

Chartech



INFORMATION
TECHNOLOGY
FACULTY

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REAL VALUE
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BUSINESSES BE
VALUING DATA?

BE PROTECTED
THE IMPORTANCE
OF A SECURITY
CULTURE



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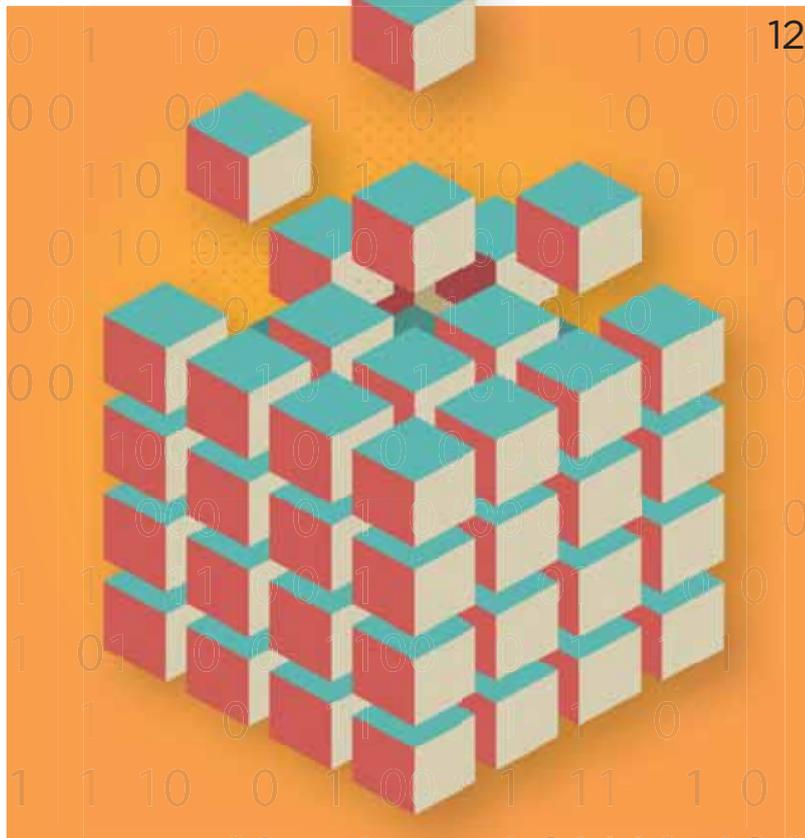
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Where to start?



INFORMATION
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FACULTY

Welcome to a new year of faculty membership! Thank you for your continuing support of our work. What are your priorities for 2017? Whereabouts are you on the technology continuum?



Is this the year you finally embrace the cloud - or are you looking at big data and analytics? In the faculty we are forward-looking, but always keeping an eye on the here and now for the technology that matters to members. I thought it would be helpful to outline our priorities for 2017 so you see how they might map onto yours.

Artificial intelligence seems to be moving centre-stage in terms of what people are talking about. Are we really seeing the end of the profession, as bots move in to take our jobs? We aim to make sense of this area, distinguishing between AI, machine learning and

automation, and why our jobs are likely to be safe for a while yet.

Blockchain is another area that is being viewed as a major disruptor, from decimating audit to taking out swathes of processes in financial services. But what is blockchain and can such a new technology really live up to the hype? We will spend time this year demystifying blockchain and examining its likely effect on the profession.

It may be likely that many members (and people in organisations they work for) have no firm concept of what the General Data Protection Regulation (GDPR) means, but 2017 is the year that the UK must prepare for the introduction of the regulation, in May 2018. Cyber breaches continue to occupy the headlines and GDPR gives regulators the teeth to start to change behaviour (We heard about this in our recent faculty lecture presented by the information commissioner Elizabeth Denham, when she outlined the important role of accountants in spreading the message and changing behaviour).

Finally, 2017 sees the introduction of Making Tax Digital (MTD). At the time of writing, final details from HMRC are still not clear, but discussions with leading software vendors suggest a tough year ahead. Working with the Tax Faculty, we will provide advice on the technology options that will be essential for the successful introduction of MTD.

These are just some of the items we will be looking at in 2017. In addition we will also spend time considering other important developments including cloud, big data and analytics, financial reporting, IT value, business and practice software and (of course!) Excel. We will continue to work with colleagues in Learning and Professional Development to ensure that the ACA remains the leading qualification for finance professionals. As ever, we value your feedback on the work that we undertake on your behalf.

Richard Anning
Head of faculty

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From the faculty



NOTICE OF FACULTY AGM

The annual general meeting of the IT Faculty will take place on 11 May 2017, commencing at 13:00, at Chartered Accountants' Hall, Moorgate Place, London, EC2R 6EA. If you would like to attend, please contact Carol Turner on +44 (0)20 7920 8846 or email carol.turner@icaew.com

NOTICE OF FACULTY ELECTIONS

Elections will be held in 2017 for four seats on the IT Faculty Committee. Nominations for these elections must be received by the head of faculty by noon on 3 March 2017. Polling day is 25 April 2017. The summary of procedures for faculty elections and nomination forms can be obtained from Carol Turner.

CALL FOR NEW VOLUNTEERS

Are you willing to invest some time helping the faculty to evolve? As has been mentioned previously in *Chartech*, the IT Faculty is extremely fortunate in having a highly talented and active roster of volunteers that helps guide its work. With technology developing at the pace it is, we continually seek fresh insight to keep our advice and guidance at the leading edge for members.

There are various ways to contribute, including membership of the faculty committees. As can be seen from the enclosed formal notice, there are four places available for election to the main committee (which helps set the strategic direction of the faculty). Applications are particularly welcome from younger



members. There are two other committees, the Technical Committee and the Excel Community Advisory Committee, whose chairmen would also welcome the opportunity to speak with new members.

In line with the new ICAEW vision (*A world of strong economies*), and strategic themes (in particular, *Agile Institute*) we would love to hear from members interested in joining more agile pop-up working groups that will work on a particular project and disband when it is complete. Much of the work of these groups will be virtual, making use of collaboration tools and online meetings as needed.

If you are interested in any of these opportunities, please email richard.anning@icaew.com

XBRL UPDATE

Although XBRL is no longer a headline item, the faculty continues to support efforts to improve and increase electronic filing and find new uses for tagging, such as sustainability reporting. The faculty continues to sit on the board of XBRL UK as well as the XBRL Governance Committee of the FRC. Recent discussions have covered the future of digital reporting in Europe and ongoing updates to taxonomies. Two white papers have recently been published that explain the importance of using XBRL in financial reports (see tinyurl.com/CH-XBRLUK). While the technology that underpins XBRL has matured, the work to improve and refine it continues. The past year has seen the FRC introduce a number of improvements. For example, the FRC has created 150 new tags to improve the reporting of subsidiaries (see tinyurl.com/CH-tagging).

The faculty will continue to track and report developments to members.



IT FACULTY MEMBER SURVEY

Thank you to all those who took the time to take part in our recent survey. The opinion of our members is important and shapes the output of the faculty. Two prize winners were selected from the IT Faculty members who completed the survey and these are Rafik Aliane and Michael Studham. Both Rafik and Michael received a £50 Amazon voucher.

IT FACULTY WEBINARS

Following on from the success of the 2016 webinar on password management, the IT Faculty's Mark Taylor will be presenting two webinars on the subject of online security.

PRACTICAL ENCRYPTION FOR THE SMALLER FIRM 2 March 2017

All organisations are told to protect client data as best they can. However, gaining an understanding of the range of technology is far from easy. This webinar will provide a demonstration of data encryption technologies to help protect your client data. Topics will include the protection of emails, data stored on mobile devices and PCs as well as how to share data with clients securely.

10 STEPS TO CYBER SECURITY FOR THE SMALLER FIRM 17 October 2017

A lot of small organisations struggle to understand, and find it difficult to approach, cyber security issues.

This webinar will help you to break the approach down into easily actionable points, and will discuss 10 steps to achieving good cyber hygiene. It will also provide you with the opportunity to ask questions about cyber security.

WEBINAR ARCHIVES

You can access the recordings of our previous webinars via our webinar archives. Topics include: keeping safe in the new digital tax world; the use of IT in audit; secure client communications; risks in models; Excel top tips and minimising spreadsheet errors.

icaew.com/excelwebinars
icaew.com/itwebinars



STRATEGIC IT IN PRACTICES

On 28 and 29 March 2017, ICAEW is partnering with Alternative Events to run an event which will help you make the business case for strategic technology investment in your firm.

