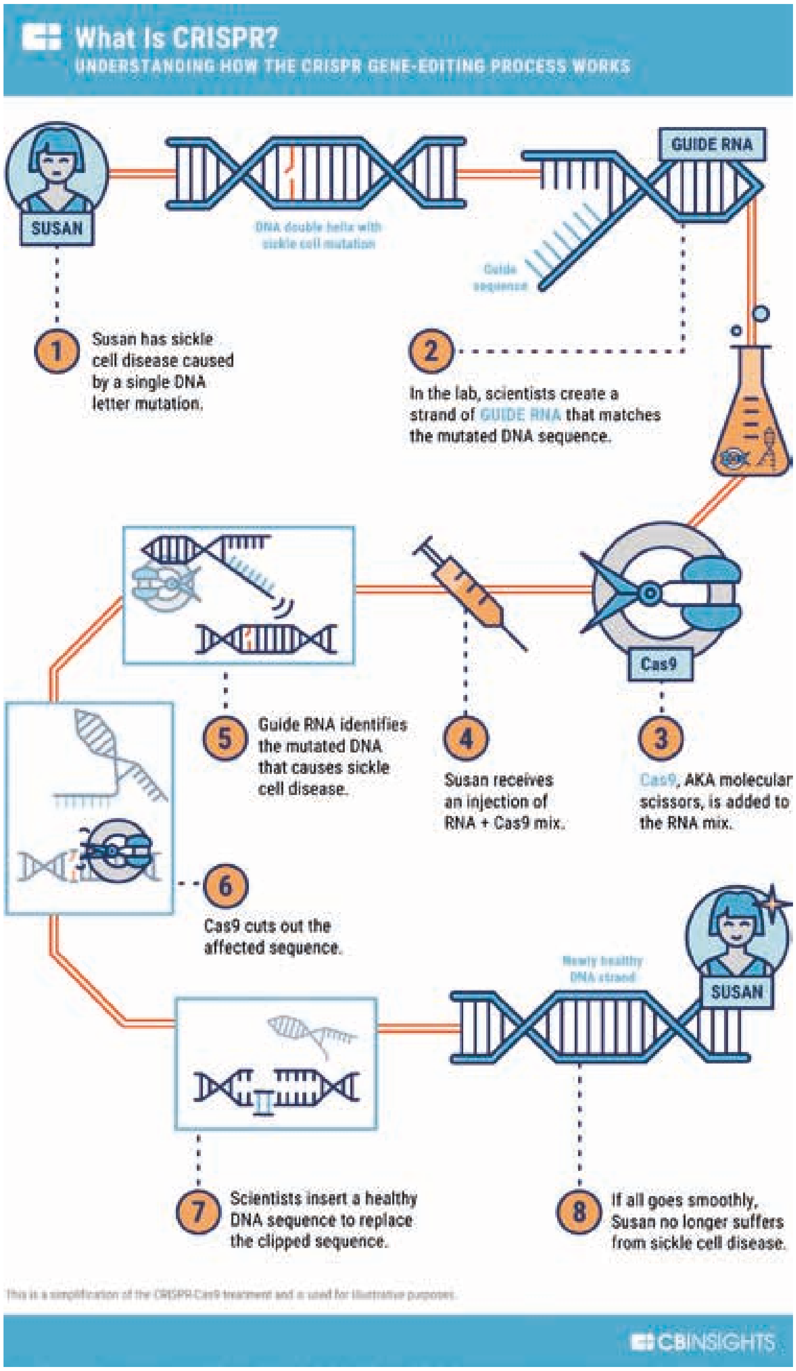
In 2017, the Salk Institute designed a "handicapped" version of the CRISPR-Cas9 system, capable of turning a targeted gene on or off without editing the genome at all. Going forward, this kind of process could ease the concerns surrounding the permanent nature of gene editing.

HOW IT WORKS

These are the three key players that help the CRISPR-Cas9 tech do its work:

1. Guide RNA: a piece of RNA that locates the targeted gene. This is engineered in a lab.
2. CRISPR-associated protein 9 (Cas9): the "scissors" that snip the undesired DNA out
3. DNA: the desired piece of DNA that is inserted after the break

Guide RNA (a genetic cousin of DNA) serves as the "GPS co-ordinates" for finding the piece of DNA you want to edit and zeroes in on the target. Once located, Cas9 (the "scissors") makes a double-stranded break in the DNA, and the DNA you want to insert takes its place.



The implications for this are vast. It could also transform everything from the food we eat to the chemicals we use as fuel.

The CRISPR sequence was first discovered in 1987. CRISPR's function and potential would not be discovered until 2012. Key people involved in the initial discovery of the bacterial CRISPR-Cas9 system's function include Jennifer Doudna, PhD at University of California, Berkeley, and French scientist Emmanuelle Charpentier, PhD. Another important figure is Feng Zhang, PhD, who was instrumental in figuring out CRISPR's therapeutic applications.

These four researchers went on to play crucial roles in setting up some of the most well-funded CRISPR therapeutic start-ups, including Editas Medicine, CRISPR Therapeutics, and Intellia Therapeutics. All three went public in 2016 and are in the drug discovery/pre-clinical stage of testing.

CRISPR has certainly stolen the spotlight as of late, due to its efficiency, flexibility, and low price-tag. Every industry can harness CRISPR as a tool: it can create new drug therapies for human diseases, help farmers grow pathogen-resistant crops, create new species of plants and animals — and maybe even bring back old ones.

Since the initial discovery of CRISPR as a gene-editing mechanism, the list of applications has grown. Though still in early stages, "animal models" (lab animals) have provided key insights. As mammals sharing more than 90 percent of our own genes, mice have proved ideal test subjects.

Experiments on mice have shown that CRISPR can disable a defective gene associated with Duchenne muscular dystrophy (DMD), inhibit the formation of deadly proteins involved in Huntington's disease, and eliminate HIV infection.

Other CRISPR animal trials have ranged from genetically engineering long-haired goats for higher production of cashmere to breeding hornless cows to avoid the painful process of shearing horns off.

Compared to research involving animals, CRISPR trials that edit human DNA have moved more slowly, largely due to ethical and regulatory issues.

Given the permanent nature of altering a human's genome, the FDA is approaching CRISPR cautiously. Some scientists have even proposed a moratorium on CRISPR trials until we have more information on the potential impact on humans.

In October, the FDA lifted the clinical hold and accepted CRISPR Therapeutics' Investigational New Drug Application for the treatment of sickle cell disease. Around the same time, researchers at the University of Pennsylvania began a study evaluating the safety of using CRISPR for patients with multiple myeloma, melanoma, and sarcoma.

In Europe, another CRISPR Therapeutics study has focused on a blood disorder known as beta-thalassemia, which results in abnormal red blood cell production. Alongside Boston-based Vertex Pharmaceuticals, CRISPR Therapeutics officially commenced the first clinical trial of its beta-thalassemia therapy in September 2018.

In August 2017, a team lead by reproductive biologist Shoukhrat Mitalipov, of Oregon Health and Science University, received private funding to use CRISPR-Cas9 to target a mutation in viable human embryos that causes the thickening of heart muscles. The altered embryos came back 72 percent mutation-free.

Some critics say the gene editing of embryos is unethical, even if the edited embryos are not destined for transfer and implantation. This type of testing currently does not receive federal funding, but instead relies on private donor funding.

In Asia, Chinese researchers operate under a different regulatory framework. Some hospital ethics committees can approve studies in as little as one day, with no need to seek approval from a federal agency. China's medical regulatory environment is also unique in that state guidelines concerning clinical trials carry the same weight — and legal penalties — as official laws.

Since 2015, China has been conducting human trials using CRISPR to combat various cancers, HIV, and HPV. So far, results are anecdotal. In November 2018, reports surfaced that He Jiankui, a Chinese scientist, had created the world's first CRISPR-edited human babies, twins dubbed Lulu and Nana. He allegedly edited the twin embryos during an IVF treatment, modifying the CCR5 gene to enhance resistance to HIV.

> **Gene editing can make farming more efficient**

While He did not provide physical proof of his work, he presented data at the Second International Summit on Human Genome Editing in Hong Kong that appeared to support his claims.

HIGH-IMPACT INDUSTRIES

Potential high-impact industries for CRISPR include medicine, food, agriculture, and the industrial biotech space. Because the CRISPR-Cas9 gene-editing system is so easy to make and use, researchers from a range of scientific disciplines can access it to genetically engineer the organism of their choice.

The future of medicine will be written with CRISPR. The current drug discovery process is long, given the need to ensure patient safety and gain a thorough understanding of unintended effects. CRISPR can bring customised therapies to market quickly, speeding up the process.

Climate change will increase the need to use CRISPR to protect the food and agriculture industries against new bacteria. For example, cacao is becoming difficult to farm as growing regions get hotter and drier. This environmental change will further exacerbate the damage done by pathogens.

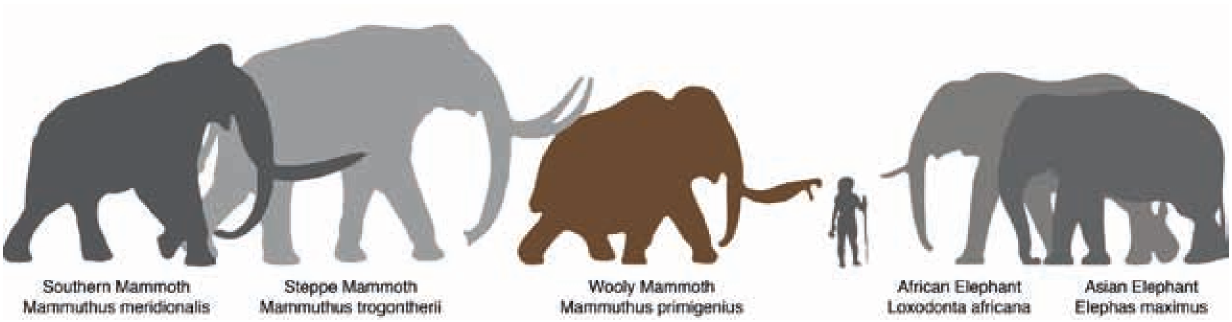
Gene editing can make farming more efficient. It can curb global food shortages for staple crops like potatoes and tomatoes. And it can create resilient crops, impervious to droughts and other environmental impacts.

Regulators have shown little resistance to gene-edited crops, and the United States Department of Agriculture (USDA) in particular is not regulating the space. This is largely because when CRISPR is applied to crops, there's no foreign DNA being added: CRISPR is simply used to edit a crop's own genetics to select for desirable traits.

This will impact the food we eat, as food items are edited to carry more nutrients or to last longer on grocery shelves. Another area currently generating buzz is the production of leaner livestock. In 2017, scientists at the Chinese Academy of Sciences in Beijing used CRISPR to genetically engineer pig meat that had 24 percent less body fat.

Another key use of CRISPR lies is in the industrial biotech space. By re-engineering microbes using CRISPR, researcher can create new materials.

From an industrial standpoint, this is big news for modifying and creating new chemical products. We can alter microbes to increase diversity, create new bio-based materials, and make more efficient biofuels. From active chemicals in fragrances to those involved in industrial cleaning, CRISPR could have a great impact by creating more efficient



De-extinction is the effort to bring back ancient animals, such as the woolly mammoth

If we know where a certain gene is located, CRISPR allows us to manipulate it

biological materials.

CRISPR's list of potential benefits is long, but the technology also brings with it some limitations.

Possible unintended effects and all the unknown variables are some of the drawbacks to this new technology, while new ethical questions and controversies are also emerging as human trials near.

When using CRISPR for human therapies, safety is the biggest issue. As with any new form of technology, researchers are unsure of the entire range of CRISPR's effects.

Off-target activity is the main concern here. A single gene edit could cause unintended activity somewhere else in the genome. A possible consequence of this is abnormal growth of tissues, leading to cancer. As more research uncovers new details, this could result in more refined, precise gene targeting.

Another issue is the possibility of mosaic generation. After a CRISPR treatment, a patient could have a mix of both edited and unedited cells — a "mosaic." As cells continue to divide and replicate, some cells may get repaired, while others won't.

Finally, these therapies may trigger an undesired response from a patient's immune system. Early research shows the immune system may dispose of Cas enzymes before they achieve their purpose, or may have an adverse reaction. All these limitations have possible solutions.

If we know where a certain gene is located, CRISPR allows us to manipulate it. Pet owners could design the dog they want with a specific colour and size. Parents could hypothetically tinker with a gene that controls height or eye colour to design their children. If we can isolate the genes associated with intelligence, that too could be manipulated.

DESIGNER BABIES

While the future could tell a different story, for now, the much-discussed topic of "designer babies" carries with it serious ethical implications and scientific uncertainties, as much of the research surrounding prospective commercial gene therapies made possible by CRISPR are still highly experimental.

If we could bring back extinct creatures, should we? De-extinction is the effort to bring back ancient animals, such as the woolly mammoth. Such initiatives are already being pursued by different scientific groups and organisations.

Using CRISPR for "germline modifications" is making the scientific community nervous.

Somatic modifications are done on body cells such as skin, brain, muscle, and heart cells, and the modifications do not get passed on to future generations. Germline modifications, on the other hand, are done in genes carried in reproductive egg or sperm cells — and thus will be inherited by future generations.

Working with germline cells raises the question: can we ethically choose the genetic changes we want for future unborn generations?

Despite the controversy surrounding the issue, the benefit of altering germline cells is that a disease can be contained or prevented from expressing itself. Through a germline CRISPR gene edit, an adult could hypothetically never suffer from cancer, even if he or she has a genetic predisposition to it.

While some ideas presented above may seem far-fetched, that could soon change. CRISPR isn't an expensive, inaccessible form of technology. It's available and in use now. From farmers to researchers, CRISPR seems sure to make its impact on our world.

** The full version of this story can be found at www.cbinsights.com*

See you at The Coalface: Finsbury Park co-working plans ‘coffee shop alternative’

FINSBURY Park’s first co-working space, The Coalface, is preparing to open its doors to entrepreneurs, SMEs and start-ups looking for a conveniently situated and cost-effective alternative to the expensive spaces on offer in central London.

