

# Computer Weekly

14-20 JULY 2015

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## The most influential women in IT



Computer Weekly recognises 50 inspirational women who are role models for diversity and success in technology



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## British Airways opens up API on flight information to IT developers

British Airways (BA) has provided an open application programming interface (API) for flight information to IT developers, which it hopes will lead to innovative ways for people to search for and buy BA flights. The airline said the APIs will eventually let travel agents offer a more innovative and personalised service to their customers, by offering ancillary services and showcasing the customer experience in the air and on the ground.

## Microsoft to cut 7,800 jobs as part of mobile business restructure

Microsoft is to cut 7,800 jobs from its global workforce over the next several months, as part of a wider restructure of the software giant's phone business. CEO Satya Nadella confirmed the moves in an email to employees, which he claims will result in the development of a "more effective" portfolio of Windows-running mobile devices.

## Campaigners call for independent inquiry into Post Office IT dispute

Campaigners for subpostmasters who claim to have been falsely accused of theft and misaccounting are calling for an independent inquiry into the Post Office's Horizon IT system. The calls for an inquiry came after a government minister repeated the Post Office's claims that an independent investigation had shown no evidence of problems with the Horizon accounting system and the processes that support it.

## Ofcom fines EE £1m for breaking regulatory complaints procedures

Ofcom fined EE £1m for failing to comply with the telecoms regulator's complaints procedure for customers. An Ofcom investigation revealed that, between 22 July 2011 and 8 April 2014, EE did not provide customers with accurate or adequate information about their right to take their complaint to an alternative dispute resolution scheme.



REXFEATURES

## George Osborne announces support for technology research

Chancellor of the exchequer George Osborne has delivered the first budget of the new parliament, making commitments around the IT needed to support tax reform, as well as pledging more investment in scientific and technological research.

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## BBC to deliver a million micro:bit computers to schoolchildren

The BBC plans to give one million codeable micro:bit computers to Year 7 students this autumn, as part of its Make it Digital strategy. The Make it Digital strategy was launched in September 2014 to encourage people into coding, programming and digital technology.

## Rolls-Royce signs up to supercomputing on-demand

Aircraft engine maker Rolls-Royce has signed a high-performance computing (HPC) contract to give it access to the Engineering and Physical Sciences Research Council's HPC Midlands facility.

## Microsoft Azure price hike to hit cloud users in the Eurozone

European cloud users should brace themselves for further price hikes, after Microsoft confirmed plans to charge enterprise users more to use its off-premise products from the beginning of August.

## Manchester City group partners with SAP to further global goals

The City Football Group, which includes Manchester City FC, is partnering with SAP to further its global goals. The group said it is looking to "co-innovate with SAP on new technological enhancements in the areas of talent management and football performance".

## BDUK reaches the Outer Hebrides

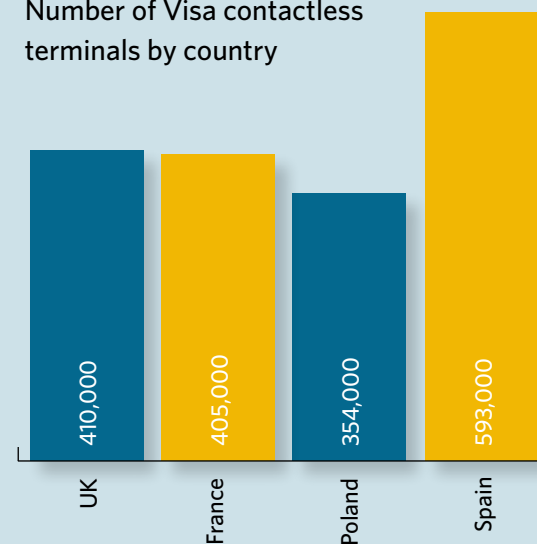
The Digital Scotland Superfast Broadband project has arrived on the remote islands of the Outer Hebrides, with the first fibre-to-the-cabinet broadband services being enabled in the town of Stornoway.

## Non-EU IT workers in the UK increase by 13% in a year

The number of IT professionals from outside the European Union (EU) plying their trade in the UK increased by 13% in 2014 compared with the previous year, according to government figures. ■

## More than one billion Visa contactless transactions in Europe in 12 months

Number of Visa contactless terminals by country



Source: Visa Europe

- ▶ *Symantec uncovers Morpho cyber espionage operation.*
- ▶ *Facebook builds wind-powered datacentre in Texas.*
- ▶ *Tech experts warn against law enforcement backdoors.*
- ▶ *HP pulls out of ESN bid process.*

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# The 50 most influential women in IT 2015

*Computer Weekly recognises 50 inspirational women who are role models for diversity and success in technology*

**C**omputer Weekly has announced the fourth annual list of the most influential women in UK IT, this year extending the list to 50 female leaders in technology.

The aim of compiling the annual list of the top women in UK IT is to focus on the role of women in tech, to recognise the most influential role models and to discuss the vital part that female IT leaders play in the UK's high-tech economy.

The 50 inspirational women featured in the 2015 list are role models for diversity and success among the tech community.

## **1 JACQUELINE DE ROJAS, AREA VICE-PRESIDENT, NORTHERN EUROPE, CITRIX; DEPUTY PRESIDENT AND CHAMPION FOR WOMEN IN TECHNOLOGY, TECHUK**

Jacqueline de Rojas (see *interview, page 12*) has 25 years' experience in leading technology businesses. She is area vice-president and general manager, Northern Europe, at Citrix. She also serves on the board of IT trade body TechUK as deputy president and board champion for women in technology. She has been a non-executive director on the board of Home Retail Group since December 2012. De Rojas is also an active member of the Prince's Trust Technology Leadership Group, which gives vulnerable young

people the practical and financial support needed to develop self-esteem and skills for work. Previously, she was vice-president and general manager, UK and Ireland, at CA Technologies.

## **2 CATHERINE DORAN, CIO, ROYAL MAIL GROUP**

Catherine Doran joined Royal Mail in 2011, inheriting a controversial IT transformation programme and the government's sell-off of the postal service. Her five-year IT strategy has successfully improved the technology estate. In a large-scale recruitment initiative, Doran targeted 30% of new starters to be women - and now 31% of her 500 IT staff are female. She joined Royal Mail from Network Rail where she led a company-wide transformation programme.

## **3 JOANNA SHIELDS, PARLIAMENTARY UNDER-SECRETARY OF STATE, DCMS; DIGITAL ECONOMY ADVISOR TO THE PRIME MINISTER**

Joanna Shields was appointed parliamentary under-secretary of state at the Department for Culture, Media & Sport (DCMS) after the 2015 general election, a role that sees her looking after policy for internet safety and security. She is also a digital economy

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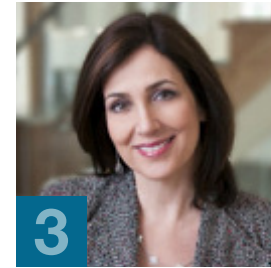
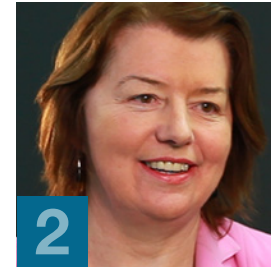
advisor to the prime minister. She was CEO and chair of [Tech City](#) and the UK government's business ambassador for digital industries. Before that she was vice-president and general manager of Facebook in Europe. She has also been president of people networks at AOL, a position she assumed after AOL's acquisition of Bebo. She is a former winner of Computer Weekly's most influential woman in UK IT award.

**4 MAGGIE PHILBIN, CEO, TEENTECH**

Maggie Philbin has worked in radio and television for over 30 years on a wide range of science, medical and technology programmes. She is co-founder and CEO of TeenTech, an award-winning organisation helping young people, their parents and teachers understand more about the real opportunities in science and technology. Reporting on science and technology for the BBC's *Bang Goes The Theory*, providing analysis and comment on technology for BBC Webwise and a regular reporter on BBC One's *Inside Out*, she has a unique resonance with audiences, having grown up with them on much-loved shows such as *Swap Shop* and *Tomorrow's World*.

