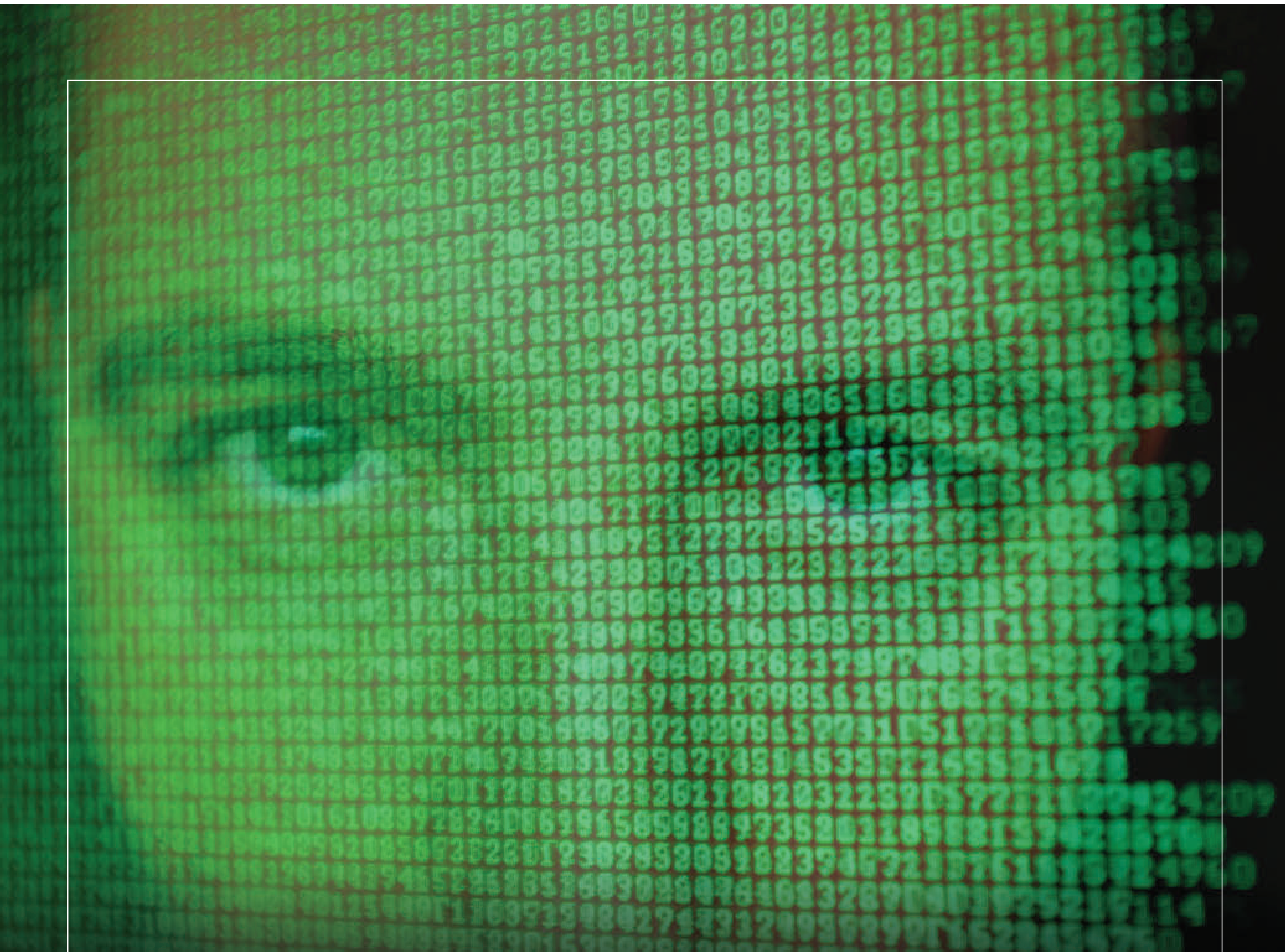
Accountancy Futures

Critical issues for tomorrow's profession

Edition 18 | 2019



Machine learning

As artificial intelligence becomes more science than fiction, the profession embraces its digital future

Plus: Cybersecurity | Digitisation and tax | Blockchain | SMEs and scaling up | Trust | Audit regulation | Accounting for cryptos | External reporting | Views from the top | Caribbean regional focus | Arnold Schilder's life in audit | In-Ki Joo on IFAC presidency

ACCA Think Ahead

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ACCA (the Association of Chartered Certified Accountants) is the global body for professional accountants, offering business-relevant, first-choice qualifications to people of application, ability and ambition around the world who seek a rewarding career in accountancy, finance and management.
ACCA supports its 208,000 members and 503,000 students in 179 countries, helping them to develop successful careers in accounting and business, with the skills required by employers. ACCA works through a network of 104 offices and centres and more than 7,300 Approved Employers worldwide, who provide high standards of employee learning and development.

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About CA ANZ

CA ANZ (Chartered Accountants Australia and New Zealand) is a professional body comprised of over 120,000 diverse, talented and financially astute members who utilise their skills every day to make a difference for businesses the world over. Members are known for their professional integrity, principled judgment, financial discipline and a forward-looking approach to business which contributes to the prosperity of our nations. We focus on the education and lifelong learning of our members, and engage in advocacy and thought leadership in areas of public interest that influence the economy and domestic and international markets.

CA ANZ

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Welcome

Explore the critical issues facing the accountancy profession in the latest jointly produced magazine from Chartered Accountants ANZ and ACCA

Few themes have such universal resonance in our time as digital technology. As we explore in this issue of *Accountancy Futures*, the IT revolution we are living through is shaping the strategic ambition and operations of every organisation.

Finance professionals have a proud record of embracing technological advances to improve the service they give their clients and the value they add to organisations. But as technology continues to develop at a breakneck pace, individuals and organisations have a clear onus to keep up to date with emerging technologies and the burgeoning associated risks.

ACCA's and CA ANZ's joint research *Cyber and the CFO* – an examination of the cybersecurity landscape – dovetails with ACCA's insights on machine learning (*Machine learning: more science than fiction*), which examines how artificial intelligence works to allow systems to learn and improve.

Both provide timely opportunities for financial professionals to learn about areas of digital that offer significant opportunity and yet equally material threats.

These two emerging trends do prove that the longstanding requirements of professional judgment and ethical input are required more than ever. You can read about machine learning on page 6 and cybersecurity on page 10.

Integrity issues have real life consequences as can be seen by a poll into public trust in tax systems. Global research by ACCA, CA ANZ and IFAC found tax professionals are considered to be more trustworthy than the tax authorities, politicians and the media. But there is no room for complacency: 55% say they trust advisers, down two percentage points on the survey findings from two years ago. (See page 24.)

Wherever and however you are reading *Accountancy Futures* – and whether you are doing so in print or on the app – this edition is designed to provide insight and understanding of the latest technology in order to help individuals and organisations build the skills and competencies required for success and sustainability in this digital world. AF

You can find out more about CA ANZ's research and insights at charteredaccountantsanz.com/news-and-analysis/insights/research-and-insights

You can find out more about ACCA's research and insights activities at accaglobal.com/insights

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This publication is also available in a range of digital formats, including as an app for Apple, Android and Kindle devices.
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Stephen Walker, CA ANZ president; Robert Stenhouse, ACCA president.

The ACCA and CA ANZ alliance

A strategic alliance was founded in June 2016 by ACCA and CA ANZ to shape and lead the future of the accountancy profession. Our combined voice represents the views of 800,000 current and future finance professionals in 180 countries, offering unique range and scale. The two professional bodies work together to advance public value, to promote and represent members, to provide greater support and resources to members and other stakeholders, and on research projects and events. Together, the two bodies have more than 100 offices and centres around the world.
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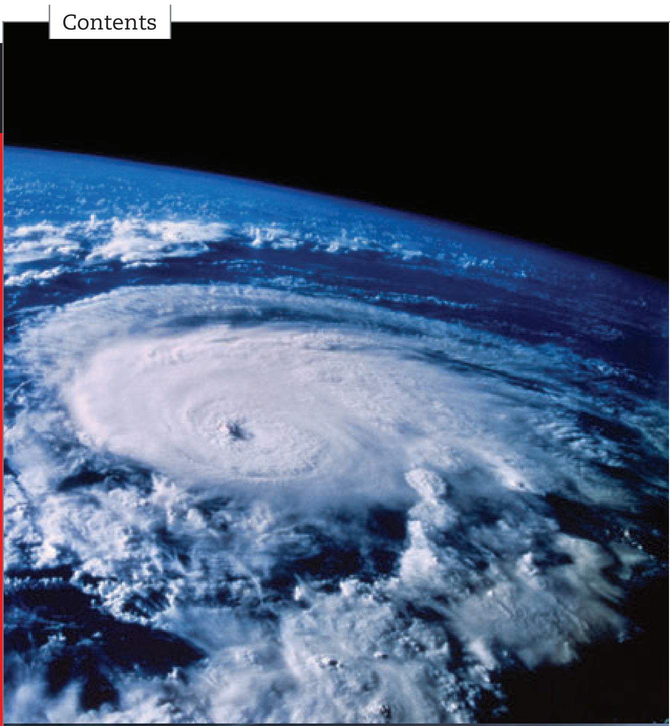
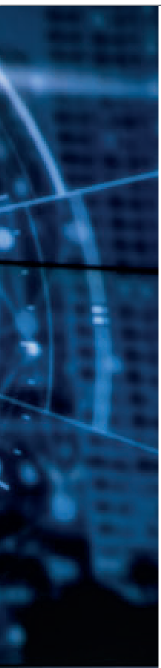
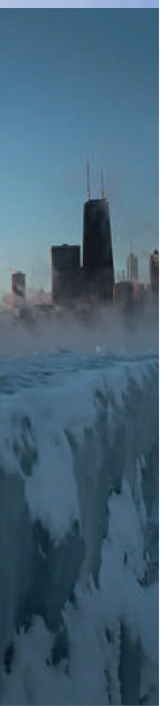
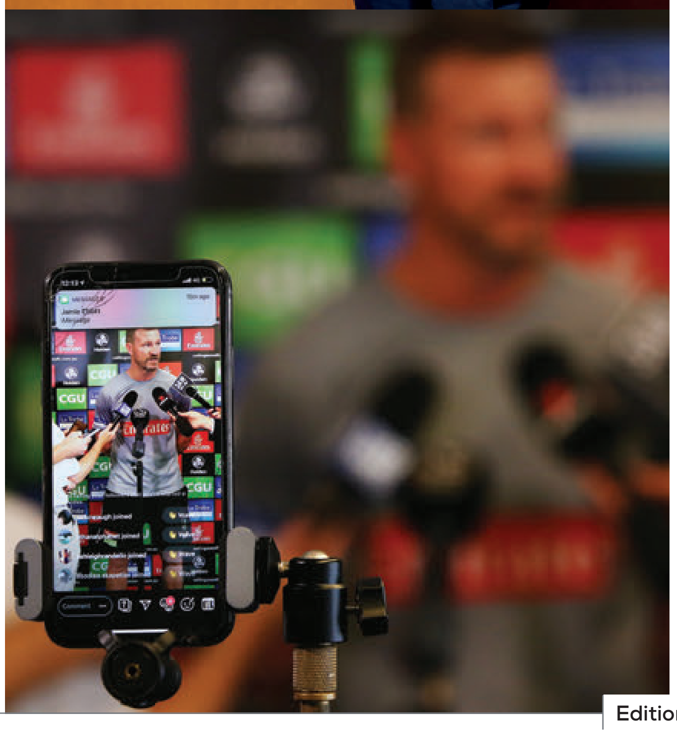


Innovation


IFAC



Science reality

Once the realm of science fiction, artificial intelligence has become reality, offering opportunities and challenges for professional accountants

Once upon a time, artificial intelligence (AI) was all science fiction and no fact. Now that we are experiencing products and services that are enabled and enhanced by AI, we are starting to appreciate its capacity to significantly change how we live and work – and to consider some of the actual and conceivable implications of this.

Public perception changes as we become more familiar with concepts such as AI and machine learning (see 'AI concepts and categories' below); but predictions about their potential pros and cons in the future span a bafflingly broad range.

AI concepts and categories

Understanding the potential of AI means also understanding some of its concepts, sub-categories and techniques, such as machine learning, natural language processing (NLP) and predictive analytics.

AI is the theory and development of computer systems that can perform tasks that normally require human intelligence, such as decision-making, language translation and speech recognition.

An algorithm is a set of rules or a sequence of instructions that are followed to complete a task.

Machine learning is an application of AI that uses an algorithm or model to process data, identify and learn from patterns in it, predict similar patterns in new data and use this to improve its performance.

Examples of this include Pinterest (content discovery) and Twitter's curated timelines.

Deep learning is a subset of machine learning, where artificial neural networks (algorithms inspired by the human brain), learn from large amounts of data. Examples include PayPal, which is using deep-learning fraud-detection algorithms to monitor transactions and identify suspicious behaviours.

NLP facilitates human and computer communication by recognising and responding to nuances in human language. Examples include Baidu (search engine), IBM Watson and Amazon Alexa.

Predictive analytics are used by programs to analyse historical data in order to predict future outcomes. They are often combined with AI techniques. Examples include: American Express (fraud detection) and Einstein Analytics from Salesforce.

Many products and services utilise a combination of multiple AI techniques and tools.

Learn more in *Machine learning: more science than fiction* and other specialist ACCA reports and resources at accaglobal.com/digital.

At one end of the spectrum is tech entrepreneur Elon Musk. 'Mark my words, AI is more dangerous than nukes,' is just one of his dire warnings about all-singing, all-dancing 'general AI', as opposed to the kind of functional, narrow AI that's used in his Tesla cars (and other current AI applications).

At the other end of the spectrum is Steve Wozniak, co-founder of Apple. He used to share Musk's forebodings, but in 2018 he declared: 'AI doesn't scare me at all,' because a two-year-old child only needs to see a dog once to always recognise one and a computer can't get near that until it's seen a dog over and over again.

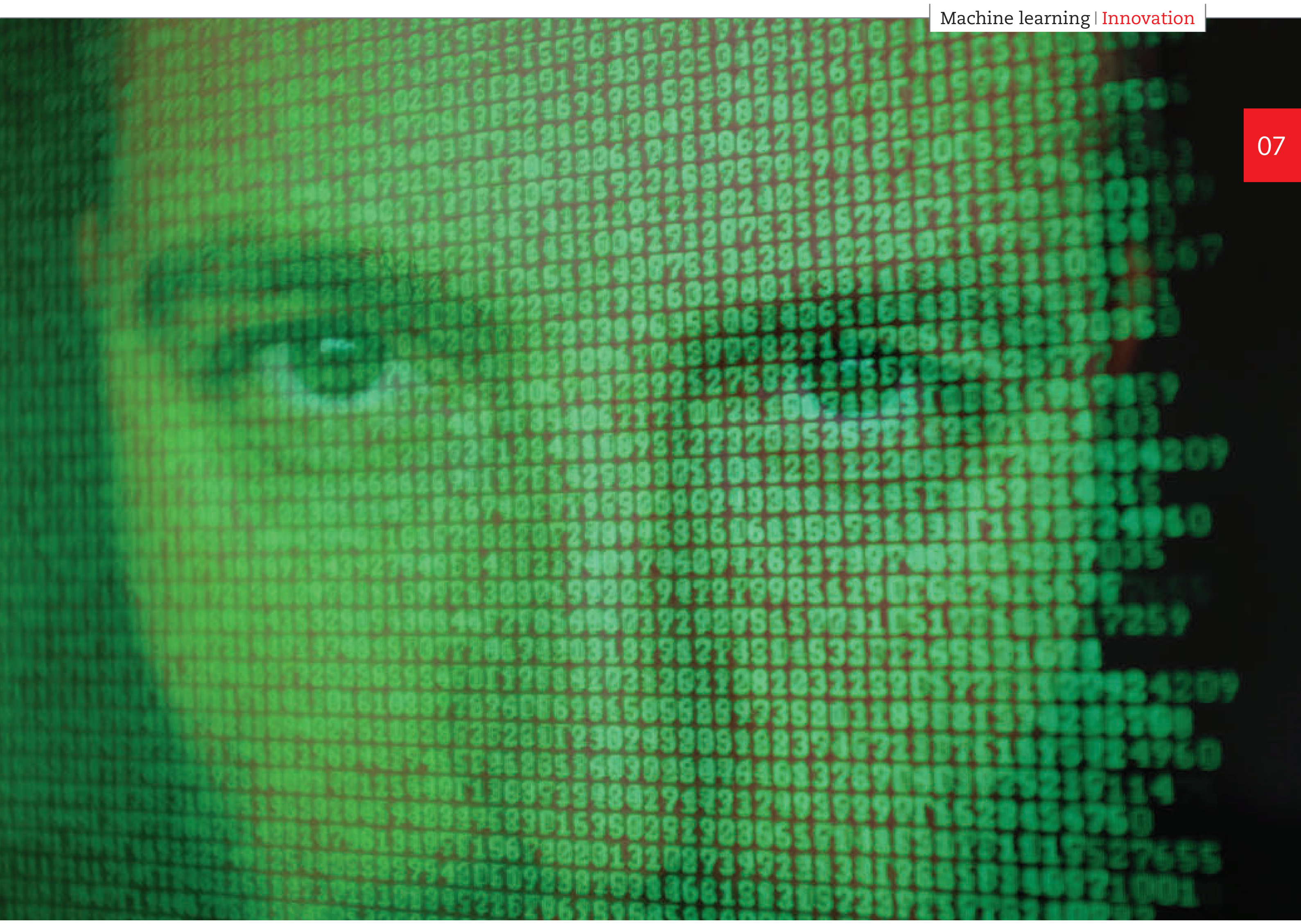
Dame Wendy Hall, computer science professor at the University of Southampton, and an expert on AI, has a more balanced perspective on its future. 'There will be lots of positive benefits. But we need to get a grip of the downsides,' she says, because change is happening very fast. AI technologies such as natural language processing (NLP), machine learning and machine processing are already being used to improve processes, enhance interactions, solve problems, perform functions and make decisions that used to be the preserve of humans, and Hall says we can expect 'escalation and acceleration'.

Here and now

Only time will tell what AI is capable of. Meanwhile public and private sector organisations across all industries are jumping on the AI bandwagon (see 'The AI gold rush', page 8); implementing solutions that AI makes possible today and exploring what it could make possible tomorrow. The really big AI successes, however, may be concentrated among the biggest online service and storage companies such as Alibaba, Amazon, Google and WeChat, because they have a head start and an inherent advantage – the vast amounts of data they are collecting.

'Data is the key raw material that feeds machine learning algorithms,' says Narayanan Vaidyanathan, head of technology insight at ACCA. Massive growth in the volume of that raw material is one of the keys to recent and coming AI advances. 'As a civilisation we are producing lots more data than we have in the past and our processing and computing capabilities are also expanding like never before. These things combined mean that use of tools like machine learning is poised for significant take-up in the future, because we have raw material and the ability to process it,' he explains.