The conference agenda has been written by accountancy practices for accountancy practices, and all content will be provided by partners and heads of IT, sharing what's worked and what hasn't, through case studies and hosted discussions. Focused exclusively on the needs and

budgets of mid-tier practices, all speakers, case studies and solutions at the conference will be appropriate to the size, challenges, budgets and experiences of your firm.

You'll have the opportunity to meet others with responsibility for IT, and to network with a community of like mind-minded individuals who face the same threats and opportunities. To register for your complimentary place, go to alternativeevents.co.uk



2017 EVENTS AND WEBINARS

We will continue our series of Excel webinars, topics will include:

- Team working with spreadsheets (including Google Sheets)
- PivotTables
- Assessing spreadsheet competency
- Excel Tip of the Week live #4
- Excel Tip of the Week live – advanced formulas
- Presentations and charts

The IT Faculty is also planning to host events on key areas including:

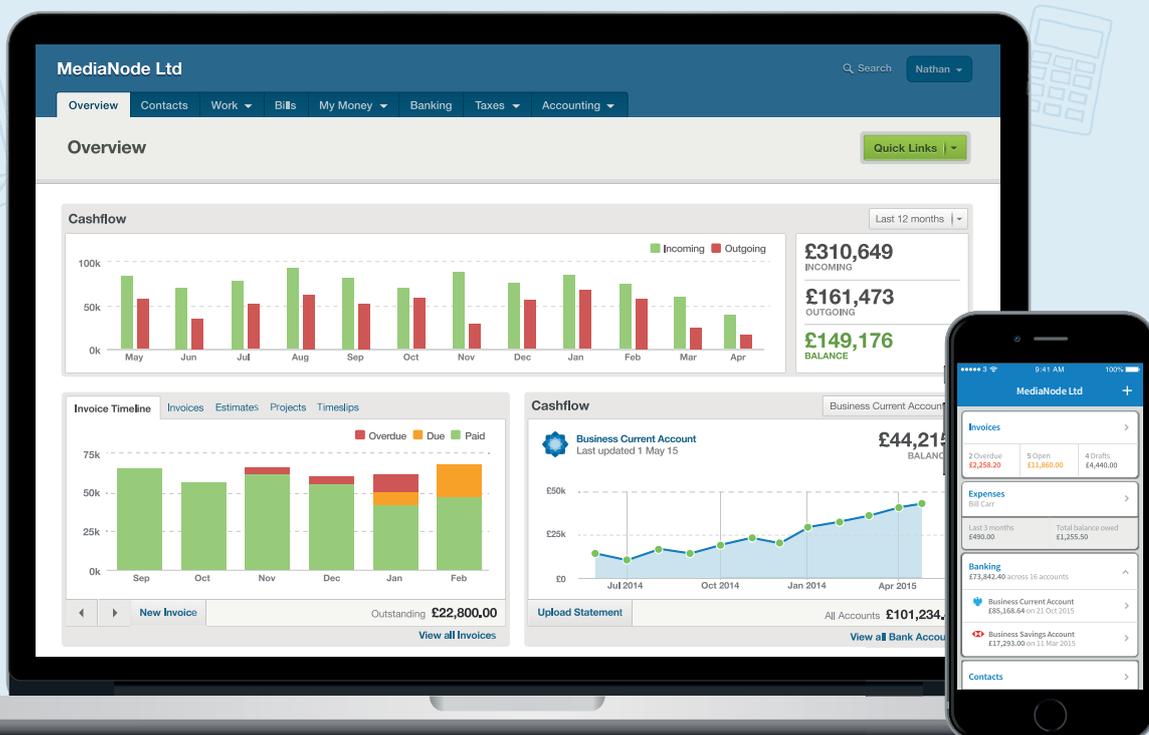
- Demystifying Blockchain – what does it mean for the profession
- Cloud adoption
- Automation/AI – what does it mean for the profession
- Making Tax Digital – software options

Further details when available will be found at icaew.com/itfacevents



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By **Sandra Vogel**
Freelance IT writer
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SMART CITY GOALS TO EMBRACE CLIMATE CHANGE

Smart city projects are still relatively young, but city management authorities can see the potential benefits and many are ambitious to push projects forward.

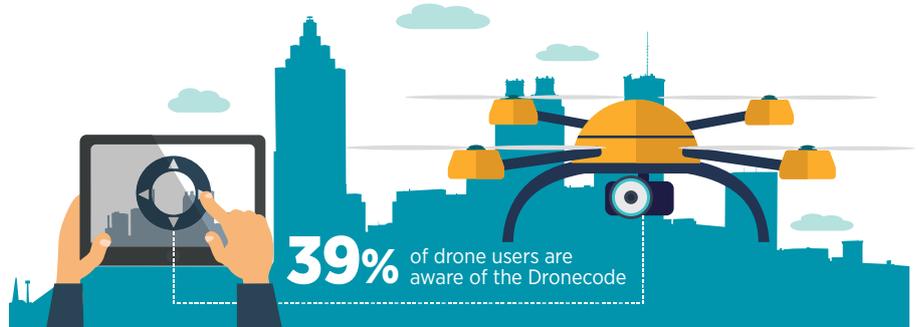
Analyst Gartner has predicted current ambitions for smart city projects will expand rapidly in scope, and has said that by 2020 half of them will include climate change, resilience and sustainability key performance indicators.

These goals will come at least in part due to pressures on cities to meet climate change objectives. Gartner gives several examples, including the EU Energy Efficiency Directive (tinyurl.com/EU-energydrive) which set targets for the reduction of energy consumption.

Gartner notes that in 2017 around 380 million connected things will be used in cities to deliver sustainability and climate change goals, rising to 1.39 billion in 2020, or 20% of all smart city connected things.



380m
connected things
will be used to deliver
on sustainability in
cities in 2017



NEW GUIDANCE FOR DRONE OWNERS

Drones are increasingly popular, and it is highly possible that some people reading this will have acquired one over the Christmas break. Their use by private individuals is subject to a series of guidelines called the Dronecode, which are set by the Civil Aviation Authority (CAA).

Recent research by the CAA reveals that only about 39% of drone users are aware of the Dronecode, so it has taken steps to

broaden the code's reach by launching a dedicated website, dronesafe.uk, which makes the code easier to find.

The new Dronecode is aimed at private individuals wanting to use a drone. Anyone using a drone commercially must be licensed and undergo an approved course.

There is more information about using drones responsibly at tinyurl.com/IT-Dronecode

TABLETS KEY TO DIGITAL TRANSFORMATION

Research by analyst IDC has found that tablets are among the top priorities for IT spending in 2017.

The research covered IT line of business decision-makers across 10 different sectors in the UK, France, Germany and Sweden including education, hospitality, government and transport. It found that tablets form part of the mobility strategy of 60% of companies with over two thirds planning to purchase or evaluate tablets or detachable devices (so-called 2-in-1 laptops), over the coming year.

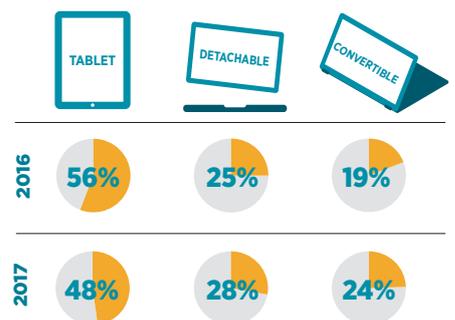
The research report, *Tablet in Enterprise 2.0 – The Large Opportunity*, looks at the relationships between PCs, tablets, smartphones, phablets and wearables, evaluating the opportunities that these have to transform the workplace.

The research found that when considering tablet deployment, organisations are starting to focus on applications and business outcomes. This is fuelled by the desire to increase employees' productivity, working flexibility and collaboration, as well as being driven by digital and workspace transformation strategies. Applications have become crucial

to help businesses achieve the objectives being set by tablet deployment, for example by ensuring workers have access to mobile data and can engage with always-connected customers.

While tablets are still a popular choice, detachable devices (2-in-1 laptops with removable tablet style screens) and convertible laptops (with 360 degree rotating screens) are becoming even more popular. Indeed these hybrid devices will, says IDC, form over half of tablet purchases over the next few years.

DEVICE PURCHASE INTENTIONS



NAUGHTY EMPLOYEES

IT security company Kaspersky's *Corporate IT Security Risks* survey, released at the beginning of last month, found only 36% of small businesses were concerned about irresponsible employee actions leading to cyber attacks, compared with 53% of medium and 51% of large businesses.

Cyber security risks can be higher for small businesses which are unlikely to have dedicated cyber security systems in place.