**5 JANE MORAN, GLOBAL CIO, UNILEVER**

Jane Moran took over as CIO of consumer goods giant Unilever in June 2014, after four years as global CIO at Thomson Reuters. At Unilever, she is involved with some of the most innovative technology developments in industry - the internet of things, 3D printing and a new programme to fund and work with tech startups. She is also a major supporter of efforts to encourage



- 1. Jacqueline de Rojas
- 2. Catherine Doran
- 3. Joanna Shields
- 4. Maggie Philbin
- 5. Jane Moran
- 6. Sherry Coutu
- 7. Sue Black
- 8. Melissa Di Donato
- 9. Gillian Arnold
- 10. Hannah Dee



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more women into IT, and Computer Weekly readers voted her as the Most Influential Woman in UK IT in 2012. At Unilever, Moran is helping to reshape one of the UK's most important companies for the digital world. In 2014, [Computer Weekly's UKtech50](#) award for the most influential person in UK IT went to Moran.

## 6 SHERRY COUTU, ANGEL INVESTOR AND FOUNDER OF FOUNDERS4SCHOOLS

Sherry Coutu is one of Britain's most successful angel investors, working with and investing in entrepreneurs to solve problems for patients in medical technology sectors and students and teachers in technology for education. She advises and serves on the boards of companies, charities and institutions such as the London Stock Exchange, Cambridge University, LinkedIn, Raspberry Pi and Care.com. As an angel investor, she has made direct angel investments in more than 50 companies and holds investments in three venture capital firms. She founded and chairs the not-for-profit organisations Founders4schools and Silicon Valley comes to the UK, and serves on the board of the Francis Crick Institute.

## 7 SUE BLACK, FOUNDER, TECHMUMS; BLETCHLEY PARK CAMPAIGNER

Sue Black is founder of Techmums, a social enterprise aiming to give mothers the confidence, skills and understanding they need to ensure they and their children can make the most of technology. She was recently appointed as a judge for the 2015 L'Oreal-Unesco For Women in Science Fellowship. Black has been widely acclaimed for her role in campaigning to save [Bletchley Park](#), the

home of the UK's secret codebreakers in the Second World War. She founded [BCSWomen](#) in 2001, which now has more than 1,200 members. She was formerly a senior research associate in the department of computer science at University College London.

## 8 MELISSA DI DONATO, AREA VICE-PRESIDENT, SALESFORCE.COM CHANNELS AND ISVs

Melissa Di Donato joined Salesforce.com in 2010 and is area vice-president of ISV and channel programmes for Europe, the Middle East and Africa and Asia-Pacific (Apac). She chairs a European ISV Advisory Innovation Board, is a board member for EuroCloud in the UK and is an advisor to various technology companies in the UK and in Silicon Valley. Di Donato is a philanthropist focusing on science, technology, engineering and mathematics (Stem) initiatives and mentoring women in business. She has recently been named as leader of the Tech Working Group of the [30% Club](#).

## 9 GILLIAN ARNOLD, CHAIR OF BCSWOMEN; FOUNDER OF TECTRE

Gillian Arnold is chair of BCSWomen, part of BCS, the Chartered Institute for IT. She has 30 years' experience in the IT industry, including 22 with IBM, and has undertaken customer-facing technical, sales, business development, strategic marketing and consultancy roles. She has managed and established teams for new products, and built teams with cross-industry and cross-platform experience across Europe and the UK. She has now retired from IBM. She is interested in encouraging more women into the science

*continued on page 8*

› *Inspirational females share advice on being a woman in the technology industry*

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## Computer Weekly's most influential women in UK IT hall of fame

Computer Weekly has launched a "hall of fame" to showcase Britain's most successful female IT leaders for their commitment and contribution to the IT industry and their efforts in encouraging more women to join the tech sector.

The hall of fame sits alongside Computer Weekly's annual list of the most influential women in UK IT, and was established to highlight those who have appeared prominently on the list every year, in recognition of their longevity and lifetime contribution.

This recognition allows judges to instead include new entrants to the list, allowing more new role models to obtain the prominence that appearing on the list provides.

### Introducing the inaugural hall of fame members

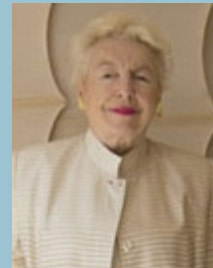
#### Dame Wendy Hall



Topping the 2014 list of the Most Influential Women in UK IT, Wendy Hall has been

entered into the hall of fame for her many achievements and commitment to furthering the cause of women in technology throughout her career.

#### Dame Stephanie Shirley



Stephanie "Steve" Shirley has been entered into the hall of fame due to her sustained com-

mitment to the IT sector. Shirley's approach to flexible working and job sharing for women in the 1960s was revolutionary and paved the way for women working in the technology industry today.

#### Baroness Martha Lane Fox



Martha Lane Fox is known best for co-founding Lastminute.com, but has been entered

into the hall of fame for her efforts in transforming the lives of millions as a UK digital champion and for supporting the notion that women should be at the heart of the technology sector.

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and technology sectors and has chaired a forum for IT trade body Intellect. She sits on the board of directors for the UK Resource Centre for Women in Science, Engineering and Technology.

## 10 HANNAH DEE, LECTURER IN COMPUTER SCIENCE, ABERYSTWYTH UNIVERSITY

Hannah Dee set up the BCSWomen Lovelace Colloquium, the UK's main conference for female undergraduates, which she has run for the past seven years. She has a degree in cognitive science, a master's in philosophy and a doctorate in computing, all from the University of Leeds. Her research areas are computer vision for the analysis of human behaviour, the detection of shadows and reasoning about shadows, and student attitudes to the study of computer science. She has held post-doctoral positions in Grenoble (France), Leeds and Kingston upon Thames. She is a women in computing activist and deputy chair of BCSWomen.

## 11 TRUDY NORRIS-GREY, GENERAL MANAGER, CENTRAL AND EASTERN EUROPE, MICROSOFT; CHAIR OF WISE

Trudy Norris-Grey is chair of Wise (Women in science, engineering and technology) and managing director of Microsoft's public sector business in central and eastern Europe. The Wise campaign is aimed at encouraging more girls and women to pursue Stem careers. Previously, she held senior executive positions at BT, Sun Microsystems, Oracle and Eastman Kodak. She has also chaired the CBI Innovation, Science and Technology Committee and was chair of UKRC before it merged with Wise.

## 12 EMMA MCGUIGAN, MANAGING DIRECTOR, ACCENTURE'S UK AND IRELAND TECHNOLOGY GROUP

Emma McGuigan runs Accenture's UK and Ireland technology business, which includes consulting and outsourcing for 70% of Accenture's UK business. She joined Accenture in 1994 after graduating with a master's degree in electronics from the University of Edinburgh. McGuigan leads Accenture's work with Stemettes, a charity dedicated to increasing the number of women in Stem careers. In 2012, she was the technology category winner of Women in the City's Woman of Achievement Awards and in 2013 was made a fellow of BCS, The Chartered Institute for IT.

## 13 SHEILA FLAVELL, COO, FDM GROUP

Sheila Flavell was appointed chief operating officer of IT services firm FDM Group in 2008. She played an integral role in the group's flotation on AIM in 2005 and was a key instigator of the management buyout of the group in 2010 and the subsequent float on the main FTSE market in June 2014. Flavell campaigns for promoting women in IT. She won the corporate leader of the year award at the Cisco everywoman in Technology Awards 2012 and is the driving force behind FDM's Global Women in IT initiative.

## 14 SUSAN COOKLIN, CIO, NETWORK RAIL

Susan Cooklin is group CIO and director of shared services at Network Rail. Her career spans over 20 years in financial services, leading business, technology and operational teams across global organisations. She also is a non-executive director

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on the board of Leeds Building Society. In 2013, she launched Could IT Be You? – a competition for girls aged between 16 and 18 to raise awareness of IT as a career for young women. The winning girl has her first-year university fees paid for by Network Rail. Susan also sits on the CIO board of the Tech Partnership and is a member of the Shadbolt Advisory Group on accreditation of computer science degrees.

