THE MAGAZINE FOR ENTERPRISE APPLICATIONS AND ASSOCIATED TECHNOLOGIES

ERP TODAY

ERP VENDORS
OUR ANNUAL ANALYSIS OF THE KEY PLAYERS

EAM
CONSIDERATIONS FOR COMPREHENSIVE ASSET MANAGEMENT

ENERGY SECTOR
HOW TECHNOLOGY IS TACKLING THE ENERGY CRISIS

MEET THE WORLD'S biggest EMPLOYER

MIHIR SHUKLA

VOLUME 2 · ISSUE 1 · Q1 2020


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Editor's Words

Tom Peters famously said "if you're not confused, you're not paying attention." Nothing could be closer to the truth when considering one's options in the modern technological era. The rate of change has gathered such momentum that disruption hardly feels like a fitting term anymore. Wave after wave of new technology is washing over us like a tsunami of opportunity with many of us baffled by the options. Moving to the cloud seems like the easiest choice; what to do when you get there and how to architect your technology landscape to be future proof and primed for competitiveness is the hard part.

To remain relevant you have to move forward. For every enterprise that hesitates to embrace change there are a dozen more that are grasping the opportunity and eating your lunch while they do it. Transforming your business, however large or small, into a digitally intelligent enterprise is the only way you can flourish. Your competitors are implementing smart finance to improve accuracy and educe meaningful insights; they are streamlining production and delivering goods and services faster than you can; they are utilising automation to reduce costs and free-up human capacity, and they are harvesting experiential data to cultivate customer relationships you can only dream of.

Whether you are a global enterprise or an ambitious start-up the time to engage with digital transformation is now. You only have to look at the Global 500 from 20 years ago to see how few of those businesses are still relevant to realise that the pervasive nature of digital technology has already had a permanent impact on commerce, society, and the human condition - and its reach and influence has barely started.

However, taking steps towards becoming an intelligent business does not have to be as daunting as it may seem at first. The days of pumping millions into monolithic ERP systems that took years to implement and rarely delivered the predicated benefits are long gone. Today it's all about agility and time-to-value; small projects that deliver rapid results utilising creative technologies like RPA, blockchain and elastic infrastructure. Those enterprises that harness the technology and culture required will prosper while those that do not won't just be left behind – they will soon cease to exist.

It's an honour to introduce **WRAP** as our patron charity for the inaugural **ERP Today Awards** and to welcome **Automation Anywhere** as our headline partner. The event is almost a sell-out already and we cannot wait to bring a fresh and innovative social spectacle to the ERP community. The awards website has launched and the nomination process is open so don't delay in telling us why you should be recognised as a leader in your field.

Finally, I would like to say a very warm welcome and a massive thank you to our new extended team. We have assembled some of the sharpest minds in the industry to bring you the news, views and opinions that will help you make sense of the opportunities with thought provoking editorials on the topics that most affect ERP, enterprise applications and digital transformation.

Paul

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ERP TODAY

AWARDS 2020

22ND OCTOBER 2020

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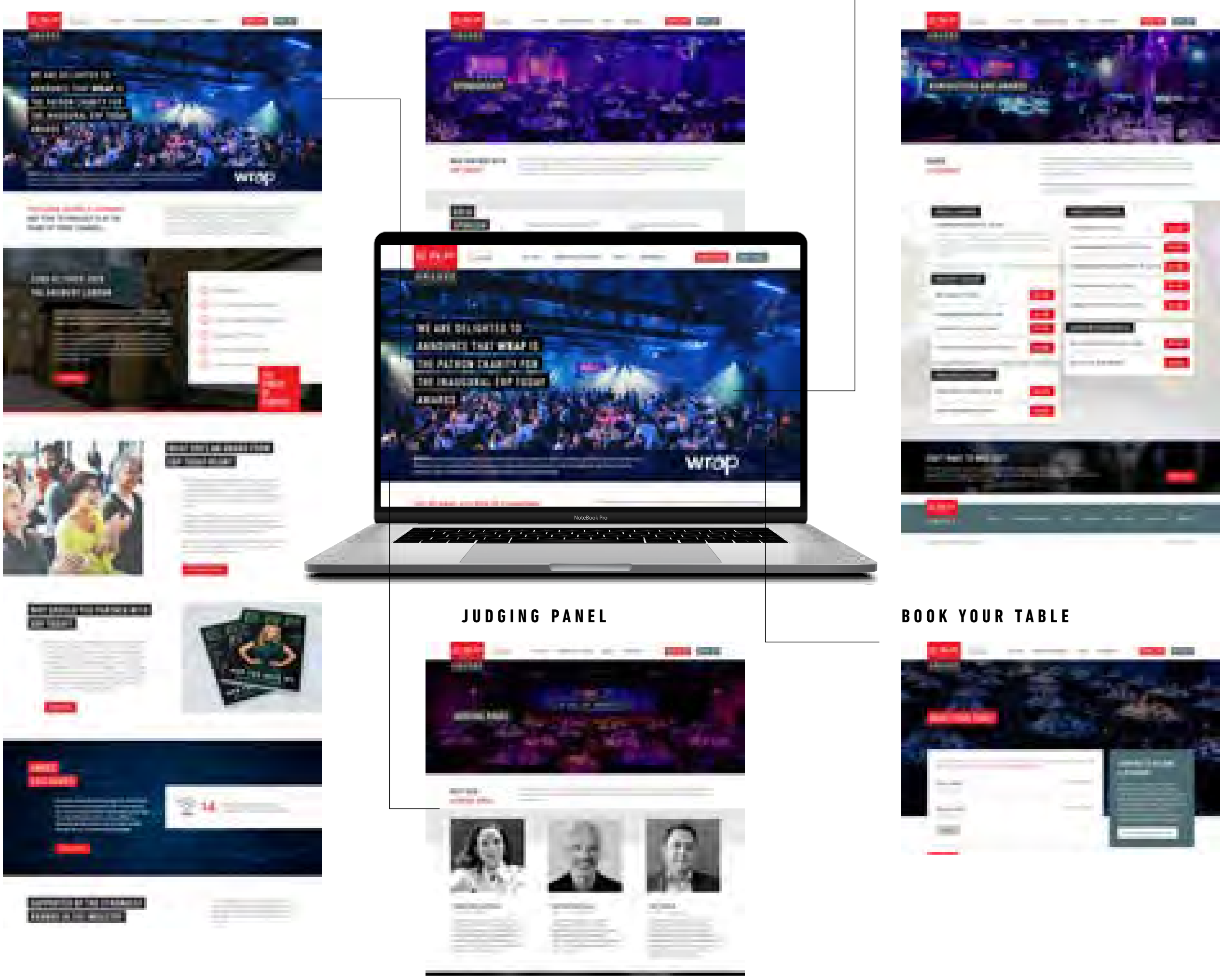

#THEPOWEROFPURPOSE

AWARD CATEGORIES

WITH 14 CATEGORIES COVERING INDIVIDUAL DISTINCTION, PROJECT EXCELLENCE AND PRODUCT INNOVATION, THE ERP TODAY AWARDS PROVIDES A POWERFUL OPPORTUNITY TO DEMONSTRATE INNOVATIVE AND SUCCESSFUL USE OF YOUR TECHNOLOGY. ALL ENTRIES WILL BE JUDGED ON MERIT AND THE SIZE OR SCALE OF THE PROJECT OR BUSINESS IS NOT RELEVANT.

THE BREWERY

Located in the heart of the city, The Brewery is a unique venue that will make the ERP Today Awards a truly unforgettable event.

ERP VENDOR OF THE YEAR

The ERP Today "ERP Vendor of the Year Award" will be presented to the ERP vendor that can demonstrate the greatest commitment to customer success and value, underpinned by a deep responsibility to its employees, the environment and broader society. **Self-nominate.**

TRANSFORMATION PARTNER OF THE YEAR

The ERP Today "Transformation Partner of the Year Award" is for teams/practices within technology and change-enabling consultancies that can demonstrate the highest levels of customer success and value in delivering digital transformation and enterprise technology projects. **Self-nominate.**

TRANSFORMATION LEADER OF THE YEAR

The ERP Today "Transformation Leader of the Year Award" will be presented to an outstanding CxO who has led a successful digital transformation or technology project and demonstrated exceptional leadership. Nominees will be able to demonstrate success across a broad range of technical innovation, commercial excellence, and forward-thinking strategic leadership. **Nominated by a technology partner or consultancy.**

YOUNG PROFESSIONAL OF THE YEAR

The ERP Today "Young Professional of the Year Award" will be presented to an outstanding individual at the outset of their career in the enterprise technology eco-system. Successful nominees will be able to show clear evidence of both high performance and high potential and a strong desire to forge a purposeful career in the technology sector. The winner will be decided by an interactive vote at the ERP Today Awards event. **Nominated by their supervisor or line manager.**

DIVERSITY AND INCLUSION EXCELLENCE AWARD

The ERP Today "Diversity and Inclusion Excellence Award" will be presented to the organisation within the ERP and enterprise technology sector that can demonstrate the deepest commitment to building a diverse and inclusive business culture. **Self-nominate.**

