

Chartech

IN POLICY WE TRUST
HOW EFFECTIVE IS
PRIVACY PROTECTION
REGULATION?

PUT INTO PRACTICE
WHAT MAKING TAX
DIGITAL MEANS FOR
PRACTITIONERS

HELD TO ACCOUNT
SENIOR MANAGEMENT
AND THE BOARD
UNDER GDPR

Tapping into a digital future

Making Tax Digital is on its way, but how will the changes it brings affect accountants in business and practice?





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March/April 2017 Issue 208

14

TAKING SHAPE

Making Tax Digital will cause a sea change within the profession. Lesley Meall investigates the what, when and how



12

STEPPING UP

The recent IT Faculty annual lecture saw information commissioner Elizabeth Denham discussing the privacy step change to IT, reports Kirstin Gillon

18

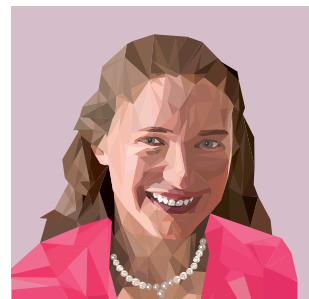
FORMAT FOLLOWING FUNCTION

What is behind the global boom in the use of XBRL for financial reporting? Philip Allen takes a look



10

IMPACT ASSESSMENT



Roll on with the rollout

Despite potential teething issues with Making Tax Digital, Jessica Pillow is excited for it

04 Editor's letter

Richard Anning discusses the rise of technology and an interesting conversation with professor Richard Susskind

05 News and events

The latest news from the faculty, plus important dates for your diary

08 Byte size

The rise of Bluetooth 5, the continuing growth of the cloud and regulation for robotics

11 IT governance

How should senior management meet GDPR obligations? Alan Calder has a few ideas

20 Excel tips

Simon Hurst provides a helpful summary of some useful new Excel tools

22 Leo on security

Leo Waldock peeks into Vault 7, and the latest *Wikileaks* revelations about potential CIA access to our devices

The future is robotic



At a time when artificial intelligence (AI), robotics and data are seemingly in the news as much as cyber, and the future of the accountancy profession comes ever more into the spotlight, it was fascinating to hear professor Richard Susskind present his views on the future of the professions to an audience at Chartered Accountants' Hall.

His book, *The Future of the Professions*, co-written with his son Daniel, has been mentioned in *Chartech* before. In it they take a look at eight professions (including accountancy) and discuss how technology is having, and is likely to have, an effect. It was a polished performance, presented entirely without notes, and slightly more respectful than suggested in the book, where they argue "that our current professions are antiquated, opaque and no longer affordable, and that the expertise of the best is enjoyed only by a few".

What is it about technology that it is causing it to have such an effect right now? Susskind highlighted two capabilities that he kept coming back to - the exponential increase in underpinning technologies, as highlighted by Moore's Law, and the fact that machines are becoming increasingly capable. He also referred to the massive increase in data that is driving machine learning, which will supplant human input and judgement. In the long run, which he defined as the 2030s and 2040s, much will be taken on by machines, including many tasks currently undertaken by accountants.

After finishing on the positive note that "there has never been a more exciting time" and "the best way to predict the future is to invent it", he followed up in the Q&A session by saying that the majority of the new jobs that will be created in this new environment will actually be taken on by machines!

I spoke with Susskind after the lecture and asked how machines might replace the strategic elements of an accountant's role (questioning, intuition and scepticism) where no data or little data exists at that level. I wasn't entirely convinced by his answer and feel there is an implicit assumption that brute force processing and data will eventually somehow provide the answer. However, we cannot escape the fact that long term structural change is inevitable.

Kirstin Gillon is spending time looking at particular roles and tasks within accounting that might be subject to automation/AI. She would be delighted to talk with you if there are aspects of your role or those in your team that may be subject to change. Her contact details can be found opposite.

Richard Anning
Head of faculty

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ICAEW

IT Faculty

George Quigley

Chairman

T: +44 (0)20 7893 2522

E: george.quigley@kpmg.co.uk

Jeremy Boss

Deputy chairman

T: +44 (0)7791 293 319

E: jeremy.boss@btinternet.com

Richard Anning

Head of IT Faculty

T: +44 (0)20 7920 8635

E: richard.anning@icaew.com

Kirstin Gillon

Technical manager

T: +44 (0)20 7920 8538

E: kirstin.gillon@icaew.com

David Lyford-Smith

Technical manager,

IT & the profession

T: +44 (0)20 7920 8643

E: david.lyford-smith@icaew.com

Mark Taylor

Technical manager,

technical innovation

T: +44 (0)20 7920 8476

E: mark.taylor@icaew.com

Tracy Gray

Services manager

T: +44 (0)20 7920 8526

E: tracy.gray@icaew.com

Contact details

IT Faculty

ICAEW

Chartered Accountants' Hall

Moorgate Place

London EC2R 6EA UK

☎ +44 (0)20 7920 8481

✉ itfac@icaew.com

icaew.com/itfac

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NEWS & EVENTS



NOTIFICATION OF FACULTY AGM

The annual general meeting of the IT Faculty will be on 11 May 2017, commencing at 13.00, in the Members' Room at Chartered Accountants' Hall, Moorgate Place, London EC2R 6EA. Please contact Carol Turner (carol.turner@icaew.com) if you would like to attend or dial in. For full details please visit tinyurl.com/CH-AGM-2017

TAX AND BLOCKCHAIN



David Lyford-Smith recently attended a meeting of international banks, regulators, tax authorities, academics and accountants,

discussing the potential for blockchain in tax applications. The technology has some interesting features that have drawn the attention of the financial sector and this conference came to see what tax administration could take from it.

Blockchain, created originally as the platform on which Bitcoin runs, is a distributed ledger system that allows large numbers of participants to share a single, synchronised ledger of transactions that retains a permanent and accurate record, without the need for a central party to host and maintain the ledger. Some can even support code within the ledger that will automatically post transactions under certain conditions. However, while blockchain has much potential as a disruptive

technology, some aspects of it make finding use cases for tax difficult. Indelible records, and the public nature of many blockchains, restrict what kinds of tax services could realistically meet the security and privacy requirements of tax administration. Moreover, the current costs and scales of even the largest blockchains - \$8 per transaction and five to six transactions per second for bitcoin, for example - are not yet anywhere near what's needed for the scale of tax authorities.

There are some interesting use cases that are adjacent to tax work - in supply chain tracking for example, that could be used for excise taxes, or for land registry that would be tied to stamp taxes. There is also much talk of the potential of the blockchain to help with the move to an increasingly cashless economy, and expand banking and financial services to the world's billions of unbanked citizens.

For now, it seems that finding the right way to use blockchain is taxing even the most informed of groups.

NEW-LOOK ICAEW

You know all about assets, how important and valuable they are. One of ICAEW's most important assets is our brand. And it's about to change.

The world has changed a lot since our last brand update in 2005. We've changed too. So our brand - our image, what we stand for and how we communicate - needs to reflect that we are an international, forward-thinking organisation. It is evolving to support our strategy and to ensure that we remain relevant and always one step ahead.

Our new brand launched in April (this edition of *Chartech* is in the new brand). We have also issued new material that you will need to make changes to your own stationery and marketing collateral. You won't have to change everything overnight; you will have until the end of 2018 to adopt the new identity.

In the coming months you will see our website, *economia*, as well as our technical publications updated to match the new brand.

Find out more about our new look on the website at tinyurl.com/CH-ICAEW-Brand

The new look *Chartech* is also available online (as are all previous editions) - please visit tinyurl.com/CH-Chartech for the latest digital version.

