



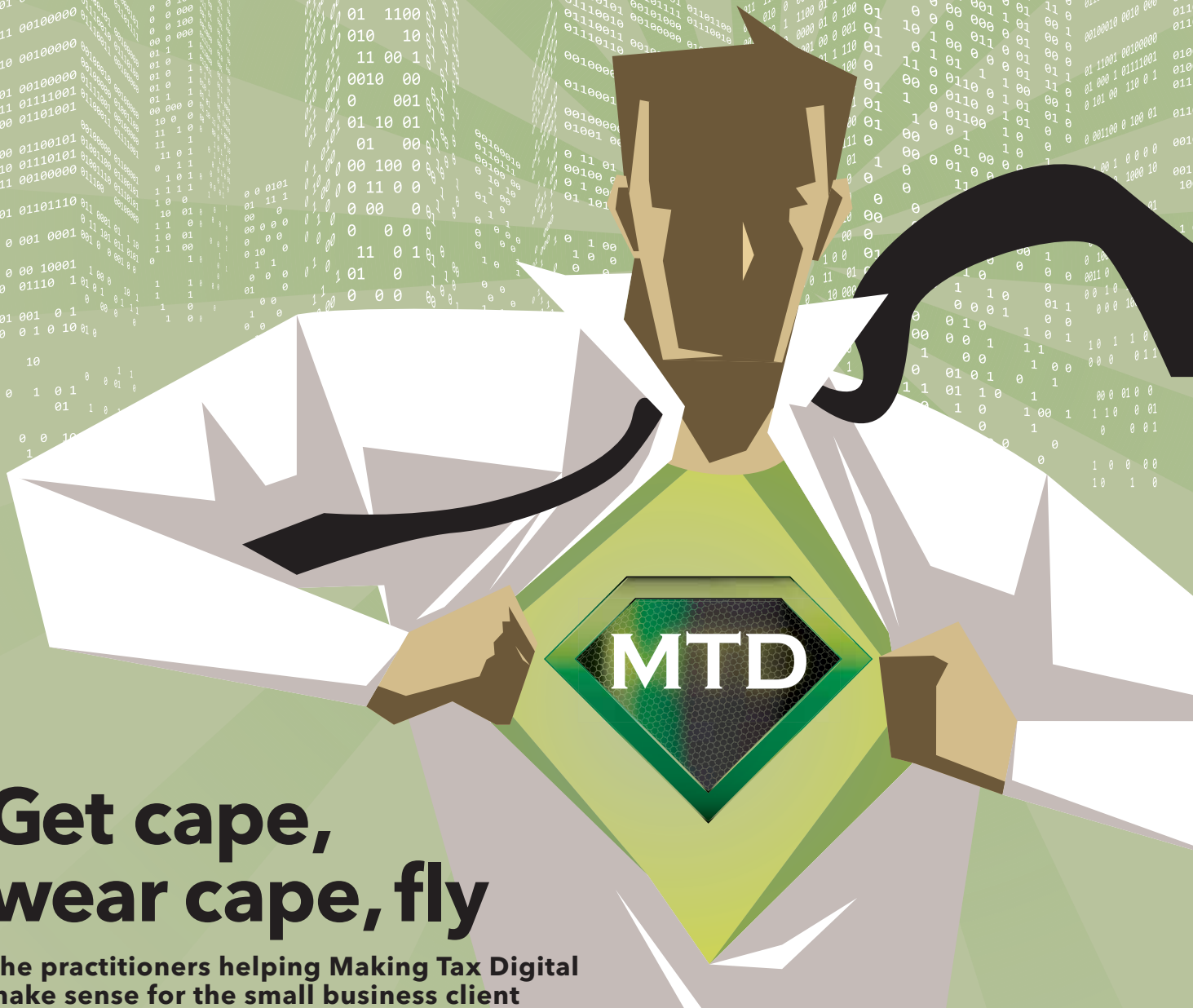
# Chartech

**TAMING THE WAVES**  
TACKLING SOFTWARE  
CHANGES RESULTING  
FROM FRS102

**ARTIFICIAL VISION**  
AI, ANALYTICS AND  
POTENTIAL FOR  
AUDIT OF THE FUTURE

**GOODBYE CELLS?**  
TRANSFORM YOUR  
POWER QUERY  
SKILLS IN EXCEL

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**Get cape,  
wear cape, fly**

**The practitioners helping Making Tax Digital  
make sense for the small business client**

For every second of delay at checkout,  
conversion drops up to 7%.

7%...

14%...

21%...

28%...

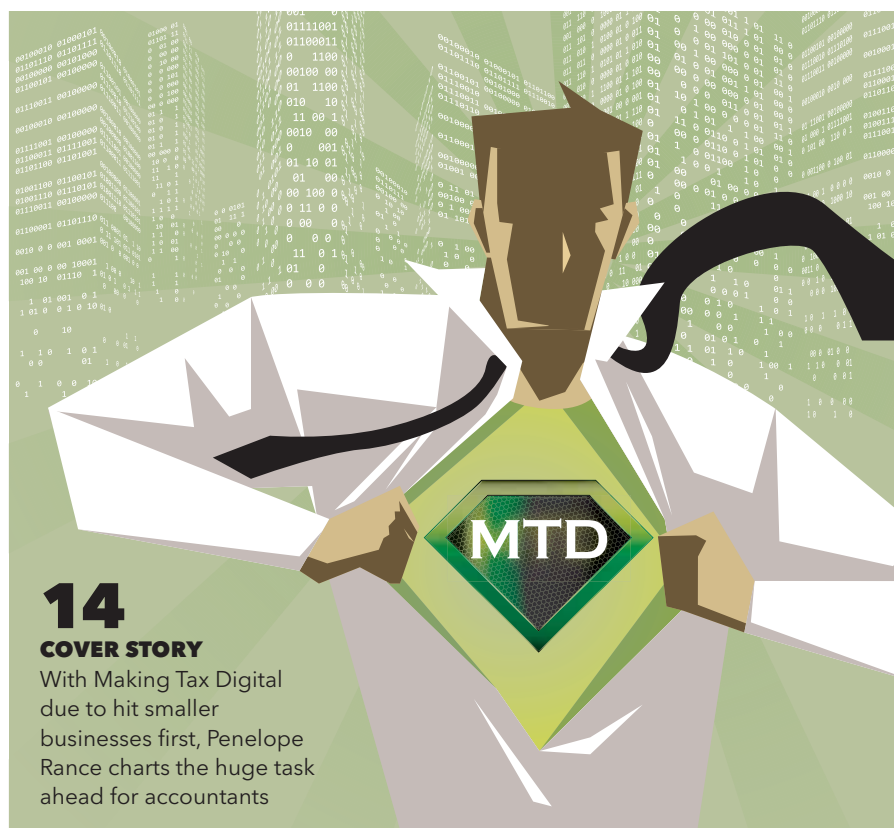
You see where this is going?

Better checkout means more revenue.

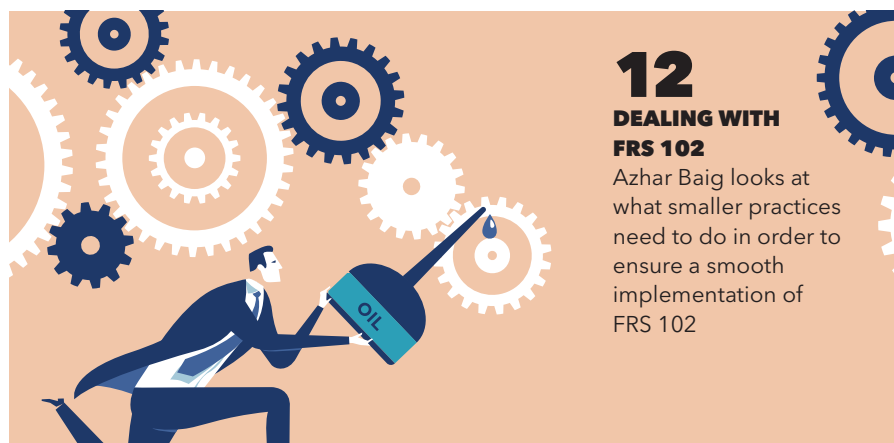
RETHINK PAYMENTS

**Braintree**  
A **PayPal** Service

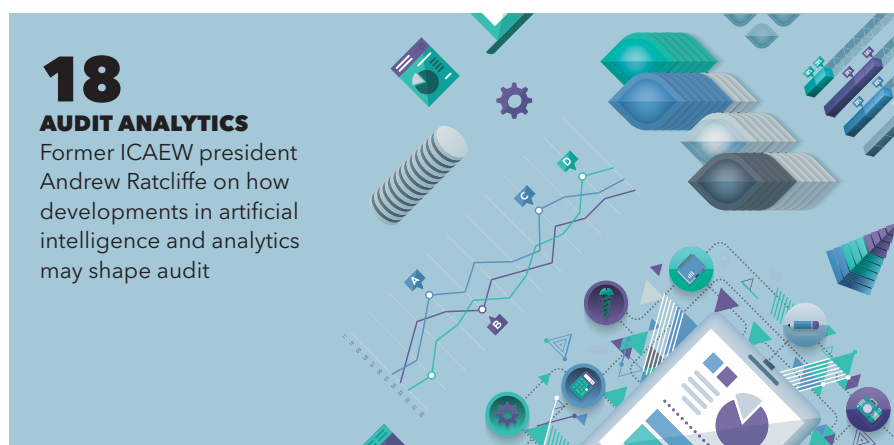
## May/June 2017 Issue 209

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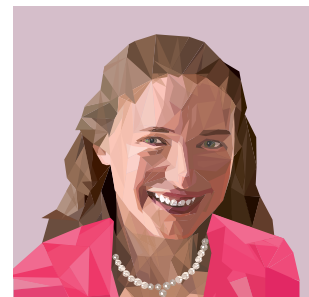
With Making Tax Digital due to hit smaller businesses first, Penelope Rance charts the huge task ahead for accountants

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Encryption is a vital tool to ensuring our privacy is protected but, says Leo Waldo, politicians may not have considered the implications of restricting it

# Remaining relevant



I recently spent some time discussing technology with about 20 professional accounting organisations (PAOs) based primarily in Central and Eastern Europe; we were debating what these organisations can and should be providing to their members in relation to technology. Some of the PAOs were fairly young with relatively few members (one was 20 years old with just over 200 members),

but many of the issues seemed to resonate regardless of location or size.