SUSTAINABILITY EXCELLENCE AWARD

The ERP Today "Sustainability Excellence Award" will be presented to the organisation within the ERP and enterprise technology sector that can demonstrate the deepest commitment to sustainable and responsible business practices. **Self-nominate.**

RETAIL PROJECT OF THE YEAR

The ERP Today "Retail Project of the Year Award" is for retailers and companies involved with the retail sector that can demonstrate the most innovative and impactful use of digital enterprise technology. **Nominated by a technology partner or consultancy.**

MANUFACTURING AND INDUSTRIAL PROJECT OF THE YEAR

The ERP Today "Manufacturing and Industrial Project of the Year Award" is for manufacturing and industrial companies that can demonstrate the most innovative and impactful use of digital enterprise technology. **Nominated by a technology partner or consultancy.**

TECHNOLOGY AND SERVICES PROJECT OF THE YEAR

The ERP Today "Technology and Services Project of the Year Award" is for technology and services companies that can demonstrate the most innovative and impactful use of digital enterprise technology. **Nominated by a technology partner or consultancy.**

HIGHER EDUCATION PROJECT OF THE YEAR

The ERP Today "Higher Education Project of the Year Award" is for higher education institutions, and businesses involved with the higher education sector, that can demonstrate the most innovative and impactful use of enterprise technology. **Nominated by a technology partner or consultancy.**

PUBLIC SECTOR PROJECT OF THE YEAR

The ERP Today "Public Sector Project of the Year Award" is for public sector organisations and businesses involved with the public sector that can demonstrate the most innovative and impactful use of digital enterprise technology. **Nominated by a technology partner or consultancy.**

TRANSFORMATION PROJECT OF THE YEAR

The ERP Today "Transformation Project of the Year Award" will be presented to an overall winner taken from the category winners of the vertical Awards. This project will represent the pinnacle of project excellence and will demonstrate all of the elements that combine to deliver what's possible when people and technology work together.

BEST USE CASE OF ARTIFICIAL INTELLIGENCE

The ERP Today Award for "Best Use Case of Artificial Intelligence" is for businesses and organisations that can demonstrate how their implementation of artificial intelligence (AI) technology has delivered a measurable and positive impact. The winner will be decided by an interactive vote at the ERP Today Awards event. **Self-nominate.**

BEST USE CASE OF BLOCKCHAIN

The ERP Today Award for "Best Use Case of Blockchain" is for businesses and organisations that can demonstrate how they have implemented blockchain technology to deliver a measurable and positive impact. The winner will be decided by an interactive vote at the ERP Today Awards event. **Self-nominate.**

ERP TODAY AWARDS 2020

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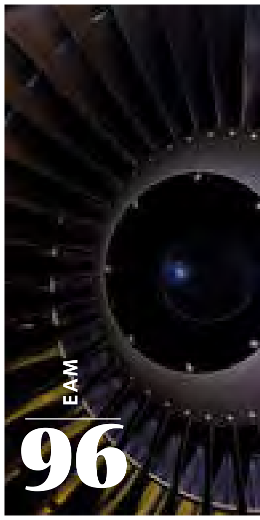

Articles

Feeling forced down an ERP path you aren't ready to take?

NewsDeals&Wins

Prahlad Koti, executive director at Mastek, and Gary Barnes, SVP at Evosys, talking to Paul Esherwood about the deal

Mastek to acquire Evosys

Mastek has entered into a definitive agreement to acquire **Evosys**, an **Oracle** platinum partner with more than 1,000 customers, in a deal valued at $138m. The deal will expand the portfolio of services each company can take to market and allows Mastek to diversify its geographic concentration.

Evosys' executive team led by co-founders Umang Nahata and Rakesh Raman will continue to work for the larger organisation. John Owen, Mastek Group CEO said: "The strategic intent is compelling for both companies. I am thrilled Umang, Rakesh and their outstanding team have accepted our invitation to combine resources under Mastek. We all see a fantastic opportunity to accelerate the digital transformation agenda for many more customers globally."

The deal is an interesting development in the UK Oracle marketplace and is a further, and possibly final, example of significant consolidation in the UK partner eco-system. Over the last five years most of the small boutique Oracle practices have been acquired (although they were mainly focussed on legacy technology), **Accenture** acquired **Certus** - one of the forerunners in the Oracle cloud space - and now Mastek, who many ERPers may not have heard of, has acquired a business which boasts more Oracle cloud customers than any other partner.

The bigger SIs – the likes of **PwC**, **Deloitte**, and **IBM** - have stable and established Oracle practices, while others which used to figure including **Fujitsu**, **Hitachi** and **Sopra** all but seem to have disappeared from the race for new Oracle cloud customers. This all amounts to fewer options for customers when looking for a partner with only **Inoapps** remaining as a serious mid-range alternative.

Evosys has an excellent reputation for winning large Oracle contracts in both the public and private sectors. **MGroup Services** (see elsewhere in this issue of ERP Today), **Birmingham City Council** and a glut of London Borough Councils, to mention just a few. However, it will be imperative that Mastek leverages the experience and customer base appropriately rather than simply integrating head count and turnover. While the name Mastek may not be familiar to many in the ERP space, it has a significant portfolio of offerings in complementary digital services and it is easy to imagine how they will cultivate Evosys' large customer base as more enterprises seek digital extensions to their core ERP systems.

Good news for Mastek and Evosys and most likely good news for existing Evosys customers that will now be able to fulfil their end to end digital needs with a full service shop under the Mastek brand.

NewsDeals&Wins

IFS results show strong growth

IFS has announced double digit growth in every region and line-of-business during every quarter of 2019 in its full year financial results.

IFS reported a 20 percent increase in net revenue to $668m, saw its field service management business grow by 51 percent and its aerospace and defence business expand by 38 percent year on year.

During 2019 IFS added many global brands to its ranks, including **SPIE**, **Rolls Royce**, **Tietex**, **Revima**, **Resolute Mining**, **Primo** and **Cryostar**. The company also joined forces with **PTC** for product innovation, **Acumatica** for channel innovation and completed the acquisition of **Astea International**.

Appetite for IFS's cloud offerings continue to grow with revenues for cloud and SaaS increasing 56 percent year on year (excluding Astea and **WorkWave**).

"Our employees clearly understand our focus, feel ownership of our progress, and stand united in a passion for our customers. Our differentiator is not that we talk about customer centricity, but that we commit to delivering customer value," said Darren Roos, IFS CEO. "The investments made last year into our product and partner enablement will benefit the company in the long-term and will have a positive impact for our customers – and our own business – in 2020 and beyond."

AUTOMATION ANYWHERE APPOINTS NEW CIO

Automation Anywhere has appointed Yousuf Khan as the company's first chief information officer.

Khan will be responsible for leading and overseeing the vision, strategy and operations of Automation Anywhere's IT department globally.

Commenting on Khan's appointment, Clyde Hosein, CFO at Automation Anywhere, said: "Yousuf is a creative and innovative leader and his skills complement the talents of our IT leadership team as we build the systems and processes to support our vision of the digital workforce and building a robust enterprise business."

Koch puts an end to Infor IPO speculation

Infor, the world's third largest enterprise software vendor, has been acquired by **Koch Industries** in a deal that values the business at $13bn.

Koch was already a key investor in Infor and acquired the remaining shares from **Golden Gate Capital**, meaning Infor will become a Koch Industries subsidiary.

The deal puts an end to the speculation over a much-anticipated IPO.

Koch first expressed interest in Infor in November 2016 when it invested $2bn into the company. In 2018, Koch invested a further $1.5bn alongside Golden Gate Capital and has since rolled out the Infor technology across several of its subsidiaries.

"Koch's decision to acquire Infor is a strong endorsement of our product strategy and focus on creating innovative solutions for our customers," said Kevin Samuelson, CEO at Infor. "As a subsidiary of a $110bn revenue company that re-invests 90 percent of earnings back into its businesses, we will be in the unique position to drive digital transformation in the markets we serve. We are rapidly expanding our industry-specific CloudSuites and offering customer experiences and outcomes that are well beyond what is standard in enterprise software."

"Software is no longer an industry vertical; it is a disruptive layer that is transforming every facet of society," said Jim Hannan, executive vice president and CEO of enterprises for Koch Industries. "As a global organisation spanning multiple industries across 60 countries, Koch has the resources, knowledge and relationships to help Infor continue to expand its transformative capabilities."

NewsDeals&Wins

CORNERSTONE TO ACQUIRE SABA

Cornerstone OnDemand has entered into a definitive agreement to acquire **Saba**. The strategic combination will enhance Cornerstone's reach and accelerate innovation around how people learn and grow at work.

Valued at approximately $1.4bn, the cash and stock transaction has been unanimously approved by the board of directors of both companies.

With the addition of Saba, Cornerstone will have an expanded reach and the ability to help more clients realise the potential of their people with the right learning and development opportunities. The combined company will have more than 75 million users and serve approximately 7,000 organisations around the globe.