If you have any queries on the new brand, call us on +44 (0)1908 248 250



FORGING CLOSER LINKS WITH SOFTWARE DEVELOPERS

Two recent issues have led to closer links between the IT Faculty and the software development community - though there have always been strong industry relations through the Technical Committee.

The first saw the faculty meeting the FRC and the Business Application Software Developers' Association to discuss members' dissatisfaction with accounts preparation software. Reporting standard FRS1021A had been causing particular difficulties. A follow-up meeting has been arranged between the FRC, ICAEW and a larger number of software developers to help improve processes and dialogue between the participants.

The second issue involves Making Tax Digital. Members' concerns include the pilot, free software and use of spreadsheets. A pop-up group has been convened with developers (including practice, book-keeping and tax return software) and ICAEW practitioners representing small, medium and large firms. The group will feed back to faculty and ICAEW members through *Chartech* and at icaew.com/MTD



UNDERSTANDING THE RISKS OF CLOUD SERVICES

Your attention is drawn to the first report in the *Cloud Adoption* series, available to you as a subscribing faculty member. This report draws on the processes to follow when identifying and addressing the risks that arise from adopting a cloud-based strategy for a small business. Taking a cloud-based approach for software is, in its simplest forms, an outsourcing decision: to what extent should you empower third parties to control and support the applications you use within your business? Further reports will look at legal implications and migration risks.

The report can be downloaded at tinyurl.com/CH-CloudAdopt

IT FACULTY 2017 EVENTS & WEBINARS

EVENTS

PivotTables - Simple, Effective and Interactive 11 May 2017

During this webinar, Simon Hurst will show the range of Excel problems that PivotTables can solve: from simple summaries with no need to use formulae or functions, to interactive dashboards that turn dreary data into inspiring insights. Topics covered include:

- Why would you want to use a PivotTable?
- Why everyone needs to know what PivotTables can do.
- The importance of data.
- PivotTable basics - using sorting, filtering and grouping.
- Exploration of more advanced features.
- Interactivity - charts, slicers and dashboards.

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.

WEBINAR UPDATE

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

- Assessing spreadsheet competency.
- 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 will be published at icaew.com/itfacevents

WEBINAR ARCHIVES

Don't forget, 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

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 - 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 these online facilities and the Excel online training at icaew.com/excelwebinars

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200

million PayPal customers
is better than not having
access to them.

A better payments partner
means you reach more customers.

RETHINK PAYMENTS

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61%

OF LARGE ENTERPRISES HAVE SUFFERED AT LEAST ONE DATA BREACH THROUGH INSECURE PRINTING

150,000

WEB-ACCESSIBLE PRINTERS WERE SUCCESSFULLY HIJACKED



HOW SECURE IS YOUR PRINTER?

Businesses are increasingly seeing the value of the multifunction printer (MFP) as a document management centre. MFPs run their own software, are accessible beyond the physical boundaries of the office and are a hub for scan, fax, email, copy and print services.

However, analyst Quocirca's new paper, *Print security: an imperative in the IoT era*, looks at the technology's security challenges, drawing on its own research and

on information about security from key MFP vendors.

It points out that 61% of large enterprises have suffered at least one data breach through insecure printing. In one recent example, a hacker hijacked more than 150,000 printers that were accessible to the web and issued each printer with a warning about the vulnerability. Any organisation that currently uses MFPs or is considering doing so can download the report at tinyurl.com/QuocircaReport

GET SET FOR BLUETOOTH 5

While we are unlikely to see Bluetooth 5 devices until the latter part of this year, the buzz around the latest update to the wireless technology is increasing. Bluetooth 5 offers faster speeds, greater distances and greater 'broadcast message' capacity.

Bluetooth 5 has a range four times that of Bluetooth 4.2. Hopefully this will allow it to reach across a small office or entire home. Its speed will double from 1MBps to 2MBps and the capacity of data broadcasts will increase by 800%, opening up possibilities for more data to be shared more quickly.

These advances are important facilitators of the burgeoning Internet of Things, which requires more efficient communications to continue its growth trajectory. The technology will also be important for beacons - location-based technologies that often provide services without the need for a formal connection to another device, for example systems that provide navigation inside buildings like airports or shopping centres.

800%

INCREASE IN THE CAPACITY OF DATA BROADCASTS

2MB

SPEED OFFERED BY BLUETOOTH 5

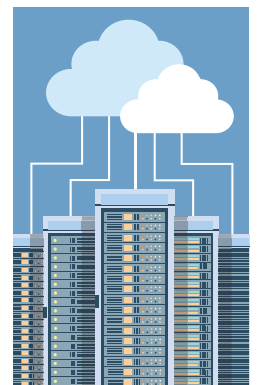


MORE SILVER LININGS?

With a predicted 18% growth for the worldwide public cloud services market, Gartner is advising that businesses should examine their cloud services strategy. The cloud services market, worth \$209.2bn in 2016, is set to grow to \$248.6bn in 2017.

As cloud computing develops it is expected to cause further disruption in the business world. David Mitchell Smith, vice-president and fellow in Gartner Research, says: "As it enters its second decade, cloud computing is increasingly becoming a vehicle for next-generation digital business, as well as for agile, scalable and elastic solutions."

The impact on businesses relates to their IT strategy surrounding migration to cloud services. Factors such as agility and cost-optimisation should be taken into account. "[We] predict that through 2020, cloud adoption strategies will influence more than 50% of IT sourcing," says Sid Nag, research director at Gartner.



By **Sandra Vogel**
Freelance IT writer
sandra@svogel.com

THE INTERNET OF THINGS JUST KEEPS ON GROWING

Analyst Gartner says there will be more than 8.4 billion connected 'things' in the world this year, a rise of 31% on the 2016 figure. The consumer segment has by far the largest proportion of 'things' with 65% of the total.

Gartner says appliances such as smart TVs and digital set-top boxes will dominate the consumer sector while smart electric meters and security cameras will be most in use by businesses.

Although applications suited to specific vertical industries, such as location devices for healthcare, will drive the use of connected 'things' in business in 2017, from 2018 things will change, with cross-industry devices such as LED lighting and HVAC (heating, ventilation and air conditioning or climate control systems) becoming more important in the market.