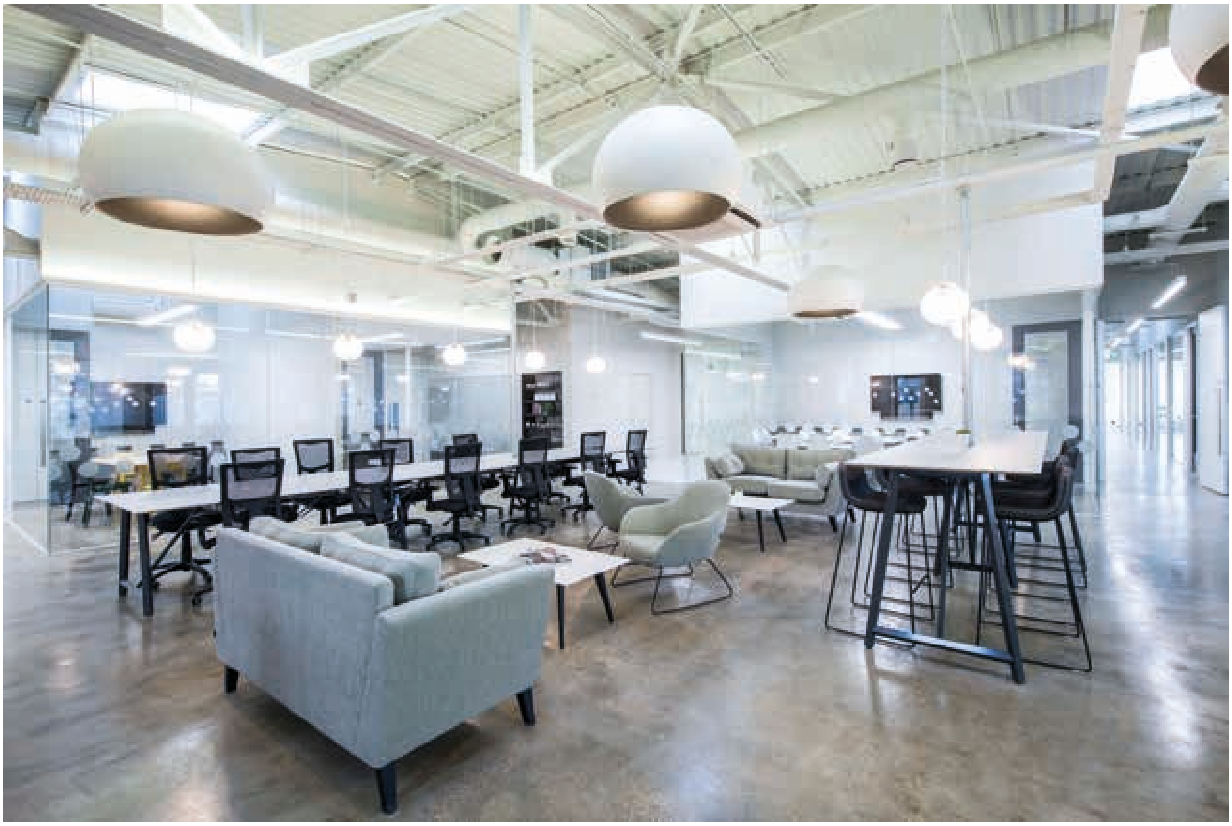
The Coalface is an architecturally refurbished work space set over one floor of Clifton House in Wells Terrace, Finsbury Park — ideally located for transport links in and out of London and into the City. The Coalface name honours the industrial heritage of the location; Finsbury Park was an important hub for the coal industry, and Wells Terrace housed a coal depot in the 1800s.

Private offices with three to 20 desks

In contrast to many co-working facilities, where economically affordable desks are in shared, open-plan spaces, The Coalface offers predominately private offices that are genuinely affordable. Without compromising on quality, amenities or space, entrepreneurs, SMEs and start-ups can secure a private office from £267 + VAT per desk, per month.

The Coalface provides private offices with three to 20 desks. The space is designed to be flexible and accommodating to tenants’ changing needs; each office can be made larger or smaller as businesses expand or downsize. The Coalface also provides tenants with private meeting rooms, break-out areas and outside space for work or relaxation. Drop-in desks are available from £150 per month.

“Co-working spaces were designed to offer an affordable and flexible alternative to traditional long-term office lets,” said Jonathan Hausmann, COO of The Coalface. “However, most



‘The site offers an alternative for freelance workers who are fed up with working out of a coffee shop’

The Coalface is an architecturally refurbished work space in Wells Terrace, Finsbury Park

of the facilities on offer are based centrally, and prices reflect this.

"For many entrepreneurs and creative start-ups, being based in Central London is no longer critical to their business, and there is a clear market for a more affordable space outside of the City. Finsbury Park is close to the creative hubs of Hackney and Shoreditch, and is ideal for people who need to travel in and out of the city centre for meetings; its transport links mean you can be there in less than 10 minutes."

The site offers an alternative for freelance workers who are fed up with working out of a coffee shop, he said. "It's also great for people travelling into London from commuter routes that come into Finsbury Park station — such as Cambridgeshire and Hertfordshire. People now don't need to continue their journeys into central London, and pay a premium for the privilege of working there."

The Coalface has been developed by London property investment and development company, Dorrington plc.

For more information:
www.thecoalfacehub.co.uk

The interior of Finsbury Park's first co-working space

Ocasio-Cortez steps on toes, takes aim at sacred cows in the name of social justice

BY HEATHER LEAH SMITH

CALL her a radical. Alexandria Ocasio-Cortez doesn't mind the moniker.

"I think that it only has ever been radicals that have changed this country," she said in a recent 60 Minutes interview. But the Bronx native prefers to think of herself as a consensus builder, rather than an agitator.

Ocasio-Cortez comes to the House of Representatives armed with the gumption to act now — and that passion has caused some to brand her a flamethrower. And the audacious Green New Deal resolution she's pushing in Congress has the potential to transform the country on a scale not seen since Abraham Lincoln signed the Emancipation Proclamation, or Franklin D Roosevelt established Social Security.

'Hostage crisis happening in the Republican Party'

National leadership seldom accurately reflects the views of the majority or its elected representatives, and this is particularly true with regard to the US government's approach to climate change.

President Donald Trump took to the campaign trail denouncing climate change as a Chinese hoax, and his administration has done little to combat it. Instead, there has been a loosening of restrictions on greenhouse gas emissions, a backtracking on environmental protection laws, and a reduction of the penalties for infractions.

While the White House maintains a head-in-the-sand position on climate change, the Republican party is warming up to the idea, and islands of support are emerging in the House

The audacious Green New Deal resolution has the potential to transform the country

'I think that it only has ever been radicals that have changed this country'

and Senate. Many Republicans understand that climate change is a real problem increasingly affecting their constituents — but most continue to toe the party line, explicitly or implicitly endorsing the Executive Office stance.

Ocasio-Cortez believes there's a "hostage crisis" happening in the Republican Party. "There are a lot of Republicans that know what the right thing to do is," she said, "and they refuse to speak up."

They're afraid of committing political suicide, she says — but to her, that's not unacceptable, "because we're not in the realm of politics anymore". "These are not questions of politics," she says, "these are questions of society."

Climate change isn't the only issue Ocasio-Cortez and co-author Senator Ed Markey tackle in the Green New Deal resolution. They outline ideals to guide the US through the next chapter of its history, driven by social entrepreneurism and solidarity.

The impacts of human-induced climate change are becoming more evident, and the poorest sections of the population are the ones bearing the brunt. That doesn't sit right with Ocasio-Cortez. "What we have to do is redefine what the climate movement is about, and we have to redefine it in the scope of environmental justice," she said in an interview with Rolling Stone magazine.

"For so long, people have thought of climate-change legislation as saving polar bears, but they don't think of the (water) pipes in Flint. They don't think of the air in the Bronx. They don't think of coal miners getting cancer in West Virginia."

For Ocasio-Cortez, this is an issue of equality and civil rights.

"When we talk about defining the scope, we have to talk about climate as a social-justice issue, as an economic justice issue, and as an environmental issue. We really want to lay some stakes in the ground that say, 'If your legislation is not dealing with jobs, if it's not dealing with infrastructure, if it's not dealing with bringing justice to frontline communities, then it's not a Green New Deal.' And we have a majority in the House, so why not swing for the fences?"

Frustrated with half measures and partial solutions, the youngest woman ever elected to Congress has drafted a resolution that aims to jolt the US — a recognised and influential world superpower — onto a path of social justice, environmental sustainability, and economic empowerment.

Unlike FDR, Ocasio-Cortez doesn't have the House majority to back her bold play, so she's taken to the streets — and social media — to ensure her message resonates with the American people. And it's resonating particularly well amongst millennials.

Millennials have heard the siren song of Ocasio-Cortez and her Green New Deal, and they feel that they finally have a representative in the legislative branch who understands the crisis, one who is willing to fight for what's right.

"Many Americans are really worried about the economic

Ocasio-Cortez has taken to the streets to ensure her message resonates with the people

state of this country, where people working full-time jobs cannot support their families. It's astounding to me that this is not seen as a national crisis," she says.

More than 200 million Americans earn less than $20,000 a year — 40 percent of the population. Raising the minimum wage to $15 an hour would enliven economic activity, according to Ocasio-Cortez, who cites Seattle as a case in point.

"I want to be able to tell my grandchildren that we established a single-payer [health-care] system, tuition-free universities, and that we saved our climate for their future, because we decided to be courageous in the moment and make it happen."

She believes the issue comes down to who is financing the political campaigns of elected officials. In the current system, whoever holds the purse strings makes the policy.

"What we are seeing now is a ruling class of corporations, and a very small elite that have captured government," she said. She insists that big donor campaign contributions undermine the democratic process, converting elected officials into the puppets of special interest groups. "They don't cast a vote unless their sugar daddies tell 'em what to do," she said. Ocasio-Cortez was referring to Republican representatives beholden to their campaign donors, but she warns that party loyalty won't prevent her from speaking out against campaign corruption wherever she sees it. "There are certain issues where I'm going to make some Democrats mad if they're trying to deliver paydays for Wall Street donors. But that doesn't mean I'm going to burn the house down over it.

'Fighting for the American consensus'

"I believe that I'm fighting for the American consensus," she says, and statistics bear her out: 70 percent of Americans believe in universal healthcare, 90 percent want to get "the money" out of politics, and 67 percent think immigrants contribute to the country's economy and culture. More than 80 percent believe that "climate change is a real, systemic and urgent problem".

Critics of the New Green Deal are eager to paint Ocasio-Cortez as a radical, intent on outlawing American icons such as muscle cars, milkshakes, and cheeseburgers. "How can we afford to do this?" the sceptics wail — but the real question for Ocasio-Cortez is: how can we afford not to?

US government agencies have released findings showing the cost of climate change — now, not in the distant future. Reports directly attributed 247 deaths, and $91 bn in damages, to climate change impacts in 2018. By the end of the century, costs associated with climate change in the US could reach more than $500 bn.

The Green New Deal outlines a plan that promises to tackle the country's shortcomings in social equality and environmental foresight to create economic opportunity for American workers and communities — the true drivers of economic growth.

"We have never gotten out of desperate situations in this country with a scarcity mindset," Ocasio-Cortez said. "We have never 'austeritied' our way to prosperity, ever. It's never happened. The only way we got out of the Great Depression is through a massive injection of public investment, and a massive expansion in public ambition, and the idea of what is possible in America.

"We're not going to get out of this through incrementalism. We need Moon-shots."

Analytics key to Africa getting its fair share of services trade

UNCTAD-UN project's experts pool wisdom to grow regional economies and increase benefit from value chains

AFRICA needs to step-up its analytics game to play a more active role in global and regional value chains.

This was the consensus among African countries participating in a joint UNCTAD-United Nations Economic Commission for Africa (UNECA) project on services trade.

The project is helping African experts to measure the contribution of services to regional value chains, and to explore the role of domestic and foreign firms. In partnership with Ethiopia, The Gambia, Kenya, Mali, Nigeria and Togo, UNCTAD-UNECA recently delivered a three-day "train-the-trainers" seminar in Addis Ababa, Ethiopia.

The focus was on how to unlock potential in three services sectors — transport, financial services, and tourism — in those countries, and help African countries acquire the necessary skillset to measure and monitor services trade value chains.

UNITED NATIONS
UNCTAD

Paul Akiwumi, UNCTAD's division head for Africa (Least Developed Countries and Special Programmes), said services offered African countries "an important opportunity to diversify production away from traditional sectors and engage in activities with higher value added".

"Some services — transport, financial, and information and communication services — are key contributors to trade and improve the ease of doing business across borders."

Services trade could support the aspirations of the African Continental Free Trade Area (AfCFTA) agreed by African leaders in 2018. The AfCFTA seeks to establish a single market for goods and services.

Sixteen countries have ratified the agreement, but turning the AfCFTA vision into a reality has proved challenging, says Stephen Karingi, director of UNECA regional integration and trade division. "One of the main stumbling blocks to the implementation of trade services-related policies is the lack of understanding and quantification of services trade," he said.

Raising the profile of services in Africa may offer promising opportunities for export diversification, services-led transformation and services trade-led growth. Africa stands to gain from sharpening its ability to measure and analyse services value chains.

Policy-makers are committing to levelling up their services analysis skills to design services policies aimed at increasing integration into regional and global value chains. In practical terms, unlocking this potential requires services trade to be better understood and supported in policy-making processes, experts say.

AfCFTA seeks to establish a single market for goods and services

Once more with feeling: Koç Group manufactures sensitive robotic arm

Vehbi Koç's life of innovation and inspiration has led to stellar possibilities. *BV'S* JASON AGNEW talks Turkey — and technology.

IN 2010, the Turkish Koç Group, in conjunction with Koç University, founded Inventram as an early-stage technology investment company — with the aim to become the country´s leading investment and solutions provider for investors and entrepreneurs.

The university was set up in 1993 by group founder Vehbi Koç (1901-96) to further his commitment to education. A devoted moderniser, Koç observed the rapid scientific advances being made around the World. "(We) are racing towards new discoveries in outer space," he said. "In order for us to close the gap, and in preparation for the future, we must educate our young people in the best way possible."

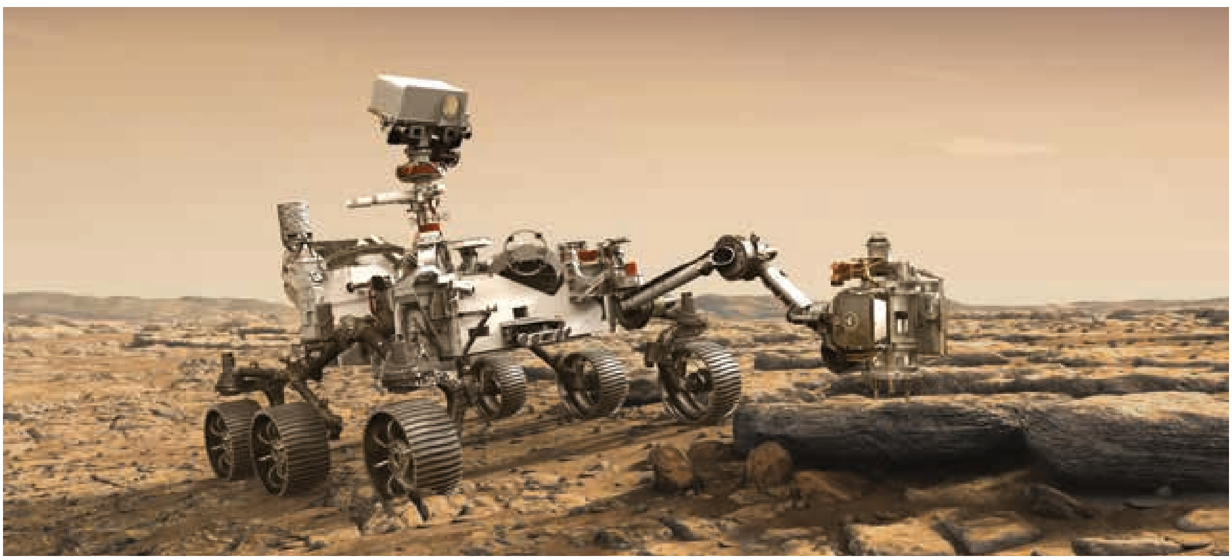
Philanthropist Koç created his foundation in 1969, investing in health, education, and culture. He went on to set up the Koç School in 1988, and the eponymous university five years later.