Access to that all important raw material can be somewhat uneven. AI pioneers such as Amazon and



Google have always valued the vast amounts of data we have willingly ceded to them and they've spent years preparing for the transition from micro to macro-level applications of AI and machine learning. 'The last 10 years have been about building a world that is mobile-first, turning our phones into remote controls for our lives. But in the next 10 years, we will shift to a world that is AI-first,' wrote Google CEO, Sundar Pichai, in a 2017 blog.

Shifting sands

Pichai predicted a world where 'computing becomes universally available – at home, at work, in the car, or on the go – and interacting with all of these surfaces becomes much more natural and intuitive, and above all, more intelligent'. This shift appears to be well under way, as AI is trickling into more and more areas of our personal and professional lives. There are chatbot educators, while lawyers, therapists and finance professionals are interacting with AI applications in specialist areas as diverse as audit, the delivery of financial services, financial close processes and fraud detection.

ACCA explores some early stage AI applications in its new report *Machine learning: more science than fiction*. 'It offers an introduction to machine learning for professional accountants,' says Vaidyanathan.

> 'AI will bring lots of positive benefits. But we need to get a grip of the downsides, because change is happening very fast'

Ethical dilemmas

Although AI raises potential ethical concerns for many professions, accountants consider ethics through the prism of the code of ethics of the International Ethics Standards Board for Accountants (IESBA). ACCA's report *Machine learning: more science than fiction* considers how ethical challenges around AI may challenge or compromise the profession's core principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Accountants can bring this perspective on ethics to some of the wider debates taking place on issues around algorithms, machine learning and so-called 'black box' systems. The profession may be well placed to develop some of the assurance frameworks that may eventually be needed to demonstrate that organisations developing and using AI are doing so in accordance with the necessary ethical principles – if consensus can be reached on these.

Dame Wendy Hall, computer science professor at the University of Southampton, who is a leading figure in the UK on the development of AI technologies and the associated ethics, says: 'It is very hard, once these algorithms are let loose, to unpack exactly what they are doing.' Perhaps those developing and using AI should be in some way accountable. Hall says: 'All companies should be aware of their responsibilities in this area and of the ethical issues in what they are doing.'

The report outlines what machine learning is, shares current thinking on its use, considers ethical implications from the professional accountant's perspective (see 'Ethical dilemmas', page 7) and explores how machine learning developments will influence future skills for the professional accountant; and all of this is underpinned by primary research with around 2,000 ACCA members across the world.

'This research will provide some reality on what accountants are currently doing and adoption they are seeing in their organisations. There are lots of insights from the profession,' says Vaidyanathan. The report explores how finance professionals feel about machine learning, its influence on interactions between accountants and technology, and emerging issues such as explaining how machine learning algorithms make judgments, avoiding bias in data sets or algorithms, algorithmic accountability (see 'Challenges and opportunities' section, below), and ensuring the provenance and veracity of data.

Roles for the profession

'Data can only be used to create insight if you have clean data that has been validated and properly managed,' says Vaidyanathan. This presents an opportunity for the profession. In many organisations, CFOs, FDs and other senior finance people have a control responsibility in terms of managing the governance of the organisation and its structure and processes, there is already an overlap with existing technology resources and the associated data, and as the amount and value of data increases, so will the involvement of finance professionals.

The AI goldrush

All sorts of organisations are investing in all sorts of AI: ranging from systems that can converse with a human to those that can perform better than a human – and it's not just AI pioneers such as Amazon and Google that are mining for gold. Billions of dollars, euros and yuan are being invested by private equity firms and AI startups, corporates that want to beat them and their competitors to the benefits, and local and national governments jockeying for position as the leading country or region for AI.

Big tech has a head start. AI already powers many Google products and services including Google Assistant, Duplex, Maps and Search. This provides it with massive amounts of data to feed the machine learning algorithms that are key to its success today and its strategy for tomorrow. Google's decision to share its machine learning platform TensorFlow with an Open Source community is not an act of altruism. If you are not paying for the product then you are the product.

Entire countries are now trying to play catch-up. China has declared its intention to oust the US as the world leader in AI by 2030 – and has committed billions to the pursuit of this aim. China's giants Baidu, Alibaba and Tencent (often abbreviated to BAT) are investing heavily in research and development; and the country has a massive advantage over many others in the race for AI gold, because it has very few obstacles to data collection and regulations on its usage.

ACCA and Alibaba

ACCA and Alibaba Cloud Computing have signed an exclusive agreement to see a closer working relationship for the two organisations to focus on course development, research and professional insights. The agreement sees both organisations working together to shape the future of the profession during a time of digital transformation. ACCA chief executive Helen Brand said: 'Our collaboration will be broad – from producing joint research to looking at course development for ACCA members about digital innovations.'

As data becomes ubiquitous, so may the accountancy profession. 'We know that accountants are constantly expanding their field of vision,' says Vaidyanathan. They have access to data from across the business and in many organisations this is not just finance-related data. Finance professionals are also working with operational data and getting more involved in processes that reflect the changing nature of strategic and corporate reporting, for example, by broadening their scope to encompass processes that feed into environmental, social and governance (ESG) reporting and integrated reporting more broadly.

In the brave new world of data-enabled AI, members of the profession bring some specific and very valuable skills to the table. 'If you want to get insights from the data that add value, you need to understand where you are going as a business and you need to link what you are doing with the data with where you are trying to go as a business,' says Vaidyanathan. 'This is something many accountants already excel at and a new final case study module "Strategic Business Leader" was recently added to the ACCA Qualification to emphasis the importance of this area.'

As AI changes the business environment, professional accountants will play an increasingly important role. 'There will be a much higher premium on the ability to get out there and really understand the priorities and risks within the business,' he says. Accountants will understand and communicate how an organisation's strategy, financial and non-financial information interact with each other to create a picture of value creation and direction for the company. 'All of this is essential when you are dealing with machine learning algorithms, because they don't have any of that wider context,' explains Vaidyanathan.

An algorithm can do lots of clever computation but you need business knowledge to ask the right

Talk to me: an LG fridge with a built-in Amazon Alexa digital voice assistant on show at the Consumer Electronics Show in Las Vegas.

> 'Professional accountants can add value by bringing their professional scepticism and ability to interrogate, and having oversight of what the algorithm is doing'

questions and interpret the answers. Accountants can also play key roles in addressing the control and governance issues that are emerging around machine learning.

'Professional accountants have the potential to add value in terms of bringing their professional scepticism and the ability to interrogate, and having oversight of what the algorithm is doing,' says Vaidyanathan.

Challenges and opportunities

The spread of machine learning algorithms raises a host of thorny questions on accountability. Professor Karen Yeung, interdisciplinary professorial fellow in law, ethics and informatics at Birmingham Law School, in the UK, says there are difficult questions to be asked about the distribution of authority, responsibility and liability, and who is held accountable if there is harm. 'The fake news debate is a great example of how there are real tangible consequences from using these systems, yet we have no real effective way of governing those,' she says.

Although many regions are strengthening their data protection legislation, AI and its utilisation of data is creating new issues. Yeung says: 'The European Union has been the world leader on the regulation of automated decision-making.' There are some mechanisms in its General Data Protection Regulation. However, meaningful ethical regulation of AI systems will be more difficult to mechanise, not least because

AI components and data from multiple jurisdictions are being built into products and services. 'Grappling with these questions is the Wild West; nobody really knows what data ethics is.'

More data seems likely to bring more problems. 'Every reliable estimate suggests that the amount of data we create is going to increase exponentially not linearly,' says Vaidyanathan, and the abilities of machines are growing along with data volumes. At some stage there may be an argument for breaking up some tech giants or legislating to curb their emerging monopoly on data – before their AI-enabled automation becomes ubiquitous in every walk of life. If we want to enjoy the benefits of AI we need to deal with some of the burdens, and fast. Because as Hall observes: 'The genie is out of the bottle.' AF

Lesley Meall, journalist

The power of digital

ACCA has been focusing on how digital developments are changing the accountancy profession, highlighting the key impacts, offering learning and development opportunities, and evolving the ACCA Qualification to ensure it remains cutting edge. You can explore our professional insights research, content and opportunities at accaglobal.com/digital. During May 2019 we'll be introducing a new CPD course on robotics based on our joint ACCA/CA ANZ research on the topic, along with a new microsite which will bring together all of our learning and resources on digital.

A perfect storm

The cyber threat landscape is changing fast, and CFOs must run to keep up

App attacks, cryptojacking, ping of death (the sending of a malicious ping to a computer), zero-day vulnerabilities – the A-Z of cybersecurity threats is constantly growing. New menaces emerge almost daily, the number of attacks is increasing, and no individual or organisation is invulnerable. 'It is no longer a case of if you will be attacked, but when,' says Geraldine Magarey, thought leadership and research leader at CA ANZ. A perfect cyber storm is brewing, and CFOs need to understand and mitigate the associated risks.

There are signs, however, that many CFOs and their finance teams see cybersecurity as somebody else's problem. Recent global research among more than 1,500 members of ACCA and CA ANZ found low levels

'SMEs think they are not a target, because cyber attackers will go after somebody bigger, but this is not true' of cyber risk awareness. 'CFOs often regard cyber risk as a technology issue, not a governance or business issue,' says Magarey. The research, *Cyber and the CFO*, a joint report with Optus Macquarie University Cyber Security Hub and Singtel Optus, indicated that cyber threats did not register prominently, except perhaps where privacy was more front of mind as a result of recent legislation.

You are not alone

Responsibility for managing and mitigating cyber risk does not rest solely on the CFO's shoulders. 'It is the collective responsibility of the C-suite,' says Clive Webb, senior insights manager at ACCA. But CFOs are becoming more involved in operational crisis planning as operating models evolve. 'As more businesses are cloud-enabled and more technology resources are third-party hosted, technology looks less like an operational domain in its own right and more like a strategic operational issue,' says Webb. Failing to respond to this trend can have dire operational and financial consequences.

Trying to recover after an adverse cyber incident such as a data breach or ransomware attack can be complex and time-consuming. Money spent trying to remediate damage – to data, systems, relationships with customers and suppliers, and the reputation of the business – can quickly mount up. Then you need to factor in opportunity cost and loss of revenue due to downtime. 'Cybersecurity is a business issue, not a technology issue. CFOs need to understand and act on this,' says Webb, because the damage a cyber attack can cause is determined by how well prepared an organisation is.

Plan to survive

Basic cybersecurity controls can protect against the most common cyber attacks, according to the National Cyber Security Centre (a British government organisation), which has made some simple guidance (at bit.ly/NCSC-Guidance) freely available; so do public and private sector specialists in other countries. Cyber risk and liability insurance may give you a sense of security, but implementing and regularly testing basic cyber monitoring procedures and controls will make your organisation more resilient to the most common threats and make recovery from adverse cyber incidents easier to manage when they do occur – as they inevitably will.

All organisations should assume that they will be attacked, even small and medium-sized enterprises (SMEs). 'SMEs think they are not a target, because cyber attackers will go after somebody bigger, but this is not true,' says Magarey. Adverse cyber incidents afflicting the biggest businesses and brands may grab headlines, but such victims are the tip of an iceberg. Beneath the waterline, many smaller organisations are also being attacked by cyber criminals. According to Verizon's 2018 *Data Breach Investigations Report*, 58% of cyber attack victims were businesses with fewer than 250 employees.

Cyber wargaming

War games used to be the preserve of armed forces, but corporate wargaming is on the rise – and it's not hard to understand why. The simulation of moves and counter-moves in real-time settings can be an effective way to test your organisational reflexes, surface gaps in plans, and to develop your collaborative judgment capabilities – particularly in a fast-moving cyber attack scenario.

'Cyber wargames are an important way to raise awareness of the latest cyber risks and attack types, as well as cyber risk management and adaptive response capabilities an organisation needs during, after, and preparing for the next cyber incident,' says Daniel Soo, cyber wargaming leader for Deloitte cyber risk services, and Deloitte risk and financial advisory principal.

'The most impactful wargames are those that use live knowledge of an organisation's current threat environment to support the decision-making process across operations, finance, regulatory, marketing, and beyond,' says Soo. With supply chains and cyber risks increasingly interconnected, industry bodies are also testing and practising their collective response and information sharing procedures.

Examples include Cyber RX in the healthcare industry and Quantum Dawn, a regular simulation event that most recently involved more than 50 financial institutions, utility and infrastructure providers, plus various government agencies. The biennial exercise, Cyber Storm (sponsored by the Department of Homeland Security in the US), spans multiple industries.

The benefits of business wargaming go beyond cyber risk. Management consulting firm McKinsey suggests that wargaming can help CFOs to strengthen their strategic decision-making, by simulating various scenarios in which executive teams make big and consequential decisions under pressure. A podcast and transcript on this is available from McKinsey at bit.ly/McKinsey-WarGames.

Cyber storm ahead

No organisation can be 100% secure; but lack of cyber risk awareness leaves SMEs less well prepared for cyber attacks than larger organisations and less able to deal with the consequences. Research by the US National Cyber Security Alliance found that 60% of small businesses go bankrupt six months after a cyber attack. Unfortunately, SMEs are increasingly popular with cyber criminals, who see them as a soft target for penetration and extortion and conduits into their supply chains; hence the appeal of sector and multi-industry cyber wargaming (see above).

The spread of internet connectivity among objects, organisations and people – the internet of things – is turning us all into links in a chain, and the associated cyber risks are unlikely to diminish any time soon. As technology advances, so do cybercriminals' weapons and the sophistication of their methods.

'As a CFO, you need to appreciate how fast the nature of cyber risks and the types of attack you may face are changing,' says Webb. This does not mean you need to become an expert on app attacks, cryptojacking or ping of death attacks. Webb says: 'As a CFO, you should know what you don't know and who to ask when you do need to know.'

Lesley Meall, journalist

Read the report, *Cyber and the CFO*, at accaglobal.com/digital

Tools for the future

The latest advances in digitisation have brought opportunities and challenges for tax administrations, finds a recent ACCA report

Set in stone: the Rosetta Stone, which dates from 196 BC, is actually a tax decree, an early example of the struggle to find an efficient way of collecting taxes.

Taxes have been a part of human life from the earliest recorded historical times – the Rosetta Stone, a stone slab that dates from 196 BC and which proved key to the deciphering of Egyptian hieroglyphs, is in fact a tax decree. Just as much a part of human life has been the battle to find an efficient and fair way of collecting those taxes.

The advent of digital technology is seen as the ultimate opportunity for societies to transform the tax system for the better, making both calculation and collection of taxes simple, accurate and (relatively) painless. A new report from ACCA, *Technology tools and the future of tax administration*, looks closely at the practical implications for the tax system worldwide, discussing the main issues that policymakers and decisionmakers need to keep in mind.

The use of innovation and technology in tax is by no means new. Our attempts throughout history to calculate and collect tax have triggered many innovations. Trigonometry, for example, has its roots in the techniques ancient Egyptian tax inspectors used to measure irregular areas of land.

The modern world, though, brings one crucial difference. 'One thing all the historic tax tools had in common was that they had originated in an environment where information was recorded in physical form, and duplication was a comparatively expensive process,' says the report. Over the past 20 years, the emphasis has shifted to electronic storage of information. 'The character of information is changing – its cost and, perhaps, its value too are in a state of flux.'

The difference, from the point of view of a tax administration, is that digital records are infinitely reproducible. Many users can access a single, centrally held record and when it is updated for one user, it is updated for them all. Thousands of items of data can be shared at a click, and vast volumes of data can be interrogated automatically by software almost instantaneously. 'Tax administration is just starting to grasp some of the potential of this development,' says the report. 'The future is already here; it's just not very evenly distributed.'

Shape of the future

Digitisation, of course, is not just transforming business and the way information is stored and accessed; it is also changing the very goods and services we produce and consume. That, argues the report, also has profound implications for the shape of the tax systems of the future.

Today, taxes fall into one of three broad categories: taxes on income or profit; taxes on transactions; and taxes on static wealth. 'The implementation of digital tools has the potential to draw the three together,' says the report, 'or crystallise the differences between them.'

The reasoning behind this is that the benefits of digitisation vary according to the different types of tax. For taxes on profits, the benefits are mostly around calculation and analysis. As long as profits continue to be assessed on an aggregate of transactions over a set period of time, the existing model of tax administration (the taxpayer collates, analyses and

Tax innovation in action

Aerial imagery in the US

Aerial mapping technology was introduced in Ascension Parish, Louisiana, to help identify property improvements that were liable for tax. The technology produced detailed images of parish properties, which were then combined with property tax records to help an assessment team review changes to properties and prioritise field inspections. More than 6,000 property improvements that were not detailed on the tax rolls were identified, resulting in US$18.1m in new annual tax revenue. A similar exercise in Anne Arundel County, Maryland, expanded the county's tax base by almost US$32m.

Electronic billing in Rwanda

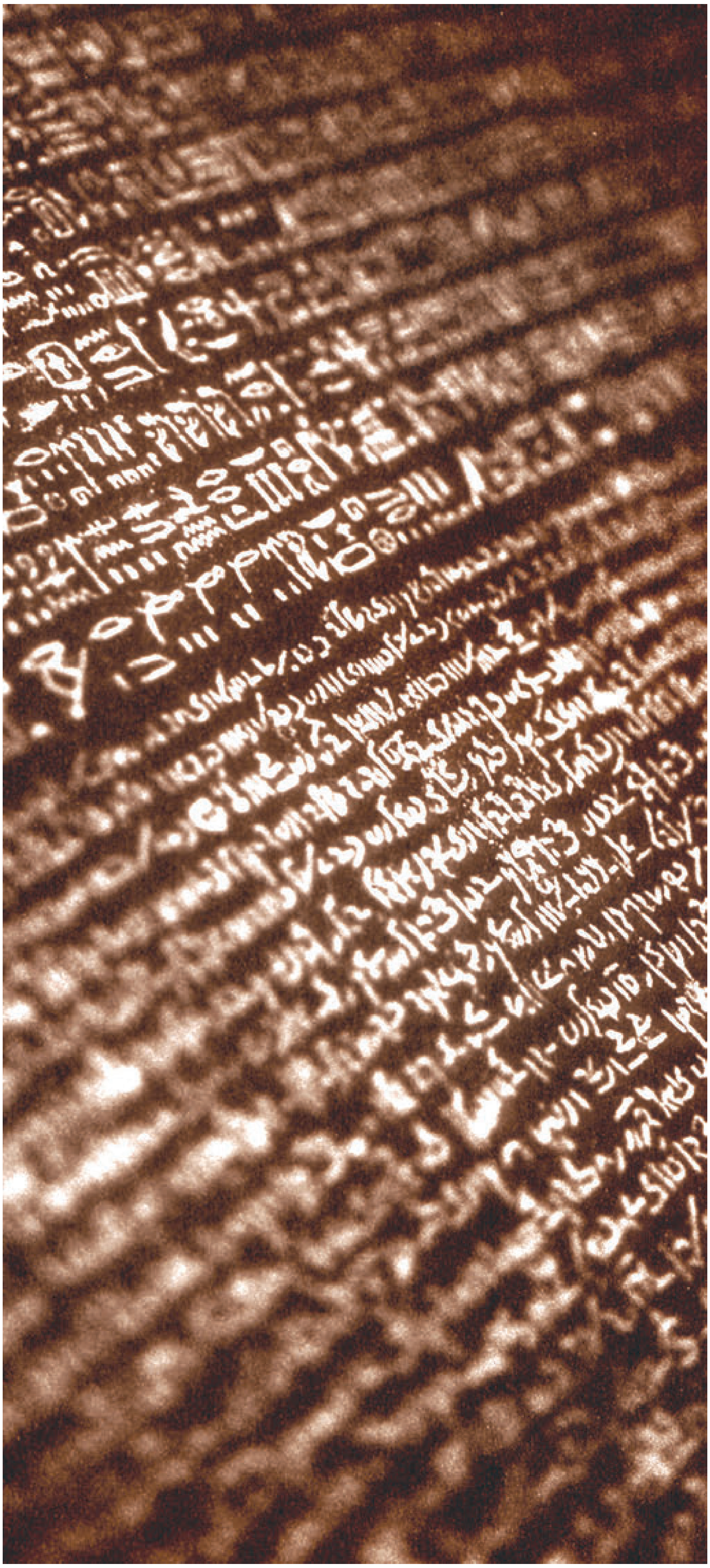
Electronic billing machines (EBMs) were introduced by the Rwandan government in 2013 in order to address vulnerabilities in the domestic VAT system. The paper-based system was vulnerable to fraud and manipulation, with the tax authorities routinely uncovering suppressed sales figures and false refunds. Traders were required to buy and use EBMs in a phased introduction beginning in 2013. By 2015, VAT collection rates had increased by 20% a year and VAT compliance times had fallen from 45 hours to five hours a year. In 2018, the government announced plans to replace the physical EBM hardware with a free, officially sanctioned software-based equivalent which could be used on smartphones and computers. As a direct result of this innovation, Rwanda is the only low-income economy to be ranked in the top 50 of the World Bank's 2019 *Doing Business* report.