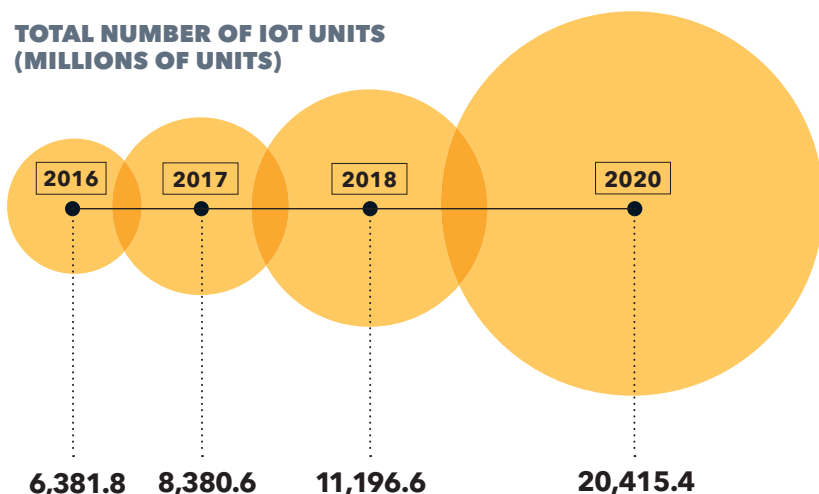
31%

INCREASE IN CONNECTED DEVICES SINCE 2016

65%

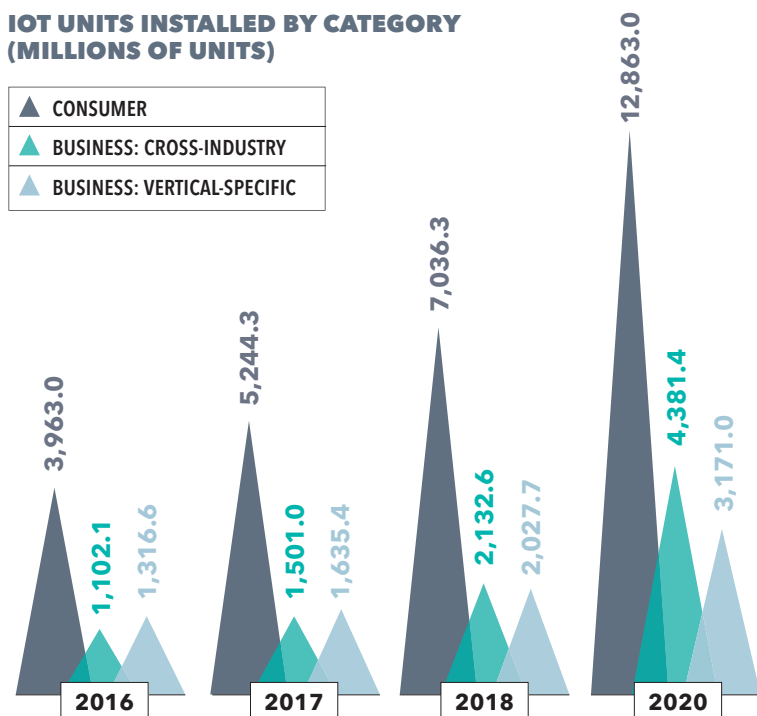
OF CONNECTED THINGS ARE IN THE CONSUMER SECTOR

TOTAL NUMBER OF IOT UNITS (MILLIONS OF UNITS)



IOT UNITS INSTALLED BY CATEGORY (MILLIONS OF UNITS)

| |
|-------------------------------|
| ▲ CONSUMER |
| ▲ BUSINESS: CROSS-INDUSTRY |
| ▲ BUSINESS: VERTICAL-SPECIFIC |



RISE OF ROBOTS FUELS EU REGULATION

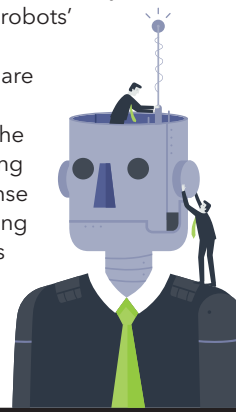
The European parliament has issued a report designed to help inform the regulation of robots. It points out the great reach that robots and artificial intelligence could have for our society, noting they "seem poised to unleash a new industrial revolution" and are "likely to leave no stratum of society untouched".

Recognising that this development promises to bring savings and efficiency to a wide range of areas, the EU is concerned that robots and developments in artificial intelligence are now at a stage where regulation is needed regarding their potential to harm people by acting autonomously.

To this end, the EU suggests a set of rules - like those suggested by sci-fi writer Isaac Asimov in his 1942 short story *Runaround* - that should be brought to bear on the designers, producers and operators of robots, at least until such time as robots become self-aware enough to implement these laws themselves. The upshot is that the EU argues for robots to be fitted with a 'kill switch' so they can be turned off if things start to go awry.

There are also recommendations for designers to ensure robots operate according to local, national and international legal and ethical principles; that European values of dignity, freedom and justice are taken into account in the design, development and delivery of robotic technologies; that robots' decision-making steps are traceable; and that robots are identifiable when they're interacting with humans. The report considers introducing a basic income as a response to the risk of robots reducing employment opportunities for humans.

The report can be viewed at tinyurl.com/EU-Robot-Report



NEW MOBILE AND BROADBAND COVERAGE CHECKER

Communications watchdog Ofcom has updated its coverage checker app. Available for iOS, Android and through a web browser, the free app checks the performance both of home broadband and mobile reception. The app can be used to compare voice, 3G and 4G coverage for all major network operators both indoors and outdoors. It is useful for anyone moving home or office, or thinking of changing provider. It also provides troubleshooting advice.

Visit checker.ofcom.org.uk to try the web version or search for 'mobile & broadband checker' from your mobile app store.



JESSICA PILLOW

As a busy practitioner I am always keeping up to date with the latest changes, revelations and legislation that we have to bring into our business. Like you, I feel that some things are a great idea and others maybe not so, but it all has to be adopted and rolled out to our staff and clients in the easiest and most efficient manner.

The next major change that we are looking forward to is MTD. Yes Making Tax Digital's abbreviation is already well known and on the lips of many practitioners, but what does it actually mean for us? Well the first thing we need to do is be on the cloud and have robust digital systems in place ready for the MTD rollout from April 2018.

We're already using cloud software for all our small company clients and have trained them on the proficient use of the software. We keep an eye on the accuracy of their records with quarterly VAT reviews as a minimum service for most clients who are not on the flat-rate scheme.

KEEPING IT SIMPLE

What about the smallest sole traders and our property landlords? These clients are still often paper-based and will be brought into MTD quite early on. We will look to use less complicated versions of the accounting software that we are already using to great success with our business clients to keep things simple – FreeAgent has a great sole-trader product and Xero has their partnership editions. These software packages are great if the client wants to start from the bank statement and explain their activity. However some clients will prefer to start with the receipt, in which case 1Tap will come into its own.

Internally, we are currently upgrading our practice management solution to one of the new cloud offerings, which

READY TO ENGAGE

Jessica Pillow looks forward to the rollout of MTD next year and examines the impact on accountants and their clients

“I want to work electronically with HMRC. I find it frustrating that at least 80% of our physical mail comes from them, which is expensive to handle in a paperless practice”

integrates with our existing tax software and Dropbox (with appropriate security), so we can keep one central client database. We're also redesigning all our work processes so they are more streamlined and digitalised.

GETTING THE RESULTS

Our new solution will enable us to track and report on all our deadlines more easily – there will be lots more of these with quarterly reporting. Because we'll have to contact all our clients more frequently we could easily spend our whole time on administrative tasks. With our new system we'll have bulk mailing and an automated reminder system to take the strain. We can connect directly into our clients' accounting systems which helps us see trends, monitor for errors, keep tabs on important account balances and even set alerts – all of which take our client service to a new level.

I'm personally looking forward to MTD, once the inevitable initial system problems are out of the way. I want to work electronically with HMRC. I find it frustrating that at least 80% of our physical mail comes from them, which is expensive to handle in a paperless practice. We also have to spend hours in queues on HMRC phone lines. I'm hoping MTD will allow us to communicate electronically and in almost real time with HMRC.

MTD will also give me more time with my clients. This is great, as I really enjoy helping them run their businesses on a day-to-day basis, rather than just speaking to them once a year. ●

Jessica Pillow, managing director, Pillow May chartered accountants



ALAN CALDER

The EU General Data Protection Regulation (GDPR) will mark a wide-reaching and significant shift in the way organisations protect personal data when it comes into effect in May 2018. Not only does the regulation apply to all EU data controllers and processors, it also applies to organisations outside the EU that deal with EU residents' personal data. Moreover, the government has confirmed the UK will adopt the regulation irrespective of Brexit.

Under the GDPR, data subjects have a number of new rights, including the right to judicial remedy against organisations that have infringed their rights (Article 79). On top of this, controllers face the possibility of administrative fines of up to €20m (£16.9m) or 4% of global annual turnover. These are intended to be "effective, proportionate and dissuasive" (Recital 151) - sending a clear message to organisations throughout the EU that they must take data protection seriously.