The key word that we kept coming back to was relevance, particularly beyond audit (as thresholds go up and their members look to provide additional services elsewhere). Interestingly, while many do not have a formal obligation to work in the public interest in their charters, they do include it as part of their strategic objectives.

A couple of specific issues discussed provide an interesting contrast to the UK. The first issue was a concern expressed about technology environments falling behind more developed economies. There was discussion around turning this into a benefit, with the potential to leap-frog certain technologies to establish a leadership position. One only needs to think about the success Estonia is experiencing with the digitalisation of its government systems.

The second issue that affected a number of the PAOs present was attracting younger talent to join the accounting firms (this is also against a backdrop of large scale emigration, with one country's population having fallen from 11 million to seven million as a result of people leaving to find work). In many of the countries represented, audit is just not seen as an interesting career for many of the students entering university.

In response, one PAO gave an impressive outline of how it is tackling this issue head on, working with its leading university (and ICAEW) to raise the profile of the course and career, and supporting how current students want to learn, which typically involves less face-to-face teaching than is traditionally the case.

What was clear from the discussion is that many of the issues are common to all - the key one being what is the future of the profession in light of the ongoing march of automation and machine learning? This demands consideration of what skills new and existing members of the profession need and, given the pace of change, a realisation that students entering a three-year degree course now might already be behind the technology curve by the time they graduate.

**Richard Anning**  
Head of faculty

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# NEWS & EVENTS



## QUIGLEY BOWS OUT AS CHAIRMAN AT IT FACULTY AGM

At the AGM, faculty chairman George Quigley (pictured below) outlined some of the highlights from the year, and reflected on his four years as faculty chairman, which came to an end at the conclusion of the meeting. He noted the ever-increasing impact of technology on society, the profession, and the role that the faculty is now being asked to play. Since taking over as chairman he has seen much greater collaboration between the faculty and other areas of ICAEW, and was particularly pleased to see an ongoing discussion between the faculty and Learning and Professional Development, helping to increase awareness and coverage of technology in the ACA syllabus and exams.

Dave White, Nicola Granger and Jonathan Teller were re-elected to the committee. Jeremy Boss, Paul Rolison and Tim Fouracre were elected to the committee, although all served as co-opted members of the committee for the previous three years.

We extend thanks to Roland Brook and Ian Whittaker who stood down from the committee early to make way for new members. The committee is in the very fortunate position of



having five observers, a number of whom are likely to be co-opted to the committee during the coming year.

Brook has been a very active supporter of the faculty, serving as a volunteer even before the faculty was set up in 1991. An associate director at Smith & Williamson, he has been the honorary treasurer of the faculty for the past few years and became inaugural chairman of the Excel Community Advisory Committee when it formed in 2012. He has also supported the faculty at countless events in Chartered Accountants' Hall and beyond.

Whittaker has been on the committee since 2003 as an active member in Scotland. A managing consultant at Leidos with deep experience of the public sector, he has represented the faculty at CIPFA's Financial Management Panel for the past four years. Both Whittaker and Brook have expressed a desire to continue working with the faculty in future.

In the next edition of *Chartech* we will outline the new faculty office-holders and their plans for its continued development.

## DON'T FORGET TO USE FRS

A recent study from CoreFiling shows that more than a million filers of iXBRL accounts to Companies House have not yet switched to the new FRS taxonomy.

About 1.45 million of the 1.5 million companies that file accounts online to Companies House each year appear to have taken advantage of the exemption to delay implementation of the new FRS by a year from 1 Jan 2015 to 1 Jan 2016. Of these, just under a third explicitly tagged the FRSE exemption flag or provided an explicit exemption statement while a small handful appear, on turnover at least, not to have been qualified to claim it at all.

The jury is still out for periods starting on 1 Jan 2016 or later, but to mid-March more than 32,000 such accounts had been filed online, 62% of them using the old UK GAAP taxonomy. The new FRS taxonomy is mandatory for these accounting periods, so the number should be zero.

Inertia or ignorance (by preparers and/or software vendors) may be to blame. For periods starting on or after 1 Jan 2016 check that if you are offered the choice you select the new FRS taxonomy to tag accounts against. If your preparation software is designed to take care of this choice for you, then check that you have the latest version. If in doubt contact your vendor.

### 1.45m

COMPANIES APPEAR TO HAVE DELAYED IMPLEMENTATION OF THE NEW FRS BY ONE YEAR



## BREACHES SURVEY

The UK government recently released its latest *Cyber security breaches survey*. The faculty has always been very supportive of this annual survey and was again happy to endorse the fieldwork and was pleased to be quoted in the final report in this capacity.

The findings this year are pretty consistent with our experience when speaking to members and others in the field. It finds that just under half of businesses suffered cyber attacks or breaches in the past 12 months. Attacks and breaches are more common in certain sectors and as businesses get bigger. But the results make clear that this impacts on businesses of all sizes and in all sectors.

As seen with the recent NHS breach, they really can happen to anyone. It will be interesting to see if the next breaches survey will reflect this.

*Cyber security breaches survey 2017* can be found at [tinyurl.com/GOV-CyberBreach2017](http://tinyurl.com/GOV-CyberBreach2017)

## EXCEL COMMUNITY MEMBERSHIP

Did you know that IT Faculty members have access to all services provided by the Excel Community? Watch our webinar to learn what is available to you – including the comprehensive webinar archive, hints and tips provided by our experts, and two suites of Excel online training. Watch a demonstration of how to make the most of the online facilities and the Excel online training at [icaew.com/excelwebinars](http://icaew.com/excelwebinars)

## IT FACULTY 2017 EVENTS & WEBINARS

### WEBINARS

#### Cyber security - reducing the risk of security breaches

**13 June 2017**

Computer security to prevent unauthorised access to your data is of increasing importance, as businesses and individuals face daily attempts to break into computer systems. The government's *Cyber security breaches survey* found that 74% of smaller businesses reported a security breach in 2015 as hackers move to attack SMEs. Mark Taylor will present practical tips on reducing the risk of suffering an attack and will run through some simple steps to ramp up your security.

#### Excel Tip of the Week Live #4

**10 July 2017**

Join David Lyford-Smith, author of over 180 Tip of the Week posts, as he shares more top tips for Excel success. From functions to features and formatting, David will cover a wide range of topics as well as answering your questions. This webinar will come with a copy of the presentation file to allow you to follow along, or to try it all for yourself after the event.

#### 10 steps to cyber security for the smaller firm

**17 October 2017**

A lot of small organisations struggle to understand how they should approach cyber security. Mark Taylor will discuss the first 10 steps to good cyber hygiene. The webinar will also provide you with the opportunity to ask questions about cyber security.

#### Financial modelling - the hows and whys

**19 October 2017**

Liam Bastick will highlight the right and wrong ways of setting up a financial model. The webinar will include: layout, formats vs styles, the importance of units, key issues with number formatting, hyperlinking and creating a workable template.

#### Charts and graphs in Excel

**7 December 2017**

Make the most out of your charts and graphs in Excel with trainer John Tennent. John will explain every aspect of producing charts, and look at: when and how to use charts, producing complex chart combinations, analysing chart data, and how to present data visually to maximum effect. The webinar will be presented within Excel, showing you exactly where each option lies and how to use it in practice.

### EVENTS

#### Demystifying blockchain

**Chartered Accountants' Hall, Moorgate Place, London, EC2R 6EA**

**28 June 2017**

Firms continually deal with greater requirements for reporting, transparency and dissemination of data – can blockchain technology really solve these problems? This seminar is designed to give you a grounding in this revolutionary ledger technology and bring you up to speed with its history and features. Created to manage digital currency bitcoin, blockchain allows for a ledger to be shared across many parties, each with their own copy but all kept perfectly synchronised. With wide-ranging proposed uses in finance, supply management, land registry, provenance, banking and more, blockchain is a potentially landscape-altering technical innovation.

Further details and online booking can be found at [icaew.com/itfacevents](http://icaew.com/itfacevents)



## A WELL-DESERVED OPPORTUNITY

### EXCLUSIVE VOLVO V60 MEMBER OFFER

You joined ICAEW to get more from something that matters to you. Buy the V60 D4 R-Design Lux Nav Automatic, with its advanced handling and practical versatility, and we'll return your commitment with an exclusive saving of £8,539.