Adam Miller, CEO and founder of Cornerstone, said: "Saba and Cornerstone have always shared a passion for people development, and together we can accomplish great things. The additional depth of expertise and capability from Saba is an ideal complement to Cornerstone. With the combination, our product development team is expected to significantly expand, giving us the ability to develop faster, further increase competitive differentiation, and help millions of people around the world to overcome the skills divide."

The transaction is expected to close in the second quarter of 2020.

PWC JOINS THE QUALTRICS PARTNER NETWORK

PwC has joined the **Qualtrics** partner network with the aim of standardising customer and employee experience programmes on the vendor's experience management (XM) platform.

The partnership expands PwC's existing **SAP** relationship and will allow joint customers to combine PwC's return on experience methodology with the Qualtrics experience management platform to measure the business impact of improved customer and employee experiences.

"Building brand equity is no longer solely dependent on delivering products - it has become increasingly driven by the customer and employee experiences organisations provide their stakeholders," said Matt Egol, principal of digital strategy and innovation, PwC. "Qualtrics is uniquely positioned to collaborate with PwC as the leading experience management platform capable of delivering value across customer and employee experiences that drive the bottom line. We look forward to expanding our relationship with."

PwC will also provide advisory services to Qualtrics customers.

SAP joins collective environmental action

SAP is pledging to reduce its impact on the environment by joining the **CEO Carbon Neutral Challenge** issued by **Gucci** president and CEO Marco Bizzarri and the **World Economic Forum**'s global plastic action partnership community.

The CEO Carbon Neutral Challenge involves businesses taking full responsibility and accountability for the total greenhouse gas emissions they generate and delivering nature-based climate solutions that mitigate emissions and drive positive change.

"SAP is not only a world-leading innovation and technology company, we are a world-leading sustainability company," said Jennifer Morgan, co-CEO and member of the executive board, SAP.

The company has also committed to creating a cleaner ocean by 2030 and is planning to launch the next phase of its plastics cloud to allow businesses to shift rapidly to alternatives to single-use plastics, scale design for circularity and invest in materials collection infrastructure.

Epicor appoints new president

Epicor has promoted Himanshu Palsule to president.

The move will see Palsule take on the additional responsibilities of leading the Epicor auto and EDI businesses while continuing his role as chief product and technology officer overseeing Epicor's global portfolio. He will continue to report directly to chief executive officer, Steve Murphy.

"Since joining Epicor in 2015, Himanshu has built a compelling product strategy that aligns with our overall mission, drives a differentiated customer experience, and produces real growth for our customers," said Murphy. "I am

confident that under Himanshu's thoughtful, bold leadership, our auto and EDI businesses will benefit from a more unified approach."

ServiceNow acquires Loom Systems and Passage AI

ServiceNow has acquired **Loom Systems** and **Passage AI** to help strengthen its AI capabilities. The Loom Systems deal will extend ServiceNow's AI for IT operations capabilities which will provide customers with deeper insights into their digital operations so they can prevent and fix IT issues at scale before they become problems. The acquisition of Passage AI provides ServiceNow with an automated way to respond to customer enquiries to advance its goal of supporting all major languages across the company's digital service platform and products.

Microsoft pledges to be 'carbon negative' by 2030

Microsoft has pledged to remove all of the carbon from the environment that it has emitted since the company was founded in 1975. The company aims to become 'carbon negative' by 2030 and by 2050 remove from the environment all the carbon it has emitted either directly or by electrical consumption.

Microsoft wants to cut its carbon emissions for its supply and value chain by more than half by 2030 through a portfolio of negative emission technologies, including seeding new forests, soil carbon sequestration – a process of putting carbon back into the ground - direct air capture and bioenergy with carbon capture.

The company said it would fund the efforts by expanding its internal carbon fee – a fee it charges to its internal business groups to account for their carbon emissions. The fee will now cover all Microsoft-related emissions.

Satya Nadella

KPMG and Google Cloud announce strategic alliance

KPMG and **Google Cloud** have announced a partnership designed to accelerate digital transformation for KPMG's UK firm and its clients.

Senior Google Cloud developers and KPMG's team of certified consultants will join together to create a team of 100 by the end of 2020. The team will also incorporate the internal IT team that is targeting migration of around 10 percent of KPMG's internal workloads to Google Cloud during the course of the year.

As part of the alliance, a further two new solutions are being developed on Google Cloud Platform (GCP) covering artificial intelligence for lenders and an AI-driven chatbot for financial services clients.

IFS powers up ARO Drilling

Offshore drilling contractor **ARO Drilling** has deployed **IFS** Applications to unify mission-critical business processes across its headquarters and fleet of 16 offshore drilling rigs in Saudi Arabia.

Following a competitive bid process involving several major ERP vendors, ARO Drilling chose IFS Applications based on the platform's industry-specific functionality and fully integrated architecture.

Since the solution's successful implementation ARO Drilling has been able to simplify its work processes, leading to increased efficiency and project profitability, with the platform being utilised by some 400 full users and 2,000 self-service users across the firm's onshore and offshore operations.

The IFS solution will support critical processes including maintenance, supply chain management, finance, and human capital management.

Anas Mosa, IT director at ARO Drilling, said: "From streamlined procurement and inventory management to more efficient maintenance of critical equipment on our rigs, IFS Applications has made a real difference in how we operate. ARO is working in close collaboration with IFS' team of industry experts and we are now running a true industry solution based on best-practice, standard functionality that empowers our staff to make the right decisions, anywhere and at any time."


Mehmood Khan

Mehmood Khan, managing director of IFS, Middle East, added: "There are few industries where project control and asset maintenance and safety are more critical than in the oil and gas sector. Working with some of the world's leading offshore companies, we have developed a broad set of industry-specific capabilities that is unique in the market. We are very proud to announce ARO Drilling as the latest addition to our growing list of world-renowned oil and gas customers and we look forward to a long and mutually beneficial partnership."

UKCloud's state of cloud adoption survey

UKCloud has announced the results of a survey of more than 300 senior IT professionals and business leaders in the UK public sector that reveals the key challenges and issues that are affecting cloud adoption.

The results of the survey confirm a desire to shift from traditional IT environments to cloud solutions with 87 percent of those surveyed stating they would do this if a 'perfect solution' existed. These results were reflected at all levels with 82 percent of respondents agreeing that the senior leadership in their organisation 'understands and values progressive technology.'

One of the key findings of the survey was the extent of concern of the commercial risks of cloud adoption. 78 percent of respondents expressed a fear of vendor lock-in with a similar number agreeing that the risk of 'over reliance on a sole provider' is inhibiting their cloud adoption. More than 85 percent agreed they would prefer multi-cloud which UKCloud suggests as being a means to mitigate these commercial risks.

Another aspect of risk identified by the survey is related to security and operational risks to live systems. 85 percent of those surveyed believe their organisation is reluctant to move workloads to the cloud due to risk and security concerns.

Affordability also plays a role with 85 percent of respondents agreeing cost is the biggest impediment to cloud adoption and 80 percent saying that 'fear of runaway costs' is a notable hindrance.

Finally, 78 percent of respondents confirmed they lacked the skills and resources, such as DevOps and automation, to build and operate cloud-native applications.

NewsDeals&Wins

IBM appoints Arvind Krishna as new CEO

IBM has appointed Arvind Krishna as CEO, taking over from Virginia Rometty, who is stepping down after eight years as head of the company.

Krishna is currently IBM's senior vice president of cloud and cognitive software and spearheaded the $34bn acquisition of **Red Hat** last year. He originally joined IBM in 1990 working across a range of research and business management positions.

Rometty is going to remain as executive chair of the board until the end of the year, when she will retire after almost 40 years at the company.

Commenting on Krishna's appointment, Rometty said: "Arvind is the right CEO for the next era at IBM. He is a brilliant technologist who has played a significant role in developing our key technologies such as artificial intelligence, cloud, quantum computing and blockchain. He is also a superb operational leader, able to win today while building the business of tomorrow.

"Arvind has grown IBM's cloud and cognitive software business and led the largest acquisition in the company's history. Through his multiple experiences running businesses in IBM, Arvind has built an outstanding track record of bold transformations and proven business results, and is an authentic, values-driven leader. He is well-positioned to lead IBM and its clients into the cloud and cognitive era."

SAP DELIVERS ON 2019 OUTLOOK DESPITE S/4 DIFFICULTIES

SAP has announced it has hit every revenue and profit target across FY 2019 with a total revenue of €27.5bn, up 12 percent year-on-year.

The company reported a 25 percent increase in new cloud bookings in FY 2019 to €2.2bn. Its overall cloud revenue was €6.9bn, an increase of 39 percent year-on-year.

Commenting on the results, co-CEOs Jennifer Morgan and Christian Klein said: "SAP's strategy to be the experience company powered by the intelligent enterprise is resonating. More and more customers are turning to SAP and **Qualtrics** to close their experience gap."

Accenture accelerates growth with acquisitions

Accenture has acquired the **Workday**, **Salesforce** and US **MuleSoft** practices from **Sierra-Cedar Group** as well as strategic data consultancy **Mudano** and CRM specialist, **maihiro**.

The Sierra-Cedar agreement will see 275 consultants move to Accenture upon its closure, which is expected in early 2020.