Failing to report a data breach to the regulator within 72 hours of discovery (or, if you report it after 72 hours, failing to explain the delay) represents another breach of the GDPR. So you can assume that the size of the administrative fines levied on you will be that much higher when any unreported breach is subsequently discovered, as it most surely will be.

CULTURE OF PRIVACY

If we're honest, most organisations' approach to data protection is very much a box-ticking exercise. However, as information commissioner Elizabeth Denham explained to ICAEW members on 17 January (for more about the event, see page 12), rather than just box-ticking, companies should focus on a "framework that can be used to build a culture of privacy that pervades an

NOT JUST BOX TICKING

Alan Calder examines what boards and senior managers must do to meet their obligations under the GDPR

entire organisation". The key question is how can this be achieved?

Article 5 of the GDPR states that "the controller shall be responsible for, and able to demonstrate compliance with" six privacy principles. The sixth principle (integrity and confidentiality) states that personal data shall be "processed in a manner that ensures appropriate security of the personal data, including protection against unauthorised or unlawful processing and against accidental loss, destruction or damage, using appropriate technical or organisational measures".

One way for data controllers to demonstrate they are processing data in such a manner is to achieve certification to a recognised standard or framework.

The UK government's Cyber Essentials scheme sets out five security controls that organisations can implement to protect themselves from up to 80% of

common cyber attacks, and certification to the scheme demonstrates independent verification that systems and applications have a base level of cyber security.

THE PROFESSIONAL APPROACH

Cyber Essentials only provides a snapshot of corporate security, however. Organisations seeking a greater level of information security maturity might turn to an international standard such as ISO 27001. An ISO 27001-compliant information security management system (ISMS) is a risk-based approach to information security that all organisations can use to demonstrate GDPR compliance. It has the added advantage of being an international standard against which organisations can achieve independently audited certification to demonstrate that they have implemented, and maintain, a system that addresses the specific information security risks that they face.

An ISMS supports both the privacy by default and by design principles, covers the necessary policies and procedures, provides a framework for staff training and incident response. Most importantly, it also sets out a best-practice approach to protecting personal data.

Under the GDPR, organisations have to be able to demonstrate that they have put in place proper accountability processes to ensure that they deal with the rights of data subjects in an appropriate manner. There are, of course, other steps that organisations can and should take to ensure their compliance, including appointing a data protection officer. But ISO 27001 certification provides a structure on which other activities depend. ●

Alan Calder, CEO, IT Governance

Elizabeth Denham speaks at the IT Faculty's annual lecture; below Denham talks with Lanah Kammourieh Donnelly



PRIVACY REGULATION - HELP OR HURDLE?

Kirstin Gillon reports on the privacy step change facing IT professionals as outlined by information commissioner Elizabeth Denham at the IT Faculty's annual lecture in January

Maintaining consumer trust through good privacy protection is the foundation of a successful digital economy. Regulation, such as data protection laws, should support this through a clear framework of rights for individuals and obligations for organisations.

But as Elizabeth Denham, the UK information commissioner, highlighted in her speech for the IT Faculty's annual lecture, there is a risk that regulation is viewed as simply a box-ticking exercise. Emphasising the importance of 'accountability', Denham explained how the new EU General Data Protection Regulation (GDPR) aims to help organisations maintain customer trust in an ever-changing technological world.

THE ACCOUNTABILITY APPROACH

Denham set the scene by recognising the pace of change and how digital

technologies such as the internet and smartphones have transformed our lives. She also highlighted the way that internet businesses have morphed from providing discrete services to spanning many aspects of our lives. Google, for example, started life as a search engine but now does maps, email, office applications, social networks, translation and so on.

These changes demand a new approach to data protection - and this is reflected in the GDPR, which has heavily adopted the concept of accountability. Denham described this accountability attitude, which was pioneered in her native Canada, as about “moving away from seeing the law as a box-ticking exercise”. Instead, she added, firms need to “work on a framework that can be used to build a culture of privacy that pervades an entire organisation”. This requires organisations to understand the privacy risks they are creating and put in place a holistic programme across all their activities to mitigate those risks.

There are also specific measures that will be required, including stronger provisions around consent and adopting an approach of “privacy-by-design”. Denham acknowledged that smaller businesses in particular face a challenge in complying with these new requirements because they are unlikely to have the expertise required. To assist them, she called on the accountancy profession to do more here to help smaller businesses and promote good privacy practices both in their own organisations and with clients.

PENALTIES AND BENEFITS

GDPR will substantially strengthen the hands of regulators, such as the Information Commissioner’s Office (ICO). In particular, regulators will be able to levy fines of up to 4% of global revenue where major breaches occur. Denham also drew attention to the ICO’s role as educator and promoter of good practice. To this end it will be bolstering its activities in these areas to help businesses improve their practices. Denham also expects the ICO to provide more information where enforcement action is taken so that others can better understand why controls were deemed to be inadequate.

While there are bigger sticks though, Denham argued that businesses need to see tangible benefits from building the right mindset and practices around privacy. To illustrate this, she cited the latest ICO survey that found 75% of

“Isn’t having customers’ trust a cornerstone to good business? Isn’t that intangible relationship with customers - loyalty, trust and repeat custom - something most companies want?”

respondents did not trust businesses with their personal data - a proportion Denham described as “shocking”. Underlying that loss of trust, said Denham, is a sense that individuals have lost control over personal data because they no longer have any idea who has it or what they do with it. To restore that requires rebuilding trust through a new framework because, as Denham asks: “Isn’t having customers’ trust a cornerstone to good business? Isn’t that intangible relationship with customers - loyalty, trust and repeat custom - something most companies want?”

IMPLEMENTATION AND BREXIT

There were wide-ranging questions from the audience, with most focusing on practical issues related to implementation. One question asked to what extent would compliance with Cyber Essentials mitigate a breach. In response, the audience was told if compliance with a

AN INNOVATOR’S VIEW

Lanah Kammourieh Donnelly, Google’s policy lead on privacy in Europe, gave a short response to the lecture.

Donnelly agreed that compliance was just a baseline, and Google saw privacy not only as an aspect of competitive positioning but also as a moral duty to users.

She went on to argue that we should see technology not as the problem but as a solution, saying there are many ways that technology could help users get greater control over their data. She highlighted Google’s ‘My Account’ facility as an example of transparency and control.

Security was also a strong theme in her response, including that there is no privacy without good security. Therefore principles, such as security-by-design, are key enablers to good privacy.

standard such as Cyber Essentials were embedded into a complete and proper privacy process across the organisation, then yes, it would be a mitigating factor. This emphasised two important aspects of implementation - closer links between cyber security and privacy, and the need to think beyond box-ticking to wider organisational processes and culture.

The big question, though, was the impact of Brexit, given that GDPR is a piece of European legislation. The immediate answer given was that GDPR will come into force in May 2018. As the UK will still be a member of the EU at that point, organisations will need to comply. Once the UK withdraws, there is a possibility that the government could review and change it. However, equivalent standards of protection would be needed if the UK wanted to retain unrestricted data flows with Europe.

THERE IS MORE TO COME

GDPR represents a step change for organisations in how to approach personal data. The lecture highlighted that the regulation should help businesses rebuild trust with customers and users around privacy. To do this, though, organisations need to approach it as a shift in culture and mindset rather than a series of compliance obligations.