The creation of Inventram was a logical step for the organisation, combining its business acumen with the university´s innovation potential and technological capability. So successful has the endeavour been that in 2016, the giant Japanese investment firm Mitsui & Co acquired a 30 percent stake, after two years of talks. Both parties agreed that the strength of the Turkish economy was the main driver behind the deal.

Inventram operates in four main fields: intellectual property (IP) rights management, early-stage equity investment, technology commercialisations and preferred partner programmes. It is an active investor in disruptive technology: the Internet of Things (IoT) and sensors, robotics technology, biotechnology, nanotechnology, AI, big data and cloud, automotive technology, electronics and durable goods, and defence-industry technology.

The company has already received more than 6,500 project applications. So far, it has made two company investments, 41 patent investments, six patent licences, nine technology commercialisations and 26 preferred-partner joint ventures.

The first company Inventram founded was Kuantag AŞ (also known as Quantag Nanotechnologies), which delivers high-end nano-products to specific markets. It has developed "Quantum Tagging", a novel method to identify and authenticate products, enabling cost-effective high-security



NASA is planning to use Inventram technology in the robotic arms of a Rover bound for Mars

Quantum Tagging is a novel method to identify and authenticate products

authentication for the global automotive industry.

Next up was CY Vision, an augmented reality (AR) and virtual reality (VR) company operating in Silicon Valley and established in 2016 as a spin-off from the Koç University lab. A year later, the company closed a Series A funding round, led by Vestel Ventures and Intel Capital, which raised $7m.

CY Vision´s computational holographic technology, says Wendell Brooks, senior vice-president of Intel Capital, has the potential to play “a vital role in the development of the broader ecosystem and … the potential to redefine human-computer interaction”.

Inventram is in the final stages of creating a new robotics technology company based on its patented Sensobright technology, which aims to give a robotic arm a sense of touch vaguely comparable to that of a human arm. “When we applied this technology to artificial skin,”, says Inventram director-general Cem Sosyal, “we got a robot arm which is sensitive (like a human arm).

What does that mean? Today’s technology can place 20 ‘nerve endings’ on a robot´s hand.” The emerging technology has garnered much interest from NASA, which is planning to use it in the robotic arms of a Rover bound for Mars, as well as for an astronautical robot, “Robonot”.

The story of Vehbi Koç was always one of innovation and inspiration. The serial pioneer revolutionised Turkish business practices, and was determined to help modernise the republic.

The technology has garnered much interest from NASA

The young Koç worked as a teenager in his father´s grocery store in Ankara, but was soon taking his own path. He registered his first company in 1926, and became the local representative of the Ford Motor Company and Standard Oil (now Mobil). Ever aware of current events, he realised the potential of construction when Ankara was proclaimed the new national capital; he began trading in building materials, supplies and hardware. Koç’s prescience was rewarded, as the city´s population grew from just over 30,000 to almost 300,000 in 25 years.

During World War II, the Turkish government imposed heavy wealth taxes on non-Muslims. Koç acquired many collapsed or confiscated companies — and then hired the former owners to run them. After the war, he convinced General Electric to let him build a light bulb factory, and in the 1950s he diversified into making cars, household appliances, textiles, and radiators. He entered into further joint ventures with Siemens — creating a cable factory — and Fiat, producing tractors.

In 1963, Koç consolidated these diverse industries under the umbrella of Koç Holding AŞ. In a career spanning 75 years, he created more than 100 companies, and the group has 80,000 employees — and a turnover of more than $40 bn. Koç became Turkey´s wealthiest citizen; so rich, in fact, that after his funeral in 1996, his corpse was snatched and held for ransom. (It was later found buried in another grave.)

Inventram has been hailed as a trendsetter in Turkey, a parallel to Tesla’s technology which has proven so influential in electric car development in the US. This might seem an ambitious claim, but the history of success and trailblazing that Koç had behind him suggests that not even the sky is the limit.

Jugglers of the World, unite: women find ways to balance careers with motherhood

BY NAOMI SNELLING

IN A WORLD where the drive for equality is setting the workplace agenda, sometimes it's easy to forget one simple point: biology isn't equal. It's still women who get pregnant and give birth.

The skills and insights that women bring to the table — and the boardroom — are increasingly valued, yet there remains an uncomfortable juggling act. It's a thing. It can't be ignored. Countless women are juggling family and work responsibilities like circus performers.

Behind the scenes, lobby groups have been painstakingly chipping away at millennia of entrenched attitudes, identifying and outlining best practice.

"Businesswoman and mother-of-three" sentences are falling out of fashion in the UK, but the issue frequently comes up.

For some entrepreneurs, being a mother is something that informs and directs their business success, and their understanding of the "motherhood massif" can vastly improve how they pitch and grow their business.

Birmingham-based Hannah Brierley is founder and owner director of Elegantly Sweet, an online store that has carved a niche for itself selling "bespoke treats".

Brierley set up the business in 2015, while on maternity leave with her fourth child. "My husband works away in the week and the plan was for me not to go back to work," she says. "I didn't think I could juggle four kids and keep going with my nursing shifts.

"It was coming up to Christmas and I was making handmade sweets for the children and I went overboard and a had lot left, so I put the surplus for sale on Facebook — and it all took off. It kept growing, and customers kept coming back to me."

Hannah Brierley

Hannah credits part of her success to increasing consumer support for independent businesses, rather than big-name brands. "I've also always tried to build really good relationships with customers. Lots of them are mums, and I think mums are quite a united force; they like to support one another."

In terms of time-management, Hannah is managing to pull off the supermum trick of being a mum in the day and working on her business during what she calls "the twilight shift".

"Once the kids were in bed, I had free evenings and it was exciting to see how quickly the demand was growing," she says. "Early on, people were asking what else I did … I guess that was a bit of a challenge and an impetus for me. Whatever money I made from it I invested back into the business.

When she started, Brierley was just doing sweets, but in 2016, she invested in her first chocolate-making machine. "It cost £600, and I had a friend and business mentor who encouraged me to go for it. Now I have several machines that cost considerably more — but back then that represented a significant investment."

She operates from a workshop premises at her home, but is considering expanding to new premises because the business has grown so rapidly.

"A huge part of that success has been down to social media, Facebook and Instagram," she says. "I'm very fortunate that in this day and age I can sit at home and do my advertising — and it's free!"

Elegantly Sweet is fast becoming a "real" family business; Hannah employs her second eldest daughter, Heidi, to help with admin, packaging and design. "She's very arty and she enjoys it."

Brierley believes that witnessing her hard work and dedication has been good for her children: "they see the sacrifices and the rewards". And she says she would never go back to being an employee. "I lost one job when I had my eldest child — I was on my six-month probationary period and they got rid of me because I needed to take days off when he was sick," she says.

Mandy Garner of the Working Mums organisation says that stories like this illustrate the importance of educating employers in the 21st century to create win-win situations.

"From our work on best

Elegantly Sweet is an online store that has carved a niche for itself selling 'bespoke treats'

practice, it is clear that there are a number of things that help women — and men — to work more effectively when they have caring responsibilities," Garner says. "The most basic is creating an environment where there is an understanding about the kind of issues and stresses they might be facing. "

Garner also suggests that an individual's desire for work flexibility can be seen as a benefit by employers who need to cover different time zones.

A smorgasbord of corporate schemes is available to support parents, from parental leave and childcare support through to the breast milk delivery service announced last year by Goldman Sachs. "On the practical side for employees and the self-employed, organisation is key," says Garner. Creating regular schedules, finding networks that will offer support, avoiding isolation by getting out regularly and talking to others who are in a similar position are all useful techniques.

As for the holy grail — healthy work life balance — both women agree that things are always in a state of flux. You just have to do the best you can, wherever you are right now.

PARENTAL LEAVE BOON FOR DIAGEO WORKERS

BY ALIYA VIGOR-ROBERTSON

RAISE a glass to alcoholic beverage producer Diageo, which is setting a landmark for gender equality.

The UK company is showing that — regardless of size or FTSE 100 ranking — companies can offer real-world benefits to their staff. It is allocating its male workers the same amount of time-off as female colleagues for leave when a baby is born.

Diageo believes this will lead to improved staff retention, collaboration and workplace relationships. Whether single parents or couples, Diageo employees will be able to have regular contact with their newborn — with a positive impact on their bonding experience, a boon for working families.

Statistics show that parents who are given this opportunity return to the workplace more engaged to the business. Even so, some organisations remain concerned about the impact of the initiative, financially and in terms of productivity.

But an organisation offering this policy as standard can better plan and offset the impact of an employee's absence. Businesses will be able to create opportunities for contract workers to enter the business, and allow junior members to step-up to a new role.

The bigger challenge that businesses such as Diageo face is ensuring the right systems and processes are in place for returning parents, to avert the anxiety that mothers and fathers sometimes feel after taking time away from their job.

If businesses can establish these processes to support returning parents, the firm believes, policies offering extended parental leave will prove a success.

BV

Be wise and digitalise VAT, report urges UK's SMEs

A recent report has laid out a digital roadmap that could catalyse up to a £57bn productivity pay-out for UK SMEs over five years

THE DIGITALISATION of VAT in April should catalyse an annual benefit of £6.9bn — or £46bn over five years — in net gains in turnover and growth.

The Productivity Payout: UK Small Businesses And The Digital Economy, was released by independent economic consultancy Volterra Partners, in association with accounting software solution-providers Intuit QuickBooks.

The new economic model — built on predicted behaviours of small business owners as a result of social and financial drivers — suggests that once businesses integrate technology to become month-to-date (MTD) compliant, a "digital snowball effect" is likely to occur.

The spill-over benefits will drive increases in SMEs' levels of productivity, by enabling better cash-flow and human resource management and freeing time for more productive activities such as sales, marketing or training.

'Digital snowball effect' is likely

Having adopted one form of digital technology, businesses tend to adopt others, saving more time and reaping the rewards from cumulative productivity benefits from digital interoperability.

Despite the gains to be made from the digitalisation of traditional business practices, research reveals that roughly one in five SMEs are still unaware of MTD and its associated impact: a productivity pay-out. For sole traders, the predicted average net gain in annual revenue is £1,900, while a small business with 10-49 employees should see an average increase of £18,000 to their top line growth.

"Unregistered" businesses are not registered with HMRC for VAT or PAYE. Sole traders are registered for VAT but not PAYE.

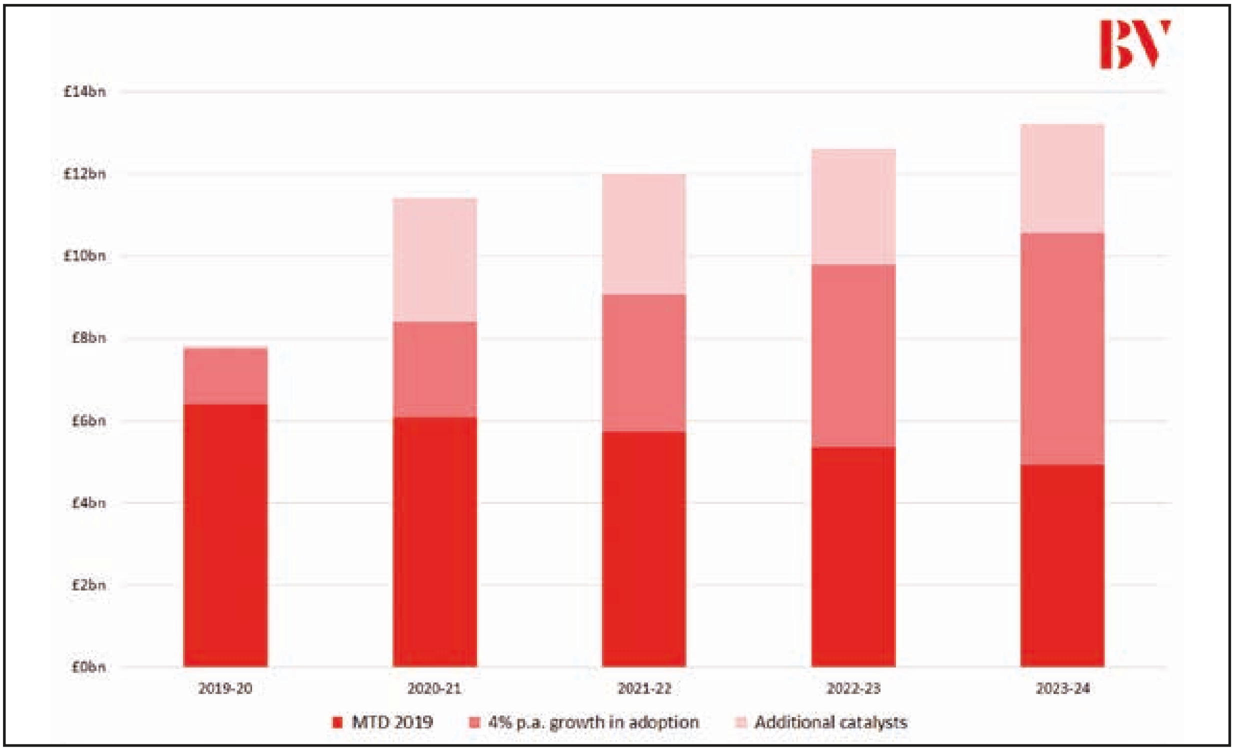
With no rollout of MTD beyond VAT-registered business, and no further action by government or industry, the model predicts SMEs will see a total productivity gain of £46bn over the next five years.

If industry, government and SMEs work together to catalyse further growth of the productivity

	Increase in turnover (£)	Average increase in turnover per business (£)	Average increase in turnover per worker (£)
With no employees (unregistered)	0.6bn	200	200
With no employees (registered)	2.2bn	1,900	1,700
1 to 9	3.9bn	3,400	900
Small	3.8bn	18,000	900
Medium	1.4bn	41,100	400
All SMEs	**11.9bn**	**4,400**	

Predicted increase in annual turnover (£) if all SMEs experience a catalyst to adopt all digital processes within financial management software

Source: Volterra Partners



Month-to-date compliance enables better cash-flow

pay-out is predicted to be significantly higher — £57bn over the same period.