E-payments in Afghanistan

An e-payments system for the payment of customs duties was introduced into Afghanistan as part of the US-led programme to develop the country's economy. Customs duty accounts for up to 30% of the country's total tax revenue, but before the electronic system was introduced, a significant proportion was stolen before reaching the public purse.

The project proved to be challenging, with less than 1% of customs duties paid through the e-system three years after it was first implemented. A lack of infrastructure to support the full chain of payments was identified as a major factor in discouraging traders from using the system. Commercial banks, for instance, were not able to access the central bank's electronic customer clearance system, forcing them to scan and transmit supporting paperwork manually. With little incentive for traders to adopt the system, the technology was largely unused for a number of years.

‘The character of information is changing – its cost and, perhaps, its value too are in a state of flux’



adjusts the relevant entries, and then transmits them in one package to the tax authorities) will survive.

The impact of digitisation on transactions is more fundamental. A number of jurisdictions have already introduced ‘smart tills’ (see box), which record sales taxes and VAT automatically and transmit the data to tax authorities. Ultimately, as the infrastructure develops, we are heading for a model where the sales tax element of a transaction payment is transmitted directly to the tax authority’s account, bypassing the merchant entirely.

For wealth and capital gains taxes, the benefits of digital filing are less obvious, although the report argues that there are advantages that can be exploited. The use of distributed ledger technology, for example, in land and property transactions ‘offers opportunities not just for streamlining the operation of land registries, but also for eliminating the scope for errors or delays in the operation of stamp duties and similar taxes’.

The report points out that in the digital economy it is increasingly difficult to point to the stage in the supply chain at which value is created. ‘So,’ it adds, ‘perhaps the current models of profit taxation will retreat and be replaced with a broader reliance on consumption taxes… which is the area where digital tools may perhaps have the biggest impact on our daily experience.’

Barriers

While tax administrations are, unsurprisingly, keen to explore the use of technology, one of the biggest barriers identified in the report is the fact that the adoption of technology varies widely between countries and within them – even when the technology in question is available.

‘The range of individual experience and capability is probably the most diverse it has ever been in many workplaces,’ says the report. The success or otherwise of a digitally driven tax solution depends entirely on the willingness of individuals and businesses to adopt integrated solutions – something that is by no means guaranteed.

‘One of the key things about technology is that its adoption is rarely universal or instant – and it does not follow the same linear path of progression everywhere it appears,’ concludes the report. ‘Approaches that work well in one market might not work at all in another, and external factors can completely change the dynamic within which the tax system operates. Tax administrations need to be sensitive to the local environment, and to other factors in the local economy, before seeking to implement costly measures which may not repay the investment.’

Liz Fisher, journalist

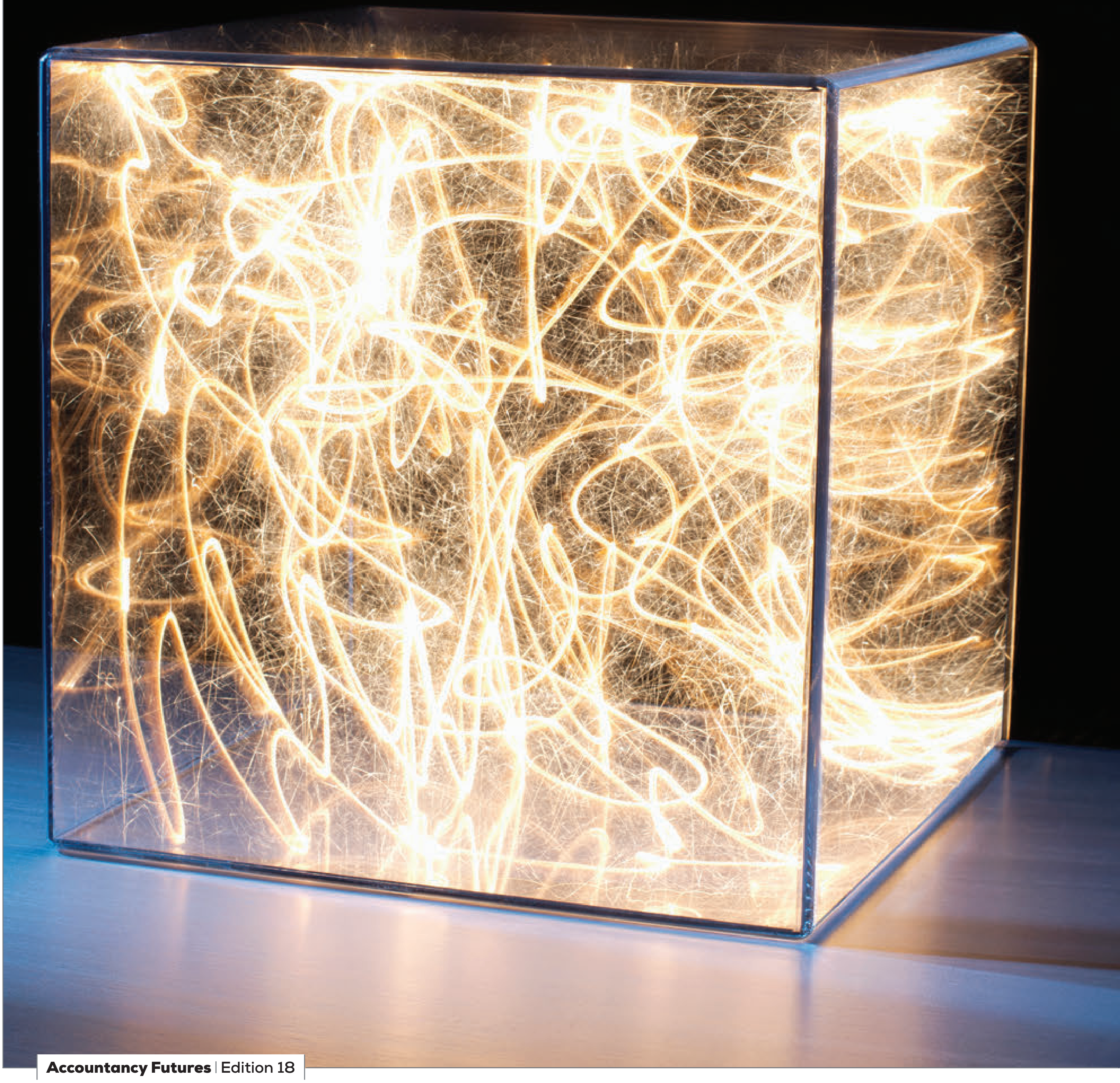
Read ACCA’s report *Technology tools and the future of tax administration* at bit.ly/ACCA-TaxAdmin

Killer? Thriller!

Far from dealing a mortal blow to the audit profession, blockchain technology looks likely to generate a range of exciting new assurance roles

Could the audit profession have been given a stay of execution? Blockchain, or distributed ledger technology, has been touted as its executioner – after all, if all transactions are recorded in an immutable chain of digital blocks, with no apparent way of being altered after the fact, it creates a perfect audit trail, so dispensing with audit and auditors.

Not so fast. Auditors are starting to seek to stake a claim in this new technology so they can use it to their advantage – and that of their clients. They point out that as long as a human element is involved (with



the attendant risk of mistakes and fraud), a third party is needed to provide assurance over the validity of transactions.

Simon Padgett FCCA, a Vancouver-based cryptocurrency and blockchain forensic accountant, doubts that blockchain will kill off the auditor. 'I don't think so,' he says. 'Blockchain has the capability to eradicate audit, but there is always scope for error and fraud. The uncertainty of human interference before, during and after a transaction means that you will always need an external audit.'

That is not to deny that blockchain will radically alter auditors' operating environment. As Padgett explains, the technology offers enhanced transparency and accessibility to financial and non-financial information that could profoundly affect record-keeping, reporting, assurance and governance.

'In a blockchain future, auditors and forensic experts could be given a set of blockchain digital access "keys", providing access to detailed, timestamped information covering all transactions,' he says. 'Such access could have significant impact on the auditors' approach to their work. Organisations that use the blockchain will likely incorporate continuous internal audits in their processes, supply an audit trail, and provide account analysis at the push of a button.'

While companies and auditors move to embed blockchain applications and platforms into the accounting and finance environment, it is critical that these systems do not become seen as 'black boxes' that offer – ironically – limited transparency and audit trails.

Katie Canell, audit innovation director at Deloitte, says: 'The validation of the system of governance and controls, the security and integrity of data within the system, and the need to understand whether the platform or application is operating as intended over a period of time are all critical aspects of being able to rely on the outputs.'

> 'Blockchain has the capability to eradicate audit, but there is always scope for error and fraud'

The need for trust

The creation of trust will be key to the success and widespread adoption of blockchain for accounting and auditing purposes. As Padgett explains, the internet has done a great job of data transfer. On the whole, the process was trusted until banks began to crash in 2008–09 and questions were raised about the transfer of value – in particular, currency value. It is no coincidence that 2009 was when bitcoin appeared. 'There was mistrust in the financial system, so there was a need for a new financial channel, a trusted way of moving value, not just data,' he says.

And this is where an auditor can still be involved. Canell says: 'Distributed ledgers are founded on the basis that they promote trust and resilience without the need for a central, trusted party controlling the process. However, in reality, while an entry on the blockchain can be trusted as an official record that a transaction occurred, it does not necessarily provide evidence relating to the nature of the transaction, why it has occurred, or if all transactions have been recorded.'

EY has recently announced the launch of its Blockchain Analyzer tool to help audit teams assemble an organisation's entire transaction data from multiple blockchain ledgers. Its auditors can then interrogate the data, analyse transactions, perform reconciliations and identify outliers. It is also designed to support testing of multiple cryptocurrencies managed or traded by exchanges and asset managers.

'These technologies lay the foundation for automated audit tests of blockchain assets, liabilities, equities and smart contracts,' says Paul Brody, EY's global innovation blockchain leader.

PwC has also launched blockchain validation software, which combines a risk and control framework with continuous auditing software. As powerful machines test for anomalies in real time, with every transaction tested, longer-term patterns not evident to the human eye will be spotted. Mid-tier firms are getting in on the action too, with BDO teaming up with Microsoft to develop blockchain technology.

Challenges include the power hunger of blockchain hardware, the risk of hacking and money laundering, unidentified errors, integration with legacy systems, and obsolescence. Canell believes regulation will also need to be rethought: 'There is a fine balance between regulations adapting and opening up opportunities for evolving technology, and technology driving the need for change.' AF

Philip Smith, journalist

The ups and downs

Simon Padgett FCCA outlines the blockchain audit pros.

- Blockchain-based accounting systems could provide new ways to record and report financial information.
- Organisations could retain their double-entry accounting systems while parties to a transaction could record their respective entries in a shared blockchain ledger, allowing transaction integrity to be confirmed in the shared ledger.
- Smart contracts could replace internal and external reporting functions.
- Blockchain ledgers could rapidly aggregate and consolidate financial reports in real time, reducing monthly and year-end reporting delays.
- Opportunities will be created for blockchain governance and forensics.

PwC highlights the blockchain audit cons.

- Blockchain environments have unique architectures and lack standardisation, so each client must design a custom control environment based on their use case.
- There is a lack of knowledge and blockchain expertise within organisations to design control environments.
- Blockchain is a real-time technology without the historic ledgers that allow audit.

Cheap prediction

AI may be best understood as 'cheap prediction'. But while it's a useful input to decisions, people will still be needed

In the mid-1990s an economist called William Nordhaus had a radical idea for valuing the invention of the light bulb. How much effort, he wondered, would it take to produce a similar amount of light with a wood fire?

The answer: to produce an hour of electric light with a light bulb would require chopping wood for 10 hours a day, for six days. Nordhaus went on to create a price index going back to sesame oil-powered lamps from Babylonian times, showing that the real benefit was a dramatic fall in the cost of artificial light.

Researchers have since used this economic approach for valuing technology to examine the internet's role in lowering the cost of search; transporting, verifying and replicating information; and in tracking behaviour. And now three academics in Canada have followed this process to cut through the hype around machine learning, the most popular example of artificial intelligence (AI) today. 'Digging into the technology it became clear that it was a drop in the cost of prediction,' says Professor Avi Goldfarb, an econometrician who specialises in the science of quantitative marketing. With Professors Ajay Agrawal and Joshua Gans he has co-authored the book *Prediction Machines, the simple economics of artificial intelligence*.

Not everyone sees machine learning in such a reductive light. Computer science academics emphasise the potential of AI's ability to learn, and the ramifications this holds for training robots and the like. 'But that's not the AI we have today. It hasn't gone past that one thing – cheap prediction,' says Gans, a renowned Australian economist who moved to Toronto in 2010.

Better forecasts

Prediction is the process of filling in missing information. It takes the information (or data) you have, and uses it to generate information you don't have.

Given the great advances in AI, calling it 'cheap prediction' seems a little underwhelming. It suggests we haven't yet reached a drop in the cost of intelligence; we're only reducing the cost of one part of it. Yet this part is a critical step. Machine learning's probabilistic model mimics our own learning process, a process that developed through millennia of evolution. Prediction, argues another author, Jeff Hawkins, is the basis for human intelligence. 'Prediction is not just one of the things your brain does. It is the primary function of the neocortex, and the foundation for intelligence. The cortex is an organ of prediction,' Hawkins wrote in his book, *On Intelligence*.

Using AI to automate audits

Accountants are already using machine learning software to audit accounting files in minutes. And the task of poring over spreadsheets to match transactions looks like one of the first to fall under the wheels of automation.

Radlee Moller was at a partner retreat in Hawaii when he first realised the opportunity for machine learning.

Managing partner at CA firm CIB Accountants and Advisers, in Parramatta, NSW, Moller was intrigued at claims made by a software company, MindBridge Ai Auditor, that it could automate most of the legwork for auditors.

Moller invited MindBridge CEO Solon Angel to Australia and watched Angel run the 'Pepsi challenge'. The software took five minutes to audit a file and find the four mistakes within that had taken a five-person team three weeks. It even revealed a fifth, unknown error.

Moller timed the software on other files at CIB. 'It took 12 minutes for the biggest file in the firm,' Moller says.

Several months later, Moller had convinced Angel to let him distribute MindBridge to Australian firms.

The startup is already making millions in revenue, has 120 customers – including the Bank of England – and is preparing for an IPO in 2021.

CIB Accountants hasn't dropped its fees for audits, despite the time saved. 'I tell clients there's a software cost. We don't pass that on; we wear it,' Moller says.

Moller's experience fits the prediction made by Deloitte Australia in a 2017 report. It identified auditing as the most likely role for automation.

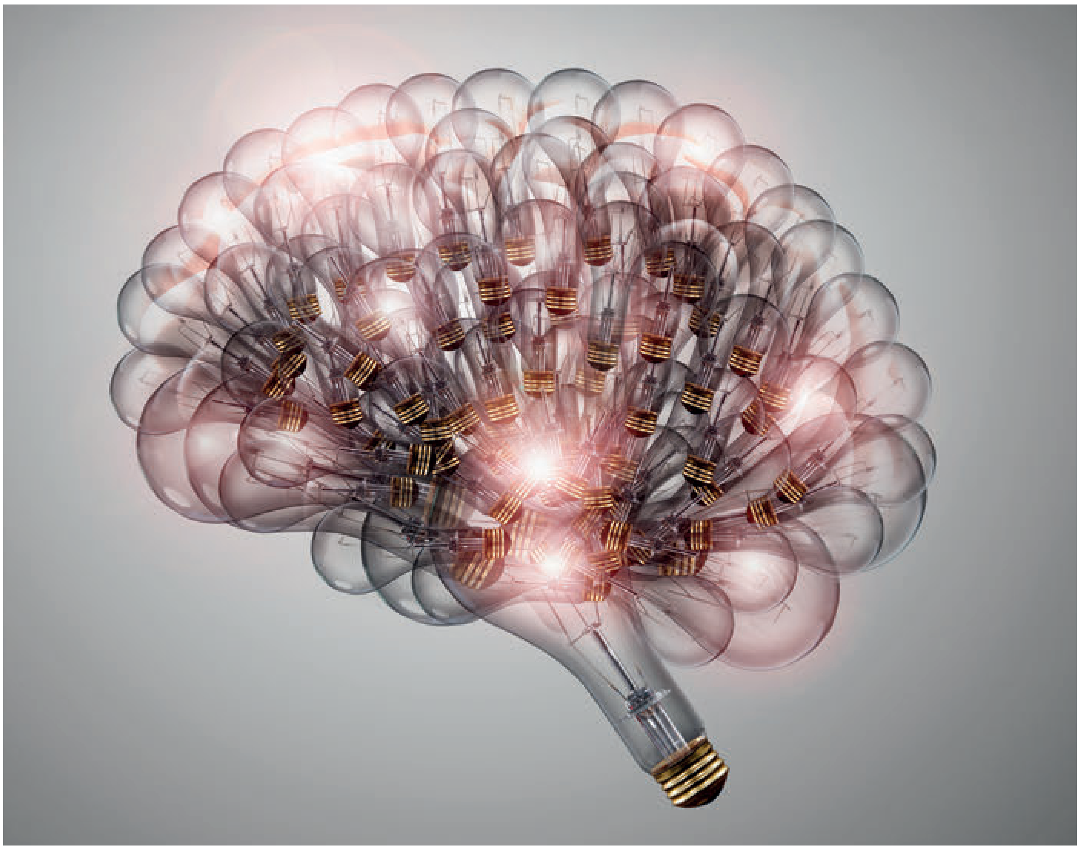
'Auditors will eventually veer towards the forensic accounting, accuracy, validation type of role rather than sitting with Excel spreadsheets trying to manually reconcile thousands of transactions,' says Gavin Whyte, chief data scientist at Deloitte Australia.