The deal does not include Sierra-Cedar's MuleSoft practice in its Indian subsidiary, Sierra-Cedar India Pvt Ltd.

The sale allows Sierra-Cedar to focus on its **Amazon** and **Oracle** practice and removes a conflict of interest between Oracle and Workday ERP practices.

Cal Yonker, Sierra-Cedar chief executive officer said: "We are grateful for the tremendous contributions of our Workday, Salesforce, and MuleSoft consultants and leadership teams and are confident that Accenture will be a terrific partner for these practice areas moving forward.

"This transaction will provide Sierra-Cedar with an enhanced focus and the ability to make additional investment in key strategic growth drivers such as Oracle Cloud and AWS. As we embark on our next chapter, I am excited to continue working with our talented employees and maintaining our tight-knit culture as we deliver success for our clients."

Accenture has also acquired Mudano to enhance its analytics, data and AI transformation capabilities and maihiro to strengthen its **SAP** capabilities and create solutions for clients that drive innovation and transformation in marketing, sales and customer service.

Kronos and Ultimate Software announce merger

Kronos and **Ultimate Software** have entered into a definitive merger agreement to form one of the world's largest cloud providers of workforce management and human capital management (HCM) services.

The deal is expected to close at the end of March creating a combined company with revenues of approximately $3bn, more than 12,000 employees worldwide and an enterprise value of $22bn. Its stated plans for growth include the addition of 3,000 employees over the next three years.

Kronos and Ultimate each have a proven track record of delivering innovative solutions to organisations and the new company will bring Ultimate's UltiPro HCM and employee experience products under the same umbrella as Workforce Dimensions from Kronos and Kronos Workforce Ready, strengthening its position as a key contender in the fast-growing HCM marketplace.


Aron Ain

Aron Ain, long-time Kronos chief executive officer, will be CEO and chairman of the combined company. He explained: "Together, we will expand the value we deliver to customers and create the industry's most comprehensive human capital management and workforce management solution for organisations around the world. With a combined 70 years in business, we are poised for tremendous success. For our employees, customers, and partners there is an even better future ahead. Our top priority as we complete this merger is to ensure a smooth transition for our people and continue to exceed our customers' expectations."

Adam Rogers, chief executive officer at Ultimate, added: "The combination of Ultimate and Kronos paves the way to deliver the next generation of employee-facing solutions that will set the standard for the workforce of the future. Both companies remain fully committed to their core strengths as well as to the combined benefits that the new company will bring to employees and customers."

Acumatica Summit 2020 announcements

More than 2,500 customer, partner, media and analyst participants attended the **Acumatica Summit 2020** this year to hear about the company's latest releases and news.

A key talking point was the upcoming release of Acumatica 2020 R1, which will be generally available in late March.

2020 R1 highlights include a no-code workflow customisation, where line-of-business end users can quickly and easily customise their workflows using no-code tools, plus Acumatica's new payroll module which handles certified construction and union payroll needs.

The 2020 R1 will also have an expense management AI feature, allowing end-users to take a photo of a receipt, from which Acumatica will capture, import, and populate fields.

Acumatica emphasised that its products will focus on three areas moving forward: user experience, automation, and personalisation.

Additional announcements at the Summit included Acumatica's integration with **BigCommerce** to bring customers both back-office and front-office solutions, as well as its partnership with **BatchMaster Software**, which will develop new applications on the Acumatica platform that focus on process manufacturing and integrated quality tracking.

Acumatica also announced that it has acquired its long-time partner, **JAAS Systems**.

Other milestones were also celebrated at the Summit, including the 6,500th Acumatica customer and the firm's seventh consecutive year of revenue growth.


Jon Ruskill, CEO at Acumatica

together we deliver success

We have partnered with Brovanture for a number of years and always been delighted with the level of expertise and service

— Fiona Rodger, Edrington-Beam Suntory

We continue to find their support and training excellent, their whole team is very knowledgeable, responsive and flexible.

— Jane Edison, Channel 4

We would definitely use Brovanture again, their ongoing support is responsive and flexible and adds a lot of value.

— Louise Williams, discoverIE

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20 MORE YEARS OF INNOVATION FOR S/4... AND RELIEF FOR BUSINESS SUITE USERS

In the worst kept secret since **Oracle** made a similar about-turn, **SAP** has announced it will extend support for Business Suite 7 until at least 2027. SAP announced back in 2014 that it would bring the curtain down on support for its legacy ERP solution in the hope that it would drive customers to upgrade to the latest platform, S/4HAHA. However, the announcement fell pretty flat and SAP came under criticism for effectively trying to force its install base to invest in the newest solution. While the announcement to extend support for ECC 6 will give some comfort to the many SAP customers still trying to evaluate the S/4 proposition – the announcement itself was a rather muddled affair being mixed in with a headline about extending innovation for S/4 until 2040.

Michael Kleinemeier, member of the executive board, SAP Digital Business Services, said: “We are determined to make our customers successful. The extended commitment to SAP Business Suite 7 and the long-lasting support for SAP S/4HANA is at the core of this.”

SAP made the announcement under the headline “Extended innovation commitment for SAP S/4HANA. Clarity and choice on SAP Business Suite 7” and went on to set out the development roadmap for S/4 until 2040 while also extending support for Business Suite 7 until 2027 - with an optional three years on top of that for customers in mid-migration.

Was the SAP marketplace looking for clarity on 20 more years of innovation for S/4 or did 95 percent of SAP customers want to know if they were going to be forced into a choice between an unsupported ERP solution or investing in a project that wasn’t underpinned by a genuine business case?

Large technology vendors have a habit of trying to control the narrative so tightly that the message can sometimes look contrived - and this was no exception. Whilst the announcement itself is good news for SAP customers, the way that it was delivered seemed in contrast to the ‘transparency and trust’ that was quoted in the official press release. The SAP marketplace has been illuminated with conversation and conjecture around the end of life scenario for ECC 6 and it would have been a far more transparent gesture to announce the extension for the legacy platform and leave the S/4 announcement to another day.

S/4 is gaining momentum and the major SAP partners are reporting significant activity with their customers. The product itself has matured to a point where it is as functionally rich as its predecessor and the additional intelligence that the HANA platform can deliver will allow customers to innovate and become more agile. In years to come most, if not all, SAP customers will be running S/4 on HANA and those that aren’t will be the few that operate in undisrupted verticals where innovation and enterprise intelligence is less of a premium. Given the historic reputational issues that SAP has endured, and gone to such lengths in recent years to address, the announcement could have been delivered with a far more compelling story.

Under the new stewardship of co-CEOs, Christian Klein and Jennifer Morgan, SAP is continuing to push its experience proposition on the back of buying **Qualtrics**. Having invested so heavily in the acquisition it’s not surprising that SAP want to talk about it but it will be interesting to see how far up the agenda the migration strategy from ECC to S/4 is at SAP’s major UK event, InnovationX - which by the time you read this, will have already taken place on 12th March. You can read all about it in the next issue of ERP Today.

STRONG START TO FY2020 FOR SUSE

SUSE has announced its financial results and highlights from the first quarter of its fiscal year 2020, which ended 31 January.

Reflecting a strong start to FY2020, the company reported a 12 percent year over year increase in Q1 revenue, including a 67 percent rise in cloud revenue.

Large deals continue to grow, with a rise in deals over $1m and significant customer wins such as **SAP**. SUSE added 52 new employees to its more than 1,600-strong employee base, further expanding the company's market and customer reach.

Melissa Di Donato, CEO of SUSE, commented: "SUSE started 2020 with strong growth in strategically important areas, including cloud, high performance computing and containers-based computing. We continue to enable better futures and measurable value for our customers and partners through open collaboration and innovation. The market is responding very well to our commitment to their success – along with the choice and flexibility that SUSE uniquely provides."

Oracle opens five new cloud regions

Oracle has announced the addition of five new regions to its Generation 2 Cloud platform across the globe as part of its efforts to offer a minimum of two regions in almost every country in which it operates. The five new regions are in Amsterdam, Melbourne, Osaka, Jeddah and Montreal.

"Customers have told us that to run critical systems of record in the cloud, they need to run workloads across fully independent cloud regions for disaster recovery purposes," said Andrew Reichman, director of product management at Oracle. "They also told us that those multiple sites must be in the same country to meet data residency requirements. To that end, four of these new regions - Osaka, Melbourne, Montreal, and Amsterdam - give customers a second site within the same country."

The company now has Generation 2 Cloud available in 21 regions and has plans to operate 36 regions by the end of 2020.

Percipient deploys Sage solution for global travel brand

Percipient has announced that a major global hospitality brand has gone live with **Sage** X3. Deployed and supported by Percipient, the Sage solution will enable the business to shift from regional accounting to an international model, providing a centralised platform to consolidate all of the brand's financials across multiple countries and territories.

With operations across Europe, Africa and the Caribbean, the hospitality brand required a single accounting system that could be accessed from anywhere across the globe. The system also needed to include procurement capabilities to support and report on the process of rebuilding and developing certain destinations.