## 15 **LYN GROBLER, VICE-PRESIDENT AND CIO, CORPORATE FUNCTIONS, BP**

As BP's vice-president and CIO for corporate functions, Lyn Grobler is responsible for driving the technology strategy and capability that underpins these operations. Her BP career spans 12 years, including CIO of Oil Europe Trading, head of strategy and architecture and head of portfolio planning. Grobler is a sponsor for the progression of women in technology, both within BP and externally. She is a member of a number of senior women's groups collaborating to drive greater gender balance in technology and wider Stem careers.

## 16 **SHIRLEY CREED, GLOBAL CORPORATE SECRETARY, DELL**

Shirley Creed is a member of Dell's Europe, Middle East and Africa legal senior management team, with over 20 years' experience in the IT industry. She is a fellow of the Institute of Chartered Company Secretaries and Administrators (ICSA), freeman of the Worshipful Company of Chartered Secretaries and Administrators and deputy chair of TechUK's Women's Council. She is a core team

member of Connecting Women in Technology and a driver in supporting efforts to encourage more women into IT and expanding the opportunities for women in IT both internally – where she leads the gender network in Dell England – and externally.

## 17 **SARAH WILKINSON, CTO, HOME OFFICE**

The Home Office appointed Credit Suisse's head of corporate systems technology, Sarah Wilkinson, as its chief technology officer (CTO) in February. At the Home Office she is responsible for many of the most critical IT systems supporting UK borders and policing. Wilkinson was managing director and head of corporate systems technology at Credit Suisse for over two years, having previously worked at HSBC, UBS and Deutsche Bank in various senior IT roles. She also sits on Telefonica's startup accelerator, Wayra, as a board adviser.

## 18 **MAGGIE VAN'T HOFF, GENERAL MANAGER, RETAIL IT, SHELL**

Maggie Van't Hoff is general manager of retail IT at oil giant Shell. She joined Shell in 1987 and has spent 27 years in various IT positions, including support, development, project management, business development, infrastructure service delivery, business interface, strategy and planning, and IT management. She has worked in the US, the UK and the Netherlands across downstream, chemicals, global functions, group CIO office and infrastructure. She is president of the Shell Women's Network in the UK, a former president of Shell Women's Network in the Netherlands and an active mentor inside and outside of Shell.

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**19 REBECCA GEORGE, PARTNER, DELOITTE**  
Rebecca George leads Deloitte's public sector and health practice in the UK and is co-leader of its global healthcare strategy. She is responsible for the work Deloitte does with the Department of Health, health regulators and the NHS. She joined Deloitte as a partner in 2006 after spending nearly 20 years at IBM in a variety of roles, including sales, business process re-engineering and human resources. George has been involved in activities to increase the participation of women in the IT industry since the mid-1990s. She is trustee at BCS, The Chartered Institute for IT, where she is a fellow and chairs the policy and public affairs board.

**20 CHI ONWURAH, SHADOW DIGITAL  
GOVERNMENT MINISTER; LABOUR MP  
FOR NEWCASTLE UPON TYNE CENTRAL**

Chinyelu Onwurah is shadow Cabinet Office minister for digital government, including cyber security. She led Labour's pre-election review of digital government policy. She was first elected at the 2010 general election as MP for Newcastle upon Tyne Central and retained her seat this year. A chartered engineer and former head of telecoms technology at UK telecoms regulator Ofcom, she is co-chair of the Parliamentary ICT forum (Pictfor) and board member of the Parliamentary Office of Science and Technology.

**21 URSULA MORGENSTERN, CEO,  
ATOS UK AND IRELAND**

Ursula Morgenstern has been CEO at Atos UK and Ireland since January 2012. In 2013, she was also appointed global CEO of

Canopy, the Atos cloud and enterprise software service line. She joined Atos Origin in 2004 as head of enterprise solutions, having previously been a partner at KPMG for four years and general manager at K&V Information Systems.

**22 BINDI KARIA, VICE-PRESIDENT OF  
ACCELERATOR, SILICON VALLEY BANK**

Bindi Karia leads Silicon Valley Bank's early-stage efforts as vice-president for its origination and entrepreneur commercial banking arm Accelerator. She has spent much of her career in and around the startup ecosystem, most recently as the venture capital/emerging business lead at Microsoft UK. For five years she led BizSpark in the UK (now known as Microsoft Ventures), concentrating on early-stage technology businesses, as well as being responsible for working alongside venture capitalists and angels on behalf of Microsoft. She sits on many industry advisory boards and has recently been appointed a trustee for Startup Weekend Europe and is an active supporter of many of London's top incubators, including Seedcamp, TechStars, Startupbootcamp, Wayra, Entrepreneur First and Level39.

**23 EMER TIMMONS, PRESIDENT,  
BT GLOBAL SERVICES UK**

Emer Timmons has held key roles at large telecoms and professional services firms for over 17 years and is now president of BT Global Services UK. She joined BT in 2006. She represents BT as a founding member of the Board of the National Equality Standard. Committed to furthering equality, the National Equality Standard

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is supported by the Home Office, the Equality and Human Rights Commission and the CBI. Timmons has also recently joined The Women's Business Council, set up by the government in 2013 to drive a more modern and diverse workforce.

## 24 **DEBBIE FORSTER, CO-CEO, APPS FOR GOOD**

Debbie Forster is co-CEO of Apps for Good, an education and technology charity, where she oversees business and daily operations. Apps for Good teaches young people to create apps that can change their world. She also serves as CDI Europe's lead expert on education, public sector and policy. Forster has 20 years of educational experience, 13 of them in leadership roles, including as head teacher of a comprehensive school. At e-Skills UK, she led on education policy and strategic engagement, working with employers, educators and policymakers in the technology sector.

## 25 **KATE RUSSELL, AUTHOR, TECHNOLOGY REPORTER, SPEAKER AND EDUCATOR**

Kate Russell has been writing about technology and the internet since 1995. She appears weekly on BBC technology programme *Click*, speaks at conferences and lectures in schools and universities inspiring the next generation of technologists. Her website, [KateRussell.co.uk](http://KateRussell.co.uk), won the 2015 UK Blog Awards for best individual digital and technology blog. Her debut novel was published last year under official licence to space trading game *Elite: Dangerous* - the childhood passion that inspired her love of technology. As part of the licensing deal she got to name a planet in the latest release of the game. She called it Slough. ■

## Most influential women in IT: 26-50

26. Claire Vyvyan, Dell Enterprise Solutions Group
27. Claire Cockerton, Innovate Finance
28. Christina Scott, Financial Times/Pearson Professional
29. Anne-Marie Imafidon, Deutsche Bank/Stemettes
30. Dido Harding, TalkTalk
31. Kirstin Duffield, Morning Data
32. Anna Barsby, Halfords
33. Caroline Graham, Barclays/WeAreTheCity India
34. Nicola Mendelsohn, Facebook Europe
35. Liz Bacon, BCS
36. Christine Ashton, Thomson Reuters
37. Christine Hodgson, Capgemini
38. Emma Mulqueeny, Rewired State
39. Clare Sutcliffe, Code Club
40. Eileen Burbidge, Passion Capital
41. Karen Price, The Tech Partnership
42. Belinda Parmar, Lady Geek
43. Elizabeth Varley, TechHub
44. Helen Lamb, Fujitsu
45. Helen Milner, Tinder Foundation
46. Avid Larizadeh, Google Ventures/Hour of Code
47. Lesley Sewell, Post Office
48. Naomi Climer, Sony/Institute of Engineering & Technology
49. Kathryn Parsons, Decoded
50. Eileen Naughton, Google

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# IT sector needs 're-framing', says UK's most influential woman in IT, Jacqueline de Rojas