Whyte has been developing inhouse algorithms that replicate MindBridge's smarts. The Big Four firm can customise them for different clients or applications, Whyte says.

Prediction Machines explains that machine learning is not on its own a tool to replace professionals; it is merely a tool for improving prediction. And prediction is one of several inputs into the process of decision making, the authors argue. Another is that undervalued input called judgment.

'Prediction facilitates decisions by reducing uncertainty, while judgment assigns value,' the authors write. Luckily for accountants, value is a difficult thing for machines to assess. Machine learning may speed up the process of making predictions by categorising and sorting data and spotting patterns. But turning those lessons into business advice, and prioritising them in terms of success, requires analysing a combination of emotional, intellectual and practical considerations.

'In economists' parlance, a judgment is the skill used to determine a payoff, utility, reward or profit,' the authors explain. 'The most significant implication of



Bright idea: Economist William Nordhaus had a radical idea for valuing the invention of the lightbulb. Researchers have since used his approach for valuing technology.

prediction machines is that they increase the value of judgment.' 'You can appreciate what else people do to make a decision,' Gans says. 'They can't just predict things. They also have to know what the trade-offs are, and these things only come from people. Then you start to understand why it's really hard to create a fully automated thing, because we may not understand the nature of decisions that the robot needs to make.'

When will AI move beyond cheap prediction to making judgments? Few agree on the timeline for a breakthrough of that magnitude; the predictions range from imminent to almost never. 'Someone might switch on a robot AI that works it out itself and just becomes sentient. I'm not a computer scientist so I can't give you a probability, but my feeling is that it's not for a long time,' Gans says. 'We've got a lot to do with the AI we currently have and that's going to keep people occupied for the moment.'

AI onslaught

A wave of machine learning applications is breaking across the business world. One of the latest is Google's word processor for Google Docs that automatically corrects your grammar in real time. AI is being quickly built into other programs, from SME accounting software to enterprise resource planning (ERP). But Gans cautions against believing everything you hear.

'I wrote the book because I was concerned that people would say, "Buy my magic AI!" and it would turn out to be not that good,' he says. 'I don't think there's any need to rush to add it to your operations.'

The use case for accountants in practice is more clear-cut.

'Accounting does have data going for it, so it's only a step away from being put to use,' Gans says. Forensic accounting and auditing are already making way for algorithm-driven programs that process huge volumes of transactions. These programs can pull up a shortlist of transactions to check for fraud or error (see panel, page 16).

Will accountants will replaced by machines? Goldfarb believes this is unlikely. Fifty years ago, accountants spent most of their time doing arithmetic. When the spreadsheet arrived it dramatically lowered the cost of doing arithmetic and helped customers make decisions. Before spreadsheets arrived, one would have expected the arrival of such a powerful decision-making tool to reduce the need for accountants. 'But the numbers have remained steady,' Goldfarb says.

'Most of the tasks that accountants do today they will not be doing in 10 to 15 years from now. That doesn't mean we won't have lots of accountants, because these tools will enable accountants to better serve clients which will open up new opportunities.'

And of course, accountants should understand the capability of machine learning and other technologies to improve their clients' businesses.

Sholto Macpherson is a technology journalist and editor of DigitalFirst.com, a blog on the latest in accounting technology.

Read the CA ANZ report, *Machines can learn, but what will we teach them?* at bit.ly/CAANZ-EthicalGuide

Keep ahead of the game

As digital technology transforms the finance professional's role, make sure you don't get left behind, advises Xero UK managing director Gary Turner

Earlier this year Gary Turner, managing director of the cloud accounting software company Xero, wrote an open letter to the adjudicators of the *Oxford English Dictionary*, arguing that its current definition of accountant – 'a person whose job is to keep or inspect financial accounts' – was archaic and should be updated to reflect the changing nature of the role.

'The role of an accountant is far removed from what it once was,' wrote Turner. 'Today, an accountant doesn't just crunch the numbers and observe financial operations, but so much more. They advise business owners and aid and fuel business objectives such as business growth, improving efficiency, cost and productivity. Insight from well-respected bodies finds that time and time again, accountants are a business owner's most trusted adviser.' Turner went on to suggest a new definition: 'a person whose job is to keep or inspect and advise on financial accounts'.

Of course, the suggestion was a useful PR springboard for Xero, one of the fastest growing providers of cloud software to SMEs. The letter also pointed out that the number of accountancy practices embracing cloud technology means that accountants are able to 'offer useful insights by analysing operational and financial data stored in the cloud'. But Turner's proposal also gained the support of ACCA. The proposed addition of 'advise', says Claire Bennison, head of *ACCA UK*, 'is a positive development we fully support as it reflects the changing role of a professionally qualified accountant as a trusted adviser to business'.

> 'If the low-paid manual tasks are taken care of by technology, firms can deliver a different kind of service to their clients'

At the root of the issue is the fact that accounting software – whether cloud based or otherwise – has in recent years taken over much of the traditional grunt work of accountancy, freeing up professional accountants to focus on value-added advisory services. According to Xero's own research, 42% of SMEs say that they ask their accountants for advice that goes beyond accountancy, and while 34% of SMEs say that they value their accountant's number-crunching skills, far more (41%) say that they value good business advice as an important quality in their accountant.

The power of cloud

Turner is a lifelong and passionate advocate of technology and in particular its power to help SMEs achieve their ambitions. Given that he grew up surrounded by the paraphernalia and stresses of running a small business – his parents ran a garage in Glasgow – he says it was inevitable that his career would eventually lead him to the SME software sector. In Xero he saw the power of cloud technology to help both SMEs but also the accountancy practices and sole practitioners who advise them.

Automated software is transforming business finance across the spectrum, from the largest companies to the smallest. The same is true of accountancy firms, and Turner argues that small firms have at least as much to gain from automation and automated software as their larger counterparts: 'If the low-paid manual tasks are taken care of by technology, firms can deliver a different kind of service to their clients.'

But he stresses that finance professionals must move with the times to stay relevant: 'We've been on the road to automation for 30 or 40 years now. If all you are doing as an accountant is number-crunching then you're going to have a problem.'

According to Xero's *Digital or Die* survey, 45% of advisers believe practices have to move to digital skills in order to survive. 'Accounting businesses need to go digital,' says Kevin Fitzgerald, Xero's regional director for Asia. 'Our focus is on teaching accountants how to use technology to understand their clients' needs and capture the opportunity that they're leaving on the table.'

He stresses that Xero wants to work in partnership with finance professionals around the world, rather than compete with them – one of Xero's main sales channels is through accounting partners who recommend its platform to their clients: 'Our strategy has always been to win over accountants and bookkeepers, with our teams set up to support, train and educate them.'

Turner argues that initiatives such as HMRC's Making Tax Digital in the UK mean that digitally enabled practices, of all sizes, are the future of the profession. 'I recently met a sole practitioner who has built up an entirely digital practice,' he says. 'I believe that approach will be the next generation of firms.' Again, Xero has research to back this up: *Digital or Die* found that digital practices enjoy 12% year-on-year growth; four times the industry average of 3%. The advent of artificial intelligence (AI) and machine learning, says Turner, will change the game still further. (See page 6.) Turner argues that AI will be transformative in its

ability to demystify accounting tasks and remove unnecessary complexity (high integrity accounting – where data is untouched by human hands, coding is fully automated and data entry becomes redundant – is a strong area of focus for Xero). 'The smartest organisations over the next couple of decades will be those that harness AI and use it to build more efficient processes, and improve their customer service,' he says. 'AI could be transformational, but only if it's deployed in the right way.'

He adds that when it comes to AI, we should not be constrained by the way we have used technology up until now. In other words, we should not just see digital technology in terms of improving the existing processes of business, but embrace its potential for a far more significant transformation. 'Digital transformation has profound implications for the world of business that haven't revealed themselves yet,' he says. For example, powerful technology could allow an entrepreneur to run multiple companies at once: 'It could profoundly change what it means to run a business.'

The same argument applies to the application of digital technology and machine learning to the responsibilities of a finance professional. 'AI can have

Gary Turner

Gary Turner is the co-founder and managing director at Xero UK and leads the company's operations across Europe, the Middle East and Africa. He was born in Glasgow and has had a lifelong fascination with IT. After leaving school he worked as a sales manager for Select Computing, later joining Pegasus Software as marketing director, becoming the company's managing director in 2003. In 2007 he joined Microsoft Dynamics as product group director, before taking the leap to join Xero in 2009. During his tenure the company has grown from a start-up with revenues of £50,000 to a global business with annual revenues of £40m in 2018. Gary also sits on the board of Enterprise Nation, which supports new and growing businesses in the UK.

a significant impact on the world of finance,' says Turner. 'The role will change because of AI; it will allow an individual to cater for a wider range of services, or look after more clients, and be more efficient in the way they work. Digital technology brings the ability to get more work done, and it allows finance teams to be more agile. It enables the role of a finance professional; it doesn't replace it.'

The new normal

But this is not just a matter of learning to use new tools; digital technology is changing the way organisations work and organise themselves. The work of finance professionals is moving out of the back offices and is becoming integrated throughout the business. One of the biggest challenges for the finance function and for finance professionals, says Turner, is smoothing the transition to the new normal.

'Cloud tools are fostering an environment where people are more collaborative and engaged across the organisation. Digital technology is changing the way the finance function is working but it also impacts other roles, the engineering of a company and how you do business. It's the job of the finance function to align the business around that,' he says.

On an individual level, professional accountants must also take responsibility for keeping abreast of a rapidly changing world. The changing role of the accountant – to trouble-shooter, financial controller and business developer – calls for a different skillset, with greater emphasis on collaborative working and strong communication. Changes to the ACCA Qualification are specifically designed to address this, but Turner stresses the importance of continual self-education and awareness of how the world is changing, and what that will mean for you.

'We're entering a challenging phase, much like the advent of the personal computer 30 or 40 years ago,' he says. 'It's so important to get ahead of change, to understand it and how digital technology is changing the role of finance professionals. Don't wait for changes to come down the line before you react.'

He speaks from experience – he was an early engager in the potential of the internet in the late 1990s and, convinced that it would be a game-changer, devoured any books or research he could find on the topic and began blogging on the topic so he could connect with other like-minded people. 'Learning is really important,' he says. 'I would say that you should read everything you can about digital technology and where it might take us.'

Above all, he adds, professional accountants should not be daunted by what is ahead. 'One of the common myths you hear about AI is that robots are coming to take over the world, and before long will be sitting at your desk doing jobs you would have done. That's the Hollywood version. There will certainly be an increasing role for automation and AI in business, but we see it as something that augments the human element rather than replaces it completely. I don't subscribe to the view that in five years' time you won't need people. We don't disempower people at Xero – we are radically empowering accountants.'

Liz Fisher, journalist

ACCA and Xero MoU

In recognition of the importance of the cloud-based economy to the accountancy profession, ACCA and Xero signed a global memorandum of understanding (MoU) at the World Congress of Accountants in Sydney last November. Maggie McGhee, executive director – governance at ACCA, said: 'Our MoU is signed against a backdrop of an increasingly global and cloud-based economy, where small businesses need to be empowered with affordable, accessible technology that helps them grow their business and allows them to bring benefits for their clients.' Rob Stone, national partner director, Xero Australia, commented: 'Our Xero Small Business Insights data shows us there is a correlation between businesses on our platform that are embracing digital connectivity and increased revenue and employment. Therefore, driving increased uptake of digital technology creates a huge opportunity to really grow the global economy.'

Force for good

Countries need to cut employment-destructive labour taxes and increase resource and pollution taxes to help build a sustainable global economy

Tax has long been a policy tool of choice all around the world for influencing social and economic behaviour. But can it be used to help drive a sustainable global economy?

This is the challenge explored in a recent ACCA report by Femke Groothuis, co-founder of the Ex'tax project – a thinktank focused on fiscal innovations to boost the United Nations' Sustainable Development Goals (SDGs). The report, *Tax as a force for good: rebalancing our tax systems to support a global economy fit for the future*, calls for a rebalancing of tax systems, and sets out how governments must think more widely about what they should be taxing, and how those tax revenues should be put to use.

The headlines may be dominated by whether multinational companies are paying their 'fair share' of corporate tax around the world, but *Tax as a force for good* focuses on other, less publicised taxes – in particular, labour and green taxes. It is these taxes that can directly affect the world's social and economic challenges of unemployment and pollution.

The report stresses the urgent need to focus taxation on resource use and pollution rather than labour. It describes adapting tax systems in this way as 'survival of the fittest': it is not the biggest or strongest that will survive, but those that adapt to change.

Groothuis notes how tax systems have evolved over recent centuries – the 18th-century window tax in England and Wales has been replaced by fossil fuel duties and progressive income tax in the modern world. But this evolution was firmly rooted in the industrial revolution, and as we enter the fourth industrial revolution – one driven by data and technology – so tax systems around the world need to adapt accordingly.

The starting point for this discussion centres on the UN's 17 SDGs, described as humanity's 'to-do list'. Unemployment, underemployment and vulnerable forms of employment are highlighted as part of Goal 8 (decent work and economic growth), making the point that the global economy is nowhere near achieving full and productive employment.

Groothuis argues that this creates a barrier to inclusive growth. It has been calculated that just US$0.64 of every dollar an employer pays in labour costs ends up in employees' pockets (the so-called labour tax wedge). Research shows that high taxes on labour income can hamper job creation and work incentives. High payroll costs are an incentive for employers to cut jobs, and affect employees' decision to enter the labour force and the number of hours they work (the effect is particularly strong among low-income workers, single parents, second earners and older workers).

This matters, argues the report, because on average across the 36 member countries of the Organisation for Economic Co-operation and Development (OECD), more than half of all the tax revenue comes from labour. Other countries – the emerging economies of Africa, Asia and Latin America – rely more on sales taxes, but still raise significant amounts via labour. Green taxes hardly get a look in.

This disparity is at the heart of the report. Many of the world's greatest social and economic challenges relate to disadvantageous environmental mega-trends – climate disruption, pollution and consumption patterns. The report cites the latest Intergovernmental Panel on Climate Change (IPCC) analysis, which warns that global carbon emissions must start to fall in the next 12 years if large-scale natural and human risks are not to play out irreversibly. Air pollution, mostly from vehicles and industry, kills millions every year, while a truck load of plastic waste is dumped in the oceans every minute.

The figures given in the report are staggering. The long-term negative impact on the global economy caused by carbon dioxide emissions in 2017 alone was US$16 trillion, while the global welfare losses from pollution stand at US$4.6 trillion a year, or 6.2% of global economic output.

Despite this, polluters do not pay. 'Considering that we live in an era of climate change, water scarcity and geopolitical tensions over fuels and materials, it would be wise to use natural resources prudently,' the report points out. 'Our tax systems, however, are currently not aligned with the goal of sustainability, as the use of natural resources tends to be relatively tax-free, or even subsidised.'

It is not as if there aren't options for green taxation. The policy toolkit developed by Ex'tax provides an overview of more than 100 'green' tax base options that are available to governments, including ways to tax air pollution (such as carbon emissions), energy, food production inputs, fossil fuels, metals and minerals, traffic, waste and water. Each category is divided into subcategories. The waste category, for example, is broken down into electronic waste, packaging, nuclear waste, sewage, landfill and other types of waste.

> Green taxes are growth-friendly – they distort the economy less than taxes on labour and income

Green taxes can be highly effective at changing behaviour and averting environmental damage. The UK's landfill tax, for example, has been instrumental in reducing the amount of waste dumped in the ground by 44% since 2000. And when Stockholm, Sweden, began taxing vehicles to reduce the volume of traffic, air-borne pollutants dropped by up to 20%, decreasing the incidence of childhood asthma by 40%.

Crucially, the report argues that green taxes are growth-friendly – they distort the economy less than taxes on labour and income, and the administrative and transaction costs are lower than other taxes, notably income tax. Compared with emissions trading systems and direct regulation, green taxes provide more opportunity for recycling the revenues by reducing other taxes to compensate in part, or even to overcompensate, for any welfare loss that may occur.

But their use is limited. In 2014, green taxes raised 5.3% of total tax revenue in OECD countries (generating revenue equal to 1.6% of OECD GDP). Having put the case for green taxes, Groothuis sets out the steps that can be taken to shift the tax base towards a green tax system – see box above. But she concedes that implementing such a strategy is not easy – short political lifecycles do not encourage long-term strategies, while industries with a vested interest in maintaining the status quo are often powerful lobbyists. International coordination would also be required, and followers of the OECD's BEPS (tax base erosion and profit-shifting) project will be well aware of just how difficult it is to reach agreement in principle, let alone put any policies into practice.

In addition, an often heard worry is that environmental taxes can aggravate income inequality, as low-income households spend a higher share of their income on energy-intensive goods. In practice, though, plenty of policy options are available to alleviate the impact on specific households.

How to green the tax base

Femke Groothuis suggests the tax base can be shifted away from labour and income and towards a greener regime by:

- Putting a price on pollution and natural resource use. Countries can start with the low-hanging fruit – options that suit national circumstances best. In light of the Paris Climate Agreement, the abolition of fossil fuel subsidies and the creation of effective carbon pricing are the likely first candidates.
- Using revenues to lower the tax burden on labour and improve social protection. Careful design is required to ensure that the needs of vulnerable groups are addressed through increased social protection or income support.
- Monitoring and adjusting. In a fast-changing world, tax systems will need to adapt much faster than before.

Business as catalyst

Business can play an important role in promoting the shift to a greener and more sustainable tax system. The report says: 'The private sector can become a catalyst for better policy by engaging proactively with governments to push for forward-looking policies to promote circular and inclusive business growth.'

Circular business models require a shift away from the linear take-make-waste industrial model to a carbon-neutral and regenerative approach in which products are 'made to be made again'. The report cites many ways in which businesses are leading through innovative models, but governments can do more to support circular business initiatives.

The report concludes: 'By rethinking the design of our tax systems in a holistic way, taxes can become a tool supporting the ambitions of an inclusive global economy that is fit for the future.' In other words, tax can be a force for good. AF

Philip Smith, journalist

Read ACCA's report *Tax as a force for good* at bit.ly/ACCA-TaxforGood

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Mixed feelings

In a follow-up poll to its 2017 global survey, ACCA, CA ANZ and IFAC gauge the public's trust in tax systems

When it comes to tax, who do you trust? This is the question that was put to more than 8,400 people spread among the G20 countries. Their answers are very illuminating and will help guide tax thinking and policy into the future.