"In small businesses it is often the case that staff have to implement cyber security themselves," said Vladimir Zapolyansky, head of small and medium-sized businesses marketing at Kaspersky Lab. "Businesses should implement solutions designed for small and medium-sized businesses, with protection that any IT administrator, even with low IT skills, can maintain," he says. For more see tinyurl.com/IT-SMEcyber

INVESTIGATORY POWERS ACT

The Investigatory Powers Act became law in November 2016 after a year-long passage through parliament. It is controversial.

The legislation requires internet providers to keep a record of users' history, including which websites they use. The detail of what people do at each site doesn't need to be retained. Records will need to be kept for 12 months, and can be viewed by law enforcement agencies including HMRC, the Ministry of Defence, the Home Office, the Food Standards Agency, the Gambling Commission and the Serious Fraud Office.

According to the BBC (tinyurl.com/BBC-surveillance) this kind of legal duty on internet providers doesn't exist anywhere else in the world. On its becoming law, US whistleblower Edward Snowden tweeted: "The UK has just legalised the most extreme surveillance in the history of western democracy. It goes further than many autocracies."

Track the Act's progress at tinyurl.com/IT-GOVpowers



INTEL AND VISA TACKLE MOBILE PAYMENT

A report earlier this year from Walker Sands found that 61% of consumers cited security as the reason that they did not make mobile payments (tinyurl.com/FM-RetailWS).

In light of this, Intel has worked with payment technology company Visa to ensure the security of connected devices by integrating Visa's existing encryption technology with Intel transaction security software. This provides merchants with more secure transaction services in instances where payments are made through non-traditional payment devices, such as connected devices like smartphones with mobile banking capabilities.

The software described by Intel helps to secure and encrypt transaction information

to stop hackers intercepting data: "End-to-end encryption from card-acceptance at the peripheral through server delivery means plaintext data is never exposed to the point of sales operating system or to any applications - including malware - on the computing platform."

"The rise of connected devices will rapidly expand the platforms we use to shop and pay. It will also open up new entry points for hackers," says senior vice-president of Visa Mark Nelsen. "Working with Intel, we're ensuring that the next generation of payment devices have security hardwired at the ground level."

For more on Intel's secure payment system see tinyurl.com/IT-IntelVisa



YOUNG PEOPLE AND THE INTERNET

New research from Ofcom takes a broad-ranging look at how young people are interacting with the internet. It has found that TV has now been overtaken by the internet as children's top media pastime, with pre-schoolers spending over an hour a day online, and the 5-15 age range spending around 15 hours a week online. Meanwhile TV viewing (using a TV rather than a computer) has dropped to 13 hours 36 minutes a week. Four in ten 8-11s and 12-15s prefer watching YouTube to a TV.

This rising digital use raises questions about how children differentiate advertising from other content. Ofcom found growing awareness, with 55% of internet users aged 12-15 aware that online advertising can be personalised, a rise of 10 percentage points in the past year. The awareness of product endorsement from vloggers among 12-15s has also increased by 10 percentage points to 57% in 2016.

Still, only 25% of 8-11s and 38% of 12-15s correctly recognised sponsored links on Google.

The survey looked at a range of additional areas including the kinds of media children consume online, their use of social media and online safety.

Download the report at tinyurl.com/IT-KidsTV

Remote possibilities



Our new columnist **Jessica Pillow** looks at the management challenges that could arise in the process of moving from a traditional to a cloud accountancy practice

Your cloud practice is growing rapidly so you need new team members. Offering remote and flexible working would enable you to recruit from a wider geographical area and hence talent pool. But how do you make this work for your practice and ensure that client services are still efficiently delivered?

ACCESS TO CLIENT DATA

You've solved this problem by moving all your clients onto cloud software. Further enhancements include clients saving attachments of all their purchase invoices into the cloud software, either directly into the software on an invoice by invoice basis or via a receipt processing app such as ReceiptBank.

Make sure that your staff members have appropriate access to client data as required for their roles. Ensure your client is aware of all your team members so they don't wonder why an unknown user has been accessing their software - this doesn't help build trust!

ACCESS TO PRACTICE DATA

While you were taking your clients onto the cloud, did you move your practice too? If not, then you will need to consider how to give your team access to the practice software and data. The first consideration is how often and how many of the team will need to work remotely. However,

Having strong systems in your accountancy practice will increase its value when you want to sell it

a note of warning - once one team member starts working remotely then you and your team will quickly identify more opportunities for flexible working!

If it is just occasionally then consider using software such as Teamviewer, which enables remote access to your PC at work. However, this will necessitate having another PC at home and is not robust enough for heavy data transfer.

Otherwise, consider either a hosted environment or Software as a Service (SaaS). Providers such as Hosted Desktop UK will host your server virtually; or you could host it yourself - but remember to back it up in multiple locations.

SaaS would seem the obvious solution, but currently there is no full suite of cloud-based compliance solutions from the main established providers - although there are some new players emerging such as Capium, Taxfiler and mTrio. Microsoft 365 and the Google suite are options for your general office software.

Paperless filing of data is essential to remote working and options include DropBox or Google Drive (with appropriate security protocols); or maybe a dedicated document management solution such as Reckon or Docusoft. Maybe add a portal to allow your clients to upload confidential documents to you rather than using email or post.

Client communication needs to be centrally stored so everyone can reach it. Emails could drop automatically into your CRM package or your document management solution or you could drag and drop emails to your DropBox or Google Drive.

Inter-team communication also needs to be considered. Emails can

become unwieldy, but with instant messaging such as Slack you get a quick response and the note can be saved alongside the client job.

STRONG WORKING PROCESSES

With a remote workforce, strong working processes are essential to ensure that all the team are working in the same consistent way. It is important to know what stage all the jobs are at, particularly if you are working with outsourced team members in different time zones! A quality practice management solution, such as mTrio or Workflow Max, allows job processes to be set-up - allowing them to be split into tasks for each team member. The tasks should include a checklist of items to be performed and a link to any master documents used. There should be clear reporting on the utilisation of staff and job progress to ensure that deadlines are met.

However, you could equally well use spreadsheets, but they can quickly become unwieldy in a bigger practice. Whiteboards can't be accessed by remote staff - unless you're using Google Jamboard!

A little bonus for all this hard work and investment is that it has been shown that having strong systems in your accountancy practice, including paperless filing, will significantly increase the value of your practice when you want to sell it. ■

Jessica Pillow, managing director, Pillow May chartered accountants

Jessica is CEO and co-founder of Mint Trio Ltd, which in conjunction with Pillow May, helped to develop mTrio

Fail to prepare...

Alan Calder examines GDPR compliance planning and considers what the implications will be for a business in the event of a breach



The secretary of state for Culture, Media and Sport, Karen Bradley, put an end to speculation about the post-Brexit applicability of the EU General Data Protection Regulation (GDPR) when she confirmed in October 2016 that the Regulation will apply in the UK - something the information commissioner, Elizabeth Denham, welcomed as “good news”.

The vast majority of organisations in the UK now have until 25 May 2018 to make substantial changes to their data protection regimes in order to avoid administrative fines of up to €20m or 4% of annual global turnover - whichever is greater - as well as the threat of litigation from aggrieved data subjects.

Good news though this is, it is undoubtedly a big deal for boards up and down the country.

ONLINE CRIMINAL ACTIVITY?

Take the October 2016 case of “online criminal activity” at Tesco Bank as an example. Under the Data Protection Act, the Information Commissioner’s Office can issue a maximum fine of £500,000 if it rules that Tesco Bank was in any way culpable for the breach. Add the £2.5m cost to the bank of refunding the 9,000 customers who lost money from their current accounts, and discounting any reputational damage, the maximum financial impact of this incident could be up to £3m - a hit that Tesco Bank could arguably absorb.

If the GDPR were in play, however, Tesco Bank could expect an “effective, proportionate and dissuasive” administrative fine. This fine could be up to £38.2m, based on its reported revenue of £955m in 2015/16. There is also the possibility

of class actions from account holders whose privacy has been breached. The difference is clearly significant.

With less than 18 months in which to achieve compliance with the new law, many will be starting to worry about the regulatory mountain their organisation has to climb. Tackling your new data protection obligations should, however, be easy with an appropriate plan of action.

Your first step should be to designate and, if necessary, train a data protection officer (DPO). While the GDPR only mandates the appointment of DPOs for certain organisations (see Article 37), it is likely to be beneficial to appoint one anyway. A DPO will streamline your project, be on hand to provide expert advice or guidance, and be at the ready in case conditions change and you are required to have one.

But this doesn’t need to be a dedicated role - with appropriate training, a current employee could take on the responsibility alongside their other duties. The important thing is that someone should own the GDPR compliance project. Given its scope, it’s too big to leave to IT or someone untrained.