This £57bn hinges on the continued rollout of MTD (beyond the first wave as currently proposed but not finalised), the integration of Open Banking into financial management software, and SMEs collaborating with the software industry on training and support.

Intuit QuickBooks vice-president Chris Evans said it was time for small businesses "to embrace digital with unabated optimism".

The report highlighted a digital-led approach that would transform small businesses, he believes.

"The transition to digital will not be without stumbling blocks," Evans says, "but it presents a huge opportunity to streamline operations, drive efficiencies and simplify tax. It will enhance cash-flow management, and allow SMEs to get paid faster and access capital."

The model predicts the largest productivity benefit of digital adoption will be felt by London and England's south-east. It also predicts that the wholesale and retail trade, construction, professional and manufacturing sectors will see the biggest impact on productivity growth. London has the highest average regional potential benefit per business of £5,700/year.

Manufacturing is the sector with the highest potential benefit per business of £8,100/year, while retail will see almost as much with £7,600/year.

High levels of competition in cities and in the retail sector has driven wider adoption of digitalisation — and higher productivity.

A substantial proportion of the productivity increase is derived from time saved, so businesses that are already more productive are able to take greater advantage of that extra time. "This report sets out a clear and positive view on the benefits that digitisation can bring, not just to self-employed businesses, but to the economy as a whole," said Andrew Chamberlain, deputy director of policy and external affairs at the Association of Independent Professionals and Self-Employed.

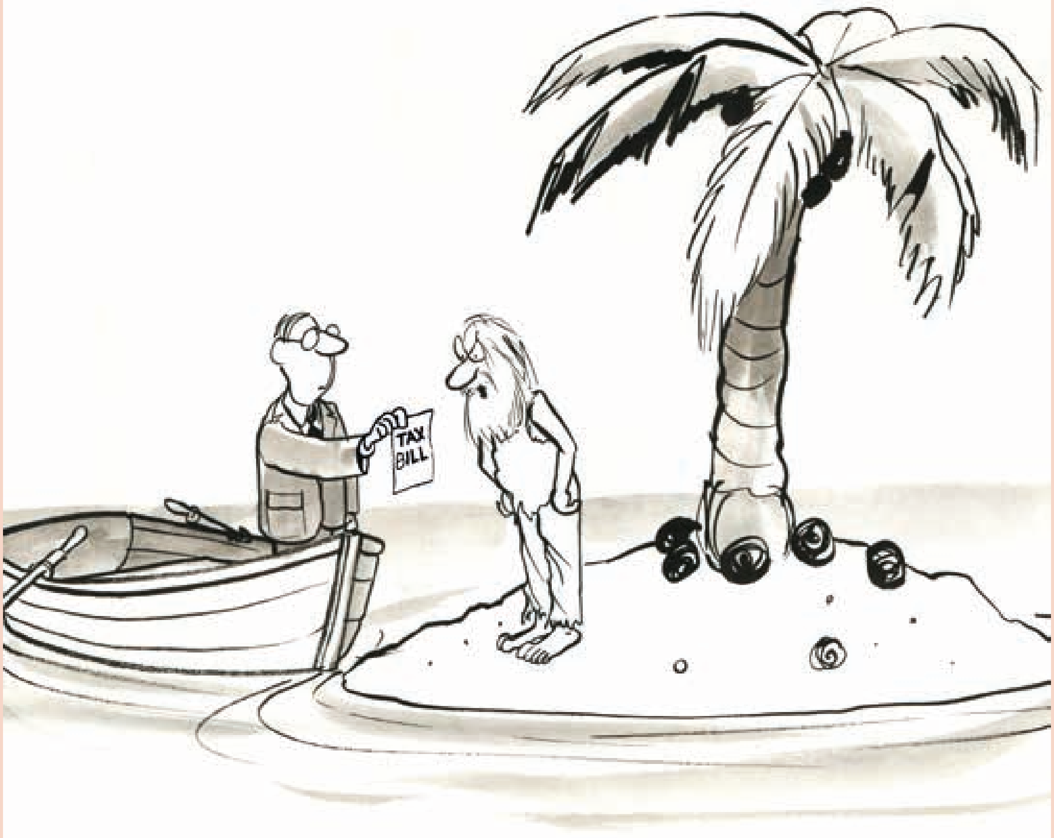
But there are challenges too, he warned: "The roll-out … must be carefully handled to ensure businesses can transition to digital systems over a sensible time frame, and with considerable support from both government and industry."

Michelle Kennedy, co-founder and CEO of the @peanut app said digital tools were "absolutely essential to any business looking to grow and succeed in such turbulent times".

"Businesses who fail to adopt digital-first thinking risk losing the agility other businesses gain when they are more open to using digital behaviours," she said.

"Without a progressive, tech mindset, companies across the spectrum of industry may significantly hamper their prospects of long-term growth."

'The roll-out must be carefully handled'



"There is no getting away from you guys."

MANY HAGGARD RETURNS: HAUNTED BY TAX?

A SURVEY asked 1,010 self-employed people across the UK what they would rather do instead of file their tax return.

One in five said they would rather give a speech to 100 strangers; the same fraction would rather spend a night in a haunted house or hold a tarantula for one minute. One in seven would rather get trapped in a lift, while one in eight would rather jump out of a plane. Presumably with a parachute.

Half of those canvassed worry that they haven't filled in their tax return correctly, two in five feel stressed about doing the task. One in four people will leave it until the last moment (the final two weeks).

Another finding in the study commissioned by accounting software provider Intuit Quickbooks was that women take twice as long as men (12.3 hrs vs 6.7 hrs) to complete their tax return. (They probably do it more thoroughly, although statistics can't prove that.)

QuickBooks has an angle, of course. It is promoting its Self-Employed app, which makes it possible to take pictures of receipts. The software will then auto-categorise expenses, and allow users to prepare self-assessment forms without fuss.

The software includes automatic mileage-tracking within the app, and the ability to integrate with bank accounts to automatically keep track of invoices and scheduled payments from clients and customers.

QB Assistant is a conversational chatbot that combines data-driven insights and natural language processing to unearth valuable insights for people who work for themselves. It must hear some interesting natural language from those filling out the tax forms.

The research, conducted by Opinium from January 5-15, also revealed young people were twice as likely as older people to submit their returns at the last minute.

One in 100 people was reportedly planning to file their return after the January 31 deadline. Some things never change.

Gender balance bid by digital office broker brings optimism

HUBBLE — the digital office broker, not the telescope — has doubled its technology team in its largest recruitment drive since being founded in 2014.

The change has created an even split between men and women in its engineering department. The business has recruited data scientists, software developers and product managers to support its growth trajectory and meet the increased demand for flexible office space from businesses.

The platform hosts London's largest real-time dataset on the flexible office market, listing over 5,000 offices — and placing business in a new office every three hours. As the UK's technology industry launches a campaign to create one million tech jobs by 2023, Hubble has made eight new technology hires over recent months.

Rick Hartley has joined as lead designer, bringing more than 15 years' experience in creating digital products and customer journeys for the businesses like Compare The Market, The Sunday Times and EDF Energy. He is to lead the design team, unify the strategy across its suite of products, and set out the UX guidelines.

Alexandre Richardson has been appointed as Hubble's data scientist to support its quest to become increasingly data-driven and build its data-set internationally.

His expertise lies in machine-learning, data analysis and visualisation.

TRADITIONAL INDUSTRIES

Ryan Crawford has joined as quality assurance head, with experience working with companies including Shazam and onefinestay. Nathan Bratby and Chloe Donegan both started as product managers; they come from technical and commercial backgrounds and aim to build products to revolutionise traditional industries.

Isabela Hodorog and Stella Loizou join as product engineers to apply cutting-edge technologies such as React and Node.js to Hubble's platform, and Ollie Crook joins as junior product engineer.

The recruitment drive follows Hubble's completion of a Series A funding round that raised £4 million from a group of industry-leading investors, spearheaded by JLL Spark Global Venture Fund. Hubble's technology platform is set to attract more medium-sized businesses (50 people or more) as it plans to become the "booking.com" of flexible office space worldwide.

Tom Watson, CTO and co-founder of Hubble, said technology had already transformed work practices and was overturning the world of commercial real estate. "The platform allows businesses to search the whole of the flexible office market by up-to-date pricing, availability, contract length and amenities," he said.

"Such a large data infrastructure requires the right team to build and maintain — from the live information right through to the user experience.

"Our latest recruits will help us in our ambition to create the world's largest platform for flexible office space, and we're looking forward to expanding our team at all levels to achieve this."

Betelhem Dessie

10

PEOPLE

BETELHEM Dessie has been recognised as the youngest pioneer in Ethiopia's tech scene.

The teenager was born and raised in the walled city of Harar in the east of the country — and her career began at the tender age of nine. The web and mobile technologies developer was born in 1999 — and wasted no time making her mark.

Dessie is founder and CEO of robotics lab iCog ACC (Anyone Can Code), and co-ordinates nationwide programmes in her homeland. Her name has spread beyond Ethiopia's borders thanks to her involvement in developing the world famous (and well-travelled) robot Sophia, who was one of the off-beat "invitees" at Davos 2019.

Dessie credits her (unnamed) father as the inspiration and supporter in business. She started work in his Harar electronics shop, and made her own seed funding by sending audio and video files to his customers. Her interest in computing and coding was piqued — and her career had begun.

She honed her video-editing skills and learned about computer maintenance and mobile phone software. By the age of 10, she was coding in HTML, and teaching computer skills to her classmates at school.

Dessie got government recognition for her work in her community and international fame after interviews with Ethiopian media and TV news organisation CNN. She moved to Addis Ababa with her parents and was (despite her age) employed by the government as a developer.

By the time she was 12, Dessie was working for the Ethiopian Information Network Security Agency, and trained 40 girls for a United States Embassy project called Girls Can Code.

For the Ethiopian government, Dessie took part in a software programming project to map irrigation projects in the country. She has four patented projects copyrighted under her own name (including the irrigation map), and three in collaboration with other software engineers.

Last year, as a third-year software engineering student at Addis Ababa University, she was identified by Quartz Africa as one of the young African innovators to watch in 2019. We're watching.

Kaj Torok

10 *PEOPLE*

IF SOMEONE says the words "fast food", what springs to mind? Here at ***BV*** headquarters, a quick in-house *vox-pop* survey revealed that three of five undernourished slaves go for "burger".

More in-depth statistics from surveys conducted in Sweden came up with similar results; it's clear that a good burger takes some beating. And the Scandinavians are in luck looking for a premium product with the MAX burger franchise.

Yes, it's a chain — but we're a long way from Mackey-Dees or Burger King here. MAX chief sustainability officer Kaj Torok is an idealist who wants to create nothing less than The World's Best Burger — and, if possible, save the planet at the same time.

"If you ask a Swede why they visit a MAX restaurant, most of them won't say it's because we're doing something good for the climate", Torok admits. "They will say it's because we have the best tasting burgers. We can't work to make the World better without having the best burgers."

A survey by ISI Wissing, which analysed 250 brands, found MAX has won the first part of the battle, rating top of the industry's most-satisfied customer list — for the 11th year in a row.

So, as the website blurb says, "Every bite is good for the environment." MAX measures 100 percent of its product emissions, including all greenhouse gas emissions in the calculations — "from the farmers' land to our guests' hand". Customers' and suppliers' travel to and from MAX restaurants is factored-in, along with waste.

And when 100 percent isn't enough… add 10. "We plant trees that absorb and store carbon dioxide from the atmosphere as they grow. Not only do we carbon-offset the emissions from all our food, we go further to capture the carbon dioxide equivalent of another 10 percent of our emissions."

Over the years, MAX has implemented hundreds of measures to reduce the emission of greenhouse gases. "I think we have the widest climate analysis in the restaurant industry since 2008," says Torok. "In just the food industry, I don't think there's more than a handful that make as wide an analysis as we do.

"I think more companies should do this, but they don't have to face the fact that they are polluting more than most people realise. Yeah. That's the ugly truth. They will see their business in a totally new way, understand what they're doing in a totally new way."

Fries with mine, please.

Consequences of trade tariffs can be far-reaching — and detrimental to all concerned

A report launched at the World Economic Forum in Davos provides global policymakers with an evidence-based overview of the economic and social consequences of trade tariffs

A REPORT commissioned by the International Chamber of Commerce (ICC) as part of its trade agenda — an initiative in partnership with Qatar Chamber of Commerce and Industry — outlines 10 possible effects of a return to broad-based tariff increases.

While recognising that trade liberalisation has resulted in some negative consequences, the report — prepared by the Economist Intelligence Unit — stresses that tariffs do not provide an answer. The consequences, illustrated by way of two case studies, range from an increase in poverty to deteriorating health outcomes.

“Almost all tariffs benefit a narrow group at the expense of a broad one,” the report says, “have unanticipated effects beyond their original focus areas, and take more time to repeal than to implement.”

ICC secretary general John WH Denton said the report highlights the “counterproductive nature of addressing social and economic problems through tariff increases” as well as the pressing need for movement on reforming trade governance. “To enable this, business needs to prepare the ground to allow policymakers to move without risk,” he said. “The ICC is helping to achieve that by channelling the voice of business and others into a more actionable debate on multilateral trade reform.”

The director general of the World Trade Organisation, Roberto Azevedo, said the private sector generated many of the new ideas on trade reforms that governments then take forward. “It is important that the private sector understands this role — it is more important than ever today.”

Almost all tariffs benefit a narrow group at the expense of a broad one

Policymakers can promote more flexible trade agreements that do not pursue free trade at all costs

The report provides three recommendations for policymakers to consider before levying tariffs, along with alternative tools.

They are:

1. To prevent further tariff increases, policymakers must first be honest about the negative effects that trade liberalisation has had on certain groups, not least to shed light on the inadequacy of tariff hikes as a solution.
2. Policymakers should insist on a deliberative process and data-driven societal impact assessments for all major proposed tariff increases. Such assessments would shift the burden of proof onto those advocating tariffs and provide insight into their wider effects.
3. Policymakers should address their grievances with more effective tools. To tackle China's unfair treatment of foreign investment, policymakers should use multilateral forums and leverage China's desire to retain a rules-based trading system.
4. Policymakers can promote more flexible trade agreements that do not pursue free trade at all costs, and instead allow countries some latitude to pursue other societal goals, such as environmental protections.

The report also notes that governments can increase their low expenditure on training programmes for groups that lose out from free trade.

Sheikh Khalifa Bin Jassim Bin Mohammed Al Thani, chairman of ICC Qatar and a member of the ICC executive board, said: "The EIU report reflects Qatar Chamber's shared view with ICC that for governments and policymakers to make informed decisions, evidence-based analysis is essential."

The report examines 10 areas where tariffs may have unintended negative effects — from disproportionately impacting the impoverished and increasing inequality to exacerbating political polarisation and hurting sustainable economic growth.