G20 Public Trust in Tax: Surveying public trust in G20 tax systems, January 2019, by ACCA, CA ANZ and the International Federation of Accountants (IFAC), found that people trust tax professionals, but are divided on their attitudes towards tax authorities and remain sceptical about politicians and the media. These same people are concerned about transparency, complexity and inequality in tax systems around the world, but they also understand that tax is an international issue that requires policy trade-offs.

In all, the survey, a follow-up to one conducted in 2017, reveals a sophisticated understanding among taxpayers about the tax system – people recognise the system's uncertainty and opacity – and the perception that high income earners and multinational companies are better off in tax terms than average or low income earners. But the survey also reveals that people are split on how tax competition can affect multinationals and national tax revenue.

'Citizens across G20 countries are concerned about transparency, complexity and inequity in tax systems,' says Helen Brand, ACCA's chief executive. 'However, they are also aware of the international tax landscape and understand the need for trade-offs in tax policy. In tackling these issues, people say they trust and want to hear more from experts and professionals, but have grown sceptical of politicians and the media.'

> The accountancy profession should not rest on its laurels – 55% say they trust tax advisers, but this is down from 2017

Transparency top concern

Transparency is the top area of concern. Across the G20, respondents desired more clarity on how and from whom their governments collect taxes, and how their tax money is spent. Corruption in the tax system is a top concern in many countries.

The survey found that people want more clarity on the relative contributions made by different classes of taxpayer to their national coffers. They were particularly concerned about multinational companies (MNCs) – overall, a small majority believed that MNCs were paying enough tax, but in a number of countries, including the US, UK, Australia and New Zealand, a clear majority didn't think so.

These particular findings should be set against the background of increased scrutiny of MNC tax arrangements. The Organisation for Economic Co-operation and Development's base erosion and profit shifting (BEPS) project is aiming to provide global coordination of tax policies so that companies are seen to be paying their 'fair share' of taxes in all countries where they do business.

However, a number of individual jurisdictions have been putting in place their own tax measures, such as the UK's diverted profits tax, to combat what they see as abusive tax planning on the part of these companies. Such moves often come in response to local political lobbying, so it is perhaps not surprising that respondents in countries such as Australia, New Zealand and the UK are the least supportive of the notion that MNCs are paying enough tax.

It is a similar pattern for high income individuals. While the overall picture suggests that the majority of respondents believe such individuals pay enough tax, there are a small but significant number of jurisdictions where it is believed they do not pay enough – Canada is the standout country in this respect, but also Italy, Japan, New Zealand and to a lesser extent the US. Interestingly, the taxation of high income individuals creeps into positive territory in the UK despite high profile campaigns calling for greater scrutiny and action.

Perhaps unsurprisingly, average or low income individuals are seen to be paying enough tax across the board, apart from in France, where a tiny percentage of those surveyed do not share this view. It is the same for local businesses, with again only one country, in this case Japan, expressing negative sentiment. The outlier in all of this is Russia, where there is a clear majority that believe no one (high/low income earner, local or multinational businesses) is paying enough tax.

The good news for the global accountancy profession is that, on the whole, tax professionals – those that help advise individuals and companies over their tax affairs – are considered to be more trustworthy than the tax authorities, politicians and the media.

However, even here there is a wide spread of opinion; while an overwhelming majority trust tax professionals in Indonesia, China and India, there is a much more even split between trust and distrust of these professionals in the UK, France and Germany. Germany was the only country where distrust outweighed trust in the public's mind.

But the accountancy profession should not rest on its laurels – although 55% say they trust tax advisers, this is down two percentage points on the same survey that was carried out in 2017. Clearly, public trust is not to be taken for granted – the profession needs to continually strive to earn public trust.

Non-government agencies came second in the trust league table. However, people were divided on their trust in government tax authorities, with 37% saying they trust or highly trust the tax authorities (making them the third most trusted group) while 34% said they distrust or highly distrust them (third most distrusted group).

It probably comes as no surprise that the least trusted group in the survey are politicians, though it might be surprising to learn that the trust profile has improved between this survey and the previous 2017 poll.

Jury out

The jury is out on the tax authorities themselves, with people showing an even split between trust and distrust. However, more people report a positive than negative experience in their dealings with the tax authorities when they are managing their tax filings, payments and general tax affairs, although there is variability across jurisdictions.

People are less positive in their perceptions of the overall fairness of the process of interacting with the tax authorities, and the reasonableness of how payment demands are dealt with. This is an area where tax authorities will need to improve if they are to improve their trust ratings. As one respondent in Australia says: 'Countries need to make taxes a more simple process; people don't want to feel like every time they talk to the tax office that they're going to get audited.'

One final point raised by the survey, which bodes well for the future of the OECD's BEPS project, is that most respondents are supportive of cooperation on international tax policy with the aim of creating a more coherent international tax system, though there is an acceptance that tax can be used to attract inward investment.

As Rick Ellis, chief executive of CA ANZ, says: 'People have an expectation that governments will work together for greater international coherence in tax systems, but are also wise to the reality of national priorities such as attracting multinational business and tax policy as a national economic lever.'

Philip Smith, journalist

Read the full report *G20 public trust in tax: Surveying public trust in G20 tax systems, January 2019* at bit.ly/G20Tax-2019

Electric dreams

Finance and transformation director Michael Mills FCCA is at the rockface of Jaguar Land Rover's exploration of innovation and performance

The one thing that anyone working in the automotive sector can say with confidence in 2019 is that within five or 10 years their business will be unrecognisable from today. And no one knows for sure what it will look like. The only certainty is that the product, and the way it is marketed and sold to consumers, will change fundamentally.

The billion-dollar question, to which no one can confidently claim to know the answer, is: what will the future look like? Right now, electric and driverless technology seems the best bet if you want to put money on it, but on the other hand several companies (including Aston Martin and Volvo-owned startup Terrafugia) are working on flying cars.

Michael Mills FCCA, UK national sales finance and business transformation director at Jaguar Land Rover, is definitely in the second camp. 'This job is hugely fast-paced; it's exciting and mentally and physically challenging.'

Challenging times

It has been a testing few years for the automotive sector generally, and JLR is no exception. In the 2018 calendar year its sales fell by 4.6% year on year, with 592,708 vehicles sold in 129 countries (over 80% were bought outside the UK). A recent sudden drop in demand from China is a particular worry – sales fell by 21.6% over the year, while sales for December 2018 were more than 40% down on the previous year.

> 'We need to get the best possible return on investment, so our engineers know they can't go crazy'

While what Mills calls the 'unbelievable level of uncertainty' created by Brexit has not helped, the broad consensus among sector commentators is that JLR's focus on 'clean diesel' has not paid off, and that the company has been slow in exploring electric technology as an alternative.

While JLR, which is owned by Indian multinational Tata Motors, remains a considerable force in the automotive sector, ultimately its success depends heavily on it identifying and investing in the right path for the future. In January 2019, JLR announced its intention to cut its workforce by a further 4,500 following 1,500 redundancies in 2018 (40,000 of JLR's total workforce of 43,000 are based in the UK). The cuts are part of a transformation programme intended to deliver £2.5bn in cost reductions, operational efficiencies and cashflow improvements over 18 months.

Michael Mills FCCA

Michael Mills started out as a financial analyst, then senior financial analyst, at Johnson & Johnson (2010-2014). Between 2014-17, he joined McLaren Automotive as business planning manager, followed by head of finance for product development and operations. He joined Jaguar Land Rover in 2017 as finance director, then last year, became finance and transformation director.

JLR's medium-term plan includes the launch of three new models of car between 2020 and 2024, which will increase its portfolio to 16 models. It is also introducing a modular vehicle architecture (where a number of different models of car are built using the same basic parts) from 2020 to bring greater standardisation and flexibility into its production line. The modular architecture will replace the six different platforms currently in use, result in lighter and more adaptable cars, and allow hybrid and fully electric vehicles to be produced on the same platform.

Much of the work takes place in JLR's 380-acre design and engineering centre in Gaydon, Warwickshire, which is undergoing a £200m redevelopment. There is plenty of evidence on the site of the £4.5bn a year that JLR is investing in its future, the bulk of which is earmarked for R&D.

So far, JLR's venture into hybrid and electric technology has been encouraging. While sales of Land Rovers fell by 11.4% between 2017 and 2018, sales of Jaguar models, including the all-electric I-Pace model, rose by 7.2% year on year. Even so, alternative fuel vehicles still account for only a small proportion of the total automotive market (just over 6% in the UK). The transition away from petrol and diesel has only just begun, and the way forward is still unclear.

'We need a number of irons in the fire so that when the market does move, we are ready and capable,' says Mills. That inevitably means investing in technologies that turn out to be dead ends. Even navigating the possibilities for electric vehicles is a minefield. 'The supply chain in electrification just isn't there yet,' Mills says. 'There are multiple possible routes in terms of batteries, for example, and no one knows which will prove to be the best.'

One of the irons recently added to JLR's fire is a long-term strategic partnership with Waymo, previously known as Google's self-driving car project (it's now a standalone subsidiary of Google parent Alphabet). The companies are jointly developing what they say is the world's first 'premium self-driving electrical vehicle', based on the I-Pace, which will form the basis

of Waymo's planned transportation service. Testing was due to start at the end of 2018, and up to 20,000 of the vehicles are planned under the agreement.

Mills' role as manager of the finance and transformation teams puts him at the rockface of JLR's exploration of innovation and performance excellence. 'It's my responsibility to manage the delivery of projects and to hold the business accountable,' he says. But when it comes to business transformation, the customer is very much at the forefront. 'Our role there is to be the voice of the customer,' he says. That means finding ways to ease customers' journey through a changing sector. 'We developed an app, for example, that assesses your driving, so you can work out if the I-Pace is the right car for you. That helps alleviate any fears people have of going down the electric route.'

Conscience of the business

Mills sees finance as the conscience of the business. 'There is a healthy level of tension between the business and finance. Innovation costs money and can push boundaries. It's our job to hold the innovators accountable, but at the same time allow them an element of rope to be creative and explore the possibilities. We need to get the best possible return on investment, so our engineers know they can't go crazy – there needs to be a business case for the investment.'

Inevitably, this means his role is more about people management than it is about crunching numbers. 'I do less "doing" [in terms of core finance work] than ever before,' he says. 'We have fiduciary duties, but that's only 10% of what the finance function is today. It's not a back-office job anymore; you can really add value to an organisation, and ultimately, it comes down to relationships, people skills, emotional intelligence and your ability to influence the outcome. There are big characters in both camps – in finance and in R&D – and if you are at loggerheads, the work of both will be inadequate.'

Mills, a maths graduate, chose accountancy and a commercial route to qualification, winning a coveted place on the graduate programme at Johnson & Johnson. He spent a year working on an acquisition in Moscow before a call came about a role at McLaren Automotive, which was developing a supercar for the commercial market.

Mills describes the then CFO at McLaren, Richard Molyneux, as 'an inspirational man', who became his mentor, so it was no surprise that Mills followed him to JLR a few years later, although he acknowledges the move was risky. 'It was in a period of change, but as I see it, that means there is an opportunity for you to add value. And they have invested billions into innovation and future growth, have strong aspirations and good people. It's very exciting.'

Ultimately, though, he is not convinced the automotive sector will alter beyond all recognition, at least not in this immediate transformational phase. 'We have no idea what the business will be in 10 years, because everything is changing, including the retail model. How are we going to sell cars in the future? Through our phones? No one can say for sure. But while the model is changing quickly, I don't see it being completely torn up and thrown away. Customers still want what they want.'

Liz Fisher, journalist

Room for growth

Fast-growing SMEs define and measure growth very differently from the laggards, but with the right strategy, scaling up should be possible for all

It is often said that small and medium-sized enterprises (SMEs) are the powerhouse of the economy, accounting for 99% of all businesses. But while SMEs are numerous, as a whole they are not particularly productive; in fact, most SMEs contribute significantly less to economic growth in aggregate terms than other sections of the economy.

High-growth SMEs are a star exception to this productivity rule. According to a report from the Institute of Public Policy and Research, a UK-based thinktank, high-growth SMEs are a crucial source of job creation and boost productivity by spreading technological innovations. High-growth SMEs have also proved to be more resilient since the financial crisis than the rest of the business population; according to the OECD, across many economies these high-growth companies have continued to grow much as they did before the crisis.

So why can't more SMEs achieve high growth? That question is the focus of a new ACCA report which seeks to identify what drives SME growth, and discusses how SMEs can scale up successfully and adopt some of the practice of businesses with higher growth ambitions.

Scale-up success: what do SMEs need to supercharge their growth? is part of ACCA's ongoing research programme examining different areas of SME growth; for the purpose of the research, SMEs are defined as businesses with fewer than 250 employees. The aim of this stage of the research was to consider how SMEs understand and experience growth in order to help more businesses think strategically about the steps they can take to encourage it.

Different measures

The ACCA report argues that 'growth means something else to more ambitious SMEs'. It points out that SMEs with higher growth rates seem to use a wider range of factors for defining or measuring growth than other businesses do. In SMEs with stable or moderate growth rates, turnover tends to be the most significant factor for measuring growth; in high-growth SMEs, productivity, staff, and research and development are all significant factors when measuring and defining growth.

The report also looks closely at the distinctive approach that high-growth SMEs often take to scaling up the business. In a fascinating exercise, it compares the actions that a high-growth SME might take at a particular stage of its organisational development to the actions of a moderate-growth SME.

For example, when a moderate-growth SME formulates a business plan, that plan will often include annual forecast targets; a high-growth SME, on the other hand, will incorporate clear growth objectives, a value proposition and annual forecast targets.

Similarly, when it is developing a finance function, a moderate-growth SME will typically centre the function's responsibilities around core accounting activities (compliance, tax and reporting), whereas a high-growth SME will encourage a wider range of responsibilities and a strategic role across the business, often appointing a CFO or finance director at an earlier stage.

The report makes seven recommendations for SMEs that want to scale up (see box, above). 'Growth can come at any stage of an SME's lifecycle,' the report says. 'This requires business leaders to think strategically about the steps they can take to enable it.' It identifies leadership as the most critical scale-up success factor of all: 'Businesses that scale up come in all shapes and sizes, but the most successful are those that are able to articulate a purpose and vision across all levels of their organisation. This can feed into the creation of a growth culture, which, among other benefits, can provide them with a greater ability to overcome the barriers towards progress.'

Another key factor in the success of these businesses is their approach to management and governance structures. 'Formalising the way such systems work and ensuring they have the right talent on board is a crucial imperative for coping with the growing demands of scale-up. In contrast, for the majority of SMEs, their approach in these areas is likely to be relatively unstructured and informal.'

While the report stresses that there is no rulebook for growth, it ably demonstrates that there are clear behaviours that set high-growth SMEs apart, and therefore practical steps that entrepreneurs can take to increase their chances of achieving high growth.

In her introduction to the report, ACCA chief executive Helen Brand says: 'The most successful SMEs are frequently run by business leaders who are driven, industrious and innovative. The way these entrepreneurs seek to measure and define growth is often as varied as the wide range of businesses that make up our global economy. Even so, one action they consistently sought to undertake was the development of a clear strategic vision that set out where they wanted their enterprise to get to and how they would achieve this.' AF

Liz Fisher, journalist

Tips for scaling up

- Leadership must define a growth culture. When staff share and are committed to an organisation's purpose and vision, they are more likely to see its future as their own.
- Establish a governance framework early on to help build organisational resilience.
- Continue developing the management team alongside business growth – one that encompasses the broader skills and experience required to help extend the organisation.
- Integrate finance into the growth strategy.
- Adopt new technologies and use the right data.
- Use external advice to develop what you have.
- Build an external funding network.

Read the report *Scale-up success: what do SMEs need to supercharge their growth?* at bit.ly/ACCA-Scaleup

View from the top

Global finance leaders on the pace of change, ethical challenges, digital developments and how to be a good leader

Melanie Proffitt FCCA

'You can generally learn what you need to learn from the business, but you always trust that, as a qualified accountant, you are bringing in a level of expertise that will add value to the business. If you have no experience of a business, you have a very different lens compared to everyone else. Technology is transforming the hospitality sector. Customer expectations have certainly changed. Overhauling the technology and systems here is an important project. The focus at Farncombe is on using it to enhance the brand and customer experience.'

Full interview at bit.ly/MelanieProffitt

ACCA Council member and CFO at Farncombe Estate, luxury hotel group

Stephen Walker FCA

'The international code of ethics for the accountancy profession is a critical foundation, although that's currently under real challenge by regulators globally. Some regulators, and particularly independent audit regulators, feel the profession has too much say over audit and assurance and ethical standard setting. In Australia and New Zealand, our members have been quite vocal opponents of a number of the international regulatory Monitoring Group's recommendations, so we'll be watching developments very closely over the next year.'

Full interview at bit.ly/StephenWalker

President of CA ANZ

Norman Sze FCCA

'To be a good leader is to have people follow you, like you and respect you. As a leader responsible for a team of over 4,000, I need to take care of [young professionals] to help them understand the company's development and how they can bring in values. There are always things I can learn from them; recently they showed me how to use the music video platform Tik Tok for self-promotion. The meetings encourage myself and others to think young and promote continuous learning.'

Full interview at bit.ly/NormanSze

Northern region managing partner at Deloitte China

Janelle Hopkins FCA

'No-one can bury their head in the sand around the impact of disruption and the pace of change. Every organisation, big or small, needs to always be thinking about what's coming over the horizon, who's doing it well in comparable industries, and saying "well, what's our response to that and what do we need to do differently to stay ahead of the game". Because if you're not considering a change, you are going backwards.'

Full interview at bit.ly/JanelleHopkins

CFO of Australia Post

Kevin Fitzgerald FCCA

'Our strategy has always been to win over the accountants and bookkeepers with our teams set up to support, train and educate them. Accounting businesses need to go digital. Our focus is on teaching accountants how to use technology to understand their clients' needs and capture the opportunity that they're leaving on the table.'

Full interview at bit.ly/Kevin_Fitzgerald

Regional director for Asia at Xero

John Stewart FCA

'I think our profession has an opportunity to step in and give the sort of services the startup scene needs. Entrepreneurs need to learn how to develop budgets and forecasts so they can gain a strong understanding of how sales are tracking and who their customers are before they can start building empires.'

Full interview at bit.ly/Johnstewart

Managing director of KPI Consulting

Part of the solution

Recent high-profile company failings around the world have led to recommendations for changes to improve audit quality

PwC was fined £6.5m for not flagging significant doubts over the future of BHS in its audit, which was completed days before the department store was sold for a token £1. BHS collapsed a year later.