Now live, the business has a common chart of accounts and centralised reporting, with support for local regulatory frameworks, which allows the executive team to assess the profitability of every resort at any point in time. This includes providing detailed insights on stock control and consumables, helping to better inform planning.

Percipient's managing director, Chris Stock, commented: "Through deploying centralised accounting capabilities across three continents, our customer will not only benefit from greater visibility, sharper insights and the ability to forecast more accurately, but will also significantly reduce its risk profile.

"Sage X3 is aligned perfectly to the challenges faced within hospitality. It eliminates the manual processes involved in operating disparate financial systems to facilitate fast, comprehensive reporting across every aspect of the business – crucially, with the scale to underpin future growth."


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NewsDeals&Wins

Infor partners with Snowflake

Infor has announced it is partnering with **Snowflake** to help businesses build automated data warehouses using the Birst full-stack analytics and business intelligence (BI) platform.

Birst helps organisations understand and optimise processes in less time than traditional solutions, enabling them to create, manage and securely administrate the data held within Snowflake.

The Birst platform builds automated data warehouses natively on Snowflake, eliminating the need for separate ELT/ETL data modelling, data preparation and analytics tools. In addition, the platform will provide enterprise data governance and fine-grained security within Snowflake, along with auditing and built-in usage tracking.

Significantly, Birst and Snowflake both run natively in AWS, accelerating data processing and querying while removing the need to export data out of Snowflake.

Kevin Miller, Snowflake vice president of systems integrators, said: "We are excited about our partnership with Infor. With this integration, customers can now take advantage of Birst's networked BI automation and intelligence within Snowflake. This will allow customers an optimised experience while eliminating unnecessary data movement."

Joint customers are able to utilise Birst's self-service data preparation capabilities to blend end-user-created data with enterprise data in Snowflake, providing true self-service for business users and analysts.

Kim Davis, Infor vice president of BI & analytics partnerships, explained: "Our joint customers will benefit from the speed, scalability, and cost-effectiveness of Snowflake's zero-management, cloud-built data warehouse. Through this partnership, users can perform all ELT transformations and data warehouse automation within the Snowflake database."

Google Cloud acquires Cornerstone

Google Cloud has acquired mainframe application specialist, **Cornerstone Technology**, to help customers migrate their mainframe workloads to Google Cloud. "As the industry increasingly builds applications as a set of services, many customers want to break their mainframe monolith programs into either Java monoliths or Java microservices," said Howard Weale, Google's director of transformation. "This approach to application modernisation is at the heart of the Cornerstone toolset."

Infosys and IBM join forces

Infosys and **IBM** have announced a collaboration to help enterprises accelerate their digital transformation journey using the IBM public cloud.

The alliance aims to help enterprises to transition, modernise and transform their enterprise workloads and applications by tapping into the security, open innovation and enterprise capabilities of the IBM public cloud.

Through the collaboration, Infosys will also offer its clients access to **Red Hat**'s portfolio of open source offerings on the IBM public cloud which will provide enterprises a greater level of scale, resources and capabilities to accelerate the impact of their cloud-driven digital transformation.

Infosys will be the first global systems integrator to join IBM's new public cloud ecosystem.

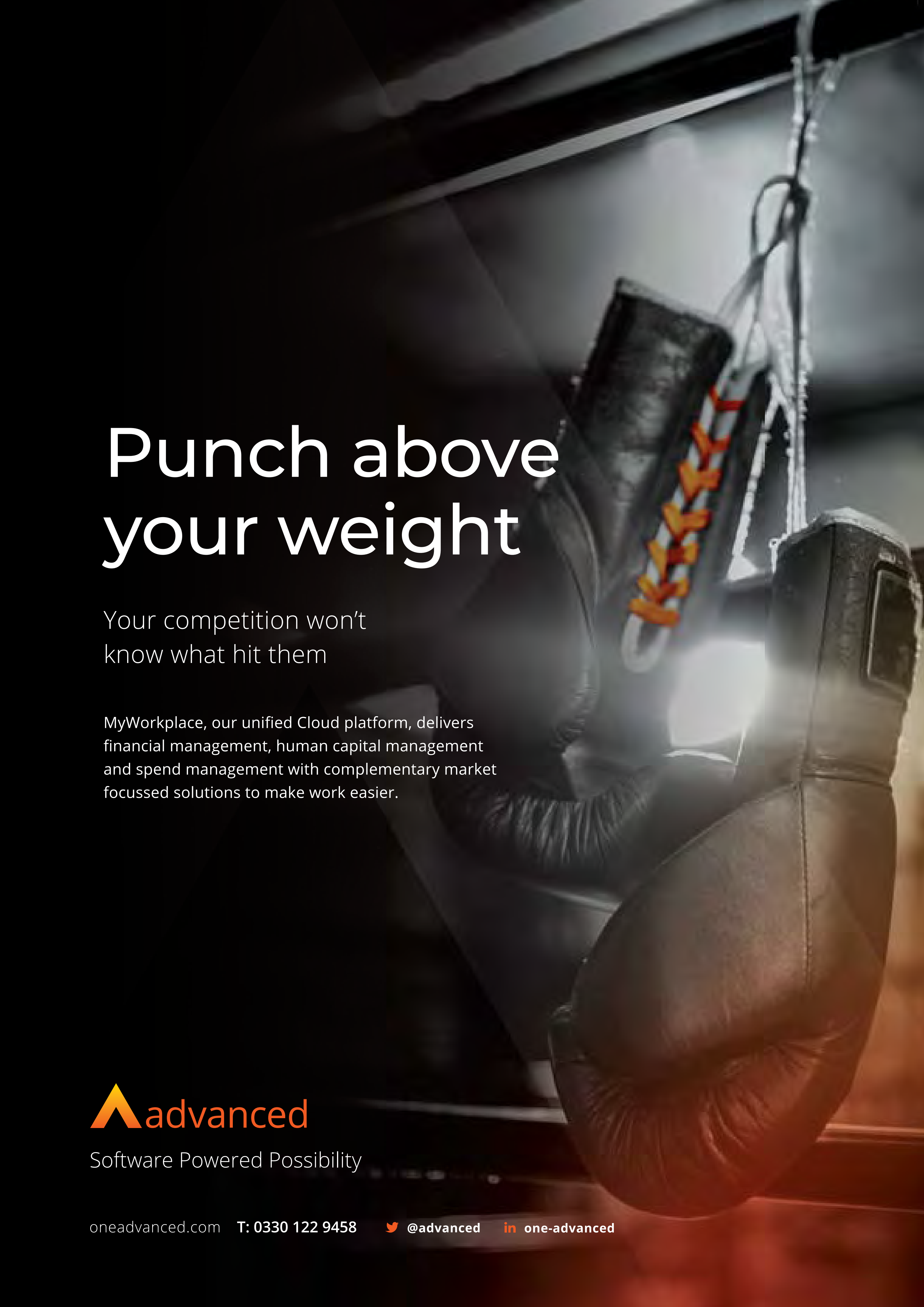
RECORD RESULTS FOR SALESFORCE

Salesforce has announced results for its fourth quarter and fiscal year, which ended 31 January 2020.

The company reported total revenue had grown by 29 percent year-on-year to hit $17.1bn, with revenue from subscription and support services reaching $16bn.

Fourth quarter revenue was $4.85bn, an increase of 35 percent year on year.

Marc Benioff, Salesforce chairman and CEO, said: "Our Q4 and FY20 results were phenomenal. We are delighted to raise our revenue guidance for FY21 by $200m to $21.1bn at the high end of the range, while expanding our operating margin."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KEITH BLOCK STEPS DOWN AS SALESFORCE CEO

Salesforce has announced that Keith Block has officially stepped down as co-CEO of the company, making Marc Benioff chair and sole CEO.

Prior to his role at Salesforce, Block served as executive vice president of North America Sales and Consulting at **Oracle**, leading a multi- billion dollar sales and services business unit that achieved record growth during his tenure.

Since joining Salesforce in 2013, he has served as vice chairman, president, director, and COO with similar success, becoming co-CEO back in 2018.

Commenting on his departure, Block said: "It's been my greatest honour to lead the team with Marc that has more than quadrupled Salesforce from $4bn of revenue when I joined in 2013 to over $17bn last year. We are now a global enterprise company, focussed on industries, and have an ecosystem that is the envy of the industry, and I'm so grateful to our employees, customers, and partners. After a fantastic run I am ready for my next chapter and will stay close to the company as an advisor. Being side-by-side with Marc has been amazing and I'm forever grateful for our friendship and proud of the trajectory the company is on."

Block will remain as advisor to Benioff for the time being, who added: "I am especially grateful to Keith for his service to Salesforce over the last seven years and I am delighted that he will be staying on as an advisor to me. Keith's strategic thinking and operational excellence have deeply strengthened our company, and our close friendship endures. I am Keith's biggest supporter as he creates the next chapter of his storied career. He will always be part of our Ohana."

In related news, Salesforce has also announced that it has named Gavin Patterson, former **BT Group plc** chief executive, as its president and CEO of Salesforce International.

Patterson, who became the company's chair of Europe, the Middle East and Africa (EMEA) in September last year, will now oversee Salesforce's largest international markets outside of the U.S.