Entitled *Aftershock: The Pervasive Effects Of Tariff Hikes*, the report was launched in Davos during the World Economic Forum's Annual Meeting 2019 as part of discussions taking place in the Global Dialogue on Trade. The dialogue is part of a global consultation to support multilateral trade reform.

Supported by the World Trade Organization (WTO), the Organisation For Economic Co-operation And Development (OECD) and regional development banks, the digitally enabled platform convenes open dialogue among multilateral institutions, think-tanks and businesses.

Once in place, it is hoped that the platform will help to develop recommendations for meaningful reform and modernisation of the rules-based trading system.

Download *Aftershock: The Pervasive Effects Of Tariff Hikes* from the ICC website. https://iccwbo.org/publication/aftershock-pervasive-effects-tariff-hikes/

Putting heart into homes, with help from the Earth

By HEATHER LEAH SMITH

IF HOME is where the heart is, what does that mean for the millions of people living in makeshift slum dwellings?

The question becomes more insistent when placed in the context of Egypt, a country of expansive and largely unpopulated deserts surrounding a strip of fertile and densely inhabited land along the Nile Delta.

The UN estimated in 2000 that the Egyptian population would reach 96 million by 2026 — but they were short by a full decade. In 2019, estimates put the figure at already more than 100 million, making it the most populous country in the Mena (Middle East and North Africa). The population continues to grow at a rate of about two percent every year, further exacerbating the country's housing crisis.

The solution, according to Egyptian entrepreneur and civil engineer Radwa Rostom (*pictured right*), lies in social entrepreneurship and sustainable building.

Rostrom founded Hand Over in 2015 to address the country's growing housing needs — an estimated 500,000 new homes are needed every five years — and empower low-income families in a country where nearly half of all households survive on $6 or less per day.

Inspired by her volunteer work as a student, Rostom decided she could help children more as an engineer than as a tutor. She launched Hand Over to help families move away from informal shanty structures — which typically lack connection to waste and water infrastructures and have subpar safety and security — and towards housing that respects the environment, contributes to community development, and encourages enterprise.

Rostom looked to ancient building techniques, using readily available mud, gravel, and sand, to create the most sustainable, resilient, and economical structures. "The idea of building with earth and local materials has

Amrdahish via Wikimedia Commons

'The idea of building with earth and local materials has been in our community for a long time'

Millions of Egyptians live in makeshift slum dwellings

been in our community for a long time because it is very viable for our climate," she says. "It definitely meets the standards of safety and quality, and it has proved to be resilient. We only need more education and awareness about such techniques, and we still need support from authorities to include (them) in the building codes to make the permits and registration more feasible."

Hand Over's main focus is split along three tracks: community development, commercial services, and educational outreach. Hand Over designs and builds public spaces that foster community development, such as housing units, health clinics, and educational centres.

It collaborates with local communities in the creation of these spaces by recruiting student volunteers as architects and engineers. Community stakeholders are included in the design and building processes. Hand Over funds this arm of the business through donations, awards and grants, NGO collaborations, and local initiatives.

Homeowners or real estate developers interested in sustainable building can look to Hand Over for eco-friendly housing solutions — and these commercial services help fund its educational outreach programmes. Hand Over delivers training sessions and workshops for architecture and civil engineering students to gain hands-on experience in earth construction, environmental design, sustainability, community participation, and design.

Rostom has been granted three fellowships

"The students are one of the main pillars of the project," says Rostom. "One of our main methodologies in work is spreading knowledge and awareness."

Rostom already has much to share from her experience with energy efficiency, energy management systems, and green building techniques. But she realised that she would have to develop her business skills to transform an idea into a start-up.

"In the very beginning, the idea was still not mature," says Rostom, who simply knew she wanted "people to live in humane and resilient housing" but was unsure of what steps to take to realise that dream. Rostom has been granted three fellowships to help develop her idea. Her innovative approach has slashed residential construction costs.

"The main vision we have, and that we are striving to realise, is that we want to create a model that is flexible, adaptable, and affordable for rehabilitation and upgrading of informal settlements and unprivileged areas, anywhere."

Lending tops £6bn in milestone year — and investors to benefit from 'increasing transparency'

IN 2011, NEW gross lending amounted to £92m. It now takes a shade under six days for marketplace platforms to originate that amount — and last year marketplace lending hit a record £6.1bn.

The value of gross marketplace lending conducted by tech-enabled platforms (including crowdfunded or peer-to-peer loans) reached a quarterly record of £1.6bn in Q4, up 13.9 percent year-on-year, according to Link Asset Services' inaugural Marketplace Lending Index.

But the pace of growth is starting to slow as the market matures. Although 2018 saw marketplace lending grow at an annual rate of 20.3 percent, this is half the pace of expansion seen in 2017.

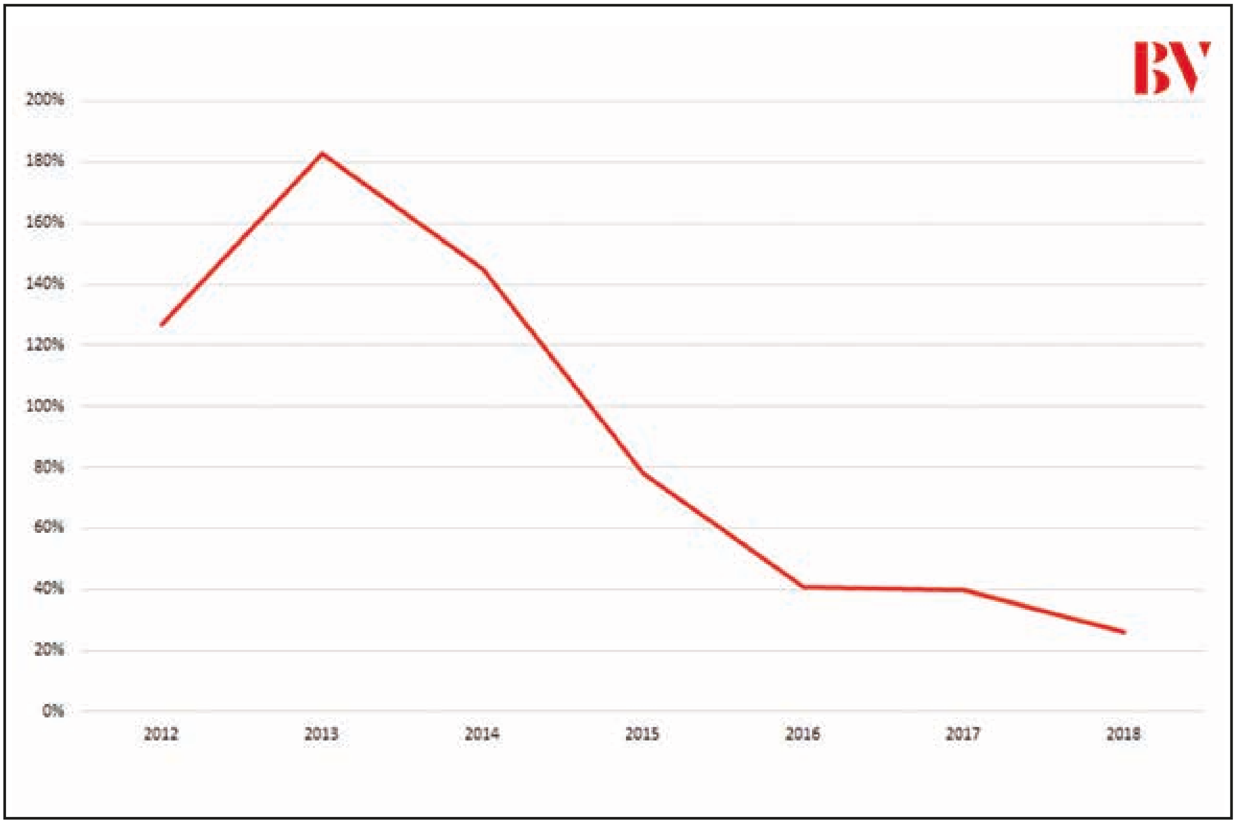
The rise of invoice finance has been a key driver in recent growth, as SMEs look beyond traditional banks to finance their working capital. Invoice finance lending increased by 104.8 percent compared to 2017, reaching £1.1bn in 2018.

Business loans — borrowing to invest, buy new premises, make acquisitions or refinance — broke the £2bn lending barrier for the first time, with gross lending climbing by 20.9 percent.

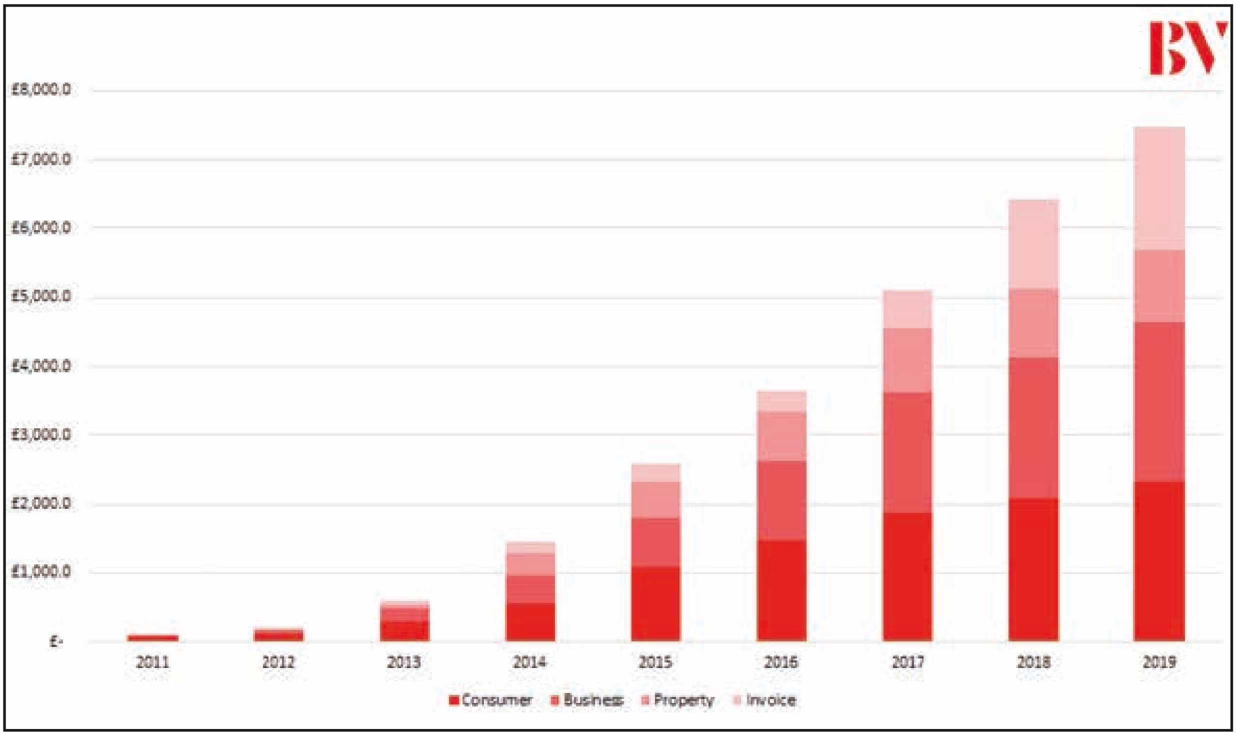
Lending to consumers saw slower growth of four percent, reflecting a more cautious approach from consumers towards spending.

Property lending grew by just 2.1 percent in 2018, but performance across the sector is not uniform. The struggles of Lendy contrasts with the solid performance of the likes of Landbay, LendInvest and Crowdproperty.

To build a true picture of the investment performance of marketplace loans for investors, returns must account for fees,



Annual growth rate in new lending — the red line tells the story



Annual gross new lending, by category, from 2011 to present

costs, term length, and losses. The latest available data shows net return on a typical marketplace loan stands at 4.1 percent. Although still an attractive yield, compared to other fixed income assets, this is down from 5.4 percent in the third quarter of 2017, and from 6.5 percent at the recent peak in 2016.

There are two components to net returns: the net yield (which accounts for the initial interest rate and platform fees), and the loss rate on loans.

Net yields have remained steady at 7.2 percent. However, rising loss rates are reducing the overall net return by 2.9 percentage points. This has worsened since 2016, when net losses reduced returns by just 0.9 percentage points.

There are two key factors behind this trend. Firstly, losses have risen on loans across the market, largely among riskier borrowers with higher interest rates.

A weaker economic backdrop has affected the ability of a growing minority of businesses to meet the terms of their loans. There is a deterioration among older consumer loans, reflecting the pressure consumer finances have been under from prolonged weak wage-growth and inflation; personal insolvencies reached a seven-year high in 2018.

Secondly, on a technical level, a smaller proportion of loans are covered by a contingency fund. These funds are designed to add additional protection against defaults, and previously flattered the figures.

Net returns may have fallen, but they remain attractive compared to other fixed income assets of a comparable term. This should continue to support demand from investors, and marketplace lending is set to grow further. Link/Brismo forecasts gross lending will grow by a further £1bn in 2019, an annual growth of 20 percent.

Mark Davies, managing director of Link Mortgages Services, said 2018 was a "milestone year" as marketplace lending moved into the mainstream. Platforms have started to fill the funding vacuum created by the retreat of many traditional lenders, meeting the borrowing needs of SMEs and consumers, and creating a new asset class for investors.

Growth is also bringing tighter regulation, marking the next stage of the sector's evolution. This should calm investors' nerves around rising loss rates, and encourage lenders to improve the transparency of performance reporting, allowing investors to assess risk against returns across platforms.

But increasing losses are already dragging on returns, and Brexit outcomes could put businesses and borrowers' finances under pressure, Davies warns. "The subsequent rise in defaults would place a new level of strain on marketplace lenders' risk-management strategies, testing their loan servicing and recovery approaches in a downturn."

Rupert Taylor, chief executive of Brismo — which powered the Lending Index — said UK platforms were the first non-bank loan originators to recognise that attracting a diverse funding base relies on demonstrating accountability for performance. "As disclosure evolves further … investors will benefit from reduced complexity and improved insight, which will further increase the appeal of these assets," he said.

FONDATION SARADAR
SAME VALUES
NEW DRIVE
NADER JABER
WINNER OF THE 5K & 10K
LEBANESE CHAMPIONSHIPS
SARADARBANK
BIT-NECB GROUP

Rutger Bregman

10

PEOPLE

Taking a stand at Davos, and a tilt at super-rich tax cheats

LOTS OF interesting stuff comes from the Davos World Economic Forum, not all of it predictable or formulaic. This year a Dutch historian, Rutger Bregman, was the source of a particularly juicy titbit.

Bregman, author of *Utopia For Realists*, had a close look at (or under) the emperor's clothes — and joyfully berated the assembled billionaires, who found themselves in the unfortunate position of having nowhere to go. He took the invited-but-captive attendees at the recent Swiss mountain gathering to task with one killer question: Why do rich people fail to pay their fair share of taxes?