The IT Faculty believes that the accountancy profession is well placed to respond to Denham’s challenge and show leadership here. The faculty will be publishing a variety of resources on GDPR to help organisations prepare, and encourage accountants to engage with smaller businesses in particular on the topic. ●

Recordings of Elizabeth Denham’s address, along with other speeches and discussions, can be found at tinyurl.com/Denham-ICAEW-Speech

The National Cyber Security Centre also publishes plenty of material on good cyber security practices at ncsc.gov.uk

Further information on ICO and other guidance around GDPR can be found in our Tech Essentials supplement, mailed with this issue of the magazine



Kirstin Gillon,
technical manager,
IT Faculty

THE MARCH OF DIGITAL TAX

Making Tax Digital for Business will bring about more than just the digitalisation of tax administration and preparation - it promises to reshape the whole accountancy profession. Lesley Meall reports





Digital disruptors are everywhere. Airbnb and Uber are the poster kids, but the value propositions of “traditional” goods and services are being changed by new technologies and new business models from all kinds of sources, not just digital newcomers. For example, many accounting practitioners in the UK now face digital disruption courtesy of HMRC, while in the US practitioners face disruption courtesy of new tax services provider H&R Block.

The digitalisation of tax administration and preparation is not new, it has been ongoing for years. But some of the changes being initiated by HMRC and H&R Block will push accountancy practitioners and taxpayers into a period of accelerated evolution, during which processes around tax administration and preparation will change so much and so fast that some of those affected will struggle to keep up.

NO GOING BACK

HMRC is already well on the way to the “fully digital” tax system it wants by 2020. It has not yet clarified all of the details around its rapidly approaching plan for Making Tax Digital for Business (MTDfB), but the direction of travel is clear. There will be more self-assessment by taxpayers, reporting will be more frequent (quarterly), and records on financial transactions will increasingly need to be captured, processed and filed electronically using software and apps on mobile devices.

“We believe that the digitalisation of tax administration is the future, but we have concerns about the speed and specifics of the rollout plan,” says David Lyford-Smith, ICAEW technical manager for IT and the profession. The group of first movers to MTDfB includes the self-employed, small landlords and unincorporated businesses, because their “avoidable taxpayer errors” create a tax gap of £8bn a year, according to a government policy paper, *Making Tax Digital for business*, published in January.

Practitioners are also concerned about the speed and specifics of MTDfB - and how well some taxpayers will make the transition to the electronic record keeping that HMRC is hoping for. Kevin Salter, a partner at Glover Stanbury, says: “We’ve had conversations with people who are using cashbooks on paper and they don’t want to change,

“The digitalisation of tax administration is clearly the future, but we do have concerns about the speed and specifics of the rollout plan”



they are quite happy with it. We've put clients onto online software in the past and they have not been able to cope with it, so we had to take them off it."

Stephen Farra, of Stephen Farra Associates, adds: "By next year, we as a practice will be ready, but our clients won't be ready." When Farra recently told one of the firm's elderly clients about MTDfB, the reaction was: "I haven't got a TV, let alone a computer, what am I supposed to do?" Farra told him about the mobile app, for smartphones and tablets, that his firm will be encouraging clients to use to capture data (and help the firm to manage the bookkeeping work that will feed into quarterly filings).

Francis Whitbread, tax partner at Edmund Carr, also has concerns about preparing clients for MTDfB - and the lack of HMRC information on the required software. He says: "Given that the implementation date for MTD for many UK businesses is April 2018, it is disappointing that HMRC has not been able to provide details of compliant software. Does it have any idea how long it takes to successfully introduce a client to a new accounting system? We need some substantive information on software providers, the form the quarterly summary will take and other issues."

Theresa Middleton, HMRC director for Making Tax Digital, says a wide range of software will emerge: "Software that is MTDfB-compatible, which has been tested with HMRC, will be listed on the GOV.UK website when it becomes available." But that when is looking increasingly later rather than

"Given the implementation date for many businesses is April 2018, it's disappointing HMRC hasn't been able to provide details of compliant software. Does it have any idea how long it takes to introduce a client to a new accounting system?"

sooner. According to one online report, Middleton admitted to peers during evidence before the House of Lords Finance Bill Sub-Committee that some providers' software will not be ready until October - six months after the MTDfB pilot begins in April 2017 (for more on HMRC see the box below left).

DEADLINES AND STANDARDS

Software developers are discovering they are between a rock and a hard place. "The main challenges are the timescales," says Steve Checkley, a director at Taxcalc and chair of the MTD special interest group at BASDA (a software developers' trade association). HMRC's back-end systems and commercial software for agents and taxpayers are all being developed in parallel. Checkley says: "There are still important matters outstanding."

Uncertainty around some of the HMRC application programming interfaces (APIs) that will enable revenue and commercial systems to communicate remains. "HMRC is changing things even as we are working on them," says Joel Oliver, CEO of MyFirmsApp. "One of the key difficulties is keeping on top of change around the APIs. For example, in December 2016 at one meeting with HMRC it revealed that it had changed how one API is structured."

In January 2017, after its MTDfB consultations (see tinyurl.com/GOV-MTD-Consult), HMRC announced that:

- businesses can use spreadsheets for electronic record keeping;
- those eligible for three line accounts can submit a quarterly update with just income, expenses and profit data; and
- free software will be available to businesses with the most straightforward affairs.

However, these clarifications raise their own thorny issues. Take spreadsheets, for example. To meet MTDfB requirements they will need to be combined with specialist software. "Spreadsheets will need keeping in a fixed, structured format, to enable software to read in the data and prepare the quarterly submission," explains Checkley. This is technically possible, but millions of businesses will need to use a fixed structure in place of myriad, personalised, spreadsheet structures they currently use for record keeping.

Then there is the "free software" that HMRC is

THE REVENUE PERSPECTIVE

As director for Making Tax Digital at HMRC, Theresa Middleton is responsible for developing the policy and services to enable Making Tax Digital for business (MTDfB). The aim is to transform the tax system, making it easier and quicker for taxpayers to keep on top of their tax affairs. She describes the quarterly filing of data to HMRC as "a light-touch process".

Taxpayers who capture and record transactions electronically should find filing the quarterly data straightforward: "A customer's record-keeping software will produce a summary of income and expenditure for the quarter, using information the taxpayer has already recorded, and prompt them to send that to HMRC," explains Middleton.

This world, she says, is not something HMRC can build alone. "We envisage a partnership between HMRC, agents and the software suppliers, to ensure that customers are aware of their MTDfB obligations, feel properly supported and have appropriate software available to them," Middleton states, acknowledging the "important role" of accountants during the transition.

"Agents are well placed to understand their clients' circumstances and needs, and help them make the right choices at the right times. We will be encouraging them to have those conversations with their clients," says Middleton. Though many firms feel as if HMRC has not yet provided them with the necessary information.

The Budget brought some relief, with a year's delay for businesses with revenue below the VAT threshold (£85,000), while the year-long pilot may also bring enlightenment: "We will share our experience of any transitional issues experienced by volunteers, together with guidance on how they can help clients benefit from good customer experience," Middleton says.

“confident” commercial developers will provide for those with the most straightforward affairs.

“Somebody has to pay for it somewhere,” says Gary Turner, managing director at Xero UK.

“We would never offer it. Not because we are greedy, but because there is a minimum level of service quality that people have to pay for, to ensure that a system is reliable and secure. When something is free, you pay for it another way.”

NEW ROLES AND RELATIONSHIPS

The ongoing digitalisation of tax administration and preparation is reshaping interrelationships between agents, HMRC, software developers and taxpayers. “A special relationship is developing between software developers and HMRC, because it needs them to provide the tools for MTDfB,” observes Anita Monteith, a technical manager in the ICAEW’s Tax Faculty. “As practices become more digitalised, the role of an agent will change too,” she adds.