The GDPR represents the biggest overhaul of data privacy laws in nearly 20 years. Compliance is within the reach of all organisations that put in the work now

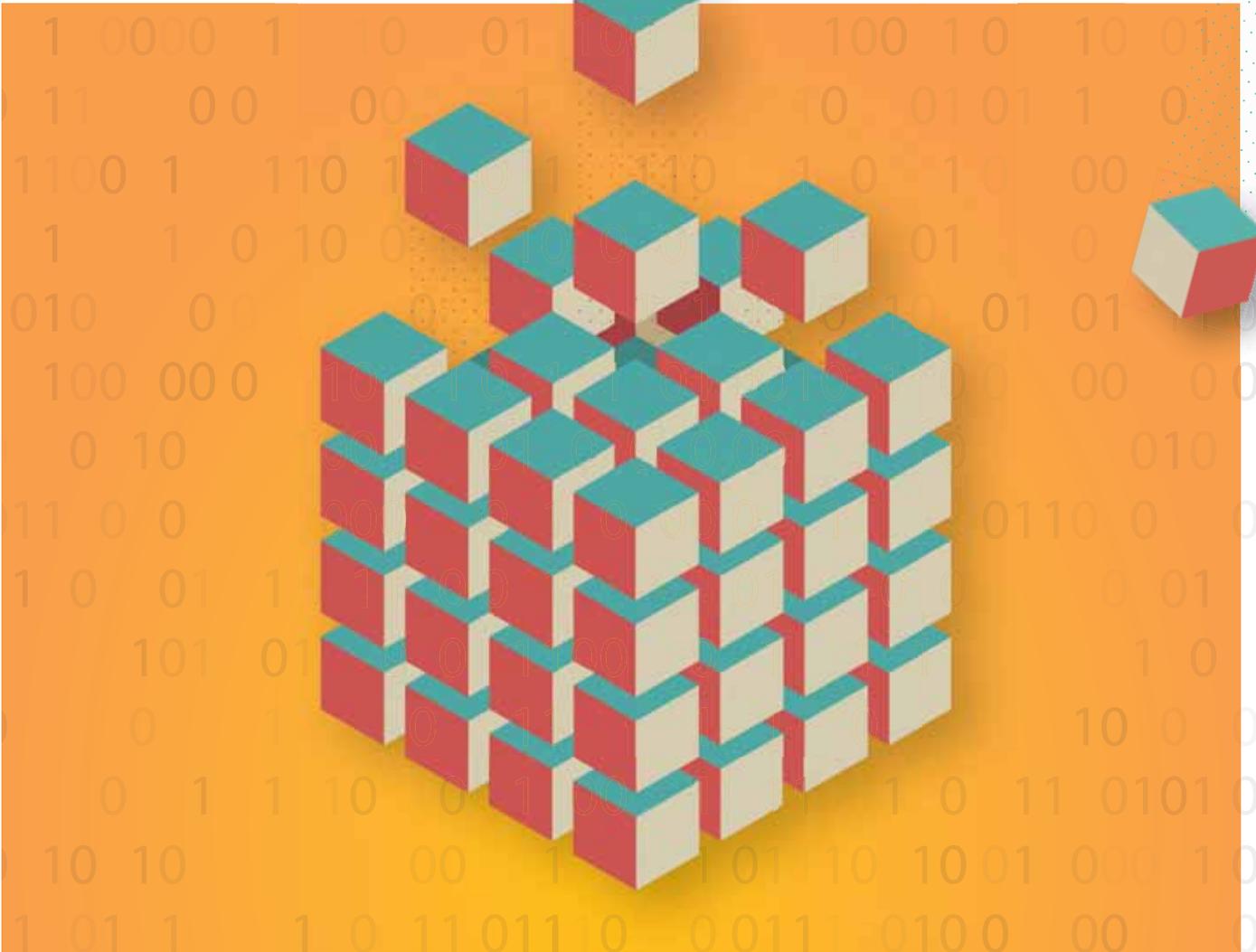
Next, you’ll need to conduct a data audit to determine what data you hold, where it is held and how it is processed. Under the GDPR you will need to provide evidence of data subjects’ affirmative consent, where necessary, and records of the processing activities for which you are responsible, including why you are collecting and processing information. Bear in mind that data subjects have a right to access, erase or correct their personal information, so you will need proper records for all data you currently hold - not just the data you will hold from May 2018. Without those records, you will be in breach of the regulation.

TIME TO GET ORGANISED

Article 24 of the GDPR requires data controllers to implement “appropriate technical and organisational measures” to secure - and demonstrate the security of - all data being processed. A documented information security management system is therefore advisable for all sensible organisations. As well as helping your organisation operate more efficiently, documenting how you comply with the regulation will provide evidence to support your defence if you are investigated following an incident, thereby minimising any fines you might be subject to.

The GDPR represents the biggest overhaul of data privacy laws in nearly 20 years. While 18 months isn’t long to put the necessary processes in place, compliance is easily within the reach of all organisations that are prepared to put in the work now. And better that, surely, than risk crippling fines? ■

Alan Calder, CEO, IT Governance



Data as an asset

David Lyford-Smith considers how best to value the UK's data economy, assessing the key issues and challenges which arise when valuing data

Last year I had the pleasure of attending a meeting hosted by the Royal Academy of Engineers (RAEng), discussing the challenges of valuing the UK's data economy. The meeting followed on from the Academy's publication of *Connecting data - Driving productivity and innovation*, jointly created with the Institute of Engineering and Technology, and was attended by key thinkers from the fields of engineering, technology, government, accounting practice and

academia. While it's been a while since that meeting, with discussions over the role of data in the economy continuing in light of the Digital Economy Bill and more, there are some important lessons from that event to consider.

In short, the argument of the RAEng is that data assets are an essential element of the value of UK companies and, with the growth of big data and the internet of things, this is only likely to increase. But currently these assets are not readily recognisable in corporate reporting, nor

are they considered in government statistics around GDP. Valuation of these assets in internal management accounting is also rare, and overall the RAEng argues that the current state of affairs undersells UK productivity, doesn't appropriately encourage the use of open and structured datasets, and under-promotes the need for security around data. By bringing data valuation techniques to the fore, the RAEng argues, the economy and society could benefit.

The first point addressed was the value of data. Most felt that raw data had low value (especially if it was unstructured); the value was only theoretical at that stage. If the data was analysed into understandable information, then the value became clearer. The value is greatest once that information is then applied to reality. Knowledge about the business, its customers or its suppliers is gained as a result. Part of the difficulty in valuing data is that the cost of performing a refinement process - and the value of the knowledge ultimately attained - is largely unknown until the work has been undertaken.

Another key driver of value is synergy. Combining two data sets can lead to fresh perspectives and new knowledge that is not available in either data set separately. This can lead to A+B being greater than A and B separately. Many have commented that this value can be generated by open, but not necessarily free, data - and therefore there is a need for common data standards.

Of course, data loses value with time as its validity and relevance fade, depreciating just as physical assets do, unless it is actively maintained. Auditing and refreshing data is as important as collecting and analysing it. Data is valuable to more than just the company that collects it -

Data loses value with time as its validity and relevance fade, depreciating just as physical assets do, unless it is actively maintained

including the criminal element. Cyber security is essential for any modern organisation, but a data-driven one doubly so. Regardless of the quality of its security, organisations holding significant amounts of personal data also open themselves to issues with public trust. People will always be suspicious of an organisation that holds their personal data and so the appearance of security and trustworthiness - and user control over their data - is as important as the security itself.

VALUATION METHODS

Current accounting practice around intangibles is quite limited, with the majority of accounting rules having been designed by 19th- and 20th-century organisations. Currently, the rules would allow for recognition on a transactional basis - ie, if the data could be valued against an external market, or as an element of goodwill on a business combination. Value in use is theoretically relevant, but again would require reliable external yardsticks to establish. Capitalised development expenditure rules are also quite narrow. Most data collection and analysis work is unsuitable due to rules on closeness to generation of identifiable cash flows, and severability from general costs of running a business. Of course, accounting rules have to lead to results which external stakeholders can rely on to make their financial decisions, and the value of data and similar internally generated, intangible assets can be overstated if rules aren't clear and conservative.

Within the context of national statistics and internal management accounts, there are fewer issues with these measures and greater creativity can be applied. For example, the Office for National Statistics could estimate the value of data by

measuring the output of those it identifies as data scientists (formerly known as statisticians) or those in connected roles. However, this method also suffers because as computing power exponentially improves, the 'cost-per-insight' in data analysis reduces too. Another suggestion is to use replacement value for data. However, this suffers many of the same problems as the other methods in terms of uncertainty.