TO FIND OUT MORE, VISIT [ICAEW.COM/VOLVO](http://ICAEW.COM/VOLVO)  
OR CALL THE VOLVO CAR BUSINESS CENTRE  
ON **03333 204 147**

V60 D4 R-Design Lux Nav Automatic  
Personal Contract Purchase Representative Example\*

48 monthly payments	£269.00
Customer deposit	£7,980.50
Finance deposit contribution	£750.00
On the road price	£38,530.00
Member saving	£8,539.00
Revised on the road price	£29,991.00
Total amount of credit	£21,260.50
Interest charges	£3,239.86
Total amount payable	£33,230.86
Duration of agreement (months)	49
Fixed rate of interest (per annum)	2.52%
Optional final payment	£11,588.50
Mileage per annum	8,000
Excess mileage charge	14.90p per mile
Representative APR	4.9%

Available with 3 years' complementary servicing  
when purchased on Volvo Advantage  
Personal Contract Purchase.

MEMBER  
REWARDS  
PARTNER



Official fuel consumption for the Volvo V60 D4 R-Design Lux Nav Automatic in MPG (l/100km): Urban 53.3 (5.3), Extra Urban 72.4 (3.9), Combined 64.2 (4.4). CO<sub>2</sub> emissions 116g/km. MPG figures are obtained from laboratory testing intended for comparisons between vehicles and may not reflect real driving results.

\*Finance subject to status. Retail sales only. Subject to availability at participating dealers only on vehicles registered by 30th June 2017. At the end of the agreement there are 3 options: (i) Part exchange the vehicle, (ii) Pay the Optional Final Payment to own the vehicle or (iii) Return the vehicle. Further charges may be made subject to the condition or mileage of the vehicle. Terms and conditions apply. Applicants must be 18 or over. Guarantee/Indemnity may be required. Volvo Car Credit, RH1 1SR. The complementary servicing offer is only available when purchasing on Volvo Advantage Personal Contract Purchase at participating dealers (excludes Polestar and Hybrid vehicles), on vehicles ordered between 01/04/2017 and 30/06/2017. Services must be carried out at a Volvo Authorised Repairer. Retail offer only. Excludes fleet operators and business users. See [volvocars.co.uk](http://volvocars.co.uk) for full terms and conditions.

## A THIRD OF UK JOBS THREATENED BY ROBOTS

A report by PwC suggests that by the early 2030s around 30% of jobs in the UK could be at risk from automation. The report takes a wide-reaching look at the UK economic outlook after Brexit and the impact of automation on the UK and other major economies.

The information is presented alongside a number of caveats. Economic, legal and regulatory factors may mean that not all of these jobs forecast will end up being automated, automation will create some new jobs in the digital and technology sectors, and productivity gains will generate new wealth to support a range of additional jobs. PwC says that there

may be either positive or negative impacts on the overall level of jobs in the UK.

The report says productivity gains should mean rising incomes, but notes the benefits may not be felt equally across all income groups. It suggests that more than half of the potential job losses will come in the wholesale and retail trade, manufacturing, administrative and support services, and transport and storage.

The changes are likely to affect men more than women, and those with lower education levels more than those with higher.

There is a lot of detail in the full report, which can be downloaded at [tinyurl.com/CH-PwC-Outlook](http://tinyurl.com/CH-PwC-Outlook)



## WHAT NEXT FOR GOOGLE ADVERTISING PLATFORM?

Google has come under fire for its handling of advertising placement, with a significant number of high-profile users pulling out of online advertising following dissatisfaction with how their ads are placed in relation to extremist YouTube content.

More than 250 organisations have been reported to have stopped using Google including the British government, numerous British companies and the likes of Verizon and AT&T (the biggest telecoms company in the world). The withdrawal is said to be worth hundreds of millions of dollars.

Google has said the company has begun a review of its ad policies and brand controls, with a view to giving brands more control over where their ads appear across YouTube.

At the time of writing this story

is still playing out. With online advertising now a staple for many of the world's top companies, and Google one of the most important companies placing digital advertising - both on its own sites and through its back end technologies - it will be worth keeping an eye open to see how things are resolved.

**250+**

ORGANISATIONS HAVE BEEN REPORTED TO HAVE STOPPED USING GOOGLE'S ADVERTISING PLATFORM



## MASTERCARD IS TRIALLING FINGERPRINT SENSORS

As part of a limited trial in South Africa, Mastercard has revealed a card, embedded with its own fingerprint scanner.

For the tests, the cardholder had to enrol their card by registering with their bank. "Upon registration, their fingerprint is converted into an encrypted digital template stored on the card," Mastercard explained.

On the top right-hand corner of what it is calling a 'biometric card' is a small square that recognises prints. Mastercard claims that the sensor works like those seen on Apple and Android devices that enable contactless payments.

The company has so far conducted two trials with a supermarket chain and reported that the card "worked as it was intended". It is currently planning a full roll-out for South Africa and testing in Europe and Asia for later this year.

But it's not all straightforward as in 2016 researchers showed that some fingerprint sensors could be bypassed by creating a replica print from play dough.



By Sandra Vogel  
Freelance IT writer  
[sandra@svogel.com](mailto:sandra@svogel.com)



## UK COMES OUT AS THE DIGITAL CAPITAL OF EUROPE

A new report from Tech City UK provides a fascinating insight into the current state of the UK's digital economy. The full report is available for free download at [technation.techcityuk.com](http://technation.techcityuk.com)

This report shows how the sector has grown in recent years, the level to which tech businesses are spread across the UK, and the contribution the sector makes to the UK economy, and there are some impressive figures.

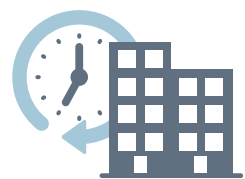


**£6.8bn**

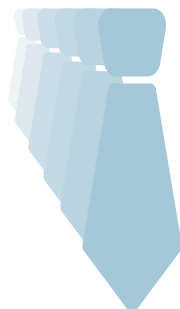
Amount secured in 2016 by the UK in venture capital and private equity investment



more than any other European country



In London, a new tech business is formed every hour



**x2**

Jobs in digital tech grew more than twice as fast as growth outside the sector between 2011 and 2015



**£185m**

ESTIMATED EXTRA COMPENSATION TO BE AWARDED FOR CONSUMERS/SMEs

## OFCOM CONSULTS ON MANDATORY COMPENSATION BY BROADBAND PROVIDERS

Ofcom has launched a consultation on proposals to require broadband providers to compensate consumers and SMEs for poor service. The compensation would apply whenever a landline or broadband is not fixed quickly enough, a new landline or broadband service is not up and running on the day promised, or an engineer doesn't arrive for a scheduled appointment.

The payment amounts would be set by Ofcom, and designed to reflect the degree of harm suffered by customers. For example it proposes £30 compensation if an engineer does not turn up for a scheduled appointment, or an appointment is cancelled with less than 24 hours' notice. Ofcom believes this would result in up to £185m in extra compensation being paid as cash or bill credits.

Ofcom recognises that around a third of SMEs use residential landline and broadband services, and they would benefit from the new regulations. It has found that 49% of SMEs are unclear about their rights in this respect, and the proposals would provide greater clarity.

The consultation is open until 5 June 2017. More information is at [tinyurl.com/CH-AutoComp](http://tinyurl.com/CH-AutoComp)

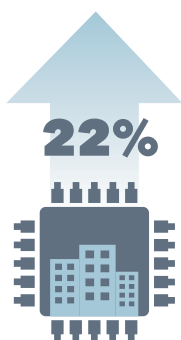
## MEMORY-DRIVEN COMPUTING MAKES MORE OF DATA

We're always hearing how much more data is produced in any one year than in previous years. Hewlett Packard hopes its memory-driven computing (MDC) innovations will speed up our ability to use this data, providing benefits for everything from healthcare to speech recognition and smart cities.

HP says the types of computer architecture we use today employ systems that are relatively slow at accessing stored data. So while processors get faster, the data they work with can get caught in bottlenecks that stop them achieving their potential.

MDC transforms the connections between stored data allowing it to be accessed much more quickly. In addition, specialised processors can work on particular tasks.

Still at the prototyping stage, MDC could be truly transformational. Read more from HP at [tinyurl.com/CH-MemComp](http://tinyurl.com/CH-MemComp)

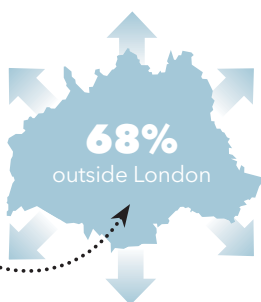


**£170bn**

Digital tech business turnover in 2015 - a growth rate of 22% in five years

**£4.6bn**

Amount regional clusters attracted in 2016, putting the amount of digital tech investment at...



**1.64m**

Number of digital tech jobs in the UK to date



JESSICA PILLOW

A great way to help businesses go digital is to handle some of their pain by removing the need for them to complete their bookkeeping altogether. This used to be impossible to resource effectively at a price that smaller clients could afford, but with the great receipt processing software available it is now very possible. It's also a great way to get closer to the client and move into offering higher value business advice work, such as budgeting, projections and management accounts.

### IMPROVE YOUR MARGINS

We've seen a large take-up of our cloud bookkeeping service so we've had to significantly increase resources in this area. But getting the bookkeeping right translates into higher margins and efficiencies in other areas of the practice such as final year-end accounts, corporation tax and payroll. If you price right, you can end up effectively being paid twice for some areas, such as the final accounts work.

Let me explain how our cloud bookkeeping process works. We take out a subscription for our client with a service called Receipt Bank, which is added to their monthly invoice along with the cloud accounting software subscription and our service's fixed fee.