This is evident in the MTDfB preparations being taken by some firms, such as Rotherham Taylor (see box, right), Stephen Farra Associates and Glover Stanbury. “Bookkeeping is where cloud is going to score and win,” says Salter. If you can get automated bank and credit card feeds working and clients making payments electronically, your firm may be able to viably support some of the self-employed and small businesses that will delegate their bookkeeping because they can’t cope with MTD.

As with any such project, timing is going to be critical. “We are hoping to get some people onto online bookkeeping now, so they have 12 months to get used to it before 2018,” says Salter. But not all accountants will want to digitalise their practices further.

“We’ve decided to go for it,” says Farra, but he knows some practitioners who are planning to retire. “I’ve already been contacted by a firm that wanted to know if we would like to take over their practice, because they can’t face MTD,” he says.

THE ELEPHANT IN THE ROOM

How the ongoing digitalisation of tax administration and preparation plays out in coming years remains to be seen. UK practitioners who are considering their options may want to note a recent development in the US, where H&R Block is collaborating with IBM, to apply the data analytics of its artificial intelligence, Watson, to tax preparation. You can watch the advertisements featuring *Mad Men* actor Jon Hamm on YouTube.

Evolution shows no mercy, but IBM and users of Watson like to position it as augmenting rather than replacing human beings. “We are creating a future where our clients will benefit from an enhanced experience and our tax professionals will have the latest technology to help them ensure every deduction and credit is found,” says Bill Cobb, H&R Block president and CEO.

Tax administration and preparation are evolving, which means practitioners must decide if they want to evolve too. ●

THE PRACTITIONER’S PERSPECTIVE

Rotherham Taylor is already preparing for the transition to Making Tax Digital (MTD) by developing its RT Clarity service to meet bookkeeping and compliance needs. “Our aim has been to create a package that is flexible enough to meet the wide variety of clients we serve,” says Rebecca Bradshaw, director at Rotherham Taylor.

“RT Clarity is key to our approach to supporting clients in making the transition to MTD,” says Bradshaw. The firm offers online accounting, so it has experience of helping clients to make the transition to capturing and recording their expenditure electronically. Although its default option for RT Clarity is Xero, the firm is open to clients using other cloud bookkeeping packages.

“Other packages we support include Sage One, KashFlow, Clearbooks and Intuit QuickBooks, although we do not restrict clients to these packages,” explains Bradshaw. The firm is so confident that it knows its debits and credits that it will work with any bookkeeping package, as long as the firm and the client can access the service simultaneously: “Our team is already experienced in helping clients make this transition, including sitting down with the relevant directors and staff members and talking them through the process of making the transition to online accounting.”

But the firm still anticipates some challenges. “The lack of specific detail on MTD, particularly in relation to limited company accounts, is a concern,” says Bradshaw. Meanwhile, supporting smaller clients with MTD will demand compliant commercial software. “We are still awaiting specific confirmation of the software requirements for MTD, although we expect this will be handled by the providers themselves.”

THE DEVELOPER’S PERSPECTIVE

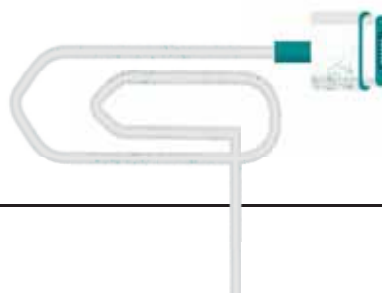
IRIS Software is one of the developers involved in a Making Tax Digital (MTD) private beta that HMRC has been running. It will also be involved in HMRC’s year-long public beta.

“We have been working closely with HMRC to ensure that its APIs and new technologies are robust and provide the required data,” says Steve Cox, IRIS Software’s product director. Yet the company still faces some practical challenges: “The infrastructure, data systems and public APIs [which are needed for software applications to communicate] are being developed by HMRC and it has set the bar high with its public beta start date of April 2017, especially when some important policy decisions are still to be confirmed,” he says.

“To enable software developers to build, test and deliver the tools for the market, detailed documentation, along with the actual APIs, are required from HMRC,” states Cox. “These details have been slow to emerge, but are increasing.”

Many agree that this lack of progress means HMRC may be cutting it fine. “HMRC is not widely promoting the digital tax project to small businesses, so it will inevitably fall back onto accountants to inform their clients of the impending changes. Right now, education and preparations are essential for firms beginning their digital tax journey,” explains Cox.

“Accountants must become fully educated on the changes and challenges the MTD project brings to their practices and their clients,” says Cox. “With this significant change in the amount and regularity of information requested by HMRC, practitioners need to digitally enable their practices and ensure they have the tools to work with their clients.”





REPORTING REVOLUTION

Philip Allen explores what lies behind the rise in global popularity of reporting format XBRL

Since its first adoption in Australia in 2001, there has been incredible growth in XBRL. In the last three years alone, the number of organisations adopting XBRL as the preferred reporting medium has virtually doubled. It has risen from more than seven million filings in over 50 countries involving over 70 regulators in 2014 to more than 15 million filings in over 100 countries involving over 140 regulators in 2016.

In the UK and Europe, this growth is expected to accelerate in 2017 and beyond. For example, the Basel IV and Solvency II initiatives for banking and insurance industries will be boosted further following the recent decision by the European Securities and Markets Authority to adopt Inline XBRL as its single electronic format for preparing and submitting annual reports for 7,000 securities issuers across Europe.

The reasons for this increase in acceptance lie in XBRL's ability to report and keep track of large amounts of complex data, both financial and non-financial. In banking and insurance regulation, this reporting and analysis from multiple financial institutions and, in consolidated form, from national authorities, is key to its success. XBRL's ability to communicate and compare complex corporate financial data without losing the context of individual disclosures is unparalleled in reporting of company financial accounts.

FACING UP TO THE CHALLENGES

Many regulators have seen opportunities that digital reporting presents in automating the processing and analysis of business reports. Not only do they present potential cost savings in processing returns, automation is empowering:

- tax authorities to rapidly assess and collect revenues due;
- business registers to receive and re-publish business reports more quickly and efficiently; and

From 7 million filings in over 50 countries involving over 70 regulators in 2014 - to more than 15 million filings in over 100 countries involving over 140 regulators in 2016

- financial authorities to improve their confidence that banks, insurers and securities issuers are meeting their capital and liquidity compliance requirements.

Despite this growth, XBRL still faces challenges that could potentially threaten its future.

One criticism of XBRL is that, despite its unmatched ability to accurately capture data, it is difficult to consolidate and contextualise data to drive business intelligence decisions. XBRL has had very low adoption to date from data analysts and researchers as these markets prefer to rely on data published in multiple non-structured formats.

Businesses are complex structures with many forms of subsidiaries and counterparties. These structures can sometimes be difficult to unpick and therefore hinder the automated analysis of business reports. To date, XBRL has been unable to effectively manage these relationships and present the resulting data in a meaningful way to downstream analysts and aggregators.

XBRL AND THE PROFESSION

The UK accountancy profession was introduced to XBRL in 2011 when HMRC first mandated companies and agents to file Corporation Tax returns formatted in iXBRL, followed by the submission of Annual Reports to Companies House. By "tagging" the main concepts in a set of financial accounts, consumers could analyse and compare company financials without having to cut and paste from PDFs. Benefits include more useable tax data, the collection of government statistics, automated assurance techniques and faster investment analysis. Other factors leading to the growth in XBRL use include quarterly returns to the SEC in the US and resilience reporting for European banking and insurance institutions.

In addition, Gartner's 2016 hype cycle for emerging technologies, which can be studied in more detail at tinyurl.com/Gart-Hype-Cycle, shows that blockchain is one of the top threats to disrupt the entire processes for financial transactions - and thereby potentially the infrastructure of business reporting.