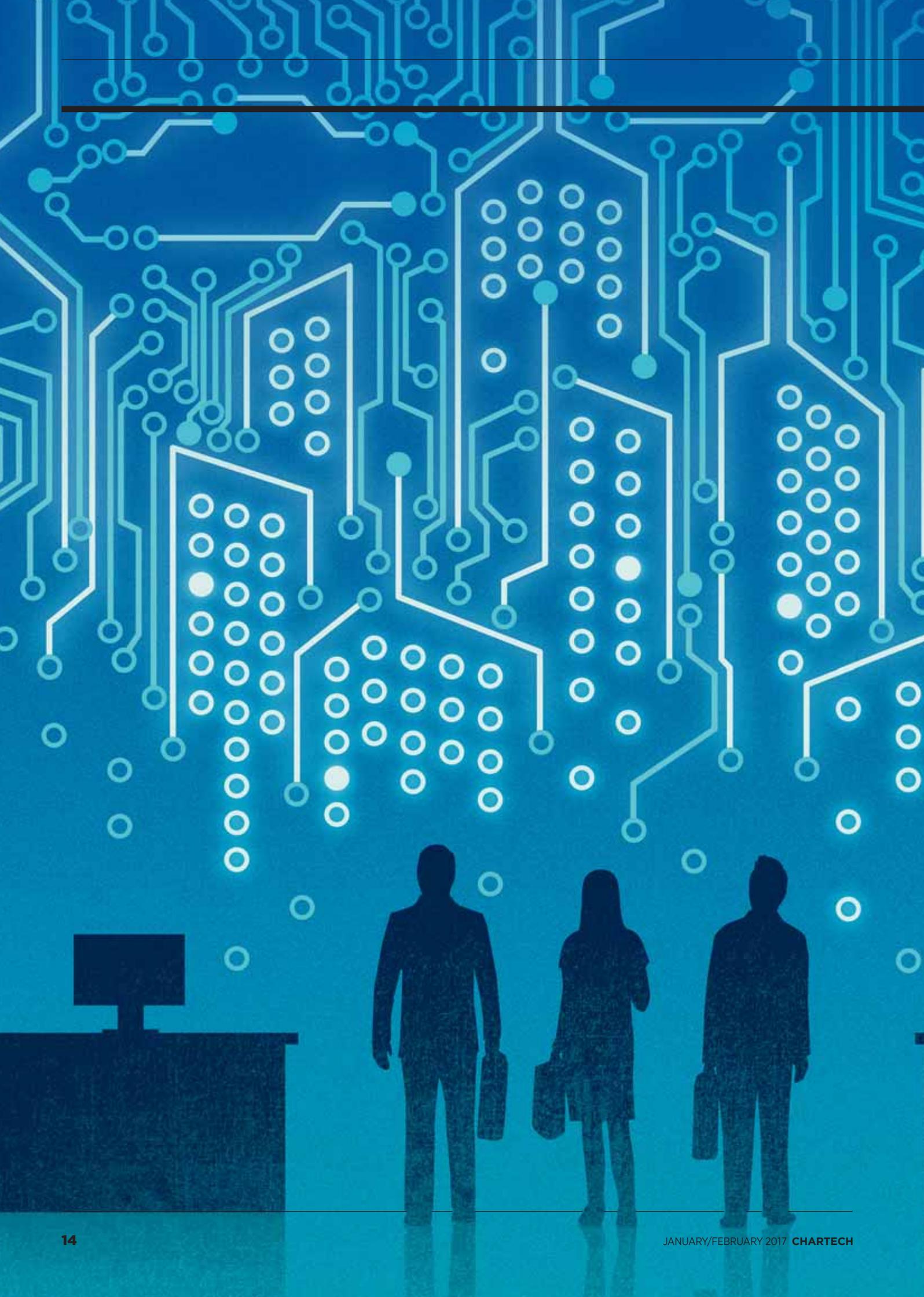
In December, I attended a follow-up meeting co-hosted by the RAEng and the Royal Statistical Society. The panel discussion focused on issues such as data quality, identified as a key component of what drives the value of data, but also on the asymmetry between parties in a data economy. By nature, the seller of data is in a better position to know its worth than a buyer - there is an information gap that leads to a relatively inefficient market. This gap is even more apparent between information collectors and subjects - we may not realise just how much a company learns about us when opting in or out of information-sharing arrangements and apps.

Ultimately these considerations have to be worked on. Ignoring the value of data assets isn't tenable in the long term, any more than ignoring the effect of the internet on business models over the past twenty years was. In my opinion, the first step has to be for regulation and standardisation to make the way for true markets in data. This will create huge synergistic value for the economy. It will also make a market for valuations to mark against, creating a true picture of the value of data-driven companies across many sectors. No matter what approach is taken there will be a need to create transparent permission processes and data ownership for individuals whose data is part of these data sets.

Investment in cyber security research and training to protect that personal data will also be crucial. ■



David Lyford-Smith, technical manager, IT and the profession, IT Faculty



DOUBLE-EDGED SWORDS

Keeping your skills up to date in the face of fast-changing technology developments can be a struggle, but chartered accountants are well placed to rise to the challenge, says Lesley Meall

Accountants have always needed to be adaptable and flexible. Assimilating repeated regulatory change is part of your professional DNA; so is using available tools and technologies to meet the changing needs of clients, inside and outside your organisation. Those who were not around at the time (and those who were), can take pride in the knowledge that your profession's widespread adoption of spreadsheets - back in the late 1970s and early 80s - helped to kick-start the personal computer revolution that propelled us down a long and winding road that eventually arrived here: in a world where information technology (IT) is integral (and essential) to the accountancy profession - and many others.

There are benefits for accountants and their clients. Accessible and affordable cloud-based tools have enabled Pillow May accountants to streamline its processes, more easily share data with clients and partially automate bookkeeping and expenses services that would otherwise be too labour intensive to be viable. "The clients input their receipts, then we pick up the process," says Jessica Pillow, MD, who discusses this in more detail, along with other practitioners, in issue 203 of *Chartech*. Pillow is comfortable showing her clients the benefits of this approach and she is keen to automate further. "My dream is to get everything to connect together," she says, citing one of the main barriers to this as a lack of UK bank APIs (the software needed to automate bank connectivity).

Progressive automation of this particular service may come to seem less appealing.

Mark Taylor, the faculty's technical innovation specialist, thinks it may be a service area where accountants are eventually entirely absent from the process. "In the future, people will use smartphones and software to totally automate this. After they have taken a photo of a receipt, smart software in the background will extract information such as the data, amount, location and other relevant information from the receipt and automatically process this," he says. Final accounts production is already moving away from practitioners, with developers of cloud bookkeeping software offering their business users tools that they can use to produce and file their own statutory accounts.

NEW SERVICES AND NEW SKILLS

"The feeling is that accountants will move towards being trusted and strategic advisers to business. You can already feel some smaller organisations moving towards a more professional services type of engagement, albeit on a small scale," says Taylor. Rather than simply adding up the numbers, or moving data between systems en route to compliance submissions, they are interpreting and presenting the numbers and conducting data assurance, such as ensuring that what happens during automated processes is valid and a true representation. Depending on how UK government plans for Making Tax Digital pan out, a massive increase in demand for data assurance work may be just over the horizon.

Either way, the progressive automation of ever more processes and the inevitable dependence on third-party software can



create particular challenges for the entire profession, which can be highlighted by considering statutory audit. Sandra Higgins, an audit specialist at Peter Upton, shares some of her reservations. “Firms that do not have the resources to develop their own audit methodologies are becoming more and more reliant on off-the-shelf programs and the software companies that develop them, but sometimes they fail us,” she says. Higgins has been frustrated by accounts preparation software that did not not reflect all of the new UK GAAP disclosure requirements. “We should not have to spend so much time checking that the software is correct and up-to-date and waiting for updates before we can use the programmes to produce compliant financial statements,” she adds.

Higgins suggests that in regulated areas some software products should be regulated, tested or recognised. HMRC does operate a scheme around payroll, which includes a list of paid-for software applications that it has tested and recognised and ICAEW operates an Accredited IT Product Scheme. However, one issue with any such scheme (whether it is operated by ICAEW, by government, or by any other organisation) is that software products are tested at a particular point in time.

This approach (though unavoidable) offers no guarantees that “accredited” software will be kept up-to-date in a timely manner in the future and no framework for rectification when it is not - and it is incompatible with the frequent updates associated with cloud-based systems.

“After they have taken a photo of a receipt, smart software will extract information such as the data, amount and location and automatically process this”

The progressive automation of audit-related processes also highlights a profession-wide education challenge. “A lot of what we do now in terms of training for audit is based on the corkscrew approach,” says David Lyford-Smith, technical manager, IT and the profession. Someone does the basic parts of audit one year, moves up to take on slightly more interesting work the following year, then steps up again in year three. If the first year or two of this process is automated away and people are not required, auditors will no longer be able to get their grounding in the basics in this way. He says: “Approaches to training will need re-thinking to ensure people still have knowledge of the basics.”