We train the client how to produce sales invoices on their cloud accounting software and email them out to clients. We suggest to clients that this is the extent of their use of Xero apart from using the reports.

We set up the direct bank feeds in the cloud accounting software with the client's authority.

Then everything is ready to go. Our job is to enter the purchase receipts from Receipt Bank (or at least the ones

## CLOUD THE ISSUE

Persuading clients to sign up to your cloud bookkeeping service can benefit them – and your business too

that can't be processed automatically using supplier rules already set up) and then reconcile the bank.

We've been offering this service to clients for five years, during which time we've seen how the service can be improved considerably by persuading clients to help us by sticking to a few pieces of key advice.

It is best for them to ensure that your main contact in the business for the cloud bookkeeping service is an admin staff member if possible, as the business owner can otherwise get frustrated at being asked for copy receipts. Also, they normally get better

at providing all the receipts once they have been chased a few times.

If there is no administrator, then try to get log-in details of the main online accounts, such as Amazon and Paypal, so you can retrieve the necessary paperwork.

If you are accessing your client's online accounts then make sure your engagement letter sets out exactly what you will use this access for and the controls that you will put in place for payment authorisation (which must then be rigidly followed by your team, with supporting documentation retained).

Finally, agree with the client how often the service is carried out – weekly, daily, fortnightly or monthly; and then schedule the work into the teamwork planner to make sure that there are sufficient staff resources. Regularly review the fee charged to ensure it is sufficient and ideally invoice on a fixed-fee basis to benefit from the software efficiencies.

### REVIEW YOUR STRUCTURES

We've found that the structure of our staff team has changed. The cloud bookkeeping service is offered by our cloud software team, which also handles client support queries (for those clients not using the cloud bookkeeping software); cloud accounting training; management accounts production and VAT support.

Since the team is constantly working on the front line with clients, it is extremely important that each team member has good communication skills and an engaging nature, as well as possessing good detail and analytical skills. ●

**Jessica Pillow, managing director, Pillow May chartered accountants**



ALAN CALDER

The General Data Protection Regulation (GDPR) came into force on 24 May 2016 and will apply across the EU from 25 May 2018, when it replaces member state implementations of the European Data Protection Directive, including the Data Protection Act 1998 (DPA) in the UK.

For those organisations that have taken advantage of the UK's relatively low-key DPA compliance environment, the new law will mark a significant increase in responsibility - and potential penalties.

In the current environment, the powers of the Information Commissioner's Office (ICO) are relatively limited: fines for non-compliant organisations have an upper limit of £500,000, but this figure has never actually been reached.

By way of contrast, the GDPR mandates "effective, proportionate and dissuasive" penalties: organisations can be subject to fines up to 4% of their annual global turnover or €20m for breaches, whichever is the greater, and aggrieved data subjects can sue organisations for failing to secure their personal data properly.

The real game-changer is the regulatory requirement to report all data breaches to the supervisory authority - the ICO in the UK - within 72 hours. Failure to report is an offence, with significant attached fines. Data subjects must also be informed if a breach results in a high risk to their rights and freedoms.

By 25 May next year you need to be sure any personal data you're processing is lawful, and that this complies with the GDPR's six data protection principles. Any organisation that cannot claim with a reasonable degree of certainty that its current processing of information is fully in line with the eight DPA principles has an enormous task ahead of it - and little time in which to complete the project.

If, by 25 May 2018, you cannot identify a lawful basis for processing data, you will need to stop; to continue will be to break

## NO TIME FOR DAWDLING

With only a year until the GDPR becomes law, the moment has arrived to understand the responsibilities of data controllers and processors

the law. And consent will no longer be an adequate lawful basis for processing information in significant areas, such as employers processing employee data.

The GDPR is also much clearer about the rights of data subjects, and requires data controllers to facilitate the exercise of those rights. The new right to be forgotten and the right to data portability may both require process changes in organisations. Where processing is based on consent, it must be as easy for the data subject to withdraw it as it was to give it. Not surprisingly, it will no longer be possible for data controllers to rely on consent by default or silence, assumed consent or even to bundle a number of items into a single affirmation of consent.

The role of data processors will also be clearly defined in law; it will be illegal for a data processor to process data other than in compliance with a contract from a data controller. Many organisations have still to assess whether they are a controller or processor. The wrong time to discover that you're a processor - and don't have an appropriate contract with a controller

- will be when you've been breached and have to determine who that breach has to be reported to. Similarly disconcerting will be if you believe that you're a processor and discover - on being breached and putting together your mandatory data breach report - that you're actually a controller and don't have a lawful basis for processing the breached data.

The GDPR requires organisations to demonstrate accountability in data processing - data protection has to become embedded in company culture. Only a subset of all organisations is actually required to appoint a data protection officer (DPO) or carry out data protection impact assessments (DPIAs), but because failings around the requirements for data protection by design and by default also carry significant financial penalties, most organisations will need a DPO and need to be using DPIAs to determine the administrative and organisational measures they need to put in place. Given the size of the task, this is not something to start tackling next year.

All personal data - biometric, genetic and locational data, email addresses and online identifiers such as IP addresses - fall within the scope of the GDPR. All organisations outside the EU that provide services into the EU also have to comply with the GDPR - and that includes appointing a representative within the EU.

The GDPR really is the first global privacy law. The UK has not only confirmed that it will apply in the UK beyond Brexit, but that the government will ensure it is rigorously enforced as part of its cyber security strategy. ●

For a digital version of our *Tech Essentials* guide to GDPR, log in at [tinyurl.com/TechEssentials1-GDPR](http://tinyurl.com/TechEssentials1-GDPR)

**Alan Calder, CEO, IT Governance**



# SMOOTHLY DOES IT

FRS 102 has caused plenty of waves for bigger firms using accounting software lately. Now it's the turn of smaller practices to take on board the changes, writes **Azhar Baig**

Accounts preparation software, like your broadband connection, is expected to always function. You may never give a second thought to the complex calculations and algorithms that are taking place - except when it is not working as expected.

For many years this software has been seen as a vital element of the profession's toolkit. Accountants have become more efficient through the use of technology as their work has become more complex. Up to now, the software was easily able to keep up with the incremental changes to standards and legislation. That all changed with the introduction of new UK GAAP, in particular FRS 102 and FRS 105, and changes to company law for small entities. The changes bring improvements and introduce new requirements that need to be addressed. This has meant a monumental task for many software vendors of maintaining existing standards and functionality while at the same time developing for new standards.

## LEARNING FROM EXPERIENCE

Large and medium-sized entities have been implementing FRS 102 for the past two years with accountants using a combination of software and professional judgement to ensure new requirements were met. This year will see the largest group of businesses - small and micro-entities - implement FRS 102 or FRS 105 for the first time. There are lessons to be learnt from early adopters so small practices can prepare for what lies ahead and make a smooth transition.

Every accountancy practice will have heard about the changes and made a decision as to how it effects them. Small practices may well have chosen to stay with the Financial Reporting Standard for Small Entities (FRSSE) for as long as was permitted and avoided the changes in 2016. Accountants are now ready; technical update courses have prepared them well. Small practices need to ensure that they have a good grasp of the changes now that they are mandatory and how their chosen software provider is addressing the changes.

The experience with accounts preparation software is getting better. Last year saw software vendors compete to be first to market with software that could address all the new requirements. Some might call it an understatement to say that there were some teething problems. The good news is that the main software



vendors have taken action and updated their software to address the new requirements of FRS 102, FRS 102 Section 1A (for small entities) and FRS 105 including the associated SORPs and legislation changes.

The technical helpline at ICAEW (see box, below) has been in a unique position to support members as they have implemented FRS 102, including discussing the challenges faced with software. Issues with software have not been eliminated entirely. As more entities apply the new standards, new issues will be found. So how can you be best prepared this year?

**1 People** This is the most important factor. Make sure your people are ready. This means training them in the changes in the software and in the standards. Investment here will help you to do it right first time. Involve staff at all levels - does everyone understand when a critical decision has to be made? For example, are the right people involved in making decisions around tailoring options at the right time? Or is it left to the most junior person in the office? People at all levels need to be aware of what has changed.

**2 Planning** Have a list of your clients, their year ends and which standard they are using. Are they early adopting anything? What SORPs are applicable? There will be further amendments to the standards coming in the future - will you want to wait? Will your software be upgraded in time? What if changes are delayed? Use this to understand what challenges there may be, and how you will address them.

#### A HELPING HAND

- The Technical Advisory Services helpline is a telephone-based service that provides ICAEW members with confidential support on accounting, auditing and ethical issues. Details on how to contact the service can be found at [tinyurl.com/ICAEW-Support](http://tinyurl.com/ICAEW-Support)
- ICAEW's guidance and factsheets about new UK GAAP can be found at [icaew.com/newukgaap](http://icaew.com/newukgaap)
- Model accounts and disclosure checklists for new UK GAAP can be found at [tinyurl.com/ICAEW-Model-Checklists](http://tinyurl.com/ICAEW-Model-Checklists)

**3 Budget** The preparation of the financial statements should be budgeted for appropriately - it will be different to last year! In understanding what you need to do, you will be able to assess the costs of implementing the changes. Compare budget to actual to understand where variances arose. What needs to be different on the next assignment?

**4 Software** Make sure you have the latest versions of your software, including any disclosure checklists. The updates will address functionality as well as bug fixes. Do you have a process for finding out when the latest version is available, and when you will choose to upgrade? How will updates affect your in-progress files, for example where you may have processed a work-around? To allow you to revert to an earlier version, make backups of all your completed files, and take regular backups as your assignments progress.