How will smart contracts, crypto-currencies and distributed ledgers affect the way that companies carry out business operations and report on their activities? Do recent innovations in fintech, big data and other areas spell the end of XBRL? Or are the reports of its demise exaggerated?

FIGHTING BACK WITH SOLUTIONS

The XBRL community has not been slow in confronting and responding to these challenges. Recent developments by standards body XBRL International Inc (XII) mean new standards emerging. These maintain the integrity of the core standards and allow XBRL data to be published in JSON (JavaScript Object Notation). This format allows XBRL data to be easily and readily absorbed into big data, thereby streamlining its use in business intelligence and analytics applications.

For data collection, these new standards simplify the ingestion of business data in common formats such as CSV, allowing the data to be uploaded into the reporting chain from common business applications without the need for complex extract, transform and load processes, simplifying and reducing costs for those reporting.

The integration of blockchain and XBRL provides a seamless data solution, with blockchain as a potential output from XBRL-based reporting. Plus, blockchain's smart contracts might be facilitated by XBRL's powerful, persistent data model. Again, the community, in conjunction with banks, vendors and technologists, has initiated pilot projects to validate the benefit of integrating blockchain and XBRL.

A new joint initiative between XII and Global Legal Entity Identifier Foundation, the organisation responsible for unique legal entity identifiers (LEI) worldwide, is looking to embed LEI into XBRL taxonomies, allowing seamless identification of parties and counter-parties in enterprise reporting. This will provide significant benefits when comparing results between parent companies and subsidiaries. It will also assist in the complex task of understanding who owns who and ownership structures of subsidiaries and counter-parties.

LOOKING TO THE FUTURE

The continued development and adoption of XBRL globally is opening new horizons in automated analysis of business reports. New opportunities are being presented by combining the rigour of structured data with the wide-ranging capability of big data, and credit risk processing and exposure analysis could be enhanced by linking reports to parents and subsidiaries.

The benefits of structured data in business reporting are increasingly being embraced by larger enterprises and will continue to evolve as emerging technologies such as blockchain start to mature. But ultimately these new standards and new initiatives need robust solutions for the digital reporting market to respond to and take advantage of these new opportunities and new channels. ●



Philip Allen,
executive chairman,
CoreFiling and
chairman, XBRL UK

NEW EXCEL FUNCTIONS SINCE 2013

Excel's built-in functions could be the key to winning the spreadsheet battle. **Simon Hurst** selects those to consider adding to your arsenal

EXCEL 2013

Too many new functions were introduced in Excel 2013 to cover them all in detail. So, we have selected a few by category for further explanation. The full list is available at tinyurl.com/CHAR-XL-F-List

DATE AND TIME

- The DAYS function returns the number of complete days between two dates.
- The ISOWEEKNUM function returns the number of the ISO week number of the year for a given date.

The DAYS() function differs from simply subtracting one date value from another by returning an answer in whole days, ignoring any period less than a day (Figure 1).

ENGINEERING

The Engineering category for Excel 2013 saw 13 new functions introduced. Eight of these deal with operations on complex numbers, such as IMTAN() which returns the tangent of a complex number. The other five are to do with 'bitwise' operations - these work at the level of individual bits or binary representations of numbers.

FINANCIAL

- The PDURATION function returns the number of periods required by an investment to reach a specified value.
- The RRI function returns an equivalent interest rate for the growth of an investment.

Here is an example of using PDURATION() to calculate how many periods it would take to turn 2,000 into 250,000 at a periodic interest rate of 5%. The RRI() function then

reverses the process to calculate the periodic interest rate from the number of periods and the same values. We have included a formula check, calculating the final value from the starting value, interest rate and number of periods (Figure 2).

INFORMATION

- The ISFORMULA function returns TRUE if the referenced cell contains a formula.
- The SHEET function returns the sheet number of the referenced sheet. The sheet number is the position of the sheet, reading sheet tabs from left to right, including any hidden or very hidden sheets.

The reference can be a 'normal' cell reference in which case the sheet number of the sheet that the cell is on will be returned. The reference can also be a reference to the actual sheet name entered as text.

- The SHEETS function returns the number of sheets in a reference (again including hidden and very hidden sheets). For example, the following 3D reference includes three sheets and will therefore return 3: =SHEETS('New features (2):New features (4)!A11)

If no reference is entered, SHEETS() will return the number of sheets in the workbook.

LOGICAL

- The IFNA function returns the value you specify if the expression resolves to #N/A, otherwise returns the result of the expression.

This is similar to the IFERROR() function that combines IF() and ISERROR() to avoid the need to

recalculate the checked formula. The disadvantage of ISERROR() is that it doesn't discriminate between different types of error, so can mask an error that you weren't anticipating. IFNA() gives the advantages of IFERROR() but being specific to #N/A errors when, for example, a lookup function fails to find a match.

- The XOR function returns the logical exclusive OR of all arguments:

| | | | | |
|-------------|------|-------|-------|-------|
| | TRUE | TRUE | TRUE | FALSE |
| | TRUE | TRUE | FALSE | FALSE |
| | TRUE | FALSE | FALSE | FALSE |
| =XOR(B1:B3) | TRUE | FALSE | TRUE | FALSE |

LOOKUP AND REFERENCE

FORMULATEXT() displays the formula in the referenced cells. We have used it throughout the screenshots for this article.

TEXT

There are three new text functions, including the NUMBERVALUE() function that converts a text value to a number in a 'locale-independent manner', eg, to convert European format numbers that are recognised as text to actual values: 1.00,90 100.9 =NUMBERVALUE(A1,"",",")

The characters originally used for the decimal 'point' and separator are entered as the second and third arguments.

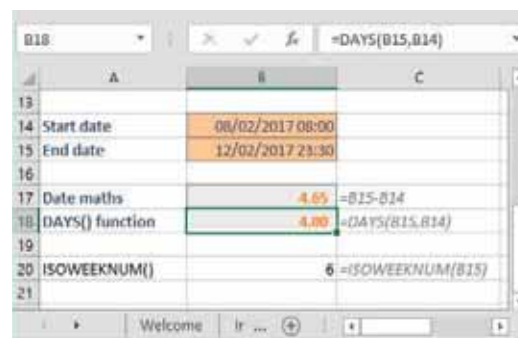


Figure 1

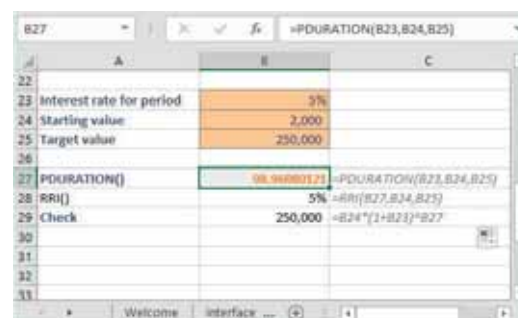


Figure 2

OTHER CATEGORIES

Excel 2013 included 15 new maths and trigonometry functions, including ARABIC(), BASE() and DECIMAL() for number conversions, five new statistical functions and three functions for working with web data and services.

EXCEL 2016: FORECAST FUNCTIONS

There are five new forecast functions to support the new Data, Forecast sheet feature.

JANUARY UPDATE

Although the first release of Excel 2016 didn't include the following functions, they were introduced for Office365 subscribers in the January 2016 update. This means that, even if you have Excel 2016, you might not have access to these functions if you have a 'retail', rather than subscription, licence.