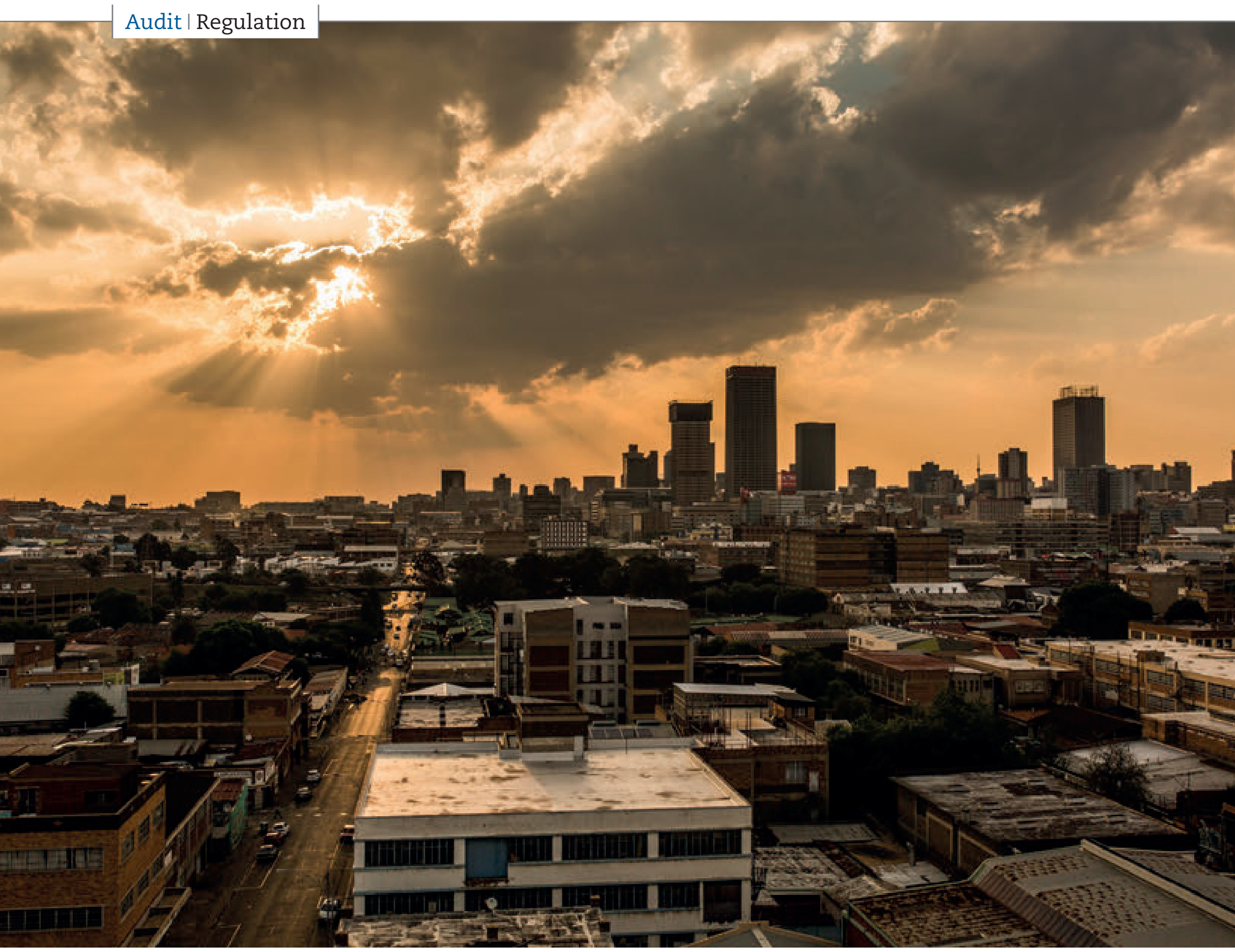
In the UK, high-profile corporate collapses such as that of retailer BHS and construction group Carillion have led to investigations into various aspects of the audit market.

Late last year John Kingman's independent review of the Financial Reporting Council (FRC) – the UK regulator for the accounting and audit professions and corporate governance – recommended that the organisation be replaced by a new independent statutory regulator with enhanced powers. The Competition and Markets Authority (CMA) has also raised serious concerns about the level of competition in the audit market and the quality of audits. The CMA has proposed a series of reforms such as splitting the audit and advisory businesses of practices, and requiring joint audits for large companies to encourage more choice in the audit market.

The House of Commons' committee on business, energy and industrial strategy is also conducting an inquiry into the future of audit, while the Department for Business, Energy and Industrial Strategy itself has appointed Donald Brydon, former chair of the London Stock Exchange Group, to conduct his own independent review of the quality and effectiveness of the UK audit market. This will build on the work of Kingman and the CMA by testing the current audit model and considering issues such as how far audit can and should evolve to meet the needs of investors and other stakeholders.

Expectation gap

'Audit is not an industry that people think is redundant,' says Andrew Gambier, ACCA's head of audit and assurance. He sees the audit as remaining an important element in corporate governance frameworks. A 2018 ACCA survey of 1,000 members of the public found that 65% believe audit should evolve to prevent company failures, and 41% expect auditors to always detect and report any fraud. (The full survey results will be published in a forthcoming report, part of a global research initiative with CA ANZ, titled *Closing the expectation gap in audit*.)



There has been a string of recent audit-related scandals in South Africa.

'I see this expectation gap as quite positive,' Gambier says. 'It would have been easy for the public to say audits are a waste of time, but we didn't hear that. People see audit as part of the solution to preventing company failure.'

Outside the UK, corporate collapses and scandals have also raised concerns about audit quality and auditor independence. Deloitte and KPMG, for example, are under investigation by the Securities Commission Malaysia in relation to their audits of 1MDB, the state-owned investment company mired in scandal. KPMG in the US has also attracted negative headlines after the US Public Company Accounting Oversight Board (PCAOB) revealed it had found problems in half the KPMG audits it inspected in 2017 and almost half those it inspected in 2016.

> 'People see audit as part of the solution to preventing company failure. It is not an industry people think is redundant'

In South Africa, scandals include the collapse of VBS Mutual Bank after a clean audit report from KPMG, and an ex-employee has been referred to disciplinary proceedings after alleged money-laundering activities by Linkway Trading, owned by the Gupta family. In a statement on VBS, KPMG said it had 'taken many steps' to deal with the issue and welcomed the 'independent scrutiny' of the regulatory board for auditors.

'I believe a lot of the audit failures we are facing today are because of lack of auditor independence,' says Bernard Agulhas, CEO of the Independent Regulatory Board for Auditors (IRBA) in South Africa. A range of reforms are accordingly being introduced in the country or are under consideration. The IRBA issued a rule in June 2017 that auditors of public interest entities (PIEs) must comply with mandatory audit firm rotation from 1 April 2023.

In addition, a Financial Matters Amendment Bill working its way through the South African parliament at the time of writing contains measures to strengthen the independence of the IRBA and of auditors (eg clients will not be able to dismiss an auditor in the process of reporting an irregularity), enhance the IRBA's powers to improve its investigation and disciplinary processes, and introduce deterrents to undesirable behaviour by auditors (eg removing the limit on maximum fines).

Meanwhile, the IRBA has required audit practices to report on a set of quality indicators covering eight categories, including independence, tenure, technical resources and training. And in July 2018 it called on audit firms in South Africa to produce transparency reports providing insights into topics such as their operations, governance, leadership, culture, ethics and audit quality. The reports are not currently mandatory, as they are in some jurisdictions such as the EU, Japan, Australia and New Zealand.

The potential separation of firms' audit and consultancy arms is also still on the agenda, says Agulhas. 'Audit is a public service; consultancy is not a

The alleged looting by officials of US$4.5bn from Malaysia's sovereign wealth fund 1MDB has triggered an investigation by the regulator.

public service. The way I see it, the audit firm can't be serving two masters.' As he explains, advisory services are provided to the client, and the firm does not need to be independent. In contrast, the audit service is provided 'to the public and the shareholder, and is a public service', and for that service the auditor needs to be independent. However, Agulhas is aware that any move to split firms into separate audit and consulting entities would be strongly opposed by the profession in South Africa. 'We are in the process of doing research to identify benefits from having audit-only firms,' he says. 'We are following closely what's happening in other jurisdictions, especially in the UK.'

Playing their part

Agulhas believes all interested parties – regulators, firms, audit committees, shareholders and the public – need to play their part in ensuring effective, high-quality audits. 'As we introduce measures and start talking about and researching other measures, shareholders and the public become suddenly much more aware of the role of the auditor and the importance of auditor independence,' he says. 'That is perhaps our biggest achievement. We have raised awareness, and now the public can play their rightful role.'

In his personal opinion, Brian Hunt, chair of the International Forum of Independent Audit Regulators (IFIAR), believes there are differing levels of concern about audit quality and competition around the world. 'In some, this is a hot topic, particularly in Europe, and there's also been a fair bit of discussion in South Africa,' he says. In Canada, the focus has been more on whether the Big Four are too big to fail. That is 'a complex issue' with no easy solution, he notes.

IFIAR is playing its part in trying to address concerns that exist about audit quality, having challenged the largest global audit networks to reduce the percentage of listed PIE audits with inspection findings by at least 25% over a four-year period. The firms are on track to achieve this and IFIAR is in the process of setting a new target for the next four years.

IFIAR's global audit quality working group – which has members from all over the world – is also focused on issues such as how to assess audit quality, and the key elements that firms should be working on.

'Culture is a big issue,' Hunt says. 'What are the audit firms doing to drive a consistent culture of high audit quality? What are the firms doing in regard to their quality processes? How do they manage risk in their portfolio?' These issues are all on IFIAR's radar.

'We know firms can do quality audit,' Hunt says, 'so why can't they do that on a consistent basis? In the UK, Carillion is an example of an audit gone bad. The question for the firms is, how can a Carillion happen? What's the root cause? What processes and controls do you put in place to ensure it doesn't happen again?'

International audit regulators are keen to learn from each other's experiences. 'Part of IFIAR's mission is to share information and have a dialogue, so we are watching what's going on in the UK with great interest,' Hunt says. 'We can always learn from what's happening in other jurisdictions.' AF

Sarah Perrin, journalist

A life in audit

Retiring chair of the IAASB, Professor Arnold Schilder, reflects on his decade-long tenure at the board and the developments in audit

After a decade at the helm of the International Auditing and Assurance Standards Board (IAASB), Professor Arnold Schilder is stepping down. It has been a decade of great change and upheaval for the audit profession, with the IAASB at the forefront of the movement to create and maintain a set of globally recognised, high quality standards that serve the many stakeholders in today's audits.

But it is also a time to look forward to the developments that will have an impact on the future of auditing and assurance: wider stakeholder interest, developments in emerging economies, shifting expectation gaps and the increasing use of technology will all continue to figure on the agenda for IAASB meetings in years to come.

Back in 2010, a year after Schilder had taken on the role of chairman at the IAASB, he told an ACCA Council meeting that the expectation gap was real, and that as auditors had to deal with many users and regulators, it was important to discover what those users and auditors expected and how those expectations changed over time. So, a decade on, how much has changed?

> 'The expectation gap is a dynamic concept, one that is changing all the time. How you deliver to that is the question'

'We were always educated in awareness of the expectation gap, and that we need to make clear what auditors can do and what auditors cannot do,' Schilder says. 'That is one half, but the other half is that auditors have to deliver. There are reasonable expectations, but speaking to colleagues in the IAASB, around the world some would say the gap has narrowed, while others would say it has stayed the same, or increased. So, the expectation gap is a dynamic concept, one that is changing all the time. How you deliver to that is the key question.'

Schilder, however, points to a number of initiatives implemented during his time in office that have gone some way to reducing that gap. 'We have developed new audit reports, including key audit matters, which are a complete step change from previous audit opinions,' Schilder explains. This has, in turn, created more transparency around the audit process while helping to explain what is expected of an audit. This transparency is also helped by reports on audit quality from individual regulators, which can be critical but also positive.'

But Schilder also observes that advances in technology have contributed to a widening expectation gap – now that whole data populations can be interrogated, there should be far better testing methods. At the same time, stakeholder pressure has required the auditing of non-financial information, which can be open to far wider interpretation, presenting greater difficulties in validation.

Schilder joined the auditing profession in 1972 when he enrolled with a predecessor firm of PwC in the Netherlands. From 1998 he was a board member of the Dutch Central Bank, where he served until 2008, before taking up his current position at the IAASB the following year. During his time at PwC he earned a PhD in business economics with a thesis on auditor independence, a distinction that would have stood him in good stead as he took on the IAASB role.

Significant progress

The achievements over the past 10 years are probably too many to list, but Schilder points to a number of areas where he believes there has been significant progress during his time with the board.

The first is the work on auditing estimates. The revised ISA 540, *Auditing Accounting Estimates and Related Disclosures,* is, Schilder says, a very important contribution to auditing. 'It goes to the heart of every audit, so strengthening it was a major move,' he explains. The revisions ensure that the standard continues to keep pace with changing markets and fosters a more independent, challenging and sceptical auditor mindset. 'The standard is asking auditors to always ask what lies behind the assumptions.'

It is this scepticism that is constantly reinforced throughout the work of the IAASB, and indeed national regulators around the world. This sits alongside another area of progress, the suite of proposed quality management standards, which were released in February 2019. These standards will change the way professional accountancy firms are expected to manage quality – for audits, reviews and other assurance and related services. 'The fundamental change here is it shifts from a backward-looking quality control system to a more preventative, proactive approach so that auditors are sure they will have done the right thing,' he explains.

The final area is non-financial reporting, with the release of a consultation paper in February 2019 on emerging forms of external reporting (EER) assurance. EER encapsulates many different forms of reporting,

including integrated reporting, sustainability reporting and other reporting by entities about environmental, social and governance matters. 'It is about exploring new ways and linking concepts, but it is also a major area of development for reporting, driven by a fundamental interest in the global environment,' Schilder says. (See article on page 40.)

A further key area where audit is rapidly evolving, and will continue to do so into the future, is the use of technology in the audit process. 'I am very impressed with all the possibilities that new technology allows auditors to apply to the process, but the question is, how will this impact auditing standards?' Schilder asks.

Already, the IAASB's technology group is assisting with the revision of some auditing standards, but feedback suggests that the issue is not so much that the standards are broken, as that they were written at a time of less rapid technological progress.

'We are now in the initial phase of a project addressing the audit of the future. But auditors will always be required to help reduce uncertainty about financial reporting with their expertise and judgment. Society is relying on the auditors to deliver, and the challenge has not decreased,' Schilder says.

There is, however, one big question that Schilder does not yet know the answer to. It is a philosophical question but nonetheless one that needs to be asked as auditors are required to delve into more financial and non-financial areas. 'How much is enough?' he asks. 'The interactions between the many stakeholders means we need everyone round the table. Public interest has moved forward so much in the last 10 years.'

And Schilder has no doubt that it will continue to do so into the future.

Philip Smith, journalist

Professor Arnold Schilder

Professor Arnold Schilder comes from a family of theologians and auditors. He studied theology from 1966 to 1974, but wanted to understand more about how business interacts with society, so joined a predecessor firm of PricewaterhouseCoopers in 1972, moving into international audit in 1985, as well as taking on several management roles in the firm. In 1998 he moved to take up a place on the managing board of the Dutch Central Bank (DCB), where he was responsible for banking regulation and supervision. In addition, he served as the chair of the Basel Committee on Banking Supervision's Accounting Task Force from 1999 to 2006 and as a member of the Public Interest Oversight Board from 2005 to 2008. He remained on the DCB board until 2008, before beginning his decade-long tenure as chair of the IAASB in January 2009. He has also enjoyed a side career as a part-time professor of auditing at the Universities of Amsterdam and Maastricht from 1988 to 2009. In 2001, he was made a knight in the Order of Orange Nassau, a Dutch civil and military order of chivalry, awarded for 'special merits for society'. He also received a Lifetime Achievement Award from *International Accounting Bulletin* in 2014.

Accounting for cryptos

Fair value, inventory or intangible asset? Gary Berchowitz gives his view on how the profession should account for holdings of cryptocurrencies

Gary Berchowitz is a partner at PwC South Africa.

Let's start by defining cryptocurrency. Apart from being everyone's latest and greatest way to get rich quickly, it is actually intended to be a medium of exchange, like the US dollar. And like the US dollar, cryptocurrency has no intrinsic value – it is not redeemable for another commodity, such as gold. However, unlike the greenback, cryptocurrency has no physical form, is not legal tender in many jurisdictions and is not currently backed by any government or legal entity. In addition, cryptocurrency supply is not determined by a central bank, and all transactions are performed and validated by the users of the system without an intermediary (such as a bank) facilitating these functions.

The term cryptocurrency is used because the underpinning technology is based on public-key cryptography. For those without a PhD in programming, this merely means that the communication is secure from third-party interference.

There are many different types of cryptocurrency in existence. The most popular, bitcoin, was the first cryptocurrency to appear, in January 2009. After a huge amount of research (OK, all I did was Google 'who accepts bitcoin'), it appears that bitcoin is accepted by a number of large and small companies, including Microsoft's Xbox store, Expedia and Helen's Pizza restaurant in New Jersey. That's not to say I can use it to buy groceries (yet), but it does seem to be gaining traction as a viable medium of exchange.

In addition, since the marketing companies have got hold of this, even funkier cryptocurrencies are emerging, such as ether, ripple and litecoin (I'm just waiting for IFRScoin to appear and then I'm investing). To be fair, though, many of these new cryptocurrencies have additional or improved features over bitcoin – for example, they have faster processing times for payments made in the cryptocurrency.

The speed, ease and cost savings associated with this type of currency mean that it has the potential to become the popular choice for payments. Although the function of a cyptocurrency is to improve the ability of parties to transact digitally with each other, to date most investors in cryptocurrencies are investing in them with the hope of realising capital gains. And the capital gains have been substantial: the value of bitcoin increased approximately 700% between January 2017 and the beginning of November 2017.

Holdings of cryptocurrencies can be large and their value volatile, so users of financial statements probably want to know about them. However, today's accounting standards were not written with cool cryptocurrencies in mind.

> Cryptos fail the definition of a financial asset. Unfortunately, we are then left with only two possible positions

Where the accounting starts

Most commonsense accountants would agree that the best accounting for a cryptocurrency would be fair value. After all, that's the value at which investors will either realise their investment or be able to transact in exchange for other goods and services. However, our good old bricks-and-mortar accounting rules haven't quite moved with the times.

I think cryptocurrencies need to be accounted for as either inventory or an intangible asset. The logic for this view is as follows: in order for accountants to be able to measure a cryptocurrency at fair value, the crypto (as I dare to abbreviate it) needs to meet the accounting definition of a financial asset. And that's where the wheels fall off the fair value approach, for the following reasons:

- cryptos are not legal tender (ie cash as defined)
- cryptos are not cash equivalents because their value is exposed to significant changes in market value
- cryptos are not a contractual right to receive cash or a cash equivalent.