"We are thrilled that Gavin has chosen to lead Salesforce International headquartered in London. Salesforce International oversees our business in EMEA, Latin America and the Asia Pacific region," said Benioff. "Gavin's global leadership will help us continue to deliver customer success in these important markets. I could not be more excited to have Gavin in our Ohana."

IFS partners with Boomi

IFS has announced a new partnership with **Dell Technologies** company, **Boomi**. The partnership aims to address data integration issues by enabling a technology stack which combines 'best-in-class' enterprise resource management, enterprise asset management and field service management into a digital switchboard that 'unites industrial process expertise with cloud agility.'

"By adopting 'switchboard thinking', where all business-critical applications are connected by one central point, organisations can speed up supply chains, improve service responses and compete globally like never before," said Sakari Jorma, senior vice president of IFS. "Businesses across all industries - from aerospace and defense to power generation - will be able to connect their best-of-breed systems to their IFS core through Boomi's unified, cloud-native platform. The partnership reaffirms IFS' commitment to offering customers choice and freedom to leverage their existing digital property to achieve faster time to value."

MICROSOFT
LATEST QUARTERLY FIGURES

Microsoft's latest quarterly figures for Q2 FY2020 show a revenue of $36.9bn, an increase of 14 percent year-on-year. Commercial cloud revenue was $12.5bn, an increase of 39 percent year-on-year. Revenue in productivity and business processes was $11.8bn, an increase of 17 percent compared to the same period last year, and 19 percent in constant currency.

NewsDeals&Wins

Third-party enterprise software support market to reach $1bn by 2023

Rimini Street has announced that the third-party enterprise software support market is expected to increase by 200 percent by 2023, growing from $351m in 2019 to $1.05bn by 2023, according the recent research by Gartner.

Rimini Street reported an annualised recurring revenue of $274m in its 2019 Q3 earnings.

Gartner's research note states: "Compared with the first nine months of 2018, the first nine months of 2019 show a 50 percent increase in Gartner client enquiries related to third-party support. Gartner enquiry volumes suggest that SPVM leaders are now acknowledging third-party support as an established option."

The note includes several recommendations, including that SPVM leaders should be evaluating third-party support as an alternative to the vendor's support in order to help fund future innovation.

David Rowe, Rimini Street senior vice president and chief marketing officer, said: "We believe this research note from Gartner further validates the increasing and widespread global leverage and use of third-party support to maximize ROI on current enterprise software investments and shift savings to fund accelerated innovation that drives competitive advantage and growth. To date, more than 3,100 clients with operations in 117 countries around the world, including 175 Fortune 500 and Global 100 organizations, have made the switch from vendor support to Rimini Street, and have saved more than $4bn in total maintenance costs."

Sapphire Systems win SAP partner awards

Sapphire Systems was presented with two partner awards at SAP's 2020 SMB EMEA Innovation Summit.

The company received awards in the categories of Outstanding Performance SAP Business One Partner UKI Region 2019 and Top Performing SAP Business One Partner EMEA North Region 2019.

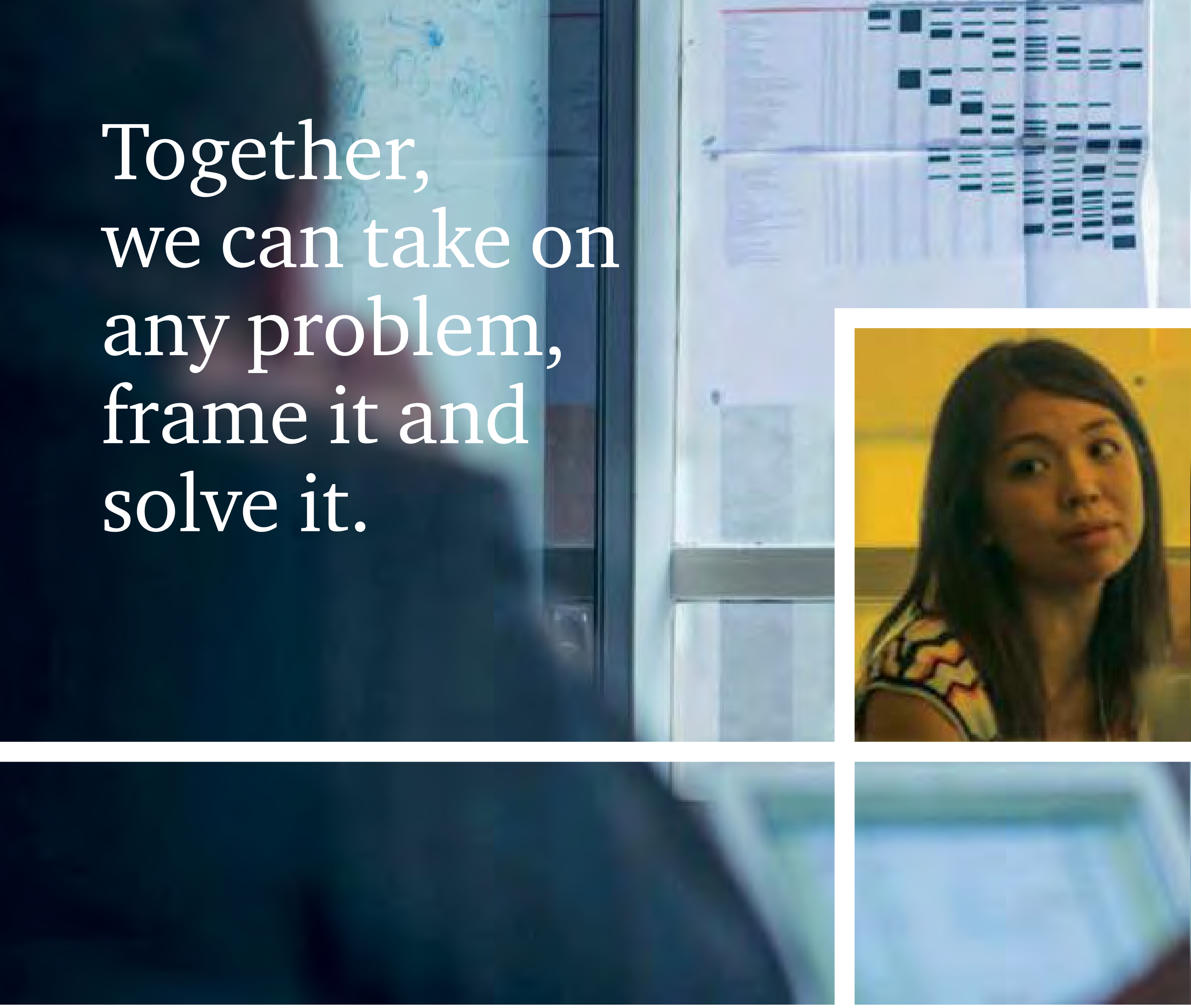
Sapphire's chief executive officer, Ian Caswell, said: "Our partnership with SAP continues to grow from strength to strength. The industry solutions and services we can offer are instrumental in helping our clients to achieve their growth aspirations."

Matt Sinclair, head of SAP UKI Business One & Business ByDesign, added: "Sapphire continue to be a key part of the SAP Business One Channel. I would like to congratulate their entire team for their continued success in providing great SAP solutions to the market."

ANESCO SELECTS ADVANCED FOR FSM

The largest renewable energy provider for solar and battery storage in the UK, **Anesco**, has selected **Advanced**'s Field Service Management software as the foundation of a configured solution to support its operations and maintenance division.

The Advanced solution will support core aspects of Anesco's field service operations including dynamic and flexible scheduling, mobile working, and works order management. The system will deliver better, more agile communication, greater visibility into mobile worker whereabouts and more efficient team deployment by enabling dynamic resource scheduling and workflow, connecting Anesco's field-based workers to the office. Anesco currently maintains and optimises over 22,000 assets on behalf of blue-chip clients, financial institutions, local authorities and individual portfolio owners, accounting for 1GW of clean energy. Matt Harvey, head of O&M at Anesco, said: "We operate in a high-growth, innovative, fast paced market and our business has grown dramatically over the last few years. We needed a field service management partner that could not only supply the technology we need today but also provide a scalable solution to enable us to adapt as our customer needs evolve and as we refine our predictive maintenance offering. In Advanced, we have found a provider with the ability to be agile and grow with us, working to deliver outcomes not just technology."


Together,
we can take on
any problem,
frame it and
solve it.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THE ERP TODAY TEAM IS STILL SMALL... BUT WE ARE GROWING.

We have assembled a team of expert contributors to comment on the issues that most affect enterprises as they grapple with disrupting markets and emerging technologies. All of our contributors offer their services pro-bono and we never take cash for content. If you have an interesting idea for a story or feature and think you can help our readers navigate the turbulent waters of modern tech-enabled commerce, get in touch and tell us about it.

PAUL ESHERWOOD
EDITOR

Thoroughly proud editor of a little start-up called ERP Today that has grown from modest ambitions into something of substance. I believe that technology can change the world but tech for its own sake is pointless and more effort should be spent developing ideas with a purpose. When I am not writing about enterprise technology I can be found in a tent fishing.