Make sure that you have the ability to retrieve previous work completed on older versions of software. In the case of a complaint or a claim, you need to be able to demonstrate the quality of the work performed. The only way to do that may be to have an old version of the software and the relevant backup.

**5 Process** Have a clear step-by-step guide that you can use on all your assignments to set out what needs to be done using your software and when. What standard journals will you need to make sure your prior year comparative is correct? Create a checklist to make sure you consider everything for each client. Many processes will be determined by the functionality in your software. It is important to understand how it works, and to know what new functionality is available. What will be different for assignments where they adopted FRS 102 last year?

**6 Tailoring** How will your software implement new requirements? Make sure you tailor boilerplate text to your client. Even if your prior year text has rolled forward, check it is complete and correct. For example, you may need to add or amend accounting policy wording or voluntary disclosures to give a true and fair view.

**7 Know what to expect** If you have made a mistake, the software won't know that. Do you know what the output should be? Do the accounts reconcile to your underlying documentation? Is the wording of the audit report correct? Having knowledge and understanding of your client is going to be a critical part of assessing the quality of the output being produced. There are different financial statement options - full, abridged or 'filleted'. Do you know how to produce them and when they can be used?

**8 Quality control** Disclosure checklists are just one part of quality control; having an up-to-date checklist and using it will help demonstrate compliance. You are going to be associated with the financial statements, so make sure you have quality control procedures in place - from making sure all the figures tie back to your work, through to spelling, grammar and formatting.

**9 Feedback** Learn from your assignments and make sure you share lessons learned and update your processes so that all your future assignments work better.

**10 Support** The software vendor can provide support on the software and its functionality. But there are also resources available from ICAEW to help you with the changes in new UK GAAP. Don't forget to speak to others and check what user groups and forums are available for your software. ●

**Azhar Baig, head of technical advisory and enquiry services, ICAEW**



# SUPERHERO CAPES AT THE READY

Accounting practices will be at the forefront of preparing microbusinesses and sole traders for their Making Tax Digital obligations. Penelope Rance explores the challenges that await

Making Tax Digital (MTD) is widely recognised as the most fundamental change to the UK tax system for a generation - a change, in fact, that would not have been conceivable, let alone possible, a generation ago. Recognised, that is, by the big businesses that will come under its remit in 2020.

From 1 April 2018, unincorporated businesses and landlords with turnover above the VAT threshold - £85,000 for 2017/18, and yet to be confirmed for 2018/19 - will need to submit quarterly digital reports of their income and expenses, plus an annual self-assessment return, from the period of account that begins after 6 April 2018. Those with turnover under the VAT threshold will be liable from 6 April 2019.

These facts are known, but the details are yet to be released after the decision to remove MTD provisions from Finance Bill 2017 ahead of the General Election. ICAEW tax manager Anita Monteith says this was “a sensible decision” and goes on: “Pending reintroduction of the provisions after the General Election, the government should prioritise addressing the detailed questions that have been raised about how MTD will work in practice.”

What is known is how unprepared many microbusinesses are for digital reporting. “The vast majority don’t use accounting software or even spreadsheets,” says Matthew Perkins, UK sales and strategic partnerships manager at Receipt Bank. “It’s a double whammy - they’re the first ones moving into MTD, and also the least likely to have, or be using, accounting software.”

Last August, a survey by FreeAgent revealed that 43% of freelancers and microbusiness owners did not know what MTD was, or how it would affect them. “Around 3.5 million businesses, many of

which are not using software today, will have to change over in the next couple of years,” says Gary Turner, MD of Xero UK. “The big challenge is to drive adoption among millions of microbusinesses, who are all quite happily doing manual bookkeeping.”

In February, the UK200 Group reported that 65% of its members’ clients do not have accounting software, while 22% of SMEs use manual record keeping, and 16% of business owners are still passing batches of receipts on to their accountant to log and then fill in their annual tax return.

Kevin Salter, partner at Glover Stanbury, says that 50% of the firm’s clients use spreadsheets or manual record keeping. “It’s going to be hard to convince those with a well-written cash book, that they’ve kept for 30 years, that they can’t do it any more. There are some clients we moved to accounting software, and despite all the hand-holding and training, they couldn’t cope, and have gone back to spreadsheets.”

## SIGNIFICANT INVESTMENT

“ICAEW research suggests that only around a quarter of microbusinesses currently use apps and accounting software. Around half use a mixture of handwritten records and spreadsheets and the remaining quarter use only handwritten records,” says Paul Aplin, partner at AC Mole & Sons. “It’s going to involve a significant investment of our time in encouraging, training and supporting those clients through the change.”

HMRC recognises this issue. “The main challenge is the behaviour change for those who do not currently use digital record keeping tools,” admits director for Making Tax Digital for Business, Theresa Middleton. “Although overwhelmingly UK businesses and individuals are connected to the internet and using smart devices in their daily lives, many are still



**43%**

Proportion of freelancers and microbusiness owners unaware what MTD was

**65%**

Proportion of clients that have no accounting software, according to the UK200 Group

## ACCOUNTING SOFTWARE

Companies that provide accounting software to UK businesses are focused on the approaching requirement for digital records. Most will be upgrading existing customers to ensure compliance free of charge. Meanwhile, accountants and their clients will need to discuss which digital solution best fits their business needs. For microbusinesses, these are some of the app and software options:

1. Sage One Accounting manages sales, purchases, cash flow, VAT and reporting, connects to bank accounts and tracks creditors. It links to the Expenses app, aimed at simple businesses, allowing income and outgoings to be logged and automatically sent to an accountant, and the Invoicing app, which creates and sends invoices, and tracks outstanding payments.
2. Xero Cashbook and Xero Ledger are aimed at moving microbusinesses off account books and spreadsheets and onto accounting software. Users can directly import transactions or bank statements and both include budgeting tools, bank reconciliation and fixed asset management. With the Xero app users can reconcile transactions, record expenses,

and send invoices while out and about.

3. Receipt Bank's 1Tap app is designed for sole traders, and photographs receipts, extracts the data and puts it into categories for self-assessment. This information is available in real time to the user's accountant. It fills out self-assessment forms, and will extract data for quarterly reports under MTD. Location activated prompts remind users to log receipts and then show probable tax savings.
4. FreeAgent online accounting software is for accountants working with contractors and microbusinesses, and includes recurring invoices that issue automatically, digital receipt recording, automatic bank feeds, VAT return generation and self-assessment liability calculation and tax return submission.
5. KashFlow cloud-based bookkeeping and accounting software creates quotes and converts them to invoices, links directly to HMRC for VAT returns and tracks cash flow with automatic list payments. Partner apps offer the option to record receipts, access alternative finance and make instant payments.

keeping paper records for tax purposes. Those businesses that currently keep records digitally will find it easier to make the transition, and help will be available for those who need it to use digital tools."

The first step is recognising the scope of digitisation required. HMRC says that under Making Tax Digital for Business (MTDfB) microbusinesses will need to keep details of income and expenses digitally, using spreadsheets, software or apps. "Businesses that currently use a spreadsheet will be able to use MTDfB software to provide quarterly updates to HMRC from the information held on the spreadsheet," reports Middleton. "It won't be necessary to capture invoices and receipts digitally. Quarterly updates may be made either by the business or their agent. The update process will be light-touch, using summary data that the business has recorded and generated by the software."

## REACH OUT

Michael Office, director of product marketing at Sage, has three pieces of advice for accountants in the run up to MTD. "First, understand how your practice will embrace MTD, have a plan. Then reach out to a partner who will give free help and support - you don't have to do all the hard work, you can lift relevant content. Then proactively get in touch with clients and educate them."

Accountants need to consider how to manage the increased workload MTDfB will create. "It will take more time out of their day to deal with compliance," says Sarah Ghaffari, technical manager, SME Business Tax at ICAEW's Tax Faculty. "They need to make a quarterly report for each business separately. If an individual has more than one business - they're a grocer, a landlord and an occasional gardener - that's separate reports for each business every quarter."

And while MTD may seem like a goldmine of potential new revenue, as microbusinesses that never previously used an accountant seek advice and practical help with digital bookkeeping, firms shouldn't over commit. "Review your client base," advises Ghaffari. "Can you afford to take on any more? Is it better to focus on the current ones and work through for a couple of years?"

MTD will also affect how accountants charge existing clients. "We're encouraging agents to start thinking about their fee structure," adds Ghaffari. "Where they'd normally bill after making an annual submission, now they might like to consider dividing it up over four reports, plus an end of year round-up." With the potential increased fees, some clients may decide to do more of their tax accounting themselves. "Identify the process, who's going to do what?"

Beyond managing their own practice, HMRC is relying on accountants and financial advisers to help small businesses be compliant with the changes. "About 70% of businesses use an agent to help them meet their tax obligations. We therefore see this relationship between agent and their client as crucial in supporting businesses as they transition to MTDfB," says Middleton. "They should have an idea



of how their client currently operates to get an understanding of what their support needs might be for transitioning to MTDfB.”

“There’s an important role for accountants to play in helping their clients of all sizes understand what MTD means and how they need to prepare,” says Kevin McCallum, FreeAgent’s business development director. “This will include translating the legislation into practical considerations, mapping out timelines and - probably most importantly - assisting their clients in addressing shortfalls in their current processes and helping them decide on the best software solution for their business.”