It's a fair point.

Bregman noted, without surprise, that it was a subject that no one — in a hall of high earners, some of whom arrived by private jet — wanted to broach. One of his most publicised comments from Davos was, "It feels like I'm at a firefighters conference and no one's allowed to speak about water."

Industry had to tackle the taxation issue, he said, citing the US's high tax regime of the 1950s as a counter to arguments that economies with high personal taxation were not successful. From the 50s onwards, things worked out pretty well for dreamers of the American Dream.

"Taxes, taxes, taxes," went another of his much-publicised quotes, "all the rest is bullshit, in my opinion." Such straight-talking is unusual at events of this profile — and all the more welcome (to ***BV***, at least) because of that.

While some attendees sympathised with Bregman's sentiments, he was pretty much walking the plank over shark-infested waters. A brave man, with a bold — but sensible — agenda.

Estimates say billions of dollars are lost to tax-avoidance each year. That money could be used to alleviate poverty in the developing world, one of Bregman's fellow panellists noted – something that even the most conservative billionaires must have found hard to contest.

Awards 2019

Spring announcement highlights

AN INVITATION TO VOTE

Readers are cordially invited to vote in the *Business Vision* (*BV*) Awards Programme.

BV seeks out candidates with outstanding corporate achievements but all eventual winners will have convinced the judging panel that they have the vision to maintain and build on their success well into the future.

Visit our website www.bv.world/awards to place your vote or email us at award@bv.world
We will send you a copy of the nomination form.

The information you provide will be used by the ***BV*** judging panel but not shared with third parties. As a small token of our thanks you will be entered in a free draw for a one-year complimentary subscription.

No vote is wasted. Your recommendation will receive our full attention.

Dhofar Insurance Company SAOG — Most Innovative Insurance Company | Oman 2019

INSURANCE is the promise of protection, and few organisations in the sector take their duty more seriously than Oman's Dhofar Insurance Company SAOG. Dhofar's customer-centric focus over the past three decades has resulted in a strong brand and a loyal client base. With a network of 42 branches covering the sultanate, from bustling cities to tiny towns, Dhofar is the leading national insurance provider. It offers insurance products ranging from health and life policies to property and disaster cover. Dhofar's mission is always to be proactive, with a personal touch. It contacts customers with advance warnings and preparation advice as part of its disaster cover, and offers extra assistance when needed. The firm's leadership is fully committed to the company promise, providing customers — and the community at large — with hands-on support, when and where required. The ***BV*** judging panel notes that Dhofar applies that same agile response to market trends and client needs, continuously adapting to develop the most relevant insurance solutions. The judges are delighted to present Dhofar Insurance Company with the 2019 award for Most Innovative Insurance Company (Oman).

JP Morgan — Best Trade Finance Banking | United States 2019

JP MORGAN is a household name in the banking world — one that's synonymous with trusted trade finance. The multinational bank is one of the largest financial institutions in the World, with a strong presence in all major global markets. JP Morgan leverages its worldwide network to provide clients with specific, local expertise to maximise the efficiency of their trade activity. The bank facilitates trade with finance solutions for supply-chain buyers and providers, as well as with its export and import finance solutions. JP Morgan has developed a suite of trade solutions to help clients mitigate risk, secure financing and optimise operations — and all that information is accessible via its intuitive digital platform, giving clients instant "any time" access to transactions – in multiple languages. The ***BV*** judging panel applauds the bank as a highly capable partner in the global trade market, and names JP Morgan as the winner of 2019 award for Best Trade Finance Banking (United States).

Averda — Best ESG Waste Management Solutions | MENA 2018

LEADING waste management group Averda tackles environmental challenges from a tradition of technical engineering excellence. The Averda story is rooted in engineering innovation, and that focus continues to drive the company's development and growth. Averda addresses environmental, social, and governance (ESG) concerns across its operations in the Middle East and Africa (MENA) with a highly responsible and technologically creative approach. Serving millions of people and managing thousands of tonnes of waste a day, the Dubai-based company concentrates on local recycling and high-tech anti-pollution strategies across three continents. Averda partners with charities across the globe to achieve its ESG initiatives and empowers its employees with various wellbeing and educational programmes — enabling them to act as agents of change in their own communities. The company has earned top green certifications and regularly submits to independent assessment to maximise improvement and ensure transparency. The ***BV*** judging panel congratulates Averda on its steady growth — 25 percent annually — and its 2018 Best ESG Waste Management Solutions (MENA) award win.

BV

DHL Express — Best Global Logistics Partner | United States 2019

EVERYONE'S in a hurry nowadays, and turnaround and delivery times are as crucial as the cost. Global interconnectedness is more than a modern buzz-phrase: it's bread and butter for US distribution giant DHL Express. Its powerful international network — 360,000 people in more than 220 countries and territories worldwide — means DHL has this one covered. "We're already thinking about what the world in 2050 might look like," the company says — and it's preparing for the logistics challenges that lie ahead. It also places a priority on customer satisfaction, with the stated goal to "bring joy and prosperity to the people we serve". With its established network, history of punctual, trouble-free deliveries worldwide, and positive attitude, the ***BV*** judges were won-over. The 2019 award for Best Global Logistics Partner (US) duly conferred.

BankDhofar — Most Innovative Banking Team in GCC 2019

FOR MORE than two decades, BankDhofar has been building a reputation for its foresight and reliable growth. As one of the largest banks in Oman, BankDhofar already claims a lion's share of the market and continues to steadily grow. Innovation drives the bank's prosperity and expansion, and its customer-centric focus ensures it keeps a finger on the pulse on the evolving needs of its clients. The latest tech advances are seamlessly integrated into BankDhofar's digital banking services, providing instant access and convenient controls for all its customers, from individual accountholders to corporate clients. The BankDhofar team references data-backed evidence to tailor products and services to match clients' needs. In 2013, BankDhofar introduced Maisarah Islamic Banking Services to meet the financial needs of many customers throughout the Sultanate of Oman. The ***BV*** judging panel cites the bank's cultivated culture of performance and its exceptionally engaged workforce as supporting factors in its decision: BankDhofar wins the 2019 award for Most Innovative Banking Team (GCC).

Patagonia — Most Dedicated Corporate Environmental Activism | US 2019

PATAGONIA'S founder Yvon Chouinard launched the iconic outdoor sportswear company from his love of wild landscapes — and the simplicity and exhilaration of the adventures to be had there. The company has been a conscientious advocate for environmental activism ever since, and today pledges one percent of its profits — no measly sum, with nearly $1bn in annual revenue — to help hundreds of grassroots non-profits around the world. The antithesis of "fast fashion", Patagonia produces durable products that last generations, and it sponsors WornWear programmes to repair or return customers' old Patagonia items. In 2017, it donated all Black Friday sales to charity — some $10m in one day. Patagonia puts the force of its empire behind its driving mission: to fight for the planet with all the resources at its disposal, from its business and investments to its voice and ingenuity. The ***BV*** judging panel is pleased to present Patagonia with the 2019 award for Most Dedicated Corporate Environmental Activism (US).

Saudi International Petrochemical Company — Best Sustainable Growth Leadership KSA | 2019

THE Saudi International Petrochemical Company (Sipchem) is a chemical manufacturing company with environmental responsibility at its core. The company specialises in business analysis and simplification, and applies strict corporate and environmental controls throughout its business practices. Sipchem is one of the biggest players in the field, proving that sustainability and profitability can go hand-in-hand. Sipchem's steady growth can be attributed in part to the ingenuity of its staff which have — through the company's Eureka policy — generated over 15,000 ideas that have saved the company about $17m since 2011. The ***BV*** judging panel believes Sipchem's forward-thinking initiatives, which use technology to get children thinking about problem-solving, will inspire new generations of skilled innovators. The judges congratulate Sipchem on its 2019 Best Sustainable Growth Leadership (KSA) award win.

Barclays Bank Kenya — Best Sharia-Compliant Investment Bank | Kenya 2019

BARCLAYS Bank Kenya is a financial institution that inspires trust with its sound governance policies and conscientious investment strategies — and its Sharia-compliant products enable clients to manage their wealth while respecting their faith. Islamic banking practices are rooted in honesty, integrity, and trust, and these principles are the cornerstone of the solutions offered by Barclays Bank Kenya. The bank offers current and saving accounts for private individuals, small and medium-sized enterprises, and corporate conglomerates — all of them Sharia-compliant. Barclays Bank Kenya provides clients with investment and financing solutions that uphold the highest standards. *Assalamu'alaikum*, the Islamic greeting goes — Unto you, peace — and the ethical focus of the bank certainly brings clients peace of mind. Its positive, affirmative and coherent approach convinced the ***BV*** judging panel. For the second consecutive year Barclays Bank Kenya is a winner, taking the 2019 award for Best Sharia-Compliant Investment Bank (Kenya).

Goldman Sachs – Best Investment Banking Advisory Team | Global 2019

DOES this firm need any introduction? Thought not. Goldman Sachs' name is an industry gold standard in and of itself, offering investment banking services to corporations, financial institutions, funds and governments. Goldman Sachs invests its own capital alongside that of its clients, and its Merchant Banking Division (MBD) has been the hub of long-term principal investing activity for three decades. Since 1986, the group has invested some $155bn of leveraged capital across countries, industries and transaction types. With nine offices in seven countries, MBD is one of the World's largest managers of private capital. It offers expertise to companies, investors, entrepreneurs and financial intermediaries. Goldman Sachs invests in communities, too, supporting development and revitalisation projects such as affordable housing construction, job creation, education, healthcare and more. That's enough for the ***BV*** judging panel, which is happy to grant Goldman Sachs the 2019 award for Best Investment Banking Advisory Team (Global).

Club Med — Best Holiday Club Brand | Europe 2019

"ALL-INCLUSIVE" doesn't quite convey the full spectrum of stress-free fun awaiting guests at any of Club Med's 24 natural holiday venues. Club Med guests are entitled to delectable dishes and world-class entertainment as part of their package. Club facilities include serene spas — with a host of pampering services — and the offer of more than 60 sports activities and courses led by expert instructors. The company considers its GOs — or "Gracious Organisers" — the heart and soul of the organisation, and employs more than 23,000 enthusiastic and extraverted professionals worldwide. The GOs hail from disparate backgrounds, comprising 110 nationalities and 30 languages. From romantic beach getaways to alpine sports adventures and family-friendly holidays, Club Med manages all the details — so holidaymakers can focus on the fun. The ***BV*** judging panel confirms Club Med — for the second consecutive year — as an award-winner, this time for the 2019 award for Best Holiday Club Brand (Europe).

Wye Tree Asset Management — Best Structured Credit Specialist | United Kingdom 2019

EXPERT market knowledge, thorough analytical skills and open communication combine to give clients good reason to entrust their nest-egg to Wye Tree Asset Management. The UK-based firm specialises in asset-backed security investments, and has proven capable of consistently exploiting structured credit opportunities. Wye Tree has developed a systematic approach to identifying fresh means to unlock the hidden value of this often-overlooked asset class. Customer relations are based on long-term wealth management, and backed with in-depth, open dialogue — enabling Wye Tree to offer personalised and insightful money-management. The firm first attracted the attention of the ***BV*** judging panel for its ethical development of corporate identity and community contributions. This year the judges are delighted to note the positive correlation between the firm's charitable contributions and return on investment — and present Wye Tree Asset Management with the 2019 award for Best Structured Credit Specialist (UK).

Terpel — Best Employee Engagement Company | Colombia 2018

TERPEL is a company of Colombian origin, tradition, and outlook with a 50-year history of promoting the country's development, growing shoulder-to-shoulder with its affiliates, and working under strict corporate governance and business ethics principles. Terpel — Colombia's leading distributor of liquid fuels, natural gas for vehicles, and lubricants — attracts and retains motivated employees. The company's integrity and co-operative practices are key to the success of its business. Terpel's supportive work environment sets the company apart and inspires long-term commitment from staff. Most of the team members have dedicated a decade of their lives to Terpel, and their personal and professional growth is enhanced through programmes designed to integrate team members, align priorities, improve competencies, and recognise achievements. The ***BV*** judging panel commends the company's open and direct lines of communication, and presents Terpel with the 2018 Best Employee Engagement Company (Colombia) award.

Amazon — Best e-Commerce Value-Creation | Global 2019

A VALUE chain is a business model that includes the full range of activities needed to create a product or service, from procuring raw materials and manufacturing functions through to marketing activities. Online giant Amazon well understands the use of this analytical framework. It assumes full responsibility for logistics, customer service, and product returns via its Fulfilment By Amazon (FBA) system. If a customer orders an FBA item and an Amazon owned-inventory item, the company ships both items to the customer in one box, a gain for efficiency. The use of FBA is optional for sellers, and this choice makes the products of third-party sellers eligible for Amazon Prime free two-day shipping and other benefits. This logistics infrastructure is one of Amazon competitive advantages, and it caught the eye of the ***BV*** judging panel. The result? A win for Amazon: the 2019 award for Best e-Commerce Value-Creation (Global).

Mahindra & Mahindra — Best Corporate Governance | India 2019

WITH increasing levels of concern about globalisation, the World needs examples. It needs global companies that work to the benefit of all stakeholders. Mahindra & Mahindra is one such company. While the "Three Ps" of sustainability are generally understood as People, Planet and Profit, Mahindra & Mahindra is known for adopting a fourth "P" — practicing good governance as a process. Mahindra has made strong corporate governance its foundation for delivering innovation and sustainable growth across the many sectors in which it operates. For Mahindra & Mahindra, good corporate governance is an enabler — and the ***BV*** judging panel was particularly impressed by the company's track record for being ahead of legal requirements, and by its interactive approach to ensuring continual adaptation of governance practices to ensure the strongest possible foundation for the business. The judges were unanimous, and without hesitation, in declaring Mahindra & Mahindra as winner of the 2019 award for Best Corporate Governance (India).

Banco Santander Chile — Best Bank Governance | Chile 2019

BANCO Santander Chile is the largest bank in the country, in terms of total assets and equity. That top position comes with considerable responsibility, and Banco Santander ensures that its corporate governance meets the highest international standards. It brings to its customers and clients the guarantee of sustainable management in the long term. Banco Santander always ensures compliance with best international practice, a model that is recognised by external institutions. "By delivering on our purpose, and helping people and businesses prosper, we grow as a business," observes Ana Botín, executive chairman of the group. Wise words which resonated with the ***BV*** judging panel. The value created by the bank's business benefits all concerned, and communities are best served "by corporations that have aligned their goals to serve the long-term goals of society". Exactly. The judges are pleased to announce Banco Santander Chile as winner of the 2019 award for Best Bank Governance (Chile).