GEORGINA ELRINGTON
DEPUTY EDITOR

From 1998 I spent ten years in public relations before jumping over the fence to write and edit for high profile tech trade press. When I'm not thinking about technology advancement for enterprises, you'll find me working on a never-ending French house renovation or landscaping the garden while daydreaming about my next desert island adventure.

HILARY CAMPTON
AWARDS PROJECT DIRECTOR

I work with the talented ERP Today team to help mastermind what is unarguably 2020's most exciting awards initiative. A tech-head at heart (if that is not mixing my body parts), when I'm not colour-coding my ERP Today Awards spreadsheet you'll find me trying not to fall off my horse.

LEAH BRADLEY
AWARDS PROJECT MANAGER

As part of the ERP Today Awards team I use my event management experience and slight obsession with organisation to help deliver what we hope will be a truly memorable awards experience. When not working through my 'to do' list, I'm busy 'project managing' the family!

JEMMA TAYLOR-SMITH
SOCIAL MEDIA MANAGER

I manage the ERP Today social media activity to share its updates, stories and events on Twitter, LinkedIn and Instagram. When I'm not tagging, tweeting and updating the Insta grid, you can find me planning my next travel adventure or playing taxi to my three slightly crazy children. #Thisisme

STEPHEN JAMIESON
CONTRIBUTING EDITOR

Stephen leads sustainable business innovation at SAP where he helps the world's largest companies transform to be more sustainable and ethical businesses through system redesign and adoption of digital and intelligent technologies. This is in support of SAP's vision to accelerate the move towards a restorative and regenerative economy.

GURPREET JOHAL
CONTRIBUTING EDITOR

Gurpreet leads Deloitte's artificial intelligence practice in the UK and the financial services AI team globally. He is the co-founder of HexScore – an AI platform that uses cognitive technologies and external structured and unstructured data sources, IoT, and curated data to create insight and provide solutions across multiple domains.

WAYNE LLOYD
CONTRIBUTING EDITOR

Founder & CEO of Smarter Contracts, a FinTech product company and challenger consultancy that specialises in blockchain technology and smart contracts. Over the last 15 years I have worked for banks directly and consulted clients around the world working for both niche and global technology consulting firms.

I've worked with Paul in his other ERP business for six years and I am married to an ERP man - I live and breathe ERP! However, I try to avoid talking about tech and spend most of my time making sure everyone else knows what they are doing and where they should be. When I'm not organising events, chasing agreements or managing Paul's diary I occasionally get five minutes to read my book!

VICKI WRIGHT
CHIEF ORGANISER

Based in Buenos Aires, I have inhabited the world of publishing since the late 90s, having worked for Newsweek, Reader's Digest and Forbes Magazine, among others. Print media is fighting hard to stay relevant in digital times and a simpler reading experience might just be the answer. When not worrying about the future of print you will find me chasing the next pair of trainers to add to my ever growing collection.

CECILIA PERRIARD
DESIGN DIRECTOR

I'm the lucky photographer who shoots top tech industry figures for ERP today. Be it a cover shoot, an in depth interview with the editor or an ERP event, I love getting an insiders view and getting creative with my camera. Away from work I'll often be found cooking something tasty in the kitchen or on the barby.

JOEL CHANT
PHOTOGRAPHER

Team behind the magazine

HOLGER MUELLER
CONTRIBUTING EDITOR

Holger is VP and principal analyst for Constellation Research covering next generation applications and human capital management. He was formerly chief application architect at SAP and is a published expert on disruptive technologies and the future of work.

DR ZARA NANU
CONTRIBUTING EDITOR

Zara Nanu is a leading voice in driving fair pay and inclusion through intelligent tech and AI. Wielding extensive diversity and inclusion expertise developed throughout a remarkable career, Zara has taken on the task of linking data science, technology and the drive to close the gender pay gap and build fair pay into the future of work.

PRINCE KOHLI
CONTRIBUTING EDITOR

Prince is the chief technology officer at Automation Anywhere bringing more than two decades of experience in the technology industry. Previously he held senior roles at ThoughtSpot, Citrix and Ericsson where he ran global R&D for all digital products and managed a team of 10,000 people.

STEVE PULLEE
CONTRIBUTING EDITOR

Steve is a data migration expert and the CEO at Egress – a company that has completed more successful DM projects than any other in the UK. He has been responsible for leading some of the largest DM projects in history including the single biggest migration of data in the UK for the NHS.

EMMA SINCLAIR, MBE
CONTRIBUTING EDITOR

Emma is the youngest person to have floated on the London Stock Exchange, doing so at 29. A serial entrepreneur, she now co-leads global software company EnterpriseAlumni, as well as being UNICEF's First Business Mentor and in 2016, was awarded an MBE by the Queen for Services to Entrepreneurship.

MARK SWEENEY
CONTRIBUTING EDITOR

Mark was the former founder and chief executive of Certus Solutions, a pioneer of Oracle Cloud applications in UK&I prior to his successful exit by acquisition. A serial entrepreneur, business angel, a champion of British SMAs, and a well-known trusted face across HM Government where he has specialised in back office transformation.

FROM A SMALL VILLAGE IN INDIA TO

THE WORLD'S biggest EMPLOYER

MIHIR SHUKLA

IS THE CEO AND CO-FOUNDER OF AUTOMATION ANYWHERE. BY THE END OF THIS YEAR HIS COMPANY WILL HAVE OVER THREE MILLION DIGITAL WORKERS DEPLOYED IN THE WORLD'S LARGEST ORGANISATIONS.

BY PAUL ESHERWOOD

THERE'S A STORM COMING AND IT'S CALLED RPA.

RPA IS LIKELY TO BE *THE* MOST TRANSFORMATIVE TECHNOLOGY TO EMERGE FROM THE DIGITAL REVOLUTION AND AUTOMATION ANYWHERE IS AT THE HEAD OF THE FIELD WHEN IT COMES TO CAPITALISING ON THE BURGEONING DEMANDS OF BUSINESSES THAT WISH TO EMBRACE ENTERPRISE METAMORPHOSIS. A RECENT ROUND OF SERIES B FUNDING VALUED AUTOMATION ANYWHERE CLOSE TO $7BN AND IT PREDICTS TO GROW ITS GLOBAL DIGITAL WORKFORCE TO THREE MILLION BOTS IN 2020 – A FEAT THAT WOULD MAKE AUTOMATION ANYWHERE THE WORLD'S BIGGEST EMPLOYER.

THE RPA SECTOR is currently worth about $1bn but the market is set to double in 2020 and continue its trajectory with an 'average' annual growth rate of between 25 and 30 percent over the next decade. Some analysts are anticipating even stronger growth than that. The total available market for RPA could be as much as $100bn with conservative estimates suggesting a more measured valuation of between $30bn and $50bn. There are many factors that will need to combine to deliver the upper end of those figures or conspire to dilute the potential – either way, the market opportunity is significant and the sector's growth rate will outstrip all other technologies in the short term.

Gartner's latest report on RPA is unequivocal stating 'it is imperative that IT leaders stay ahead of RPA use and market developments to ensure efficacy and business agility.' The report goes on to set out a series of predictions that amount to an urgent call to action for any business leader wishing to prosper in the modern age of commerce. Gartner also predicts significant volatility in the RPA market with many of the new entrants being swallowed up by the early front-runners and the potential for megavendors like **SAP** and **Microsoft** to make significant plays. Gartner suggests 'as many as nine out of 10 small pure-play RPA vendors will exit the market, merge, be acquired or somehow morph' and concludes by stating, 'everyone wants a share of the lucrative RPA pie.'

Mihir Shukla is CEO of one such front-runner - **Automation Anywhere**. Established more than 16 years ago, it has grown to market-leading status with over 3,000 customers world-wide, including a significant number of global enterprises such as **Mastercard**, **Dell EMC**, **Coca-Cola**, and **McLaren Racing**.

Automation Anywhere offers the world's only web-based and cloud native automation platform combining RPA, AI, machine learning, analytics, process discovery and a bot store. Yes, a bot store – just like an app store – the industry's first and largest online marketing place for ready-to-deploy intelligent automation. Here, you can buy pre-configured software robots, called bots, designed to perform a specific business function 'out of the box,' such as an accountant or recruiter bot, or choose from more than 700 other bots that have been developed and made available by Automation Anywhere or the company's extensive ecosystem of developers, partners and RPA practitioners from all over the world. Think **Salesforce** AppExchange for RPA and you will get the picture.

Steering a company through such a fluid marketplace is a challenge not for the faint-hearted. However, Shukla has a very clear vision for Automation Anywhere and the wider RPA market and surprisingly it's focussed on humans rather than software bots; free up mankind to be creative, innovative and pur-

MIHIR SHUKLA

poseful. The bots are just the enabler and the aspiration is to create a world where people have the freedom, flexibility and capacity to fulfil their potential.

"Fifty or sixty years ago, the number of jobs that required creativity was as low as one percent. And now it is roughly four percent. Almost all the jobs that your readers have, as well as everybody here at Automation Anywhere, they didn't exist before – they've all been created in the last half century.