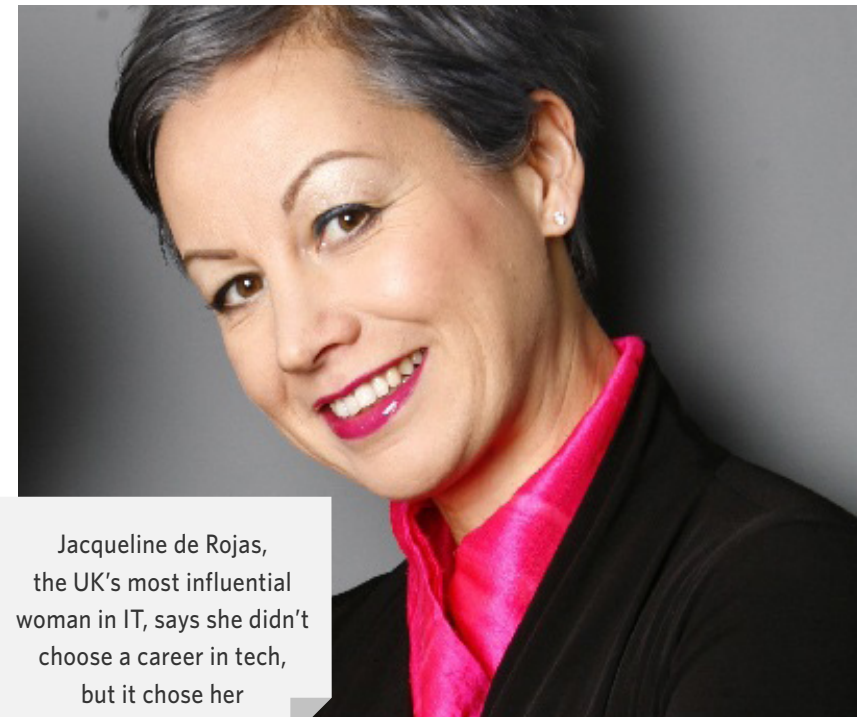
*The 2015 winner of Computer Weekly's most influential woman in IT accolade tells [Kayleigh Bateman](#) how the technology industry needs to change the way it presents itself to attract problem-solving women*

**W**omen are the "crisis managers of the world" so the IT industry needs to "re-frame" how it presents itself to women to make jobs in technology more appealing, according to the [most influential woman in UK IT 2015](#), Jacqueline de Rojas.

De Rojas, who is area vice-president for northern Europe at Citrix and deputy president of TechUK, topped Computer Weekly's 2015 list of the 50 most influential women in UK IT.

Speaking of her own experience of carving out a career in IT, de Rojas tells Computer Weekly she did not choose the tech industry, rather it chose her. "I actually wanted to read the news - I wanted to be a newscaster," she says.

"I did a language and business degree in Germany, one of the creative arts, and then came back to the UK to look for my first job. I was offered a job in technology recruitment, so it was all about people and how they impact the business. After two years, I went to work for my largest client, which was a tech company called Synon."



Jacqueline de Rojas, the UK's most influential woman in IT, says she didn't choose a career in tech, but it chose her

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Discussing the challenge of [attracting more females to the IT sector](#), de Rojas suggests one way would be to “re-frame” the way the industry advertises job roles and presents itself as a whole.

“Women are probably the crisis managers of the world – aren’t we all just saviours of the planet when it comes to being under pressure with our families or work? If we re-frame what that role is – instead of saying it’s a coding job or an engineering job, we should re-frame that as problem-solving – I think that would really make a difference in encouraging young girls into the industry,” she says.

“[Wearable tech](#) is a great example of that, where you can take lots of different metrics for people who want to stay in their own homes rather than go into a care home, for example, and to be able to use that technology to great effect. I really think that will make a big difference.”

De Rojas says she has had some amazing role models throughout her own career journey, and the industry needs to find more to encourage the next generations.

“I don’t think we called them mentors or sponsors back then, but I had people who cared about me and who cared about my career outcome, and that served me very well through my own journey,” she says.

Despite the tech sector having campaigned for several years for more women in technology, the number entering the sector is slowly [declining](#). “It is really interesting that we’ve done so much work to encourage women and girls into the industry, but that the number has still declined,” says de Rojas. “There are three things that I would probably focus on.

“One, if we really want it we have to really focus on it, and that means creating internships – I wouldn’t call them apprenticeships, but internships, so changing the language on how we encourage girls into tech at a young age.

“Two, I’d say funding is important – so encourage things like free [training in technology for women](#) returners or just women who

**“IF WE RE-FRAME WHAT A ROLE IS  
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YOUNG GIRLS INTO THE INDUSTRY”**

JACQUELINE DE ROJAS, CITRIX AND TECHUK

want to go into tech. That will certainly make a practical difference quickly.

“And three, I’d just make it fun. This is the industry which is all about innovation, creative gamification and wearable technology. We need to make it something to be excited about to encourage young girls into the industry.” ■

# Five women with an influential future in IT

*Computer Weekly reveals five rising stars for 2015 as part of its 50 most influential women in UK IT awards*

**D**uring the selection process for Computer Weekly's list of [50 most influential women](#), the judges felt that a "rising star" category should be added so that a small group could be acknowledged separately for their work and potential.

The judges selected five women whose growing influence is likely to make them candidates for the top 50 in coming years.

The [Salesforce Foundation](#) has offered to work with this year's rising stars to support them in reaching more women in technology and influencing the next generation.

The foundation will work as a facilitator to help the rising stars become involved in programmes designed to support young people in [science, technology, engineering and maths](#) (Stem) education.



Thank you to our most influential women in UK IT event gold sponsor Salesforce.com and silver sponsor Hitachi Data Systems. Special thanks to the Salesforce Foundation for extending its support to our 2015 rising stars.



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Charlotte Finn, foundation director at Salesforce, said the Salesforce Foundation was delighted to be supporting the Computer Weekly rising stars.

"One of the key missions of the foundation is to deliver effective programmes with a focus on Stem education and workforce readiness," she said.

"The rising stars are the next leaders in the technology sector and a collaboration will enable them to support, mentor and coach the future generations of rising stars, whilst at the same time allowing them to reach and expand their networks into key, transformational programmes designed to help young girls be successful in Stem," Finn added. ■

## Introducing Computer Weekly's 2015 rising stars



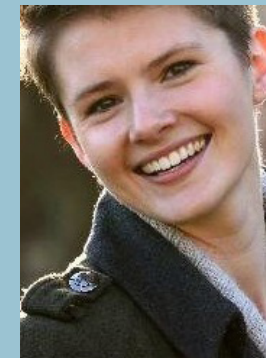
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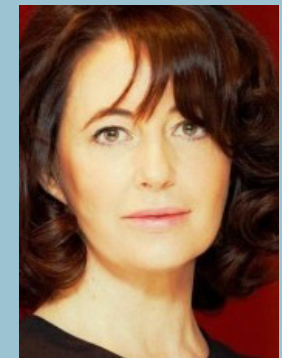
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# Time to build on support for women in IT

Computer Weekly's annual event to announce our list of the 50 most influential women in UK IT has become our most popular event of the year. We're delighted with the way the IT community has engaged with the programme to recognise and promote the amazing female role models in technology.

This year, we had nearly 150 women nominated for the list - three times the number when the list was first put together in 2012. Our online reader vote attracted more than 7,500 votes, which is 50% more than the previous year. And the social media activity around the announcement last week generated more than 10 million Twitter impressions from more than 1,100 tweets.

At one stage, our event hashtag #CWwit50 was trending as the sixth most popular Twitter topic in the UK. If it weren't for the budget, the Ashes cricket, Wimbledon and One Direction, we might have been number one.

That's a huge endorsement of the need to encourage more women and girls to consider a career in technology, and a massive nudge to recruiters to actively seek to employ more women in IT.

But the reality remains that the proportion of women working in UK IT continues to fall - some surveys put the figure as low as 14%. Even if you consider the wider definition of people working in digital jobs, the proportion of women has dropped consistently and is now just 26%.

These are figures that continue to shame and humiliate technology employers in the UK. But frankly, we've written exactly those sentiments every year and nothing has really changed, despite the growing awareness of the problem. As one female IT leader said at our event, we need to forget the past and work out what to do in future instead.

So that's our intention - to build on the broad support and huge engagement we received for this year's influential women list to identify some specific ideas that might, hopefully, finally, make a difference if employers and government take action.

Please get in touch if you have ideas. There is still a lot to do, but wouldn't it be great to be able to report substantial progress when we convene again in 2016 to celebrate the vital role of diversity in UK IT. ■

*Bryan Glick, editor in chief*

**WE NEED TO FORGET THE  
PAST AND WORK OUT WHAT  
TO DO IN THE FUTURE**

# BETTER USER ACCEPTANCE TESTING THROUGH LOG MANAGEMENT

*Application log management provides insight into application behaviour, which can be used to build better software and gain a better hold of user acceptance testing, writes [Adrian Bridgwater](#)*



ENOTMAKS/ISTOCK

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Software has become more granular. Not just in terms of components, de-coupled services, containers and the way we separate parallel programming streams, but also in terms of process.