Accountants need to get their customers on board given that time is unlikely to be on their side. “For us, stage one, identifying clients who might be affected is already completed,” says Salter. “Stage two is notifying those who will be affected that they have to do something.” The firm is already trying to persuade paper-based companies to go down the digital route. “We’re encouraging them to adopt sooner rather than later. The issue is that if they all do it at the last minute, it won’t be possible for us to handle it.”

Although HMRC has yet to release to developers the specific application programming interfaces (APIs) that will allow MTD-compliant software to connect to its systems, MTDfB represents an opportunity for small companies to create a joined up accounting workflow from scratch, and for accountants to rationalise the way their clients use technology. “Agents should decide which software they are going to support,” recommends Ghaffari. “Some clients won’t have used any in the past, so you can make recommendations. Recommend perhaps three that you are prepared to use.”

“Businesses should talk to their accountants as soon as possible but take it a step at a time and choose the software and apps that are right for them,” says Aplin. “I think the market will develop rapidly over the next two years as products become more adept at coping with the granularity of small business accounting.”

People need to practice using as well as choosing software. “Go on an Excel training course, or take one online,” recommends Ghaffari. “Look at the different apps that are available, download them and play around. It’s best to be prepared. Speak to software companies, they’ll all be biting at the

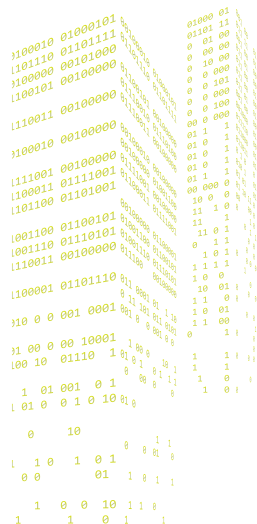
**“Businesses should talk to their accountants as soon as possible. The market will develop rapidly over the next two years as products become more adept at coping with the granularity of small business accounting”**

#### USEFUL ICAEW LINKS ON MTD

The main MTD page on ICAEW’s website links dedicated to businesses, agents and individuals and various other resources: [icaew.com/mtd](http://icaew.com/mtd)

ICAEW has designed a customisable MTD letter and factsheet for members to send to clients: [tinyurl.com/ICAEW-MTDagents](http://tinyurl.com/ICAEW-MTDagents)

For FAQs: [tinyurl.com/TaxGuideMTD](http://tinyurl.com/TaxGuideMTD)



**70%**

Proportion of all businesses HMRC estimates use an agent for their tax affairs

chance to sell their products.” She also suggests that businesses enter HMRC’s software pilot scheme.

“I want to see a range of businesses getting involved in the pilot programme so we can start to get experience of what MTD means,” says Aplin. “We need real data and real experience so we can judge the potential, the costs and the benefits based on facts.” The more businesses that are involved from the outset, he believes, the more experience they can build, which can then be fed back to HMRC and the software suppliers to create the best solutions.

#### TAILORED PRODUCTS

That those solutions are not coming from HMRC, which is only supplying APIs, has caused some consternation. “The government is not building its own software, and there has been a backlash on the fact they’re relying on private companies, but hopefully those specialists in software will have more expertise and the competitive angle will mean there are more MTD products to suit different needs,” says Perkins.

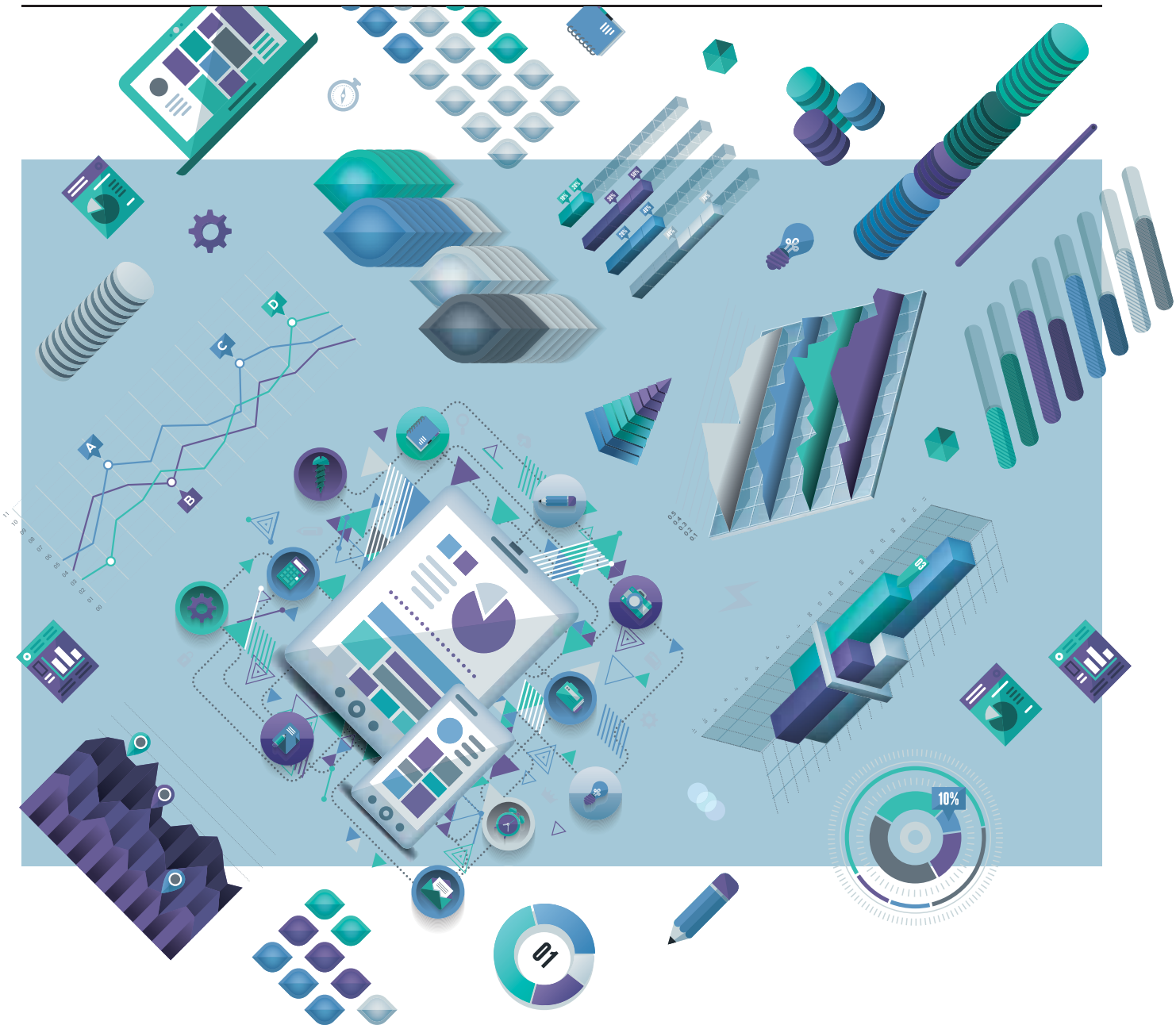
“A partnership versus a small business that employs 20 people has different requirements. Rather than government making one piece of software that everyone has to use, we will hopefully see more tailored products.”

Not everyone will fall within the bounds of MTDfB, including those with a total income under £10,000, and accountants need to identify which clients qualify for exemption. “Exemption will be based on the existing VAT online filing exemption and will also exempt people where HMRC is satisfied that it is not reasonably practicable to do MTDfB. This could be for reasons such as disability, age or remoteness of location,” says Middleton.

“HMRC has said it will behave sensitively in situations such as rural locations with very poor connectivity. Interpreting their comments, we expect that if you are unable to record digitally due to some specific challenge, or you’re in a lousy part of the UK for the internet, you won’t be expected to comply,” says Turner. “Maybe people will move to the Hebrides - both to have a better quality of life, and to be exempt!”

Although MTD has been dropped from the Finance Bill, clients should be warned not to ignore the issue for too long. Whether the clauses come back after the snap election, are delayed further or revised, MTD as a concept is definitely not dead. ●





During my year as ICAEW president, we carried out a full strategy exercise. A main theme that emerged was the effect on our profession of the huge advances in IT - and the effects that might yet come. One of IT's significant advances is big data. By that I mean the combination of the enormous volumes of recorded data being captured by cloud technology and mobile devices. They are collecting more data than has been possible before; the computing power required to interrogate and analyse those vast quantities of data is enormous.

All the major auditing firms say they are innovating their audit approaches with the use of big data and artificial intelligence (AI). But what does that mean? What are they actually doing? And what might they do?

First an obvious warning. We are right at the start of these innovations and there

## THINK BIG

In his speech to the Corporate Reporting Users' Forum, former ICAEW president Andrew Ratcliffe shared his thoughts on how developments in artificial intelligence and analytics might soon shape audit

are still big obstacles to getting some of the data into a structured form that can be computed. But, as with any emerging technology, there is the capacity for rapid and unpredictable change. In other words, every answer I give prompts new questions - there is only a small chance that anything I say will come to pass.

The most obvious application is that if we have the computing power to examine all the data, why not examine all the data - in other words: 100% auditing. You may of course be faintly surprised to hear that this is not what auditors do already. They used to; but as the size and complexity of businesses increased during the 20th century, audit methodologies evolved to include sampling and reliance on management controls. Now it is possible to go back to checking the entire data set.