Columbia Sportswear Company — Most Impactful Global Empowerment Initiatives | US 2019

OUTDOOR enthusiasts and advocates have made Columbia Sportswear Company a global giant in the apparel, accessory, and equipment markets. Founded in 1938 — making hats in the rugged state of Oregon — Columbia has grown to become a leading global manufacturer and distributor of outdoor sportswear and equipment. The company aims to "do right" by the people it reaches, the places it touches, and the products it makes. Through Columbia's Empowering People programme in 2017, its employees donated more than 3,000 hours to charitable causes. Around $2m was invested in 500 non-profit organisations worldwide, and 9,000 women received financial literacy and health education via flagship HERproject training. Columbia has a lifelong love of the great outdoors, and partners with diverse non-profits to support often under-represented groups in the outdoor lifestyle community. The ***BV*** judging panel recognises Columbia for its outstanding leadership in corporate responsibility with the 2019 award for Most Impactful Global Empowerment Initiatives (US).

Wari Group — Most Innovative Digital Finance Solutions | Africa 2018

MOBILE money — the use of a mobile phone to transfer funds — is one of the most disruptive factors to hit traditional financial systems in recent years. It enables increased financial inclusion, and has spurred some creative innovation. The Wari Group was founded a decade ago in Senegal with the goal of organising Africa's abundant resources into one accessible, scalable, multidirectional market. Through strategic alliances with prominent partners, the Wari network now spans 60 countries and boasts more than 500,000 service points around the globe. Wari customers use the platform to connect to financial and commercial services, ranging from domestic payments and international money transfers to airtime top-ups and transport services. The Wari platform allows for seamless trade in 38 currencies, using cash cards, digital wallets and cryptocurrencies. For its role as a growth accelerator in Africa, and a facilitator of financial transactions worldwide, the ***BV*** judging panel presents Wari Group with the 2018 award for Most Innovative Digital Finance Solutions (Africa).

I:CO — Most Disruptive Textile Partner | Germany 2019

I:COLLECT (I:CO) envisions a more circular economy for the future of fashion, a closed loop of recycle and reuse. The German-based company was founded in 2009 to provide innovative global solutions for the collection, reuse, and recycling of used clothing and footwear. Through a worldwide network of partners in 60 countries (and counting), I:CO has established an expansive take-back system to divert unwanted items from landfills and maximise the full lifecycle of raw materials. Through I:CO partnership, stores become points-of-sale as well as collection points, driving up store traffic and sales while engaging with consumers in a meaningful way. Reward incentives fuel customer participation and increase the company's global reach. I:CO's certified sorting and processing facilities prepare some items for the second-hand market, and convert others into repurposed raw materials for new creations. Some of fashion's top brands trust I:CO to help them achieve their sustainability benchmarks — leading the ***BV*** judging panel to name I:CO as the winner of the 2019 award for Most Disruptive Textile Partner (Germany).

TPS Eastern Africa — Outstanding Contribution to Sustainable Tourism | Eastern Africa 2019

WORLD citizens are increasingly aware of tourism's negative impacts, and many are seeking travel alternatives that are kind to the environment, local society, and economy. Tourism Promotion Services (TPS) Eastern Africa is a hospitality company specialising in culturally aware and environmentally responsible tourism — from upscale hotels, resorts and palaces to rustic forts, safari lodges and camps. Operating under the brand name Serena Hotels in six countries in Eastern Africa — and three in Asia — TPS seeks to empower the residents of the communities where it operates, and to add a beneficial ripple to their economies. Although TPS operates internationally, it's "loyal to local": TPS hires staff and sources materials locally, supports regional social initiatives, reinvigorates local artisanal crafts, and safeguards each area's natural resources. For its dual focus of maximising socio-economic benefits while protecting the environment, the ***BV*** judging panel presents TPS Eastern Africa with the 2019 award for Outstanding Contribution to Sustainable Tourism (Eastern Africa).

DAMAC Properties — Best Luxury Real Estate Developer | Middle East 2019

AS ONE of the leading developers in the Middle East, DAMAC Properties has established a reputation for delivering luxurious excellence. DAMAC has also contributed some iconic architecture to the skylines of cities across the region. Since 2002, the real estate company has handed-over more than 24,330 properties — from dream homes for young families to appealing opportunities for investors. DAMAC spares no expense in realising its vision of sumptuous style. It selects, recruits and retains top talent, whether in-house employees or award-winning architects, designers and contractors. DAMAC properties boast prime development locations and the most sophisticated building materials. With a development portfolio of more than 40,000 luxury hospitality units in progress, DAMAC extends a gilded invitation to guests and investors. The ***BV*** judging panel appreciates a bit of opulence now and then, and confers on DAMAC Properties the 2019 award for Best Luxury Real Estate Developer (Middle East).

Riyad Bank — Best Sharia-Compliant Financial Solutions | KSA 2019

RIYAD BANK is well-positioned to meet the diverse banking and investment needs of its clients. It's one of the top three financial intuitions in the Kingdom of Saudi Arabia in terms of assets, and caters to the unique concerns of its Islamic customers and clients. In addition to adhering to Sharia principles, Riyad Bank offers a full range of traditional financial solutions. Riyad's Islamic banking services range from everyday transactions to financing and investment solutions for individuals and corporate clients — and all Riyad products are regularly revised and deemed to be in accordance with Sharia law by a committee of esteemed Islamic scholars. Riyad upholds the cultural traditions of its client base with innovative products and services that help them to plan and preserve their financial futures — a feat deserving of recognition, in the eyes of the ***BV*** judging panel. Said judges are pleased to announce Riyad Bank as the 2019 winner of the award for Best Sharia-Compliant Financial Solutions (KSA).

‘Non-standard’ financial information closely tied to share prices, university finds

Want to look into the future of a company? Research by Australia’s UTS (University of Technology Sydney) provides some pointers. LEILAH SCHUBERT reports.

MEASURES that aren’t part of statutory earnings reports — such as the frequently used “underlying profit” — are better indicators for investors of the future performance and value of a company.

Research presented at the International Accounting Standards Board (IASB) annual research forum in Sydney compares “non-standard” financial information from ASX 500 companies with statutory reporting measures from the same firms over more than a decade.

“The results have turned out to be quite striking,” said the lead researcher, Professor of Accounting Stephen Taylor of UTS Business School. “They have significantly higher predictive ability for future profitability, for example.”

The findings help inform the current debate about which financial measures should be reported.

Non-standard — or non-GAAP (Generally Accepted Accounting Principles) — measures are used by companies in media releases and other communications to augment the measures they are required to report under accounting standards.

However, these non-standard measures are sometimes eyed with suspicion because they are considered open to manipulation.

On the other hand, the GAAP measures, which companies are

The research revealed non-GAAP measures were smoother and less volatile

Firms choose to report non-standard financial information because of demand from investors

legally obliged to produce as part of audited figures for the investment market and regulators, have been criticised because they take a "conservative" or cautious approach to reporting financial information.

"There has been a significant increase in the frequency of Australian firms prominently reporting non-GAAP earnings measures," says Taylor, who is also a member of the Australian Accounting Standards Board (AASB).

"But we didn't know whether this increase is because the information is helpful to investors or self-serving, or both."

The research aims to answer this question by comparing for the first time several different properties of non-GAAP earnings measures with their closest accounting standard equivalent.

This involved comparing the statutory information reported by the firms and the non-statutory information provided in their news releases from 2000 to 2014. "It is like running a horse race between two horses, but over many different tracks," says Taylor.

The results suggest firms choose to report non-standard financial information because of demand from investors for measures of financial performance that are more predictable and that are more closely tied to a firms' share price.

As well as being a better predictor of future performance and value, the research revealed non-GAAP measures were also smoother and less volatile.

Taylor notes that earnings reports fulfil two functions: providing information to facilitate the "stewardship" of a business by its management, and providing information to inform the decisions of investors.

"Where the statutory measure wins the race is when it comes to getting bad information into earnings in a timely fashion," Taylor says.

"This reflects the 'stewardship' or control role of financial reporting."

But where the non-GAAP measures come out in front is on the investment side.

The IASB is currently reviewing frameworks and standards for the reporting of financial performance.

"Our research is relevant to the debate about whether firms should be encouraged or even required to include non-GAAP financial information in reporting requirements, and/or break the statutory earnings number into more line items," Taylor says.

"The results suggest a single earnings figure can't fulfil the role of both stewardship and relevance to investors in relation to valuation and future performance."

The paper, Non-GAAP Earnings and the Earnings Quality Trade-off, co-authored by Taylor, Doctor Andrea Ribeiro and Associate Professor Yaowen Shan, will be published this year in the journal Abacus.

The research was funded through an Australian Research Council grant and the former Centre for International Finance and Regulation (CIFR).

Ken-Ichiro Kemei on a chip...

10 *PEOPLE*

KEN-ICHIRO Kamei, a micro-engineer at Kyoto University, has been making headlines for his “bodies on a chip” technology.

It’s not as gruesome as it sounds; in fact, this is a story of hope. Kamei’s glass chips — they look a bit like microscope slides — have a clear silicone layer with enough genetic information “to recreate humans and animals”.

Kamei builds his own microfluidic chips with a laser cutter and a 3D printer. He places cell tissue into six chambers connected to microchannels and, well, it gets complicated, OK? You can trust ***BV*** not to bog you down with science and technical terms. But the process has proven useful in determining the efficacy and safety of cancer drugs, which is what the BBC reported, and what you need to know.

Kamei wants to replicate organs, systems — and entire bodies — using the chips. With channels, valves and pumps, his chips can mimic a living system.

The potential for medical research has not been lost on those with more in-depth knowledge than the ***BV*** editorial team. The World Economic Forum recently named “organs-on-chips” as one of its top-10 emerging technologies.

But it’s more than organs and chips for Kamei, who aims to mimic whole animals.

The primary goal has so far been biomedical, but the chips also allow the study and better understanding of wildlife species, helping in the bid to protect threatened species. So… could he knock us up a mammoth? Quite possibly.

There is also potential for species conservation, and the technology could be used to ensure the ethical treatment of livestock, limit harmful side-effects of some agricultural practices, and create products to satisfy the peculiar demand for body parts of endangered animals.

Tiger penis grown in a lab, anyone? Ivory may take longer.

Bill Gates on the loo


Paolo Bona/Shutterstock.com

10

PEOPLE

BEFORE there was Musk, before there was Bezos, before there was Zuckerberg… there was Gates.

Bill Gates,the World's second-wealthiest person (to Bezos, despite his eye-watering divorce settlement — see elsewhere in this issue). He has made a name for himself with his prescience, generosity, and his business acumen.

With a personal fortune of around $96 billion, Bill Gates has proven, since founding Microsoft in 1975, that he has one of the sharpest minds around. With his wife, Melinda, he has also shown that he has heart. They have invested billions: into research into malaria and Alzheimer's, and health and education initiatives. Philanthropy at such a level is a rare and wonderful thing, and the environment stands to benefit, too.

Gates has recently been heard raving about a "breakthrough technology" that he believes is a game-changer: a toilet that functions without being connected to a sewer. The reason for his interest is clear; hundreds of millions of people around the globe don't have enough clean water to drink, never mind flush a toilet.

On the www.weforum.org website, Gates has espoused enthusiasm for a new toilet that can "filter wet waste, and separate out solids for safe incineration". This, he says, can deliver "a huge improvement in health and quality of life without astronomical investment". The website describes it as "a pragmatic take on a seemingly intractable problem".

Er… someone please give Bill and weforum.org a nudge. The "breakthrough technology" has been around since the mid-1800s. It's called a composting toilet.

These loos are built on a slightly elevated platform. A breakthrough called gravity gives motion to the motions, sliding things gently downhill. By adding a cupful of another technological marvel, sawdust, human waste is transformed by the heat of decomposition into organic matter that can later be scooped from a hatch, and safely used as fertiliser for fruit trees (not leafy vegetables).

The adage, for those who own such dry toilets, is: if it's yellow, let it mellow, if it's brown, help it down. Urine provides any necessary moisture for the composting process. No water required. No incineration, either.

There is little or no odour, and the only maintenance needed is clearing out the accumulated compost — it looks like regular earth or potting compost — every few months.

In a technological World, we tend to look for technological solutions — especially if natural alternatives require a little effort. So in a lazy, pampered age, it's probably just as well that Gates is pushing this one out there.

Airborne behemoth to go extinct as orders fall — and smaller craft rule the roost

Future A380 orders cut by Emirates, putting up to 3,500 Airbus jobs in doubt

AIRBUS will stop making the world's biggest passenger aircraft, the A380 "Superjumbo", because Emirates airline — the largest customer — has drastically cut its order.

CEO Tom Enders said in a statement that the decision was "painful" to Airbus, which showed a healthy net profit of €3bn (£2.6bn) for 2018. Last deliveries of the expensive A380 will take place in 2021 — but Airbus expects to deliver about 900 other commercial aircraft this year.

It even anticipates increased production — for clients including Emirates — of the smaller A330 and A350 aircraft.

Airbus said Dubai-based Emirates had reduced its A380 orders from more than 160 to just 123, leaving it "no basis to sustain production" despite some sales to other airlines.