More specifically, the mechanics of [application software development](#) have become more individually definable and therefore increasingly visible as a result.

As we now seek to gain the advantages that can be reaped from this new proximity to the core, we will look to achieve granularity from front to back – or end to end, if you prefer. This means you can look to use application log management for insight into application behaviour as a means of building better software and gaining a better hold on user acceptance testing (UAT).

## DEFINITIONS OF DATASETS

By way of definition to set out our stall, let's define these terms we are playing with in simple business technical language.

After the generation and transmission of computer system time-stamped log events, log management is the storage, archiving, analysis and ultimate disposal of the log data itself. Logs can

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be attributed to access events, data transaction events or wider database-related events.

User acceptance testing, meanwhile, is the [final testing](#) that occurs after functional, system and regression testing has been undertaken. Its aim is to validate the software against the business requirements to which it was built. After UAT, if successful, the software can, in theory, go into live production.

Given the logical relationship that exists between logs at the back end and how users react to software at the front end, how do we use one to manage the other?

## LOGGING SEASON IS OPEN

"Theoretically, in the UAT phase of software development, the new code should run perfectly. Sadly, pure theory is rarely reflected in real applied life," says Sumo Logic co-founder and chief technology officer (CTO) Christian Beedgen. "What you can always be sure of is that there's an error somewhere - and if you don't find it during UAT, your users will point it out to you later when it's in production."

Beedgen asserts that logs hold the key to this problem for development teams. He says that as a dataset, logs are an opportunity

» How companies analyse server and security logs to tackle cyber crime and internal fraud, and optimise the user experience.

to run queries and [analysis](#) to identify errors and exceptions, as well as model behaviour and alert deviations.

"So beyond UAT, once in production, logs will continue to capture the information that enables you to conduct root cause analysis and troubleshooting, so you can remediate issues that you find.

For the testing, development and production environments, collecting and analysing logs will support your mission to find and eliminate anything standing in the way of uptime and quality user experience," says Beedgen.

## WHAT ARE WE LOOKING FOR?

But what can we learn from logs and how should they connect to UAT? Essentially we are looking for any activity which we would deem to be abnormal in respect of the anticipated normal execution of the application runtime. From this we hope to be able to deduce which elements of the software development lifecycle need to be escalated as problems that need to be resolved.

But we need to be careful here; one could say that user acceptance testing and log management are concepts and worlds that are by nature always far apart,

**"COLLECTING AND ANALYSING LOGS WILL SUPPORT YOUR MISSION TO FIND AND ELIMINATE ANYTHING STANDING IN THE WAY OF UPTIME AND QUALITY USER EXPERIENCE"**

**CHRISTIAN BEEDGEN, SUMO LOGIC**

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argues Balázs Scheidler, CTO of log management infrastructure company Balabit.

Why should this be so? Scheidler says that it is because system and application logs are usually managed by operations and security operations teams, to ensure the continuous operation or the continued security of an IT system. [UAT](#) on the other hand is performed by quality assurance (QA) people at the end of the deployment/delivery process.

"User acceptance testing tends to be black-box testing, using a set of predefined test scenarios or just freestyle testing without too much concern about the internal structure – or under-the-hood behaviour – of the application. It is simply assumed that this under-the-hood behaviour was properly validated during the earlier stages of the QA process using unit tests, integration tests and system tests," says Scheidler.

## WASTED INSIGHT OPPORTUNITY

However, this can be a great waste of insight. This is because application logs tend to include a lot of information about internal behaviour as they are the primary means of troubleshooting problems encountered in production. With a few techniques in place, log analysis can uncover the rough edges of the application while performing acceptance testing.

"UAT is generally wide in scope and shallow in depth. That is to say it tries to cover most of the functionality without trying all the combinations, whereas earlier testing stages usually take care of the depth but concentrate on units or components at a time," says Scheidler.

"During UAT, the application needs to work end to end, however, in most cases, only a handful of transactions are performed. It's often the case that the application functions properly for a few requests but a bug leaves a trap somewhere in the application's state which can trip the next user. This is exactly what we intend to uncover before production," he says.

## WEAPONS IN THE UAT ARSENAL

Balabit's Scheidler lists the application awareness opportunities available to us if we include logs into our UAT arsenal. He says logs will give us the chance to:

- Look at various known bad patterns – error, failure, warning and so on;
- Track known good messages and find the exceptions – a technique also called artificial ignorance;
- Use clustering and other machine learning techniques to find differences between known good data.

Putting these steps into practice is done via a process. Trevor Pott is an IT consultant and network administrator in Edmonton, Alberta, Canada. He stipulates that we need to correlate user activities with actual events, but we must remember that access logs and error logs are usually separate. If we can narrow down an individual user's access and timeframe, we can see what might have caused their errors.

Pott urges us to remember that system administrators are users too. Logs need to be usable, he says. "They can't just spew forth so much white noise that nobody ever checks them. Thus services such as BigPanda, which scans alert emails to make sure

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that you are paying attention to the logs you actually need, are an important part of UAT as well."

It is a bigger gameplay all round if we do address logs in this way. This means UAT logging should be pretty intensive - more so than the sorts of logs we might collect during regular operation.

"If companies are using a single logging server infrastructure for UAT, testing, development and production, log management will be required to separate one class of logging - and the insane levels of alerts it will generate - from the other," says Pott.

## VIRTUOUS CIRCLE

So what happens if you get the connection from [log management](#) to UAT right?

The log management-UAT state of nirvana brings us to a place where we achieve wider overall domain knowledge in terms of the entire scope and breadth of the software we are trying to develop and deploy. This in turn leads us into a virtuous circle of intelligence where we can potentially learn more about the actual functionality that manifests itself in the software that has been produced.

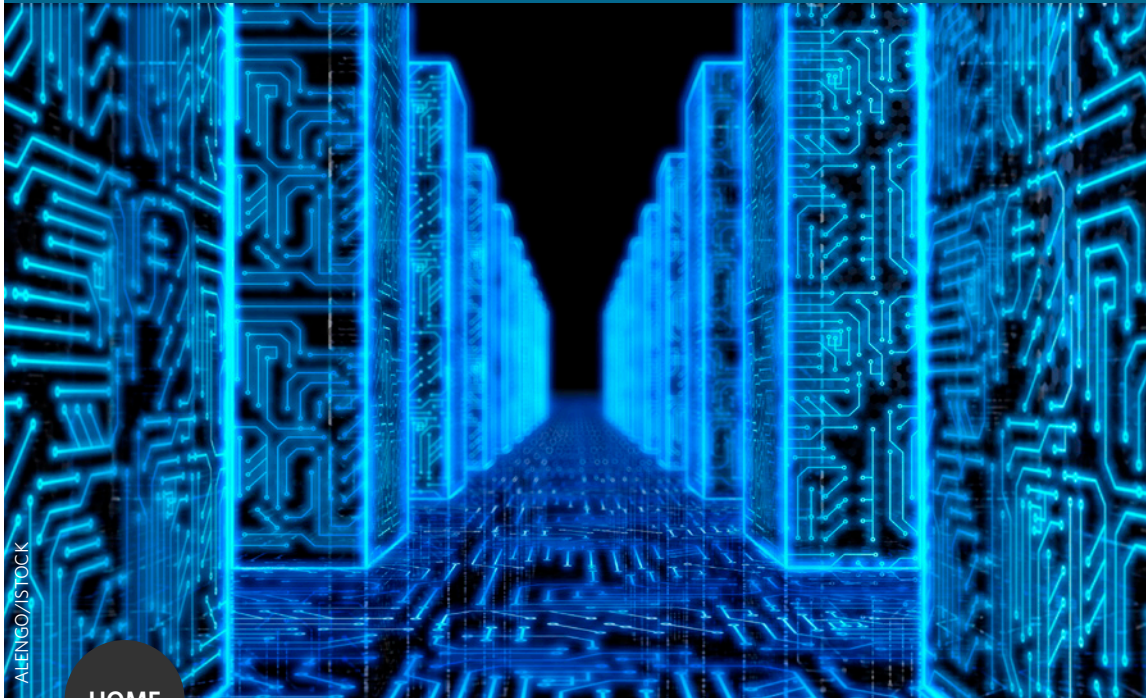
Onward from here, we get less errors in live production, better performing software and happier users with fewer risks associated with security, compliance, governance and licensing.