This could consist of just checking an accounting operation: matching all the orders and goods received notes in a year

to the related purchase invoices; checking quantities and pricing would be an example. Or it could be examining a whole population and looking for unusual items. The most common example I think all the firms are now doing is journal testing. Rather than picking a sample of journal entries and validating that sample, they now sort them by amount, by nature, time and date of entry, by author and other criteria. They look for items with apparent anomalies and investigate those further.

Looking at everything is certainly better than sampling - but what could go wrong? The testing is only as good as the choice of parameters used to try to define the exceptions or identify the outliers. If the parameters are too tight, you will end up

**“The massive computing power we now have means we can train a program to repeatedly sort sets of data and establish relationships and patterns that are not immediately apparent”**

with many false positives to investigate, too loose and you will have false negatives. How can an audit firm be sure it has that right? Is this where we will see the first big audit failure of the digital age?

Stepping up the degree of complexity, what if we use multiple sets of data instead of working with just one data set from an enterprise? The massive computing power we now have means we can train a program to repeatedly sort sets of data and establish the relationships and patterns that are not immediately apparent. Those relationships can be used to draw conclusions about new data. This is the root of what is currently being referred to as AI: I think machine learning is a better term. Google Translate is a great example of this. In our context, an auditor might be able to draw conclusions about the features of an enterprise's historical performance successes or failures and make some predictions about future performance. Could this lead to auditing becoming more than an exercise on historical financial information?

Well if it does, why would it be the auditor that does this? Does this just become a tool of good management accounting? Or, if you can persuade an

enterprise to make their data openly available (and why wouldn't they), does it become a tool of good financial analysis?

Whichever it is, this sort of analysis is based on statistical correlations in existing data. It does not tell you about causal relationships - indeed there may be none. If the data is reasonably stable and unbiased, then your conclusions may still be sound. But if there is undetected bias or something unexpected occurs - which would always be what auditors are really interested really in - it could be catastrophically misleading. A notable example was Google Flu Trends, a data project established in 2008 that claimed it could “nowcast” influenza outbreaks by tracking Google for flu-themed searches alongside information from Centers for Disease Control and Prevention in the US. It reportedly missed the 2013 peak season flu outbreak by 140%.

#### **TIPPING THE BALANCE?**

Probably the most frequent question I was asked as an auditor: “How do we compare to your other clients?” My answers were inevitably anecdotal and judgemental - “middle of the pack” was always a useful default response. But if an audit firm can now build the sort of sophisticated insights into one client that we have speculated about, then they could do it for all their clients and compare them on an equally sophisticated level.

There are lots of interesting questions here. Does this mean that the big firms increase their dominance as they have the data? What does that then mean for competition? Will clients be content for their data to be shared in this way? If they consent, why would they be content with the comparisons with just the other clients of their auditors? If this is really valuable, won't they seek a secure way of maintaining ownership of their data and looking for comparisons across the whole industry?

#### **CULTURAL INSIGHTS**

Everything I have mentioned up to now has been in the context of an enterprise's own financial and other recorded data; but however good an enterprise's records are, it is what the people within it are doing and how they are behaving that will be at the root of its success or failure.

And the biggest increase in data output comes from us personally - it is the data we each create every day through social media, payments and, most of all, our mobile phones. Smartphones are not just

#### **DATA STORE: FURTHER ICAEW PUBLICATIONS**

During his CRUF speech, Andrew referred to the following publications for further reading on data and analytics:

- Providing leadership in a digital world  
[tinyurl.com/CH-digi-leadership](http://tinyurl.com/CH-digi-leadership)
- Data analytics for external auditors: international auditing perspectives  
[tinyurl.com/CH-analytics](http://tinyurl.com/CH-analytics)

a communication tool, but also collectors of highly individual data about their users: our location, our contacts, who we are meeting, our call and messaging records and, depending on your apps, our health and financial data too.

Studying what can be done with this data is a really hot current area of academic research. Some studies have shown that second-order analysis of mobile phone collected data can lead to reasonable conclusions about the social networks you are a member of and your position within them, your age, your gender and personality. Further, this can be used to facilitate behavioural change.

Could the personal metadata of an enterprise's employees be used to monitor and influence their behaviour at work? Is this where the attempts at cultural auditing and cultural change will end up?

Let us suppose you are employed by an enterprise in a regulated industry that has had a big problem with culture. As part of their rectification plan they could, in theory, make it a condition of your employment that you should allow personal data to be collected and analysed while you are at work.

Would you as an employee agree to this? If not, why not - what have you got to hide? And if that data is available shouldn't the auditor be looking at it as well? ●



**Andrew Ratcliffe,**  
former PwC audit  
partner and past  
ICAEW president

# POWER SUPPLY

The adoption of Power Query tools in Excel has prompted **Simon Hurst** to ask if it is time to abandon the use of cell-based functions

Over the past months we have looked at various uses of the Power Query tools, which were introduced in Excel 2010 as an optional Add-in before becoming an integral part of the Data ribbon tab in Excel 2016. Although many of the areas we have covered have involved using Power Query to acquire and manipulate external data, we have also seen that the Power Query tools can be used with data held within Excel workbooks, including just working with different parts of a single, active workbook.

Given that the Power Query editor enables access to a range of operations and functions that can replicate Excel's cell-based functionality, is there an argument for using Power Query, not just for preparing data, but also to change the way all Excel tasks are approached?

We will concentrate on the Power Query tools, but many of the same arguments would also apply to the use of Power Pivot.

## WHAT'S THE BEST METHOD?

At the risk of giving the dramatic conclusion away right at the start, the answer, unsurprisingly, is that the benefit of using Power Query very much depends on the purpose of the spreadsheet. At the extremes, the answer is reasonably straightforward. Where data needs to be acquired from external sources, and cleaned and manipulated to provide the basis for data analysis using PivotTables, then Power Query is likely to be the best solution. At the other end of the scale, a spreadsheet that doesn't use any structured lists or tables of data and uses mainly individual, unique calculations and formulae, rather than the same formula repeated across many cells, would probably be simpler and quicker to construct and use with normal, cell-based calculations.

This does, however, leave a substantial number of spreadsheets that sit in the middle of the extremes: those that use some 'internal' tables or lists or include many consistent formulae, copied down to thousands of rows. Adopting a query

approach could make such spreadsheets easier and more efficient to set up and, perhaps more importantly, much easier to check and audit.

This comparatively simple example compares using 40 VLOOKUP() formulae and 6 SUMIFS() to summarise a trial balance by account code, with a query approach that uses eight steps to achieve the same result.

Our cell-based approach using Excel Tables is below (Figure 1). Alternatively, the eight steps in our query approach can be seen opposite (Figure 2).

The steps in the query approach are all generated by the interface rather than requiring any code or functions to be entered manually. Another of the great benefits of the query is the ability to examine the process step-by-step as part of the review process. For example, here we can check the addition of a conditional column that shows the code from one of the tables, if the code from

the other is not matched and therefore 'null' (Figure 3).

Because we only have 40 transactions, the difference in the two approaches might not seem that spectacular. But if we had thousands of transactions, the cell-based approach would potentially require thousands of cells to be checked. We could abbreviate the process by checking one formula and then just ensuring that all the formulae were consistent. However, the query approach would still just have the same eight steps. Were we to add any further calculations based on individual transactions, again we would be comparing adding thousands of cell-based calculations with a single additional query step.

## PROS AND CONS

There are many barriers to a widespread adoption of any new method of working with spreadsheets. Standard Excel functions and techniques have been around for many years, have been extensively tested, and are familiar to a large number of existing spreadsheet users. Power Query is a recent introduction. Its application to a range of different areas and tasks is only starting to be explored and the application itself is still in the process of development,

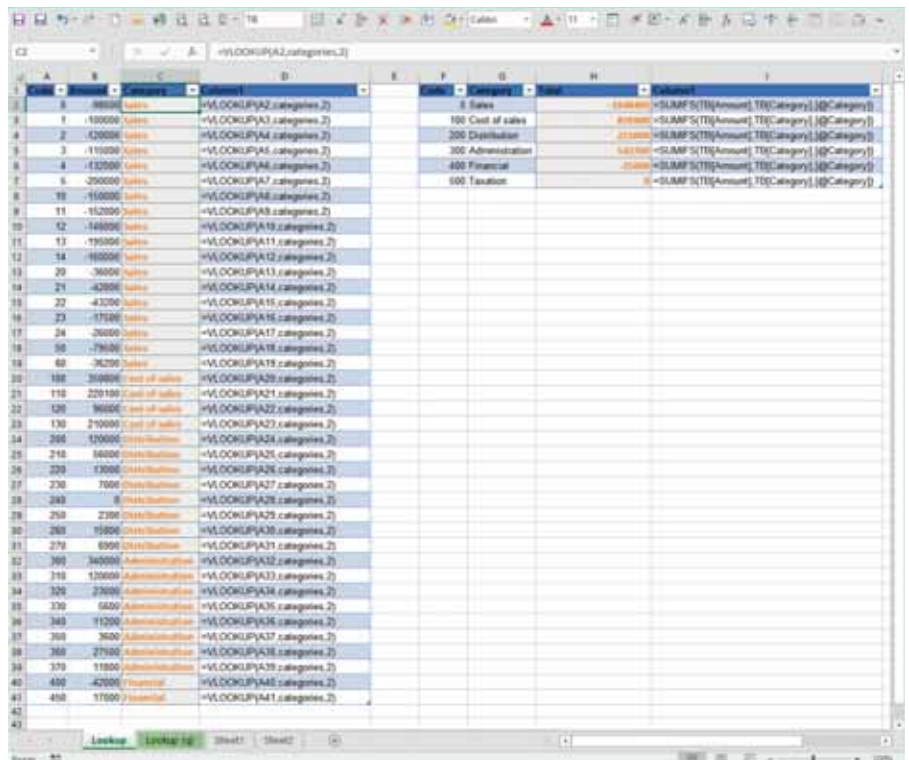


Figure 1

with updates being released monthly. In addition, the majority of spreadsheet users are probably not yet even aware of what it is capable of, let alone familiar with how to use it.