REASONS TO BE CHEERFUL

Issues such as this are unlikely to impede the progress of technology, given its many benefits. “I appreciate why some accountants see technology as a threat, but I see it as an opportunity,” says Neil

Christie, an IT Faculty committee member who is responsible for strategy and financial growth across multiple divisions of the iomart Group. Christie welcomes the increasing ease with which data from disparate sources can be combined and software can be used to analyse and share this. He says: “You can spend less time number crunching and pulling data together and more time on analysis and looking for insights, and you can use visualisation tools such as dashboards to make the numbers talk in a way that’s relevant to other parts of the business. This is an area where accountants can flourish.”

However, a particular approach may be needed if you are to keep on top of emerging technologies and what they can mean for accountants and the organisations they work with and for, and ensure that your technology skill set is fit for the future (whatever this may bring). Lyford-Smith suggests keeping a watching brief, being open-minded about technology and focusing on maintaining your capacity to learn rather than getting bogged down in the nuts and bolts of any particular system or specific technology - and the ICAEW Academy of Professional Development can help (tinyurl.com/ICAEW-CPD). However, as he notes: “Because technology is moving forward so quickly, you can’t point to a particular technology skill and say that accountants need to know how to do this.”

You can’t say that all accountants need to know how to manipulate the massive amounts of structured and unstructured data that make it ‘big’, or how to program in a particular language. “The underlying

issue is not any specific technology, but rather the pace of change,” says Lyford-Smith. Technology skills that may be valuable today may be less so tomorrow. There is a parallel here with the technical skills you learn while training and the need to build on them with continuing professional development. “You can’t expect to complete your ACA and have all of the skills you would need to survive a 30- or 40-year accountancy career any longer,” says Lyford-Smith. The same is true of technology. You need a grasp of the basics and an awareness of emerging developments if you want to make the best of them.

OUTLOOK POSITIVE

Accountants have always worked with data in one way or another, even back when ancient Assyrian scribes were using clay tokens to keep records of commerce. But the profession’s reliance on technology may never before have felt like such a double-edged sword.

The ongoing automation of basic functions and regulatory compliance frees accountants from drudgery, but it raises questions about the direction and utility of the profession; developments around big data and data analytics offer some

accountants the opportunity to shine, while hinting at the need for reduced numbers; the prospect of artificial general intelligence (which may follow today’s ‘niche’ machine learning and smart systems) may one day become an existential crisis for accountants (or even the species).

“Some believe that the development of artificially intelligent machines means the future of professionals is bleak,” notes Hemione Hudson, PwC, UK head of assurance. She takes a more balanced view. “It’s important to understand the opportunities and threats presented by disruptive technology with an open mind, while retaining our fundamental purpose of building trust in society and solving important problems,” she says.

“In the medium term, auditors will continue to bring human values and ethics to subjective judgements, while increasing audit quality and efficiency through the use of big data techniques and machine learning.”

Resisting the temptation to look into a metaphorical (or Netflix) black mirror can be as difficult as not slowing down to see what’s going on when you drive past a road traffic accident – and if we want to plan adequately for the future,

“You can’t expect to complete your ACA and have all of the skills you would need to survive a 30- or 40-year accountancy career any longer”

contemplations of some dystopian, tech-nightmare, worst-case scenarios may be prudent. But if we are going to view the future through a glass darkly, we should also temper this with a large dollop of (possibly misplaced) positivity, about the potential upsides of digital technologies (everything is going to be all right; until it isn’t) and how well-positioned many members of the accountancy profession are to embrace and then exploit them.

“The core skills of a chartered accountant are to provide trust over and insight into data, be that financial or non-financial data,” says Adam Birt, head of ACA development and special projects. This is reflected in how implicit information technology was in the past ACA syllabus and how explicit it has now become. “What we are focusing more and more on is engendering the ability to give insight through a questioning mind, through the application of professional scepticism, through judgement and critical thinking, so that all chartered accountants can generate advice or solutions whoever their clients or customers are,” he explains.

Nobody can predict where technology will have taken us five years from now, but if you are keen to keep your technical and your technology skills relevant and up to date and future-proof your career, the ACA professional development framework for trainees, and the continuing professional development that follows, can help you to ensure that you have the flexibility to adapt to change.

Shaun Robertson, ICAEW director of qualifications, says: “Chartered accountants have a framework of professional development that helps to equip them with the skills and tools they need to prepare for and react to changes not just in technology, but in many other areas too.”

So bring IT on. ■

NEW OPPORTUNITIES

If the biggest professional services firms are an indication of the direction for the profession, it is worth noting that they are starting to recruit more technologists and data scientists and fewer accountants. “Accountants will still need to pick up some of their skill sets if the profession is to remain appealing to employers, and because if there are more people in these roles, we will need to understand what they entail,” says Lyford-Smith. This is one of the reasons why ICAEW recently organised an event where accountants and data scientists were encouraged to interact (see the blog at tinyurl.com/ITFAC-DataEvent).

“There is an opportunity for accountants to work more closely with data scientists, but you need to have an understanding of statistics if you are to have intelligent conversations, to challenge effectively, ensure that the data is correct, understand what it may be telling you, and apply that in the organisation,” says Kirstin Gillon, a faculty technical manager. Data science

is very much hypothesis testing, experimenting with data and trying things out in a scientific way, rather than simply reporting. “It demands a different way of thinking about data,” she says, adding that it seems unlikely that many accountants will become data scientists.

However, at least one already has. A few years ago, after decades in finance, Roger Fried transformed himself into a senior data analyst at Teradata Aster (in the US), a global player in big data analytics. Like Gillon, he doesn’t expect many accountants to follow suit, because the two disciplines have such different perspectives on data. “Accounting is pretty much the process of pouring bias into transactions, then looking to see what you get. The limitations of this jump out when you take a more holistic data science perspective,” he says, explaining that data science techniques can overcome human bias and other impediments to impartial data analysis, such as the constraints of accounting categories.

IT'S A CULTURAL THING

Awareness of cyber threats is one thing, but increased security from change will only come from a cultural shift, say **Simon Borwick** and **Lushin Premji**

A recent report by Juniper Research found that 74% of the UK's small and medium-sized enterprises (SMEs) believe they are safe from cyber attacks. This contrasts with half of these SMEs that have admitted to having sustained such a breach, two thirds of which occurred in the past 12 months.

Many small businesses say that their people are their greatest asset, yet often people also represent their greatest source of cyber risk. PwC's *Global State of Information Security Survey* showed 51% of the worst security breaches reported stemmed from an initial human error, 28% caused by current employees. There have been a number of recent examples that have started with an employee inadvertently making a mistake resulting in widespread and high-impact consequences.

The so-called 'human firewall' is therefore a vital defence in every organisation's cyber armour. This is especially significant for smaller enterprises, where significant investment in technology to reduce the impact of human error may not be feasible. With stretched margins and considerable uncertainty affecting investment decisions, how can SMEs upgrade their human firewall to make their people the first line of defence against a cyber attack?

AWARENESS VS CULTURE

Building a cyber-resilient workforce requires two things: awareness in each individual employee and a culture that drives them towards the right behaviour. Culture and awareness are not the same thing, but both are necessary. Awareness can be defined as having knowledge about a series of facts or assertions. For example, you and your family may be aware that they each should be eating five pieces of fruit or veg each day. However, if the culture in your family doesn't reinforce and encourage acting on that message, then despite that awareness your children may wilfully eat fewer (maybe they don't like vegetables and don't understand its importance) or simply fail to do so (perhaps they are not reminded or rewarded for doing so).

Traditional approaches to improving the human firewall have focused on awareness, often through mandatory training, poster campaigns and so on. But that misses the point: we may know that we should eat our five-a-day, we simply don't care enough to do it! An awareness programme can be implemented quickly through a variety of techniques, many of

which can be low-cost. The challenge is then to follow them up with meaningful cultural change.

MODERNISING YOUR SECURITY AWARENESS METHODS

There is often little space for expression, emotion and engagement in cyber security, yet they can be powerful, low-cost approaches. Guerrilla marketing and storytelling should be embraced by those responsible for educating their employees about cyber security. Guerrilla marketing is all about surprising employees and disturbing the norm of routine. These concepts can be combined with any security message you want to raise awareness of.

For example, we recently visited an organisation where the mirrors in the lifts bore the message: "You look great; but you'd look better if you were wearing your security pass!" The phone number of the IT helpdesk where phishing is reported could appear where employees least expect it, such as on the apron of kitchen staff, or on the cups at the water cooler. The key here is thinking differently, thinking outside the box to go against traditional organisational norms.