The concepts here are simple, or at least logical enough, in terms of the way they look on paper. Working these conceptual methods through into live application production takes a little more blood, sweat and tears. Early signs are that it is worth pushing through the pain barrier. ■



# ARM WRESTLES ITS WAY INTO THE DATACENTRE WITH THE HELP OF 64-BIT CHIPS

*While Intel x86 technology has traditionally ruled the datacentre roost, **Rene Millman** considers if the power consumption benefits of ARM 64-bit systems could change all that*



ALENGO/ISTOCK

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**A**RM chips have long been favoured by mobile device manufacturers, as their reduced instruction set computing architecture means they consume less power, generate less heat and, in turn, cost less to run.

Unsurprisingly, these characteristics haven't gone unnoticed by the cloud and datacentre industry, but it's taken a while for the technology to really get its foot in the door.

Dariush Marsh-Mossadeghi, director of technology strategy and architecture at co-location firm DataCentred, says there are many good reasons to use [ARM chips in the datacentre](#).

"There are particular benefits when these processors are integrated on an open-source public cloud platform. DataCentred runs ARM AArch64 processors on our OpenStack public cloud platform, which gives customers access to 64-bit ARM hardware via a virtualised architecture that can be scaled up on demand," he says.

"We also shouldn't forget the environmental and cost benefits. 64-bit ARM architecture uses lower power chips and therefore promises to significantly cut overall power usage in datacentres, reducing the industry's carbon footprint and passing savings on to customers."

ARMv8 was the first ARM architecture to include a 64-bit instruction set and made its debut in 2011. Its aforementioned energy efficiency and performance was deemed a good fit for datacentre operators looking for a cost-scalable way to deal with the rising demand for cloud services.

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But progress in this area has been slow, despite the fact the technology's power consumption - which has fuelled its success in the mobile market - is far lower than the equivalent generation of Intel offerings.

That being said, the energy efficiency of ARM 64-bit systems can only really come to the fore if the applications that run on them can make correct use of the architecture.

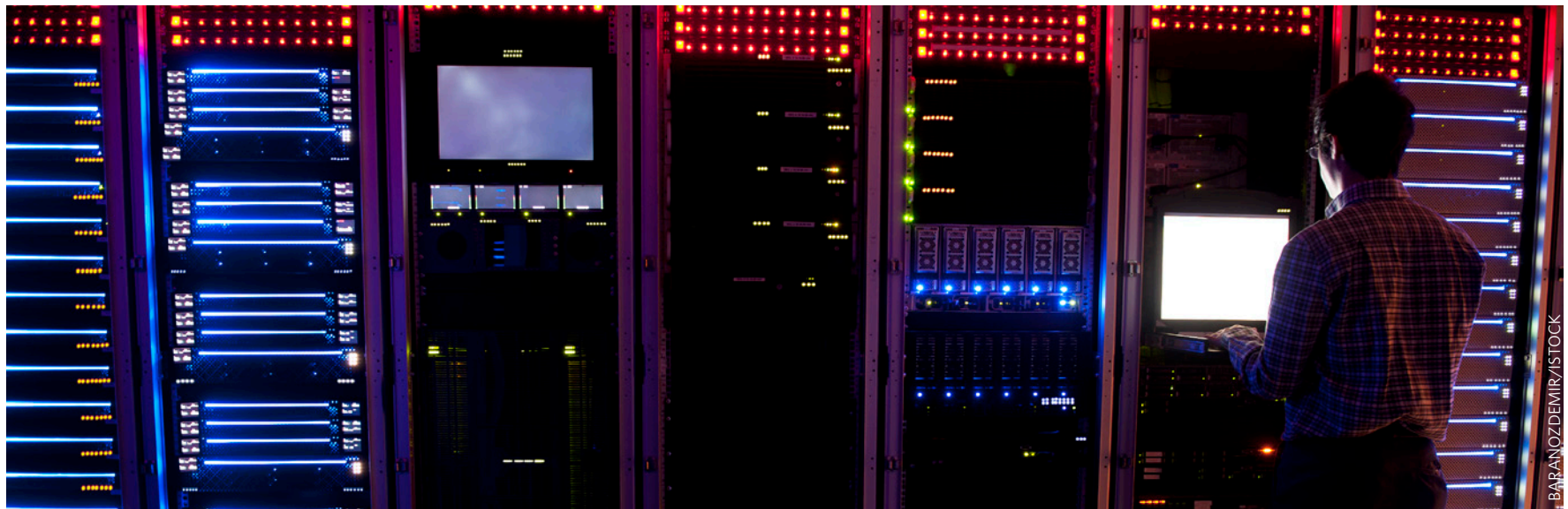
"If they don't then there may be no difference to x86 in terms of energy usage, and to achieve a given number of computations in the same timeframe may actually require more ARM cores than x86," says Ark Data Centres chief technology officer (CTO) Jason Liggins.

"This, along with the cost of porting applications from [x86 to ARM](#), may mean that there is no compelling reason to port from x86 to ARM."

### MOBILE TECHNOLOGIES IN THE DATACENTRE

David Leyland, UK and Ireland head of Dimension Data's next-generation datacentre business unit, says the technology also gives server makers the ability to add new features and functions to the chip.

"One of the key beauties of ARM for datacentre environments is that the chip design is licensed. Hardware manufacturers can add specific functions around the core processor," he says.



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"In the same way that, for example, Apple adds accelerators for iPad functions, server manufacturers can add peripheral circuits to optimise network transfers and so on, and doing so can speed up collaborative computation."

However, while this sounds good on paper, it can be difficult to do in practice because the design philosophy for servers and mobile devices are so different.

For example, the former favours embedded designs that fuse the software to underlying hardware, which works incredibly well in smartphones and tablets, but less so in the datacentre world where the hardware and software inside may come from two different suppliers.

### MIX AND MATCH

Clive Longbottom, service director at analyst firm Quocirca, says mixing 64-bit and 32-bit workloads in the Intel world is relatively difficult, but is easier to do when using ARM AArch64 chips.

This is important, he adds, because there is a lot of ARM code out there still in use, which will have been written for the older ARM 32-bit architectures.

"Therefore, I would expect that the benefit of this is in being able to port old code over easily while creating new code. This could lead to an easier migration as the old stuff gets re-written to being 64-bit," says Longbottom.

Also, while Intel x86 chips are a good fit for workloads where high-powered systems are required, there are instances where using a less powerful system to carry out the job would suffice.

"There are many other workloads that could be run on systems that are less powerful and ARM provides an environment where such workloads can be run on low-power, low-heat, low-cooling servers," Longbottom says. "Intel is trying to counter this with its Atom-based servers, but is a bit behind what ARM is now offering."

The introduction of ARM in the datacentre could herald growth in the types of [silicon being used in the cloud](#), Longbottom claims. "OpenStack is mov-

ing to being a multi-silicon platform, so being tuned to deal with the differing needs of different workloads becomes more important," he says.

"However, intelligent software will be required to ensure that the right workload is in the right place at the right time."

OpenStack's work in this area also has the potential to make life a little bit easier for those already using ARM in the datacentre.

"For those who have gone for ARM in their own datacentre, they want to have cloud-based systems where they can develop, test and run workloads against the same ARM environment. Now that OpenStack runs on ARM, it opens up options for providers in different ways," Longbottom says.

**"ARM PROVIDES AN ENVIRONMENT WHERE WORKLOADS CAN BE RUN ON LOW-POWER, LOW-HEAT, LOW-COOLING SERVERS"**  
CLIVE LONGBOTTOM, QUOCIRCA

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Tony Lock, analyst at market watcher Freeform Dynamics, says for operators that have to deliver services to widely distributed users and service providers, 64-bit chips can be a big help.