Cryptos therefore fail the definition of a financial asset. Unfortunately, we are then left with only two possible positions:

- Cryptos are recognised as inventory and measured at cost. Some of those reasonable accountants I referred to before suggest we could maybe apply the commodity broker-trader guidance in IAS 2, *Inventories*, and measure cryptos at fair value. Unfortunately, even if an entity was actively trading in cryptos, I think it would not qualify for the commodity broker-trader exemption that would let it measure cryptos at fair value because cryptos are not a commodity.
- If cryptos are recognised as intangible assets, the default position is to measure them at cost. If the cryptos are accounted for as intangible assets, an entity might be able to justify there being an active market for them, in which case the cryptos could be measured at fair value. However, this still secures only the runners-up prize, because the

movements in that fair value would be recognised through other comprehensive income, and the gain would not be recycled through profit and loss when the cryptos are realised.

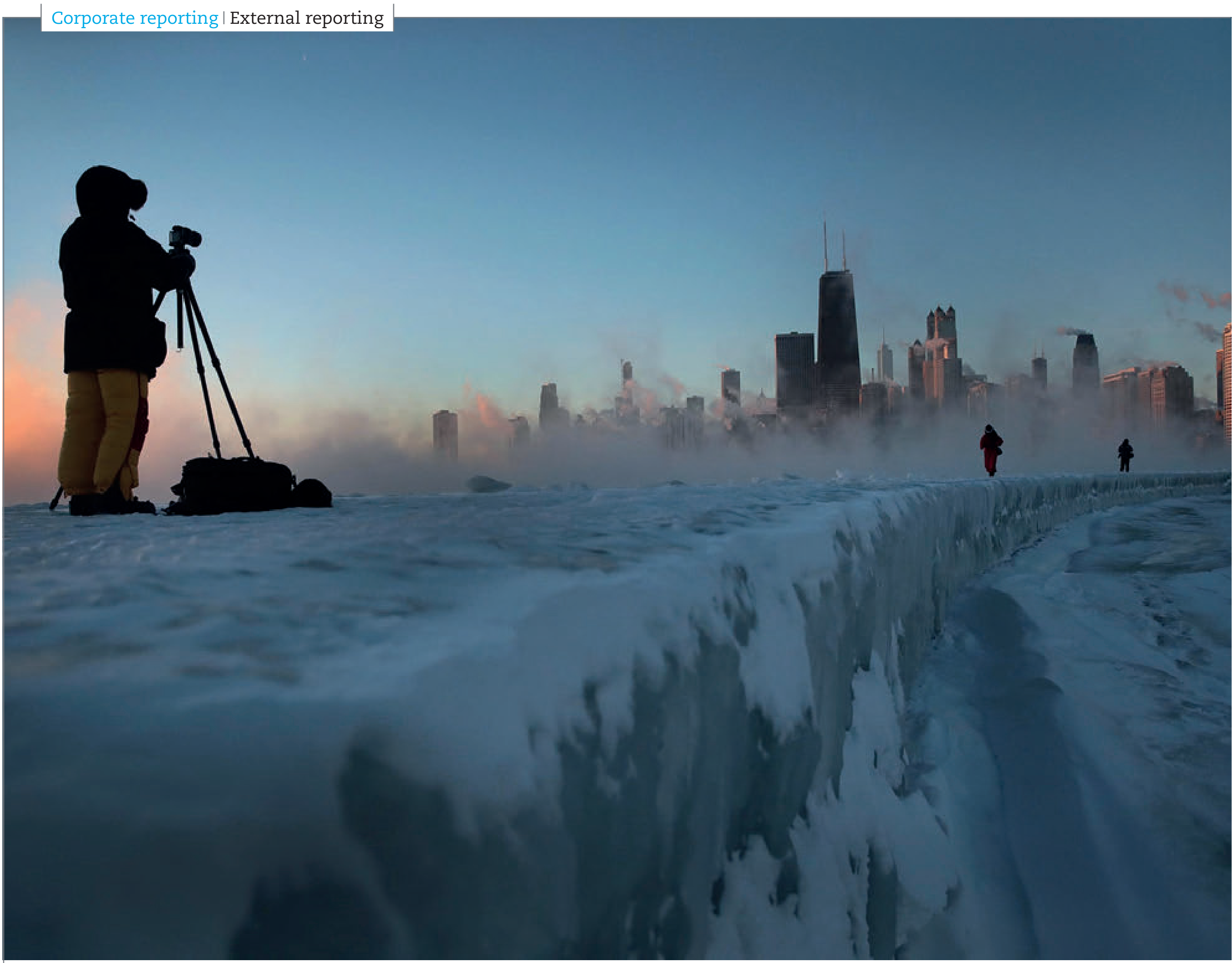
A couple of people have challenged my assertion that cryptos are not cash as defined. Some pointed out that several jurisdictions do actually acknowledge that cryptos are legal tender. However, the most compelling argument I've heard to try and land in a sensible place is that IAS 32, *Financial Instruments: Presentation*, doesn't actually define cash – probably because, when it was written, everyone knew what cash was. However, taking a look at paragraph AG3 of IAS 32, one might argue that, for accounting purposes, the words 'cash' and 'currency' are interchangeable.

Nor could I find any definition of currency in the all-powerful IFRS Standards book. So again I engaged in hours of painful research (Googling the word 'currency'). Following this, I think we could argue that a crypto meets the definition of currency and, therefore, cash, because a currency appears merely to need to be considered a reasonable medium of exchange. There is at least a judgment to be made about whether some of the more popular cryptos are mediums of exchange. And if we could get to cryptos as a form of cash, we could all breathe a collective sigh of relief in solving at least one of the 3,245 outstanding questions on cryptos.

Accounting for cryptos at fair value, with movements reflected in profit or loss, would provide the most useful information. There's a strong argument that this can't work under the current accounting requirements. But there may be a way of reading existing guidance that would allow for at least some cryptos to be classified as cash and, therefore, arrive at a sensible outcome. It's a topic the IFRS Interpretations Committee has recently turned its attention to and in its draft agenda decision reached in March, it tentatively concluded that cryptos would either be classified as inventory (and possibly measured at fair value if the holder was a broker-trader of cryptos) or an intangible asset.

The committee tentatively concluded that classification as a financial asset is currently not appropriate (read the full tentative agenda decision at bit.ly/IFRS-IC-cryptos).

A bitcoin exchange shop in Krakow's city centre. Bitcoin was the first cryptocurrency to appear, in 2009.



Credible non-financials

The growing demand for non-financial performance reporting makes a mechanism to guarantee its credibility a pressing need for businesses

In the past two decades integrated reporting, sustainability reporting and disclosures on corporate social responsibility and environment, social and governance issues (ESG) have all begun to find their way into corporate reports as investors and others have come to realise that organisations' prospects are affected by non-financial factors as well as by financial performance. As these emerging forms of external reporting (EER) have multiplied, so too have calls for a system to assure users that the non-financial information supplied is credible and of reliable quality.

Andrew Gambier, ACCA's head of audit and assurance, says there is growing demand for EER among investors. 'Among other things, EER information enables them to assess the extent to which management is keeping on top of emerging risks and opportunities,' he explains.

Many put the record January freeze in Chicago down to climate change. The Financial Stability Board has called for companies to estimate the financial impact of climate risks on their business.

Hilde Blomme FCCA, deputy CEO of Accountancy Europe, a federation of 51 professional organisations from across Europe, says: 'More companies are seeking to obtain assurance over non-financial disclosures, potentially as part of their annual reports.' Accountancy Europe has itself pioneered a 'core and more' corporate reporting approach that would organise financial and non-financial information on the basis of users' interests.

It's not just investors who rely on corporate information to make decisions, but also senior managers, and even consumers and workers relying on it to decide whether to buy products or sign employment contracts.

At a high-level meeting in Brussels late last year, organised by Accountancy Europe and the

International Auditing and Assurance Standards Board (IAASB), experts agreed that while EER best practice has been established, the expertise to deliver it well, especially outside western Europe, is often lacking.

Initiatives aimed at promoting quality non-financial reporting include an EU directive of 2016, which requires companies with more than 500 employees to report on ESG matters. Other initiatives include the Corporate Reporting Dialogue, which seeks to align the existing reporting frameworks for non-financial information better.

Gambier points to three key developments contributing to best practice in EER assurance: enhanced reporting on the United Nations' Sustainable Development Goals (SDGs), climate-related financial disclosures (notably the 2017 call from the Financial Stability Board's Task Force on Climate-Related Financial Disclosures for companies to estimate the financial impact of climate risks on their business), and more transparency on tax strategies.

While environmental reporting has been a feature for decades for some organisations, particularly chemical companies, the preoccupation with paying a proportionate amount of tax is an emerging corporate responsibility issue.

> It is clear that ultimately it will be down to companies to pick up the EER ball and run with it

Globally, though, non-financial reporting is in its early stages, so concrete assurance is hard to apply. 'There is a lack of robustness and comparability in non-financial disclosures,' says Blomme.

Even within Europe, the take-up and extent of EER is variable. In Italy, France and Spain, for example, adoption levels are high, even compulsory, but other countries lag some way behind. Birgitte Mogensen, chair of the CSR committee at FSR, the association of Danish auditors, says: 'Only 17% of businesses – the big companies – use EER in Denmark.'

Sparing with the detail

The IAASB believes any EER assurance guidance should not be overly detailed. It aims to develop 'non-authoritative' guidance based on key principles (see box), using its existing revised ISAE 3000 assurance standard. It aims to publish an exposure draft later this year.

Blomme agrees it is too early to develop subject matter-specific standards for EER assurance. However, she expects the IAASB guidance to prove 'very helpful in increasing the quality and reliability of non-financial information and addressing challenges arising in assurance practice'.

Gambier believes an assurance standard would help those wary of EER indicators: 'It would help inspire greater confidence in EER, which might encourage more people to engage with the information and give management a greater incentive to do EER well.'

Key challenges your assurance provider will face

- Criteria should be relevant, complete, reliable, neutral and understandable.
- Evaluating what should be included in a report is the hardest task.
- Narrative and future-oriented information is more subjective than historical/financial reporting.
- Are the differences between limited and reasonable assurance understood? And is limited assurance sufficient?

Source: IFAC

The IAASB's EER project has identified several challenges for EER assurance. Gambier believes there are questions over how to apply materiality and the difference between reasonable assurance and limited assurance.

Delegates at the Brussels event agreed annual reports contain far too much superfluous or 'immaterial' information, which can turn users off. Gambier says: 'Users will ignore irrelevant information to an extent, but if there is too much they may be unable to find what is really important to them.'

He believes opposition to setting standards on the basis that defining criteria is too difficult is a delaying tactic, adding that everyone knows pollution impact, for example, should be among the criteria. 'For the most part company managers do know what users want to see,' he says. 'The challenge is finding a way to force them to disclose it.'

He agrees with Andrew Hobbs, EY's public policy leader for Europe, Middle East, India and Africa, that a five-star system on assurance features may help explain what's important in a company's annual performance report. 'People don't want to read detailed food hygiene reports when they go out to eat, but they're happy to look at a food hygiene rating sticker in the doorway,' he points out. 'Perhaps assurance could learn from greater accessibility.'

Marek Grabowski, chair of the IAASB's EER task force, stresses that EER accessibility and understanding is key, and that the clock is ticking. 'In 30 years' time, the world will look different,' he says. 'EER won't be "emerging" forever; we already also call it "extended" external reporting.'

Whether EER guidance, standards or laws emerge, it is clear that ultimately it will be down to companies to pick up the ball and run with it. Richard Martin, ACCA's head of corporate reporting, says: 'Regulators and standards-setters can set out objectives and principles, but good application must first and foremost come from companies being persuaded to do it.' He believes such practice will be driven by the market, peer pressure between companies, surveys and stakeholders asking questions. AF

Liz Newmark, journalist in Brussels

Read about the IAASB's guidance project at bit.ly/EER-guidance.

Integral to progress

Professional accountants in the Caribbean are well placed to help the region adapt to the fast-moving business environment

From climate change to digitisation, there is no shortage of economic challenges facing the small island states of the Caribbean. But the region's accountancy sector has the capacity to manage upcoming change. For many financial professionals, being a part of ACCA is integral to progress.

Making headway begins with a smart, strategic approach to building resilient economies for the region's 44 million people, says Justin Ram, director of economics at Caribbean Development Bank (CDB). 'On average a year, we lose about 2% of our GDP due to natural disasters – and when a country gets a direct hit from a hurricane it can be several hundred percent,' he explains. 'We spend a lot of money rebuilding and replacing infrastructure, which leads to high debt-to-GDP ratios; some countries are in excess of 150%.'

Building more robust houses and public facilities would help – but governments are overstretching themselves, he believes. 'Caribbean governments provide too many goods and services that should be done by the private sector,' he says. 'We have to transform our economies so the private sector becomes a driver for growth.'

A major obstacle is the difficulty of trading, investing and manufacturing in many islands. Over the past decade several nations have plummeted in the World Bank's annual ease of doing business rankings: between 2009 and 2019, St Lucia sank from 34th place to 93rd, Antigua and Barbuda from 42nd to 112th, and Trinidad and Tobago from 80th to 105th.

More e-governance would be a start, says Ram, adding that taxes could be better allocated, allowing the private sector to deliver more healthcare. Public funds saved could finance better schools that prepare young Caribbeans for a future that will involve them working in a world with artificial intelligence (AI).

'Technical skills are important, but if more decisions are going to be made by algorithms, then we need to look at the real value skills that people can bring to complement the realities of AI, such as soft negotiating,' Ram says.

ACCA in the Caribbean

ACCA has operated in the region for 50 years, and this year celebrates the 20th anniversary of opening an office in the Caribbean. With 5,400 members and 15,000 students, *ACCA Caribbean*'s focus is on the future and ensuring members are equipped for success. 'We will be paying close attention to the issues that will impact the profession in years to come – such as digital technology, employability, and ethics and corruption,' says Shelly-Ann Mohammed, head of *ACCA Caribbean*. 'And we will work closely with our partners on initiatives to build capacity throughout the region, assuring sustainable continued growth.'

Blockchain benefits

One area where the region is showing leadership is in cryptocurrencies. Talks are under way about launching a digital Eastern Caribbean dollar (DXCD) for the eight nations which use the XCD. 'There's opportunity for cost savings for consumers if we can implement a digital component for trade in the region,' Ram says. Currently, US dollars are often used. 'A regional network would mean we keep more of the revenue here,' he says, adding that blockchain technology could also be used for smart contracts in the energy and health sectors.

Shelly-Ann Mohammed, head of *ACCA Caribbean*, also talks about the need for relevant skills. 'The global economy is fast-changing, and this has a major impact on the Caribbean. The accountancy profession must ensure its members have the knowledge, skills and abilities to help organisations sustain economic growth and compete nationally and internationally. The new business environment will require flexibility and relevance. Professional accountants must both maintain their technical excellence and supplement this with highly developed personal skills and professional qualities.'

'The global economy is fast-changing, and this has a major impact on the Caribbean'

While some Caribbean nations lack professional accountants, others have public finance capacity issues, she adds. *ACCA Caribbean* works closely with governments to help build capacity to ensure finance teams are equipped to meet local business demands.

ACCA's role will expand as businesses become more sophisticated, and barriers erode between internal and external reporting and financial and non-financial performance measurements, Mohammed believes, with accountants increasingly expected to 'look beyond the numbers'. She explains: 'They will need to interpret and explain them, provide insight and information, think and behave more strategically and become more involved in decision-making than before.'

While natural disasters remain the Caribbean's biggest economic threat, according to the World Bank, and are estimated to have cost the region almost US$9bn between 1996 and 2015, many small tourism-dependent islands have seen steady growth over the past three years. GDP growth rates in 2017 averaged

Left: Julie Reifer-Jones FCCA believes that many of the challenges facing today's finance professionals are unprecedented.

Right: Pamela Monroe Ellis FCCA says early adoption of auditing and IFRS standards has improved public confidence in Jamaica.

1.7% in Caribbean service-oriented economies. Grenada's 2018 region-leading performance of 5.2% continued a five-year positive trend thanks to economic reforms such as grassroots consultations and prudent management by investment funds. The region's second fastest-growing economy last year was Antigua and Barbuda, where reconstruction efforts after 2017's Hurricane Irma paved the way for 3.5% growth. And in Guyana, a 3.4% expansion was linked to increased construction activity in advance of the start of commercial oil production in 2020.

Significant value

The CDB forecasts that the region's GDP will grow by 2% in 2019, with construction, tourism and extractive industries such as gold and oil all expected to expand. In Jamaica, where GDP has increased slowly on average, by 0.17% year on year over the past two decades, the country's auditor general Pamela Monroe Ellis FCCA says the accounting profession is adding significant value to overall development.

Public sector personnel have developed a deeper appreciation of proper accounting standards and auditing systems in recent years, she says. 'Early adoption of auditing and IFRS standards as national standards has improved the reliance that can be placed on financial reports,' she says. 'People can invest confidently knowing those standards are in keeping with international best practices.'

Much of that success can be attributed to ACCA's formal relationship with the supreme audit institution of Jamaica, says Monroe Ellis. 'ACCA has contributed to our capacity-building initiatives by offering fit-for-purpose training on an annual basis, at no cost to us. This approach is seen in other Caribbean countries too, and is one I believe must be lauded,' she says. 'In a very direct way, ACCA has contributed to the positive moves taking place within the accountancy profession in the public sector.'

Many of the issues facing today's financial professionals are unprecedented, says Julie Reifer-Jones FCCA, the Antigua-based CEO of regional airline LIAT. 'In the Caribbean, we've had to adapt to build resilience into our business models. We're still recovering from 2017's major hurricanes; we're very vulnerable to climate change, and that's impacted many companies,' she explains.

There are also issues of derisking, with many financial institutions under pressure and indigenous banks struggling to operate in the global business space. 'Some islands have been blacklisted as tax havens too,' Reifer-Jones says. 'The stigma is very harmful to the financial services sector, which is particularly important to the Caribbean.'

It will be incumbent on finance personnel to identify the impact of such issues and adjust to help create a 'more relevant and resilient' business environment, Reifer-Jones says, adding: 'For the first time, they now have to factor in issues like risk of climate change into their analyses, projections and trends.'

Gemma Handy, journalist based in Antigua

Who shares wins

Information sharing is key to tackling money laundering and corruption, as the audience at ACCA's 2019 international public sector conference heard

Serious and organised crime is big business. Many people may have no personal experience of money laundering, corruption or other financial crimes, but fraud, scams and bribery can be found, often at alarmingly high levels, in every country on the planet.

The World Economic Forum puts the global cost of corruption at US$2.6 trillion, or 5% of global GDP, while the World Bank estimates that more than US$1 trillion is paid out in bribes by businesses and individuals every year. And the UK's National Crime Agency reports that financial crime affects more citizens more often than any other national security threat, and leads to more deaths than all other national security threats combined.

'Corruption cannot be fought by any one sector or institution alone. It has to be a collective effort'

Conflict and terrorism fuel illicit business activities, including human trafficking and drug trafficking, which drive money laundering. And moving fraudulent gains around the world anonymously has become much easier thanks to the internet.

Public sector accountants are in the front line of the battle against serious organised crime, corruption and money laundering. The issue came under the spotlight at ACCA's ninth international public sector conference, held in the Czech capital Prague at the start of March. Yet public sector accountancy professionals note that many in their field do not see tackling financial crime as part of their remit.