Storytelling is another powerful concept that can raise awareness by helping employees understand the consequences of taking certain actions. Many organisations have a list of cyber security dos and don'ts, but providing context behind these instructions through stories makes them even more powerful. Instead of instructing employees not to click on a phishing link, explain to them what could happen when they do so, perhaps also using a personal example of how phishing can relate to their own private lives.

Positive reinforcement goes a long way in strengthening a security culture. Employees should be recognised when demonstrating good security behaviours

BUILD A CULTURE THAT BREATHES SECURITY

SMEs tend to be entrepreneurial and innovate very quickly in order to grow. But a strong security culture requires frameworks and planning, which may be seen as running contrary to that agile spirit. The keys to building a secure culture lay beyond simple awareness. Employees must understand why cyber security is important, believe they can have an impact and want to behave securely. Highlight key behaviours you want within your culture, such as expecting all employees to take care of your customers' data. Applying positive behaviour surrounding personal data to business culture can be done by showing how this behaviour allows everyone in the organisation to achieve both corporate and personal aims and objectives.

In a recent *Audit insights* report ICAEW noted the need for boards to set the tone from the top. This requires support from both informal and formal leaders explicitly – not just in what they say, but in what they do. Employees must begin to see the behaviour as an intrinsic part of "the way things are done around here". The counter to this is that "good behaviour" must be made as easy as possible. Look at your key business processes and ask how you can remove barriers and obstacles to doing the right thing.

Positive reinforcement also goes a long way in strengthening a security culture. Employees should be recognised when demonstrating good cyber security behaviours. This reinforcement could be a simple thank-you postcard signed by their team leader's manager when an employee reports a phishing email, for example.

Finally, look to remove perverse incentives. For example, if a key performance objective within your organisation is on throughput of a particular process, then look for any shortcuts which might be insecure, and provide tools or techniques that make acting securely easier than not so that employees are not unintentionally penalised for behaving securely.

MEASURE AND SUCCEED

Measurement is key to ensuring the effort you pump into your security awareness or culture programme delivers benefits. Most companies start by monitoring pass marks within elearning modules, but most fail to use their elearning platform to its full ability. For example, rather than monitoring a simple pass mark, it might be more

51%

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28%

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74%

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informative to monitor which questions employees are getting wrong and which answer is the most wrongly selected. This will allow you to target your training and make your programme one that targets cultural or awareness blind spots.

Context is also crucial, and a security culture dashboard can be helpful. For example tracking lost devices, reported incidents and results of phishing tests are a good start. The power of a dashboard multiplies when metrics are combined, for example comparing those who lost devices against the score that those participants gained within the elearning, mapped to which departments these individuals reside in. Some friendly rivalry between teams can be constructive provided it is managed in the right way.

Security awareness is something that can be implemented fairly quickly as long as you have plenty of imagination, understand your workforce and are able to take all departments with you. Changing security culture, on the other hand, requires a long-term effort from your entire organisation – from boardroom to basement. Integrating security into your DNA is an imperative for SMEs who want to avoid the risk of being one of the 50% likely to have a breach in the next year. ■

Simon Borwick, director, cyber security practice, PwC London
Lushin Premji, cyber security culture and awareness team, PwC London

New year's Office resolutions

It's a shiny new year, but there is one less day than last year to get everything done. **Simon Hurst** highlights ways to improve the way you use Office applications to help to recoup that 'missing' day

I had to resist the temptation to include Word styles as all 10 of the productivity suggestions as there are at least 10 good reasons why using styles can save lots of time and effort, as well as improving the quality of the product. The use of styles in Word was given a big boost by the introduction of the Ribbon in Excel 2007. From an option hidden in the Format dropdown menu, styles took centre stage in the Home Ribbon tab, with the most frequently used being accessible with a single click (Figure 1).

Styles encapsulate all font and paragraph formatting to allow a set of attributes to be applied quickly and easily. As well as controlling the appearance of the text, some of the less obvious paragraph formatting can be included to automatically avoid some common Word irritations such as single lines of a paragraph appearing on the next page (Paragraph dialog, Line and Page Breaks tab, Widow/Orphan control) or headings staying on one page while the following text ends up on the next page (Keep with Next).

It's worth exploring some of the more advanced options such as using Styles dialog, Options to control which styles appear in the Styles Gallery and using styles with Multilevel List numbering to automate hierarchical numbering schemes in a document.

WORD: SET UP AUTOTEXT

The key to making AutoText easy to set up is the keyboard shortcut Alt+F3. If there is any text or content that you are likely to use repeatedly - such as the signature of a letter - you can type it in, select it, then use Alt+F3 to save it in AutoText. Word will propose a name that you can change so that when you type the first four characters (as long as no other AutoText name starts with the

same characters) a prompt will appear allowing you to press the Enter key to expand it (Figure 2).

EXCEL: NEVER EMBED VALUES

As principle 14 of ICAEW's *Twenty principles for good spreadsheet practice* states: never embed in a formula anything that might change or need to be changed. Absolute adherence to this principle will not only dramatically decrease the likelihood of error but will also save hours of hunting through formulae to find all the values that need changing when a variable, such as the VAT rate or interest rate, changes.

EXCEL: EXPLORE POWER QUERY

Don't assume that the Power Query Add-in (which became an integral part of Excel 2016 as the Get & Transform group of the Data Ribbon tab) is just about working with external sources of data. Many problems wholly within an Excel workbook can be addressed, automated and speeded up by using queries linked to tables of data within Excel. For example, if a spreadsheet uses so many lookup formulae that recalculations become slow, or it uses cell ranges that frequently need to be adjusted to cope with the addition of rows, then using a query might provide the solution (Figure 3).

POWERPOINT: USE SLIDE MASTERS

Although using PowerPoint can seem very simple, if you don't know about Slide Masters you can end up wasting hours adding content to a large number of individual slides that could have just been placed on the Master Slide. The Slide Master command in the Master Views group of the View Ribbon tab displays the hierarchy of