More specifically, one of the great benefits of spreadsheets is that all data and calculations are generally obvious and visible, whereas queries sit invisibly in the background. However, this is not entirely new to Excel - for years PivotTables have operated in a similar way, 'hiding' calculations outside of the visibility of individual cells. Another significant issue is also shared with PivotTables: the move away from instant recalculation to the need to refresh background queries. Although the queries can be set to refresh automatically at a time interval, this will still seem alien to those used to spreadsheets always reflecting changes immediately.

Compatibility is also an issue. Although Excel 2016 installed the Power Query tools as an integral part of Excel, the tools are unavailable to users of versions prior to Excel 2010. Again, this is not without more general parallels - many functions and features have been introduced since Excel 2007 that will not work with previous versions.

**THE TIMES ARE CHANGING**

Sometimes, when assessing a new technology or approach, it's useful to think about the choices we might make if we were starting from scratch, rather than being burdened with years of having to do something in the only way available. On the one hand, we have a completely unstructured approach that enables anything to be entered in multiple sheets, each including over 17 billion cells, but a method that is highly visible and flexible. Our alternative is a less immediate and less visible, but much more structured, approach to how we perform the underlying calculations and manipulations, while still allowing flexibility when it comes to reporting and individual calculations.

If both methods had been available to spreadsheet users from the outset, perhaps the thought of having to enter, review and audit the content of many thousands of calculation cells, rather than check a single operation in a background query, would have led spreadsheet usage to have developed in a very different direction and one that is now readily available for us all to adopt. ●

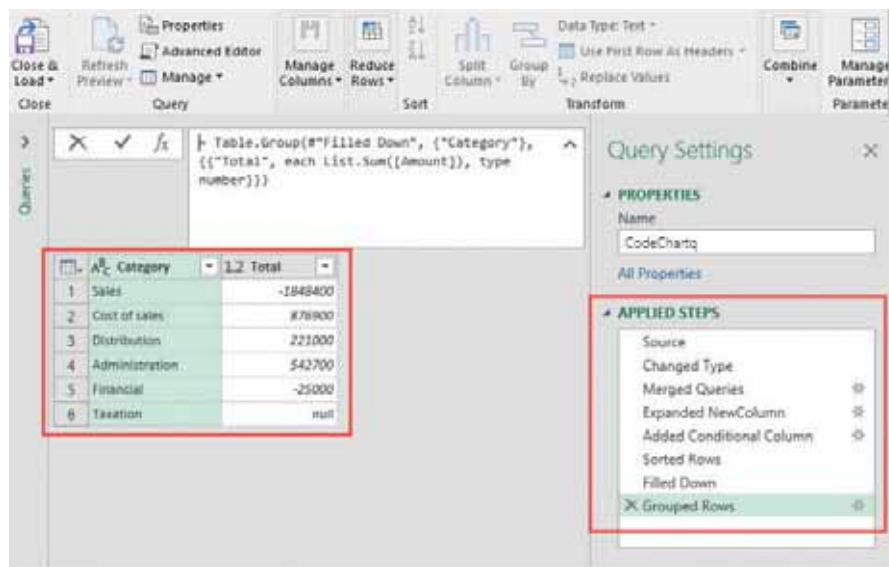


Figure 2

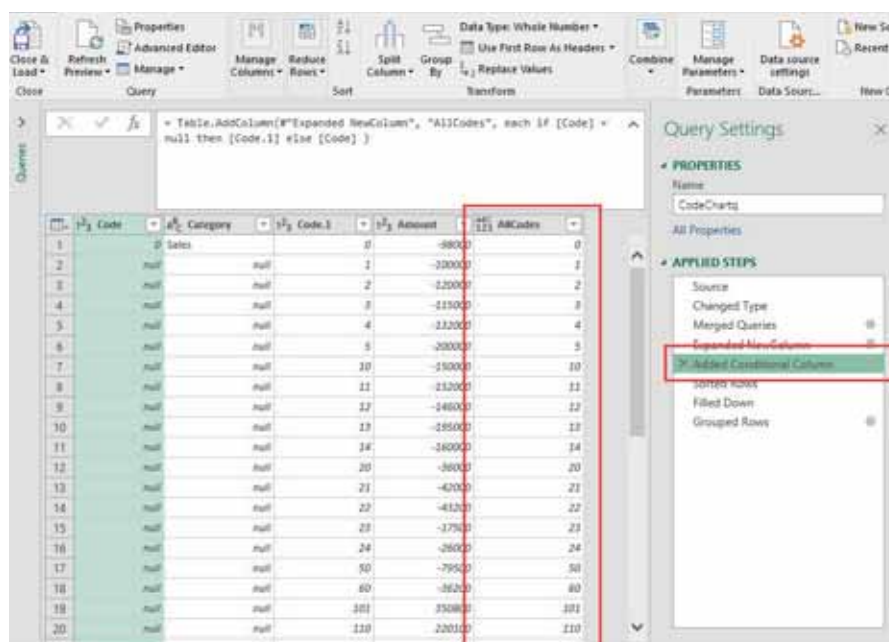


Figure 3

**OTHER EXCEL RESOURCES**

The Excel Community site includes many articles on Excel and other office software. There is also a forum where you can ask, and answer, questions on a wide range of Excel issues. The forum can be found at [ion.icaew.com/excelcommunity](http://ion.icaew.com/excelcommunity)

The IT Counts site includes articles of general interest including office software and hardware, IT security, management reporting and cloud computing, and it can be found at [ion.icaew.com/itcountshome](http://ion.icaew.com/itcountshome)

Both IT Counts and the Excel Community are available for free to IT Faculty members as part of their subscription.

You can also access faculty Excel material at the hub [icaew.com/excel](http://icaew.com/excel) Simon's book, *Essential Excel for Accountants (and others)*, is available as a PDF at [tkb.co.uk/towiee.htm](http://tkb.co.uk/towiee.htm)

Simon has included many useful Excel tips in the 'Luncheon Learning' section on his website. These can be found at [tkb.co.uk/lunchlearn.htm](http://tkb.co.uk/lunchlearn.htm)



## CODED MESSAGES

Software encryption is attracting the attention of politicians, but are all the implications of restricting it being considered?

**If the authorities allow encryption but weaken the technical standards or force a back door it will be open to black hats. Online banking and credit cards will be an open book for criminal gangs**

I was in Hanover, Germany, when the news broke of a terror incident in Westminster where Khalid Masood killed five people. Amid the horror, the intelligence focus soon turned to the fact Masood had been using the social media platform WhatsApp minutes before committing his attack.

Police were keen to discover whether Masood had accomplices or acted alone. WhatsApp is encrypted, so authorities had no idea whether what he had been doing would lead them to answers. It didn't take long for politicians to rail against the use of encryption in software such as WhatsApp.

The reason I was in Hanover on that particular day was to attend the annual CeBIT tech show, and by coincidence I was scheduled to interview Ron Raffensperger, chief technology officer of Data Center Solutions at Huawei Technologies. Raffensperger's view was that companies such as Huawei were obliged to give authorities access to their systems when they were presented with legitimate warrants, however if the data is encrypted at the handset then it is pretty much useless to the powers-that-be.

We discussed encryption, quantum computing, Wikileaks and the National Security Agency (NSA) and I received a few gnomic smiles in response to some of my questions. Admittedly we had three PR people in the room to keep us in check, but I came away with a clear view of the world.

Back home, was home secretary Amber Rudd correct to accuse WhatsApp of giving terrorists "a secret place to hide"? Up to a point, in the sense that encrypted mobile communications are considerably quicker and easier to use than letters in the mail or face-to-face meetings. But whether military grade encryption should be banned, forbidden or abolished? I personally don't believe it should.

If the authorities allow encryption but weaken the technical standards or force a back door it will be open to black hats as well as the good guys. Online banking and credit cards will be an open book for criminal gangs, and we will create a whole new industry for countries where corruption is rife.

We would also put the brakes on an ability to create secure online identities. All those biometric scans and fingerprint readers that check an entry in a database somewhere in the cloud would be worthless. Indeed, in my opinion, they would be worse than useless as they would give the impression of rigorous security while actually being wide open to manipulation.

We have to consider that the authorities may think they can pick and choose which software uses encryption: so does this mean banking = good, shopping = good, but messaging and photos = bad?

Quite how it would be enforced is a different story. The likes of Apple, Facebook, Google and Microsoft are pushing back against the NSA. Perhaps a GCHQ kite mark on new software could be created? It seems unlikely.

In any case, there are issues around what decryption could achieve. Masood wasn't on the intelligence authorities' list as a current person of interest. After the Westminster attack, they had his handset and were presumably able to access the software just like any other user.

When police know all there is to know about Masood's mobile media activity, WhatsApp will fall quietly out of the limelight. However, you can bet your boots the next time attackers are found to have used encrypted apps the issue of whether tech companies should break them will be back on politicians' lips. ●

Leo Waldock, freelance IT writer

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