In Excel 2007, SUMIFS() extended the existing SUMIF() function to include the ability to use multiple pairs of criterion and criterion range to calculate a conditional sum. The IFS() family also includes COUNTIFS() and AVERAGEIFS(). The January update added MAXIFS() and MINIFS() (Figure 3).

IFS()

IFS() is intended to avoid the need to embed multiple IF() statements to evaluate multiple criteria.

IFS() uses a series of paired arguments. The first argument of each pair is an expression that evaluates to TRUE or FALSE (zero being FALSE and all other numeric values TRUE, text returning a #VALUE! error). Generally, the alternative to embedded IF() functions would be to use a lookup function, but IFS() is more flexible than using lookup.

Each expression can be different. The function returns the result of the first argument pair that returns TRUE. It's also a good idea to include a 'default' result as the last argument pair otherwise, if none of the criteria evaluate to TRUE, the function will return #N/A. For example, include TRUE,0 as the last argument pair to return 0 if none of the earlier criteria are satisfied, rather than #N/A.

This example shows the use of

embedded IF() functions compared with IFS() and VLOOKUP(). In this case, VLOOKUP() is likely to be the best solution - it is easier to set up, simpler and will adjust automatically to added data (Figure 4).

SWITCH()

SWITCH() differs from IFS() in that you enter just one initial expression and then enter multiple pairs of value and result arguments. The result from the first pair where the value matches the expression result will be returned. In some ways, SWITCH() is just a more complex and less flexible way of performing an exact lookup, but it does have the capability of each result being an expression rather than just a cell value. For example, you could use it to calculate the actual tax payable in the above example.

CONCAT()

CONCAT() is similar to CONCATENATE() but where CONCATENATE() can only use individual values or cell references for each of its arguments whereas CONCAT() can use cell ranges.

TEXTJOIN()

Like CONCAT() and CONCATENATE(), TEXTJOIN() joins strings of text together. However, it includes the additional ability to enter one or more characters that will be used as separators between each item of text. It is also possible to specify whether an empty cell in a range will trigger the use of the separator or not.

TEXTJOIN() includes one argument for specifying the separator character or characters, another for specifying whether or not empty cells should be ignored and then up to 252 arguments for specifying individual cells or ranges of cells containing the text values themselves (Figure 5).

Note that in our example we have added spaces in CONCATENATE() as additional arguments. CONCAT() allows us to just specify a range, rather than individual cells, but we would need to add a space at the end of our original text entries. The other new text function, TEXTJOIN(), solves this problem with its ability to enter a separator entry as well as a range. ●

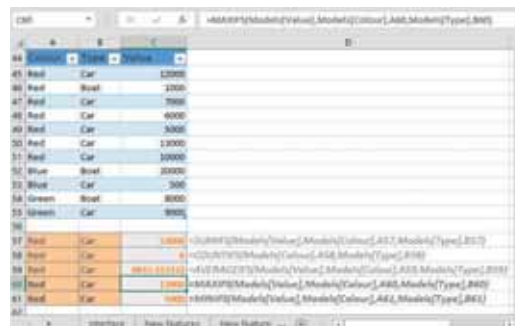


Figure 3

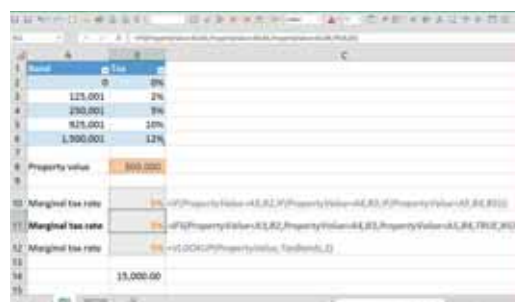


Figure 4

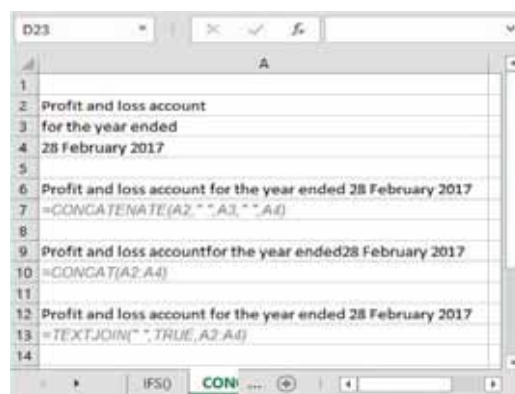


Figure 5

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



LEO WALDOCK

UNLOCKING UNEASY TRUTHS

In the wake of the latest *Wikileaks* revelation of severe privacy intrusion, Leo Waldock wonders to what extent we need to worry about our devices

In March 2017 *Wikileaks* released a massive amount of data called Vault 7. I am not clear why it is called Vault 7 or what happened to Vaults 1-6 but that's fine, there is plenty to be getting on with here. The archive contains 8,761 documents and files that demonstrate how the CIA could hack any data or device that belongs to anyone, anywhere. That sounds like the most ridiculous conspiracy theory, with the unfortunate kicker that it appears to be true. *Wikileaks*, despite upsetting a great many people over the years, has a 100% record of accuracy. And those attempting to discredit *Wikileaks* have, to date, failed to do so.

Vault 7 is a collection of hacking tools that ought to be controlled by the CIA, however it has clearly been shared between sub-contractors. It seems that one of these decided to pass Vault 7 to *Wikileaks*. The press has latched on to hacking tools with names such as Weeping Angel, GyrFalcon, Flash Bang and Grasshopper. We don't have the space or time here to look at the detail, so instead let's stick with the bigger picture. Using the tools in Vault 7 allows the CIA to get inside mobile phones running iOS, Android and Windows. Apart from gaining access to the obvious stuff such as email, phone call and text messages, any device with a microphone or webcam could be enabled as a remote monitoring tool, and no - the red light won't come on to alert you about the monitoring.

This monitoring has a wider reach than may be expected. An Android phone could be used as a wifi listening post to spy on any wifi routers that are nearby.

In other words, your phone could be compromised and used to report on the activity of other wifi devices in your home or office.

To add to the fun, the CIA can apparently make its malware appear to belong to foreign intelligence agencies. It clearly doesn't matter whether they hack US citizens (which is illegal) as well as foreigners.

But perhaps the most ominous revelation is that those with access could potentially hack modern cars and crash them. In this context the death of US journalist Michael Hastings in 2013 might be considered to look suspicious (there have long been conspiracy theories about his fatal crash).


We have long known the NSA was able to tap into data traffic that passed through the US. For some while we assumed the NSA didn't have the capacity to throw a broad net and trusted they used a targeted approach. However, Edward Snowden told us they could trawl through everything. Furthermore, the big tech companies such as Apple, Facebook, Google and Microsoft were unable to warn their customers about data tapping for fear of prosecution. Now, we have learned the CIA can probably hack pretty much anything, anywhere.

We might hope that manufacturers of devices will help their customers, but I have my doubts. The problem is that the features they love - constant internet connection, automatic software updates and streams of data flowing back and forth - suits the security people down to a tee. Voice activated hardware where you ask Siri or say 'OK Google' is necessarily listening for the correct key words before it leaps into action.

Personally I do not like the idea of paying for Amazon Echo and Echo Dot, where the Amazon ordering system is alert to your conversations and waiting to sell you stuff, even though this is all seemingly above board and openly known. Now, it seems we have to add the clandestine CIA approach into the equation, which is a truly awful prospect.

The point that George Orwell was indicating in 1984 is that if we are surrounded by microphones and cameras that might be monitoring our words and actions then we shall start to live our lives as though we are being monitored. There is very little we can do, apart from leading innocent lives as pure as the driven snow. And that advice is now more important than ever. ●

Leo Waldock, freelance IT writer



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