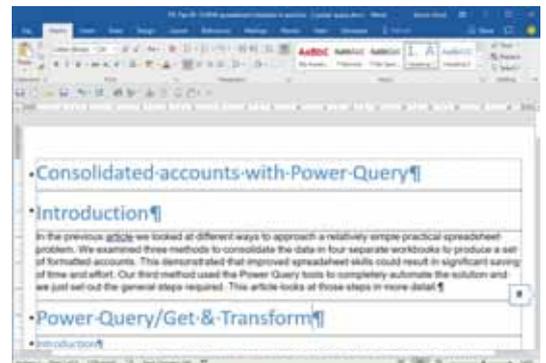


Figure 1

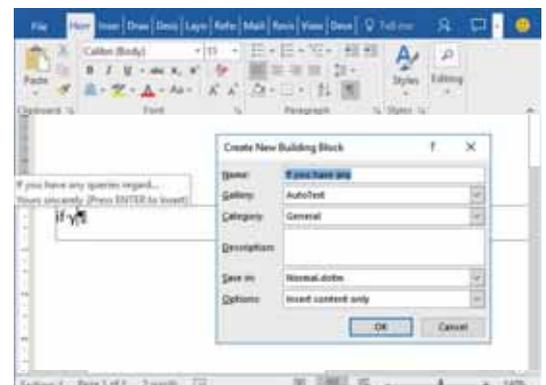


Figure 2

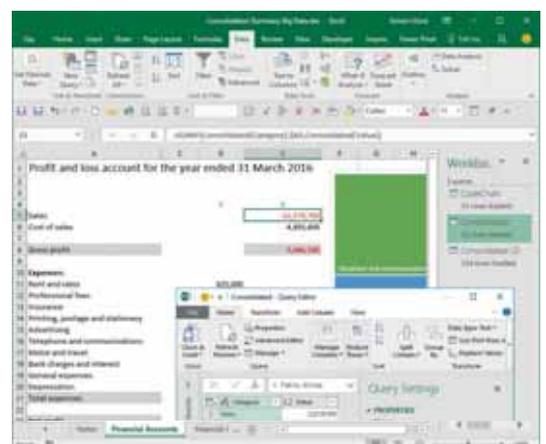


Figure 3

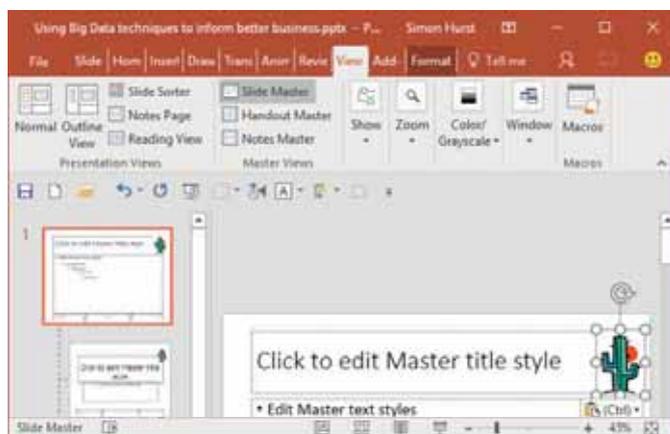


Figure 4

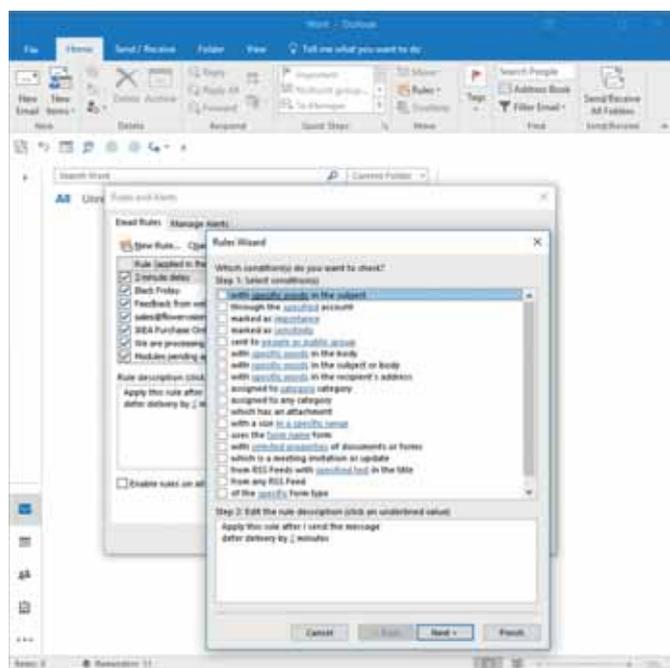


Figure 5

Slide Masters and allows specific formatting and content to be controlled for all slides, based on a particular Master. In Figure 4 we have added a logo to the main Master, which will then be included on all the other Masters and individual slides.

POWERPOINT: USE SMARTART DIAGRAMS

SmartArt is available in all the main Office applications but it is most likely to be used in a presentation. Rather than inserting and arranging individual shapes, SmartArt allows a range of business diagrams to be inserted, and then adapted, using an extensive range

of options in the dedicated SmartArt Tools, Design and Format Ribbon tabs.

There are some SmartArt features specific to PowerPoint. Text can be converted to SmartArt using the Convert to SmartArt Graphic command in the Paragraph group of the Home Ribbon tab. SmartArt can also be converted to shapes or back to text using the Convert command in the Reset group of the SmartArt Tools, Design Ribbon tab.

You can also animate SmartArt, with the Animation Effect Options allowing you to choose between animating the diagram As One Object, by level or by individual component.

OUTLOOK: USE MORE RULES

Dealing with emails can be both time consuming and irritating - Outlook rules enable you to automate the way you manage them. You can identify emails by their content, who they are addressed to, who they are from, or using a range of other attributes. You can then choose actions to be applied automatically to those emails as they are received or sent. For example, you could move emails from a particular sender to a specific folder, or you could send an automated reply with a PDF attached to respond to an email sent to a particular email address.

You can also use a rule to give you a few minutes to rethink that over-hasty email you've just sent (Figure 5).

POWERPOINT: SMART GUIDES

PowerPoint Smart Guides were introduced in 2010 and help you to accurately align slide components with each other or with the slide itself. Just move an object to the approximate position and a dotted line should appear to help you line it up exactly. ■

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: 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: ion.icaew.com/itcountshome Both IT Counts and the Excel Community are available for free to IT Faculty members as part of their subscription.

Simon's book, *Essential Excel for Accountants (and others)*, is now available as a PDF: tkb.co.uk/towiee.htm.

Simon has also included many useful Excel tips in the 'Lunchtime Learning' section on his website, available at tkb.co.uk/lunchlearn.htm

An unequal contest?

Leo Waldock explores how cyber security affected the 2016 US presidential election



Hillary Clinton was well organised, had rivers of money and was backed by the mainstream of the Democratic party. She was destined to be the first female president of the US and it would have taken an exceptional opponent to derail her campaign.

Donald Trump did not appear to be that candidate. He broke every last piece of accepted wisdom and was rude, brash and tactless.

It is probably safe to say that most Europeans were surprised to wake on 9 November and learn that Trump had won. The American College system makes the victory appear a landslide, but in fact Clinton won the popular vote. It is clear that a few percentage points here or there would have changed things dramatically.

SOME CRUCIAL MISTAKES

Part of the reason for Clinton's defeat was her over-confidence, which was reinforced by pollsters (who have had some terrible times recently) and media pundits who confused their own views with the clear-eyed analysis for which they are paid.

It also seems that part of the electorate voted for Trump as a proxy for 'none of the above'. Trump was running against the Republican party as much as the Democrats, and he was pretty much using the the party as a flag of convenience.

The other factor that told against Clinton is that she isn't trusted. This is where technology comes into the equation. First, Clinton declined to use an official government email account when she was a senator - and then secretary of state. She instead used a home brew server with a series of @clintonemail.com addresses. The reasons for this

arrangement are unclear and were unlikely to reflect well on Clinton. It also seems likely that foreign governments had access to Clinton's official communications.

Second, Clinton has a wide circle of supporters who have worked together for decades, and a great deal of that communication has taken place over email. Russia - keen to see Trump elected rather than Clinton - allegedly had little trouble hacking the email accounts of a long list of

The email server used by a political group or party looks exactly like a fruit tree that is waiting for a good, hard shake to see what falls out



Clinton's known associates and senior members of the Democratic party. A selection of these emails were passed to *WikiLeaks*, which published them during the final stages of the election (see tinyurl.com/CH-WikiLeaks).

The emails contained a number of stories and intrigues that showed Clinton in a bad light. While none dealt a killer blow, they clearly cannot have helped her efforts. *WikiLeaks* published nothing about Trump because, apparently, they had nothing to publish.

Publication of hacked emails is surely a sign of what we can expect in future elections. This may be even more likely where Russia is involved - considered by some as experts in asymmetrical warfare.

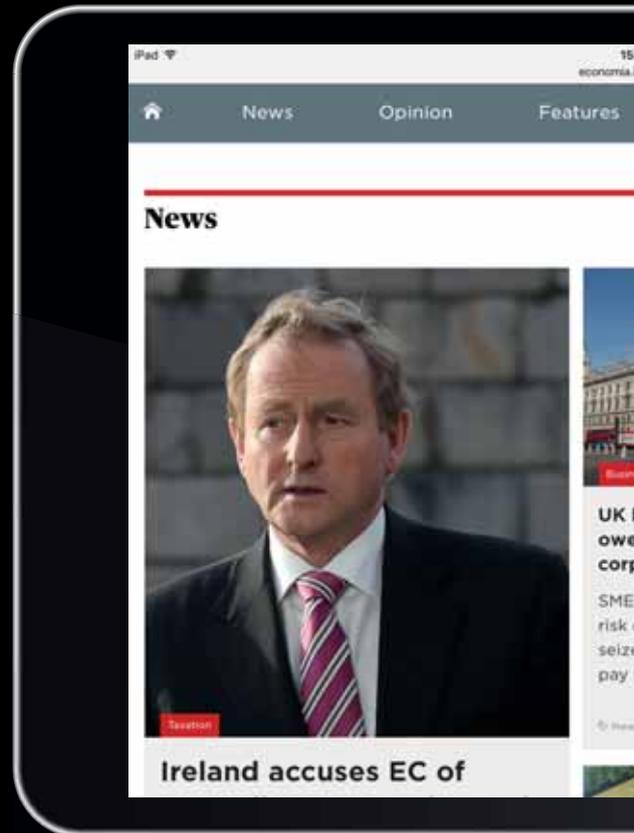
It doesn't particularly matter if the emails are obtained illegally as they are telling you what A said to B in their own words, which is a process that is tailor-made for delivering quotes and headlines. You can ignore the dross that makes up 99% of traffic and simply select the good stuff, and you can be confident there will be good stuff because these conversations are taking place between people that trust each other. The email server used by a political group or party looks exactly like a fruit tree that is waiting for a good, hard shake to see what falls out.

I would be surprised if the French election doesn't follow a similar pattern in April 2017. No doubt François Fillon and the French Republicans have already begun to sift through their archives to weed out any embarrassing emails to avoid *oeuf sur le visage*. ■

Leo Waldock, freelance IT writer

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