The giant first took to the air in 2007

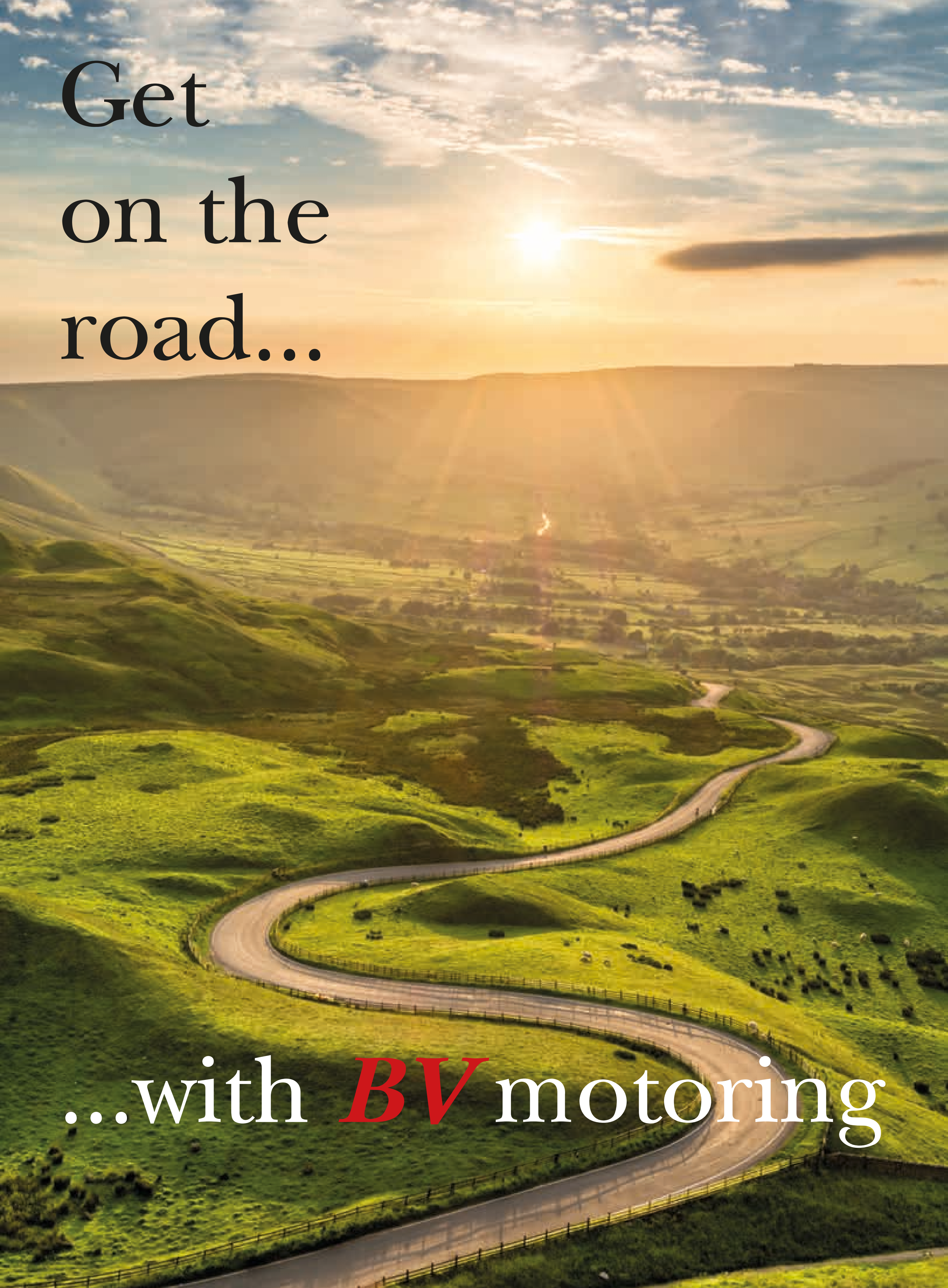
As many as 3,500 jobs could be affected by the move, but Airbus did not give details of which jobs may come under scrutiny. It said it would start discussions with partners about the issue.

A380 production has moved between European locations over the years, with final assembly now taking place in France and Germany. The wings for the A380 are designed and constructed by Airbus UK at Broughton, in north Wales. Design and engineering staff are employed at Filton, near Bristol, working on other parts of the jets.

The giant A380 first took to the air in 2007, and while popular with passengers it proved challenging and expensive to build. It was designed to connect long-haul hubs such as London, Dubai, New York and Tokyo, but smaller, wide-bodied jets have proven more popular and practical. The more fuel-efficient smaller aircraft are able to link secondary cities — making bypassing the crowded hubs a realistic option.

Airbus had initially expected to make about 1,500 A380s, but that figure will drop to a total of just 250 after the decision to halt production. The last 14 of the airborne behemoths — with capacity for 800 passengers — will be delivered to Emirates over the next two years.

The wings for the A380 are designed and constructed by Airbus UK at Broughton, North Wales


Get
on the
road...
...with BV motoring

Need, or greed, for speed? It can never get fast enough for team Bloodhound LSR

Brits are back in the bid for a land-speed record, and RICHARD THOMAS has a good sniff around. And despite the recent trend in *BV*, this beast isn't powered by electricity…

BRITISH entrepreneur and mechanical engineer Ian Warhurst is no stranger to speed.

He grew up around cars and engines in his family's garage and haulage business. After studying Mechanical Engineering and Design, he bought Melett, a Yorkshire-based company that manufactures and supplies automotive parts — including turbochargers.

During Warhurst's time at the helm, Melett expanded — in the UK and overseas. There was an office in Poland, a subsidiary in the US, and a manufacturing facility in China. In 2014, Warhurst and his wife were said to be worth more than £70m, most of which came from the value of the business.

He believes the project is commercially viable

In December 2017, Warhurst sold it to US transport engineering company Wabtec, for a sum that quickly burned a hole in his pocket. A little over a year later, he stepped in to rescue the Bloodhound land-speed record project, which had entered administration just 10 days earlier.

Recently relaunched as Bloodhound LSR, the project aims to beat the existing land-speed record of 763mph, set in 1997 by former RAF pilot Andy Green, driving the Thrust SSC. The project was launched as Bloodhound SSC in 2008 by Richard Noble, the driver of

Ian Warhurst stepped in to rescue the Bloodhound land-speed record project in December 2018

The Bloodhound LSR in its new livery at the public launch event

the car that set a 1983 record of 633mph.

The project draws from different technologies. The main power source is a rocket supplied by Norwegian-Finnish company Nammo. The rocket is fed via a fuel pump powered by a Jaguar V8 car engine. And to get the car rolling from zero, there is the Rolls-Royce EJ200 jet engine from a Eurofighter Typhoon (on loan from the Ministry of Defence).

Bloodhound intended from the outset to inspire the next generation of engineers; it was Warhurst's reason to get involved. A visit to a motor show at the NEC in Birmingham with his kids — and their excitement — inspired the whole project.

A registered charity set up alongside the Bloodhound project produces educational material for STEM (Science, Technology, Engineering and Maths) subjects: model-car building and racing, 3D printing, programming, design and practical experiments. There is even an experiment to measure the speed of sound using an old pair of headphones, a metre rule and a free piece of audio-editing software. I'll try that next time...

October 2017 saw the Bloodhound (the vehicle, not the organisation) tested "at low speed" in public. It reached 210mph on the runway at Newquay Airport in Cornwall. But then came funding issues, and Bloodhound was placed into administration in December 2018. Which is where Warhurst comes in.

In early December, Warhurst's son sent him a text message about the project's demise. Might he want to buy the Bloodhound? He got in touch with the administrators, who confirmed that the car — if that's the word — had to be broken up to return that jet engine to the MOD. Turning such a vehicle into scrap touched a nerve in the Yorkshire businessman.

"I decided I should get involved and try and keep the project together in one ownership," he said. With his team, he took a long, hard look at the financial state of the speed bid.

He is now sure that it can be funded by sponsorship, and believes the project is commercially viable. The problem now is cash-flow — something he is willing to solve. "I will provide the funding so the project can carry on month-on-month, so we can actually get to the goal as quick as we can," he said. "That goal is to take the car down to South Africa."

On South Africa's Hakskeen Pan, in the northern Cape province, the Bloodhound team will conduct higher-speed runs. This time, 400 – 500mph (644 – 804 km/h), then a crack at the land-speed record — and four figures for the first time.

Once again, Andy Green will be feeling the thrust in the driver's seat. "We're all very excited," he said.

Driver Andy Green

BV

If you harness 20 Fiestas — and mug Bezos — we're set to talk about this Bugatti

By HAL WILLIAMS

LET'S start with some numbers: four wheels, six exhaust pipes, 16 cylinders, 1,500 horsepower. Enough to be getting on with, yes?

These are just some of the vital statistics of Bugatti's *La Voiture Noire*, the mind-blowing beauty in these pictures, which was unveiled at the recent Geneva Motor Show. The name translates as "The Black Car", which is a bit of a lame moniker for what is officially, and definitively, the World's Most Expensive Car. So far, anyway.

La Voiture Noire is indeed black

Which brings us to another number, and perhaps the most important one: the price tag. It's £14.4m, or $19m / €16.8m, if currency makes any difference at these altitudes. *La Voiture Noire* is indeed black (well, carbon-fibre colour), and that "La" in the name is definitive and specific: there is only one. It's *The* Black Car.

Considering the price tag, cynics might have thought that one alone would be more than the market could bear, but — predictably, perhaps — it has already been sold. To an unnamed buyer, but it wasn't me, if that helps to narrow it down. The previous record price was the £13m someone lashed out for a Rolls-Royce Sweptail (I didn't buy that one, either).

Apparently, the Bugatti's owner lives in France and is "an enthusiast" of the marque, which is certainly not putting too fine a point on it. France is a fitting home for the black beauty, as it is also the home of Bugatti. Well, sort-of. Automobiles Ettore Bugatti was founded in 1909 by Italian-born industrial designer Ettore Bugatti in the-then German, now-French, city of Molsheim, Alsace. Cosmopolitan, rather than French, then. But hey; the name's French.

How do those 16 cylinders go into six tailpipes?

Must do a ton, surely? No official word, thus far, on how fast the Bugatti goes. Performance is expected to be about the same lunatic level of one of its stablemates, the Chiron, which roars, scorches and tyre-shreds its way to 60 mph in less than three seconds — and will keep accelerating until the speedo needle passes the 260 mph notch and starts to bend. The BBC handily calculated the Black one's power output as equal to 20 Ford Fiestas, which is kind of hard to imagine, and somehow a little sad. Just using the words "Ford Fiesta" in this article feels wrong. Let's just say that *La Voiture Noire* has sufficient supercar muscle for a vehicle built to celebrate the 110th anniversary of a notoriously sporty marque.

While I was chewing over

The Bugatti Chiron: available in any colour you like

the impressive numbers, along with a mouthful of sour grapes, I did wonder about servicing and insurance. Cover for third-party, fire and theft would probably be up there with Powerball wins, but fully-comp would be the go here. Talking maintenance, would Halfords or Kwik-Fit (or Midas; it lives in France, remember) stock spare oil filters and sparkplugs?

I also couldn't help but wonder about those six exhaust pipes. How does six go into 16, or rather, how do those 16 cylinders go into six tailpipes? I want to have a look at the manifold, or a maths textbook.

The one-off, bespoke Rolls-Royce Sweptail

‘Responsible aunty’ tech to take the ~~fun~~ excess speed out of spirited driving

BY HAL WILLIAMS

LICENCE hanging by a thread after being nabbed enjoying that high-speed blast on an empty B-road? Can’t find enough clear road to stretch your Ferrari’s legs?

Fear not. These niggling speed-related issues are soon to be washed away by legislation and technology — but not in a way most drivers will appreciate.

All new cars sold in the UK and Europe from 2022 will be fitted with devices to automatically prevent drivers from breaking the speed limit. ***BV*** contacted the UK Department of Transport to question the wording of the proposed legislation: “cars” are mentioned; motorcycles are not.

“(The legislation) doesn’t apply to motorcycles,” a DoT spokesperson told us. “It just doesn’t. I can’t comment on that.” This is music to the ears of those of us in the two-wheeled community, but let us lament in sympathy with our four-wheeled brothers and sisters.

New limiters will be a mandatory fitment

The sweeping — some would say draconian — changes have been provisionally agreed by the EU; and sorry, Leavers, Brexit won’t help you here. Even if Blighty has cut itself adrift from Europe by the time the rules come into effect, the UK’s Vehicle Certification Agency says they will apply here too.

Speed limiters will be a mandatory fitment to cars from 2022, along with automated emergency braking, electronic data recorders and “improved visibility” to allow drivers to see cyclists and pedestrians. In terms of the old horse-to-water adage, it’s hard to see how improved visibility will encourage people to use their powers of observation, but hey: let’s have bigger windows and rear-view cameras. They can’t do any harm.

The fun-killing / life-saving speed-limiting device goes by

This EU initiative will also apply in the UK, even after Brexit

Your GPS can already tell you what the speed limit is — ISA will enforce it

the jaunty acronym of ISA, for Intelligent Speed Assistance. I'd like to propose NITWITS (Nutty Initiative That We Intend To Shun) as an alternative, though prohibition by any other name would smell as foul.

Anyway, ISA will use GPS readings and road sign-recognition cameras to detect speed limits and sound a warning — then autonomously slow the vehicle. In a rather sloppy sop to real world situations, drivers will be able to override the device by pushing the pedal to the metal "in certain situations". The "certain situations" suggested so far are limited to overtaking manoeuvres.

I'd like to bring Hollywood in at this point. What if you're racing across a city to disarm a nuclear device that terrorists are about to detonate? How about if you're being chased by armed and homicidal maniacs, firing machine guns from the windows of their blacked-out SUVs? Or any of the situations that regularly lead to car chases, outside of those that count as a "plot" in brain-dead *Fast And Furious* franchises and derivatives.

Automobile Association president Edmund King has been quoted as saying (nice one, Edmund) that it is "not clear that ISAs will improve safety". But he likes the idea of "mandatory automated emergency braking". Let's just hope it doesn't automate mandatorily on the car you're following at motorway speeds, or that the brake lights come on, at least.

Safety campaigners are welcoming the speed-limiting move as a "leap forward", and already spouting stats to back their words. The road safety charity Brake hails the move as a "landmark" development. Antonio Avenoso, executive director of the European Transport Safety Council, said the measures will prevent "25,000 deaths within 15 years of coming into force". It is unclear what metrics Avenoso used to make that calculation.

To play devil's advocate for a while longer, what happens on speed limit-free German autobahns? And what if your brand spanker 2022-year, speed-limited car is somehow sandwiched between a couple of speeding, unlimited AMG Mercs from, say, back in pre-limit 2020? How do you get out of the way?

Other measures agreed-to by the EU include the mandatory fitment of data recorders and lane-departure warning systems, to stop you veering off-lane, or find out (post-crash) why you did. What is immediately clear is that drivers will soon have less autonomy and will be hamstrung, for better or worse, by technological "driving aids" that are beyond their control.

The glimmer of hope for those who enjoy a spirited drive on occasion is that the measures must be ratified by the European parliament before implementation. Oh, and that bikers are exempt from these fumbling attempts at control. Yay. For now, anyway.

Driverless cars? Bring 'em on. Things can't get much worse…

Beemer and Daimler join forces for driverless options, ride-hailing and pay-per-use

LUXURY German vehicle manufacturers BMW and Daimler have announced they will join forces to invest in next-generation services, including driverless vehicles.

The firms are have pledged to invest €1bn (£880m) in the project looking at pay-per-use car schemes, ride-hailing and parking services.

Ride-hailing firms are expanding, with Uber, in particular, noticeable in the US market. This is seen by industry experts as part of the reason for the new venture. But BMW and Daimler have also been working on the development of autonomous — driverless — cars. Tech, in the 21st Century, is becoming bigger than the traditional motor industry.

Bad news for old-school motoring enthusiasts

The development may be seen as bad news for old-school motoring enthusiasts who still like to hold a steering wheel, but it could be good news for tech start-ups: the new partners are keen to snap up suitable tech firms as the first part of the co-operative process.

The joint venture has five elements. Reach Now (a smartphone-based route management and booking service), Charge Now (electric car-charging), Free Now (ride-hailing), Park Now (parking services) and Share Now (car-sharing). Online sources report that Daimler's Car2Go car-sharing brand will join with BMW's DriveNow, ParkNow and ChargeNow initiatives, with an even 50-50 split in the projects.

BMW says five services will form a "single mobility service portfolio with an all-electric, self-driving fleet of vehicles that charge and park autonomously".

A company spokesman described the move as "the perfect way to maximise our chances in a growing market".

BMW described the move as 'the perfect way to maximise our chances in a growing market'


You have the power to create
Vodafone
Power to you