"This concerns the ability to have a common chip platform of various scales positioned in the appropriate locations - datacentre class chips in the centre and very low-power solutions close to the users at the edge of the distribution network, for example" he says.

## DRAWBACKS OF 64-BIT ARM

While the benefits of 64-bit ARM in the datacentre might seem alluring from a power and efficiency point of view, it does have some downsides, concedes Marsh-Mossadeghi.

"There is currently a lack of maturity in certain elements of the software stack that makes production systems challenging today," he says. "While the processor support is all there and works well, the challenges are in the peripheral aspects of the hardware, bringing obstacles in the areas of basic input/output systems, boot-loaders and low-level kernel features."

This is a viewpoint Virtus Data Centres product strategy director Matthew Larbey shares. "Many of the operating and application stacks will need to be redeveloped to really tap into the architecture benefits," he says.

"It will be a chicken-and-egg situation where there needs to be a groundswell on both sides - hardware and software - to make the new server alternatives a success in the marketplace and truly offer a cost and performance alternative."

» *ARM chips have entered the mainstream enterprise datacentre with HP's production-ready, ARM-powered Moonshot servers.*

Aaron Sullivan, senior director and engineer at managed cloud hosting firm Rackspace, says 64-bit systems may also require different approaches to fault management, storage management, monitoring and field service.

"If your operations teams or system administrators are very tied to their existing Raid controllers, network adapters, management tools and datacentre service models, they may need to change to incorporate ARM. The features are generally there, but the processor configuration and managing those features may be different," he says.

## FUTURE DEVELOPMENTS

Looking ahead, Matt Lovell, CTO at cloud hosting firm Pulsant, says wider adoption of 64-bit ARM in the datacentre could pave the way for greater integration between user devices and connected services.

"This enables a richer experience for the user - dependent on connection type, stability and strength - to be assessed and delivered," he says.

Marsh-Mossadeghi, meanwhile, predicts that as [collaboration](#) between the hardware suppliers and the open source community continues to grow, the maturity of offerings coming from service providers such as DataCentred will also increase.

"This will manifest itself as providing access to a broader choice of operating systems and kernels on ARM-based cloud platforms," he says. ■

# STILL RUNNING WINDOWS SERVER 2003? DON'T PANIC!

Microsoft ended support for the OS this week – but the thousands of UK businesses still running it have options yet, writes *Jim Mortleman*



YUOAK/ISTOCK

HOME

**T**his week – on 14 July 2015 – Microsoft ended its support for [Windows Server 2003](#). And if that sounds terminal, judging from the warnings emanating from certain quarters of the industry, for some organisations it could prove just that.

Those who failed to prepare for Microsoft's end of support for the ageing – but still widely used – operating system (OS) risk falling prey to damaging security and compliance breaches. As vulnerabilities are uncovered, made public and remain unpatched, hackers will have [increasing opportunities](#) to infiltrate networks running Windows Server 2003 undetected.

The extent of the problem is not fully known yet, but a recent survey from Spiceworks of more than 1,000 companies around the world shows six out of 10 organisations are still running at least one instance of Windows Server 2003.

Application migration specialist Camwood estimates there are [400,000 UK businesses](#) still using the OS. And it's not just smaller businesses that are affected.

"It's everybody. Lots of organisations have these platforms in place and either don't have the time to upgrade them – or simply haven't yet found the political will or budget to do so," says Tony Lock, distinguished analyst at Freeform Dynamics.

"That applies as much to large enterprises with dedicated IT departments as it does to smaller firms. Sometimes you might only have half a dozen people using the OS for some application, when thousands are using a newer system that does the same thing. Nonetheless, the political issues involved in getting that half dozen to move can still be very tricky," he adds.

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To compound matters, many don't even know they're running the out-of-date OS.

"A lot of organisations simply don't have the up-to-date inventory data. The first thing everybody should be doing is some very quick and dirty discovery to find out what Server 2003 machines they have running. There are plenty of inventory discovery tools that will let you do that," says Lock.

Organisations cannot expect their hardware supplier to carry on supporting Windows 2003-based systems.

"My concern is that, as Windows Server 2003 goes end-of-life, there is a significant number of customers that have done nothing. We are very concerned [they don't understand the threat](#) of a breach," Angela Cross, Hewlett-Packard's UK and Ireland country manager for industry standard servers and software, told Computer Weekly's sister title *MicroScope*.

"Even HP will not be able to help them."

Independent security consultant and commentator Graham Cluley has little sympathy for those organisations running unsupported Windows 2003 systems.

"Ignoring the problem won't make it go away," he says. "You've had years of notice, you should have switched to a more up-to-date or alternative operating system by now. Anything else is just foolhardy, inexcusable and likely to cost you more."

And if you want to move your organisation to another platform reliably and securely, it's going to take time - particularly if you use Server 2003 for any of your critical infrastructure, rather than just for isolated applications, he says.

› Hundreds of thousands of UK businesses are still running Windows Server 2003 software after Microsoft ended support for the operating system.

Freeform Dynamics' Lock says: "Organisations have to put in the time to carry out all the background work necessary to ensure everything works flawlessly. It becomes obvious if you get it wrong when you're migrating parts of your infrastructure, because everybody notices they can no longer access what they need."

## IMMEDIATE STEPS TO KEEPING THE ORGANISATION SAFE

But the good news is that you still have [several options](#) to avoid putting your company in jeopardy in the interim - but, as Cluley says, they don't come cheap, and the longer you try to avoid the hassle of upgrading, the pricier it will become to maintain and secure these ageing servers.

The easiest "quick fix" is to cough up for extended support from Microsoft, but the company will charge you heavily for the privilege - and you'll still need to migrate at some point.

Trend Micro's director of datacentre security Mike Smith blogged in March 2015: "Customised support from Microsoft for ongoing patches is possible, but it's also expensive and unsustainable in the long term.

"It's also not a good idea to run software for which patches will never again be made available. If you think Windows Server 2003 gets a lot of attention from malware writers at the moment, imagine what it'll be like after July 2015."

Trend Micro and other IT security firms are touting various services and software to keep Server 2003 systems running, secure, compliant and effectively isolated from the open internet.

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If you have critical components of your infrastructure or customised applications running on the system and really don't want to upgrade yet, investigating what the security suppliers can offer is probably a better and more economic medium-term answer than opting for extended Microsoft support. It really depends on what you have running on these machines and how quickly you think you'll be able to move off them.

"There are no clear patterns based on sector or size of business that might suggest the best route for a particular organisation," says Lock. "It all comes down to individual circumstances - what workloads you're running, how exposed these systems are and how comfortable your organisation is with risk."