A key reason why financial crime flourishes is a lack of effective communication. At the conference, speakers and practitioners argued that a more joined up, proactive approach is required, with authorities, organisations and individuals working in concert. Peter Eigen, founder of non-governmental organisation Transparency International (TI), said: 'Corruption cannot be fought by any one sector or institution alone. It has to be a collective effort.'

Tackling the problem is a significant challenge for governments. Understandably, efforts vary between nations. Max Heywood, TI's global advocacy coordinator, said: 'Very few countries are meeting global standards, and there are gaps in the scope of anti-money laundering legislation.'

Lack of communication

An ongoing TI research project, involving 70 countries and a range of stakeholders, is shedding light on the challenge, and examining how anti-money laundering frameworks are meeting their objectives. According to Heywood, lack of communication in response to suspicious activity reports (SARs) emerges consistently as an issue in a range of jurisdictions. He said project participants report filing SARs but getting no feedback from the authorities, leaving them wondering whether the SAR system does much good.

Conference delegates presented various solutions, from the global to the personal, but all echoed the need for greater, and better, communication. From a global perspective, Heywood urged careful consideration of the United Nations Sustainability

Ghana Police's Maame Addo-Danquah, Claire Jenkins of Companies House in the UK, and Transparency International's Max Heywood.

Left to right: Tanzania's auditor general Mussa Juma Assad, Nigeria's AG Anthony Mkpe Ayine, Pakistan's deputy AG Zamir Ahmad, and Jamaica's AG Pamela Monroe Ellis.

Development Goals, especially SDG 16, which relates to establishing good governance and strong institutions. 'If this goal is not tackled – and if the public sector does not have the funds for it – it will undermine all of the others,' he said.

Scaling up solutions and sharing them internationally is also important. 'When you think of the thousands of accountants and professionals spread around the world, it's a question of how to expand those initiatives to the whole population,' Heywood said, adding that better coordination between agencies is vital. 'There has to be an effort to aggregate and synchronise those efforts.'

Green light to fraudsters

Claire Jenkins FCCA, forensic accountant at the integrity and enforcement unit of Companies House, the UK company registration body, said: 'If countries aren't speaking to each other, it gives criminals a whole range of things they can do.'

She argued that even at the national level, communication between public bodies should be closer. 'For too long, public sector accountants have worked within their own departments and no further,' she said. 'This has given a green light to fraudsters to exploit this lack of communication, because they know that departments aren't speaking to each other. I cannot stress enough the importance of speaking to other government departments.'

Jenkins described a pilot project to share data between Companies House and the UK tax collection agency. 'I knew that the lack of data sharing between us was holding us back. If we know that we can't share data, the fraudsters know it too. It's vital to bring those strands together.'

Maame Yaa Tiwaa Addo-Danquah FCCA, deputy commissioner in the Ghana Police Service, pointed out that professional accountants have a ready-made conduit for communication through their professional body. 'Wherever we are, we have a society of accountants to call on,' she said. 'If I require information from an organisation, I know I have a point of contact. Bringing accountants together, sharing information and building the right kind of relationships goes a long way to help in the fight against crime.' (See interview, page 48.)

Jenkins urged practitioners to be proactive in fighting crime. 'This issue is not going to go away,' she warned.

David Creighton, journalist in Prague

Views from the top

In a panel discussion at the conference, auditor generals from Jamaica, Nigeria, Pakistan and Tanzania discussed the challenges of creating and maintaining institutional independence as part of promoting sustainability.

Against a global backdrop of declining trust in government, Mussa Juma Assad, auditor general in Tanzania, stressed that independence must apply both to auditor generals and their departments. He acknowledged that 'in newer democracies that can be a bit of a challenge. We have very strong personalities and weak institutions. When you have a strong personality in charge, they may not be interested in building strong institutions because they want to be seen to be powerful. It is a cycle that needs to be broken.' Likewise, how to attract and retain competent staff is an ongoing dilemma, he said.

Anthony Mkpe Ayine, Nigeria's auditor general, noted the need for political leadership and 'the right resources'.

Pamela Monroe Ellis, auditor general of Jamaica, stressed the role of technology in sustainability and high-quality audit in the public sector, observing that basic tools are still lacking across the Caribbean. 'It's about how to bridge that gap,' she said. 'It's difficult to train someone in data analytics when they do not have such technology to use on a daily basis.'

Giving it his all

We ask Dr In-Ki Joo, incoming president of the International Federation of Accountants, about building the global body and his new role

What do you think IFAC has achieved in your time on the board?

Our members have told us that speaking out on public interest issues adds significant value. Since joining the board in 2012, I've seen IFAC work meticulously to expand the profession's presence in, and engagement with, major policy-setting groups. This has been particularly important as the profession's skills evolve to meet the demands of businesses large and small, and at a time of record-low levels of public trust in institutions.

Engaging with these organisations has seen IFAC host the OECD's sixth annual meeting of international organisations, and the B20 [the G20's business advisory group] name IFAC as its anti-corruption partner last year. IFAC also partnered with the OECD to estimate the US$780bn cost of regulatory fragmentation in the financial services sector. Having the profession at the table helps policymakers while showing that the profession is part of the solution on many vexing issues.

IFAC has also worked hard, in partnership with our member organisations, to develop the accountancy profession's capacity in 10 countries in Africa and Asia, through a seven-year programme.

What do you see as the key role of IFAC?

To best represent its members, IFAC consults them widely on its strategic plan. The 2019-20 plan reflects our shared desire to support a dynamic, future-focused global profession. Key to success will be working with and leveraging the efforts of our members.

In what key areas does IFAC want to bring influence to bear?

As the first IFAC president to come from academia, I think there is much the profession and academics can do together to advance a future-ready profession. We must prepare both personally and professionally, and uphold and demonstrate our code of ethics – our professional foundation. We must work to encourage good governance: how organisations tell their growth and prosperity story, or declare the challenges they face, is critical to long-term value creation. And we must build our skills: skills shortages are holding back organisations from achieving their goals. The most valued skills and competencies are changing rapidly and are increasingly those that help organisations build relationships, solve problems, innovate and communicate effectively.

What is the key risk to IFAC?

The monitoring group review of standard-setting arrangements is obviously something that continues to occupy management time. IFAC fully supports a standard-setting model that is effective, transparent, and operates in the public interest. We will continue to work constructively with the monitoring group and key stakeholders to bring this review to an end after many years.

The biggest challenge for the profession is also our biggest opportunity. Technology is already liberating accountants from their more mundane tasks. I recall when Excel first appeared and the gloomy predictions of its impact on the profession.

How do you see the work of IFAC progressing in different sectors?

Public sector. Accrual reforms are set to accelerate in the next five years. By the end of 2023, 65% of governments will report on an accrual basis, mainly through International Public Sector Accounting Standards. Greater transparency in the public sector is essential in fighting corruption, increasing citizen trust in governments and unlocking wealth.

Audit. The UK is not alone in conducting a review – so are Japan, the Netherlands and South Africa. In my opinion, audit is increasingly important as part of a broader conversation on good governance. [See also article, page 33.] To challenge and probe management, auditors must draw on a range of specialists – from big data professionals to experts in taxation, forensics, fraud and valuations. However, the multidisciplinary model isn't enough in itself. A high-quality audit stems from a consistent culture of ethics and integrity throughout the entire firm and its service offerings. Above all, standards and regulation can never be the entire answer: mindset and commitment to doing the right thing enable truly effective governance. This is where our profession must play a crucial role.

Tax. The joint ACCA, CA ANZ and IFAC *G20 2019 Trust in Tax* survey showed that the public has the

Alan Johnson FCCA

IFAC appointed Alan Johnson FCCA as its deputy president in November 2018, having been nominated by ACCA. As with the office of president, his term as deputy will run until 2020. Johnson is also chair of ACCA's Accountants for Business Global Forum, a non-executive director of the UK Department for International Development and chair of its audit and risk assurance committee. He is a former CFO of Jerónimo Martins, a food retailer with operations in Portugal, Poland and Colombia, and is now the independent chairman of the company's internal control committee.

greatest trust in professional accountants, although strong distrust remains in many countries. As a global profession, we must work to build trust in tax systems across the globe. The current debate on taxing the digital economy is one area where I strongly encourage global collaboration.

Risk. The reality is that risk management remains underdeveloped in many organisations. Given today's landscape of great change – and a future full of uncertainty – accountants must take advantage of their strategic, central role within organisations to drive better enterprise risk practices.

SMEs. Support for accountants in practice working with small businesses remains a key IFAC focus, and we continue to publish research, guides and thought leadership on issues of importance. Our highly popular guide to International Standards on Auditing is now in its fourth year, while our 2018 global SMP survey found that accountants working in small and medium practices are embracing technology to better serve their clients and attract and retain top talent.

What value do bodies such as ACCA and CA ANZ give to IFAC?

IFAC's members drive the global accountancy profession's future. ACCA and CA ANZ have deep and wide networks and decades of experience that contribute greatly to the overall profession. Your efforts to support capacity building in developing countries, contributed thought leadership on IFAC's global knowledge gateway, and engagement with IFAC on important studies and reports like the *G20 Public Trust in Tax* survey all add up to a stronger global profession. The *Trust in Tax* research series shows, in practice, how leveraging the talents of our member organisations is critical to achieving IFAC's overall mission.

What are the differences across the profession in different parts of the world?

The accountancy profession, united by a global code of ethics, is the world's only truly global profession. Our diversity across geographies means we have an incredible amount to offer each other in terms of learning, including how to anticipate and overcome challenges. I see great opportunity in our differences.

Why did you want to be president?

It is a great honour to be president of IFAC, not least because I get to work closely with the brightest minds in our global profession. My accountancy students in Korea were, however, my biggest inspiration.

Can the accountancy profession make a positive impact on the world stage?

Yes, and there are a few key actions that will help expand that impact:

- adopting integrated reporting throughout organisations
- carrying out accrual reforms and adopting IPSAS in the public sector

- helping build capacity for the profession in developing nations
- fighting for greater diversity – gender and cultural – within the profession
- supporting the UN's Sustainable Development Goals.

How will you personally cope with the challenges/stresses of the presidency?

There is always more to do, and I am motivated by the great opportunities ahead for the accountancy profession. There is more that unites everyone interested in the profession – including the regulatory community – than divides us. As the profession's ambassador for the next two years, I am too energised by the opportunity and too humbled by the position to do anything other than give it my all!

Peter Williams, journalist

Top brass

As the first female director-general of Ghana's CID, Maame Yaa Tiwaa Addo-Danquah FCCA is fighting gender stereotypes as well as crime

Maame Yaa Tiwaa Addo-Danquah FCCA

Maame Yaa Tiwaa Addo-Danquah FCCA joined the Ghana Police Service as a constable in 1990. She was promoted to sergeant in 1992, then chief inspector in 1995. In 2013 she was commandant of the Ghana Police Command and Staff College. By 2016 she was made deputy director-general of the Police Professional Standards Bureau. 2018 saw her appointed director-general, CID. Established in 1894, the Ghana Police Service is the main law enforcement agency in Ghana. It falls under the control of the Ghanaian Ministry of the Interior, and employs more than 32,000 officers (5,000 of whom work on crime investigation) across 651 police stations.

After years of hard work and study, Maame Yaa Tiwaa Addo-Danquah FCCA achieved her life-long ambition to follow a career in the police service. Today she is a deputy commissioner of police in the Ghana Police Service and the director-general of its Criminal Investigation Department (CID) – the first woman to be appointed as substantive head of the department. She was also selected as the first commandant of the Ghana Police Command and Staff College, the highest training institution for police officers, which opened in 2013.

Addo-Danquah says her accountancy qualification and experience have been critical in supporting her career. She joined the Ghana Police Service in 1990 after completing a business diploma. 'I started at the very bottom of the ladder, she says. 'I was a police constable and went out on patrol.' She was promoted to sergeant two years later, and after passing the level-two examinations of the Institute of Chartered Accountants in Ghana, was admitted to Ghana's police college. She graduated in 1999 as the best all-round cadet in her class of 46 men and two women.

After a number of years in several posts, including logistics and finance officer for the missing persons unit during a peace mission to Kosovo, she was encouraged to study for the ACCA Qualification. 'I have an investigative mind,' she says. 'Auditing was my best subject when I was studying. I wanted to get to the highest level in my career, so I applied for a three-year study leave and went to the UK to study.'

ACCA's focus on managing people had a particularly strong impact on Addo-Danquah. 'That has really helped me a lot during my career. You cannot be an expert in everything, and this job is no different – there are so many different types of crime. But what you can do is manage well the people who are experts in different fields.'

Addo-Danquah returned to Ghana in 2006, at a time when the country was focusing on the rise in financial crime. 'There were a lot of challenges here around financial crime at that time,' she says. 'I wanted to understand public sector financing better, so I took a secondment to the Controller and Accountant General's Department. I stayed there for 10 months, getting to know about payroll, pensions, treasury and so on.' Once the secondment was completed, she was appointed to run the CID's commercial crime unit.

The speed at which technology is being exploited in financial crime is a major concern in Ghana, where a largely cash-based economy, significant informal sector and porous borders increase the risk exposure. According to the central bank, Ghana's banking sector reported fraud or attempted fraud worth more than 190 million Ghanaian cedi (US$39m) in 2017. Reported incidences of fraud increased by over 40% during the course of the same year.

Addo-Danquah's focus over the past 10 years has been to develop the infrastructure and skills in the CID to fight this growing category of crime. One of her first decisions was to develop a training programme for investigators. 'Most of the police officers and investigators at that time were only used to dealing with traditional crime,' she says. 'Ghana passed its anti-money laundering laws in 2008, but we still needed to work in a way that would lead to successful prosecutions and tracing of assets.' With the help of a friend who had also qualified with ACCA in the UK, she developed a training programme for both the police service and the financial sector.

She has also worked hard to put in place the necessary technological support. 'While I was studying I wrote a dissertation on the impact of crime on economic development, and I found it very difficult to get hold of the data I needed,' she says. 'That taught me that we need good systems to record what we do. And when I took over at the CID in January 2017, if you had asked me how many homicide cases we were working on, I would not have been able to tell you.'

> 'You don't have the luxury of failing in this position. You have to cope, and do what's expected of you'

With financial resources constrained, Addo-Danquah began looking for someone who could help develop a database. 'It turned out we had two software developers already working for us. One had just been offered a very good job at a bank but I persuaded him it would be more worthwhile to stay and develop

a database for us at CID. We now have a very good database in place, which was developed entirely in-house. I can go straight to my laptop and tell you how many people we arrested last week, how many appeared in court and so on.' The next step, she says, was to develop the analytical tools to make the most of this data. 'If we have the right tools we can work out where our resources, like police stations, are most needed, and report that back to government.'

A dedicated CID financial forensic unit was opened in 2017. Addo-Danquah's CID remit also includes homicide, drug law violations, human trafficking, armed robbery, commercial crime, Interpol, a criminal data services bureau, a central firearms registry and a forensic science lab.

As the first female head of CID, and one of just two women on the police service management board, she is aware that expectations are high. 'You don't have the luxury of failing in this position. You have to cope, and do what's expected of you. Women are not seen as traditional leaders in Ghana, and if I do well it creates opportunities for other women. If I don't, it will affect other women. My appointment has motivated the authorities to consider other women for leadership positions.' The police service has introduced a policy that at least 30% of its student intake should be female, in line with United Nations recommendations on gender equality.

Addo-Danquah knows that the police service in Ghana cannot afford to stand still. 'Crime is very dynamic. You put steps in place to prevent one crime, and people come up with something else. You have to always stay one step ahead. And now that everything is IT-enabled we have more challenges. Someone in the UK can commit a crime in Ghana and what happens then? How can you bring them to justice? And whose laws should apply?

Funding is often tight, but Addo-Danquah credits her accountancy training with helping her to make sure that the resources she has are always well used.

Liz Fisher, journalist

Key to SDG delivery in Africa

Africa's business and finance sectors have a critical role to play in helping governments deliver the United Nations Sustainable Development Goals (SDGs), and professional accountants are in the frontline, according to a recent ACCA report. The SDGs – an ambitious global framework for countries to achieve by 2030 – set out the building blocks of a new type of inclusive prosperity creation. Jamil Ampomah, head of *ACCA Africa*, said: 'To make delivery of the SDGs a reality will demand investment, innovation, evaluation and communication. Across these areas the role for the professional accountant is clear. Their unique role in helping businesses with the proposition, creation and capture of value, and their trusted position in effective assessment and communication of progress made, will be vital in achieving these new benchmarks and building a more sustainable future.' The report, published in late 2018, is a follow-up to a 2017 ACCA report *The Sustainable Development Goals: redefining context, risk and opportunity*, which received an honours award from UNCTAD's Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting.

Professional accountants' unique business role and trusted position will be vital in building a more sustainable Africa.

Read the ACCA report, *The Sustainable Development Goals: Redefining context, risk and opportunity across Africa*, at bit.ly/SDG-Africa

Bang the e-benefits drum

The Australian government needs to do more to make businesses aware of the benefits of new online services, according to CA ANZ. Michael Croker, CA ANZ Australian tax leader, said: 'Business communities are set to experience an influx of emerging technologies and online services. The challenge now is getting information about the benefits to businesses so they can get on board. Regulators should also identify ways to reward businesses for embracing new technology. For example, the Australian Tax Office could provide switched-on businesses with lower tax risk ratings.' Technologies seen as key include single-touch payroll (which will help to streamline employer reporting and reduce the amount of red tape), business register modernisation and e-invoicing.

The Australian government needs to make businesses more aware of how emerging technologies and online services can benefit them.

Shrinking the intangibles gap

A joint report from ACCA and Deloitte has found growing concerns that financial statements no longer reflect underpinning drivers of value in modern business, especially for intangibles, such as R&D costs. Regulators and others are considering how to make disclosures give a more holistic picture of the interdependencies among factors that affect companies' ability to create value over time. For ACCA, a large part of this gap is intangibles – seen as valuable by the market but not recognised as assets by financial reporting. The report, *The capitalisation debate*, looks at the extent to which companies using IFRS Standards recognise development costs as assets in different countries and in different sectors. It investigates the factors that may lie behind that asset recognition and makes some suggestions as to how reporting of R&D might be improved.

Read the report, *The capitalisation debate: R&D expenditure, disclosure content and quantity, and stakeholder views*, at bit.ly/ACCA-Capitalisation

Audit on the right track

The overall fall in the number of audit areas needing improvement for the 18 months to June 2018 (up to 13% at the larger end of the market), reported by the Australian Securities and Investments Commission (ASIC), is in line with global trends. Amir Ghandar, CA ANZ reporting and assurance leader, said: 'The ASIC audit inspection programme plays a very important role in Australia's economy; it's a sanity check that things are moving in the right direction. It is great to be seeing improvement each time in the raw percentages, which reflects a huge ongoing effort by firms and the profession over the past few years, but we're under no illusions that more work is needed.' (See also page 33.)