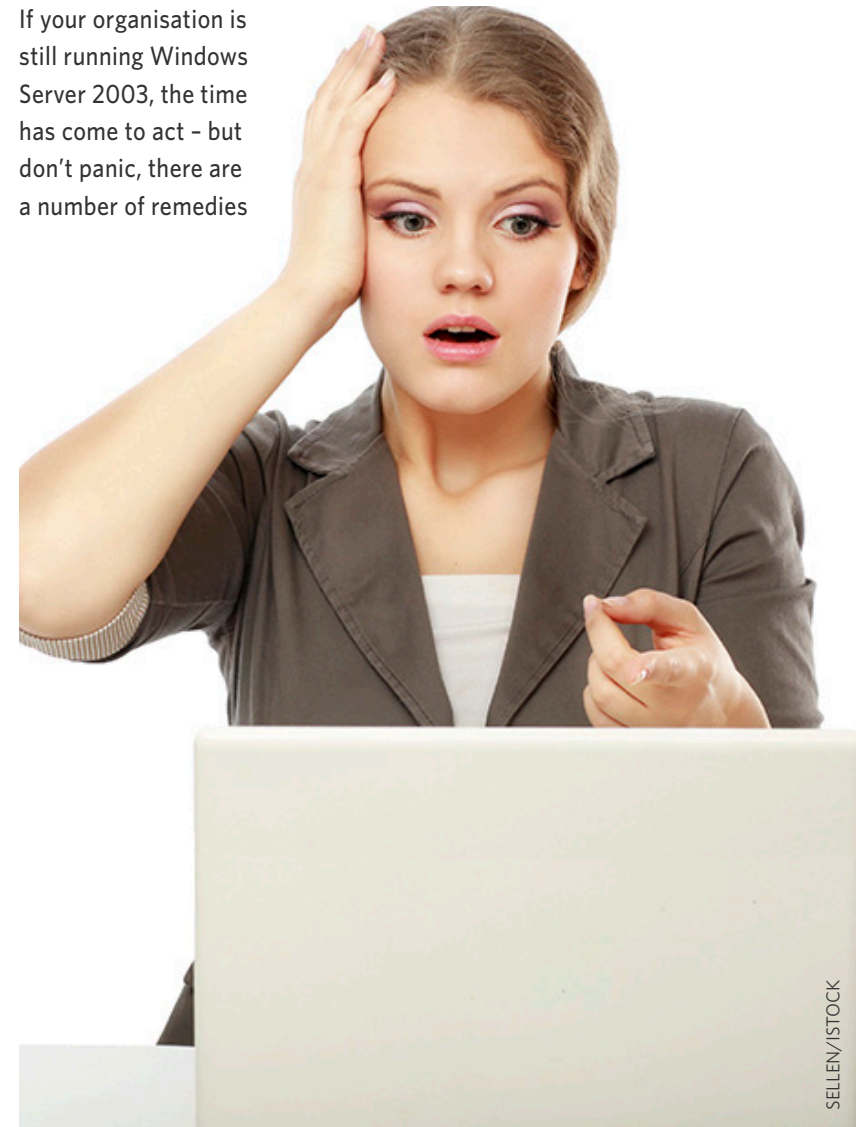
## UPGRADE ALTERNATIVES

Ultimately, most organisations will ditch the system. At this point they must decide whether to upgrade to Windows Server 2008, Server 2012 or another OS - or migrate work to the cloud.

[Server 2008](#) is only a sensible option if you already use it elsewhere in the organisation. "If you're a larger company, you might have Server 2008 systems already in place. In that case, it might be easier to move to a unified platform using 2008," says Lock.

But if you're starting from scratch - and want to stick with an on-premise or hybrid Microsoft system - then [Server 2012](#) is clearly the way to go. "The upgrade path to 2008 is just as complex as moving to 2012, so it makes sense to go for the newer platform. In particular, it offers considerable improvements when it comes to working in virtualised or part-virtualised environments and offers far better integration with System Center 2012," says Lock.

If your organisation is still running Windows Server 2003, the time has come to act - but don't panic, there are a number of remedies



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Windows Server 2012 also has a longer shelf life, meaning you can avoid having to replace the same issue facing Server 2003 for about a decade. "Support for Windows Server 2008 will end in 2020 so, if you go for that rather than Server 2012, it will only be a few more years before you face the end of life for Windows Server 2008," says Lock.

### OPTIONS FOR MIGRATING TO CLOUD

So what of [the cloud](#)? While firms might decide to use Microsoft Azure or Amazon Web Services for some applications, Lock says he doesn't see evidence of a wholesale shift to cloud.

"Public cloud is generally still only used for very specific workload cases, such as testbed applications. For long-term production applications which typically have a lifespan of three to six years, most companies still prefer to run those in-house, or at least - in the case of some smaller companies - with a managed service provider," says Lock.

Of course, while organisations must ensure they don't ignore the end-of-life issue and leave Server 2003 systems exposed, it's worth remembering that many of the industry voices warning of widespread system meltdown and armies of hackers infiltrating our networks have a vested interest in encouraging organisations to take up their products and services.

As Ian Cohen, former CIO of financial services firm Jardine Lloyd Thompson, says: "There'll be loads of claims of impending conflagration but, in reality, people will migrate at their own pace based on the risk profile of their services. I think we're all past falling for the old scare stories and engaging in panic migrations." ■



Many of those warning of system meltdown and armies of hackers infiltrating networks have a vested interest in encouraging firms to take up their products and services

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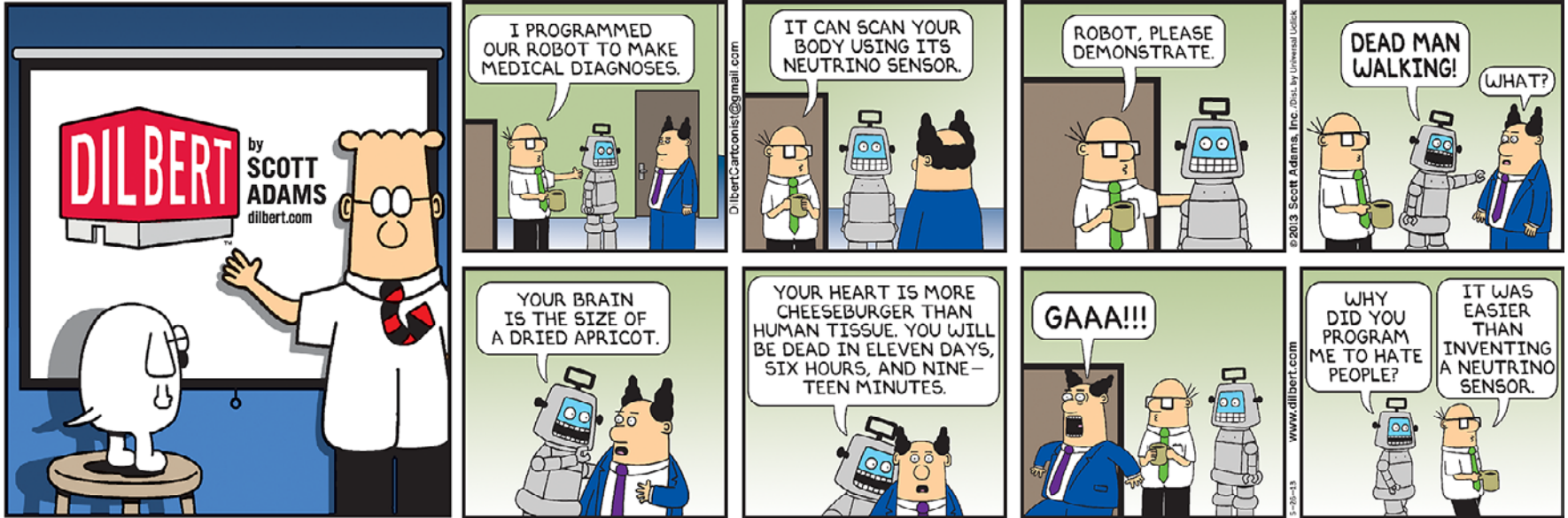
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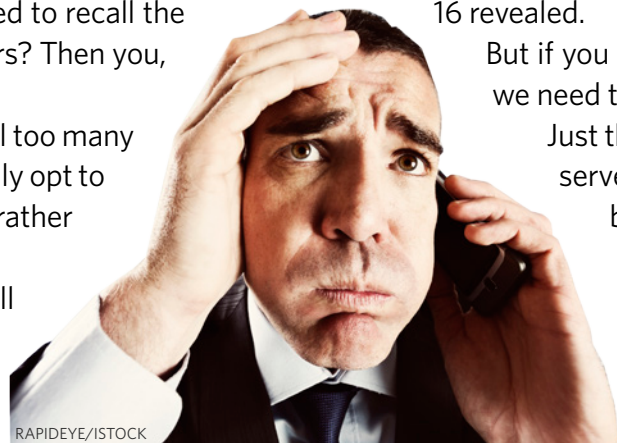


### Smartphones are making us dumb, says Kaspersky

Are you a smartphone user who's ever struggled to recall the mobile phone numbers of your significant others? Then you, dear reader, could be a digital amnesiac.

According to Kaspersky Lab, it's a condition all too many of us are blighted by these days, as we continually opt to commit these details to our phone's memory, rather than our own.

As a result, many of us now struggle to recall our workplace phone numbers or our children's contact details (what a shame), the



RAPIDEYE/ISTOCK

security company's poll of 6,000 people over the age of 16 revealed.

But if you can store them on a smartphone, why do we need to know them by heart?

Just think, the precious brain space we can conserve by not memorising these 11-digit numbers can be better spent on more important, non-trivial tasks, such as learning all the words to... erm... that song... you know the one... by whatshername? We'll consult Google and get back to you. ■

[Read more on the Downtime blog](#)