"I feel very passionate about this; as a parent we tell our children that they can do anything, which is what I tell my daughters all the time. But what does it mean 'they can do anything?' When there are only four percent of jobs that require some amount of creativity, how can they expect that they will be lucky enough to find one of those jobs? Is that world good enough for our children? I envision a world where at least 40 percent of jobs require some amount of creativity. This is not just about automating mundane tasks as much as it is about creating a world where 40 percent of jobs require a human touch. It's creating a world with more opportunities so that our children can flourish.

"They deserve better than what we had and the younger generations will demand it. Most young people don't have an interest in doing what my parents or I did. We did whatever we had to, no matter how mundane it was. That was the world I grew up in. The younger generations have no such interest. They grew up differently. They grew up with different tools and experiences and they say, 'I want a career, I don't want a job.' I want meaningful work. I want to do something that creates impact in the world that I live in. How can that be achieved if they have to go into jobs with mundane, repetitive work? If we can automate those tasks, we free up our younger generations to be creative and find careers where they are fulfilled. That's my vision. That's what automation is about and that's what we are doing here at Automation Anywhere."

THIS IS NOT JUST ABOUT AUTOMATING MUNDANE TASKS AS MUCH AS IT IS ABOUT CREATING A WORLD WHERE 40 PERCENT OF JOBS REQUIRE A HUMAN TOUCH. IT'S CREATING A WORLD WITH MORE OPPORTUNITIES SO THAT OUR CHILDREN CAN FLOURISH

That may sound rather philanthropic for an entrepreneur at the sharp end of the technological revolution, but talking to Shukla as I did, it was evident from the outset that he is driven and motivated by far greater things than world domination. Emerging from humble beginnings in a small town near Gujarat in India, Shukla had never seen a computer until he went to college and grew up dreaming of playing cricket rather than solving the world's business productivity problems. He says he began pondering the big picture questions when he fell in love with computers and realised they had the capacity to change the world for the better. Admittedly, his first ruminations were focussed on how he could travel to the stars rather than automate the world. But those early reflections set in motion a lifelong obsession with solving a problem that so far had eluded a fix.

SQUASHING THE MYTHS OF RPA

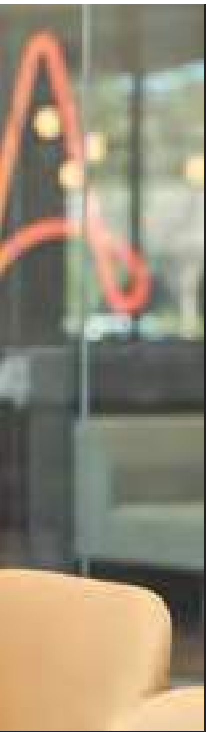
Before we get too deep into Shukla's story and the unprecedented rise of RPA, it is important to make some clear distinctions and definitions. RPA is the term used for software bots - not physical robots. RPA can be deployed at scale, in minutes, and is capable of performing a plethora of tasks – from the front to the back office – for employee on-boarding, invoice processing, payroll, sales ordering and ERP data entry, all with the speed, accuracy

and efficiency that humans can only dream of. Not that many humans are actually dreaming about going to work and carrying out the repetitive tasks that software bots were born to do. The common misconception that automation will displace workers and resign swathes of the population to the ranks of the unemployed is little more than scaremongering by those who do not fully understand or appreciate the power and potential of this technology. Let's be clear – RPA is not the enemy of human workers nor does it spell the end for those currently employed in relatively low-skilled roles.

RPA has the potential to revolutionise the labour market, create new jobs not cull them, and establish a framework for future generations to work in meaningful, creative and purposeful occupations. Consider how industrial automation changed the manufacturing industry; yes some people lost their jobs but most were reskilled and now work side-by-side with their 'robot colleagues'. Automation massively boosted productivity and efficiencies and there would be very few workers in a modern car plant that would want to go back to the way things used to be done – if they can even remember it at all. We think nothing of seeing AI powered robotics in a manufacturing plant and accept this as the norm. In much the same way we will all learn to live with the software equivalents. In a decade's time few if any will lament the change, fewer still will want to go back and perform the repetitive mundane tasks that software bots eat up.

As Shukla explained, the role that RPA plays in the modern workforce and its threat to our prosperity as individuals is often misunderstood. Human workers who co-exist alongside their digital peers are more engaged, more satisfied, more rewarded and able to develop new skills which make them more employable in the future. And companies that employ digital workers are far more likely to attract the talent they need from the Gen Y and Z demographic receiving as many as three times the number of job applicants for roles that are supported by RPA than for those that aren't.

"The question of displacing and impacting workers has been asked many times - the first time somebody asked the question was in 1777. Since then, it's been discussed and debated a hundred times over and every time we get it wrong. Various magazine covers have declared that it's the end of the 'job market' as we know it and yet today there are more high paid jobs than at any other time in history. Workers who operate alongside bots never want to go back to doing things the old way. I've walked the floors and asked thousands of customers if they would go back and the answer is universally, never. Ask yourself this; if you could go back to being 20 again and start your career over, would you look for a job that involved mundane work like order processing or data entry? Or would you want to work at a company where you could be creative and do meaningful work with all the repetitive tasks taken care of for you?



That's why employees who have experience with bots command higher wages and why employers with bots are more attractive to the younger generations."

It's not just high-volume and low-value tasks where RPA can make an impact. RPA and intelligent automation is making breakthroughs in high value domains such as corporate finance, environmental research, and medicine. It is also an increasingly powerful tool in front line services like sales and marketing and is intrinsically linked to 'the experience economy' where personalisation, propinquity and immediacy is paramount. Retailers, banks, insurers and even governments are implementing RPA to deliver new levels of service that are impossible to achieve with conventional strategies.

"Although most people talk about lower-end tasks, the reality is many of the highest paid jobs involve mundane work. Our customers in hedge funds employ some of the highest paid people on the planet and they are automating processes to free up traders and analysts to do the work that they are expert at rather than trawling though data. We are also working with the medical profession on various drug research projects that are resulting in drug availability being accelerated by automation. RPA is not just a tool to eradicate the prosaic nature of repetitive tasks, it is able to set people free to accomplish things that were previously out of reach or at least very hard to come by."

GETTING STARTED WITH RPA

So, what is a bot and how do you use one? In its simplest form a bot is a piece of code that performs a repeatable task that has a clearly defined set of rules. There are two main classes of bots; unattended and attended, with the former working completely autonomously and the latter requiring some level of human supervision. Bots can scrape information from a screen, read and understand text, make calculations, and with the addition of AI and machine learning, make educements, suggestions and improvements as it learns on the job. Bots can be built to bespoke specification or they can be bought off the shelf and perform predefined tasks right out of the box. Customers can use a 'bot store' where simple customisable bots are available that take very little coding (as little as three minutes to configure) or you can buy pre-packaged solutions like a 'Workday payroll administrator' that is, as you would expect, an authority on Workday payroll processes, prebuilt with system expertise and loaded with knowledge tokens. These bots are deployed on a digital workforce platform which integrates with an enterprise's systems and can harmonise data and processes across the full technology landscape.

Take invoice processing as one example where automation can work; when an invoice comes into an un-automated company a person will be responsible

MIHIR SHUKLA

for opening the email, reading the email, opening the attachment, checking the invoice and typing some of that information into a system of record. A bot can perform those tasks autonomously (provided it has been given the rules) and is capable of working 24 hours a day, 365 days a year, with perfect accuracy. It never calls in sick, it's never late for work and it never gets bored and makes mistakes. This is just one example and in a large enterprise, where there are thousands of these simple and repetitive jobs, RPA can have a profound impact.

However, despite the obvious benefits in this isolated scenario, the true power of RPA can only be realised through an unified strategy where bots are deployed at scale and integrated into a digital workforce platform that harnesses the power of AI, insight from analytics and is capable of connecting multiple systems across different lines-of-business and workstreams.

One of the key considerations for an RPA strategy is to ensure that the process is optimised before it is automated. Using RPA to manage legacy processes which are not entirely performant will only derive minimal value – you may get better at doing something badly. RPA must be seen as a component of digital strategy rather than a silver bullet to resolve productivity issues so implementing bots in silos to perform isolated tasks will only ever take you so far. As Holger Mueller eloquently notes in his piece on 'automation and the sentient enterprise' elsewhere in this issue of ERP Today, "CxOs need to realise that RPA is a key step towards enterprise acceleration, but it's not the final destination."

THE RISE OF AUTOMATION ANYWHERE

Whether you are a butcher, baker or candlestick maker, the time to engage with intelligent automation is now. The history books are littered with examples of established global enterprises that failed to capitalise on disruptive market conditions and disappeared almost overnight. The world's biggest brands are all new – **Amazon**, **Uber**, **Netflix** et al, and they all have one thing in common - automation. The new global powerhouses didn't invent the wheel – we were all buying stuff from shops, calling taxis and renting videos long before they emerged. These trailblazing companies took what we did every day and made it better. They gave us the same product, the same output, but made it quicker, easier, and cheaper and that is the holy grail for any enterprise with transformational aspirations

RPA is the piece of the transformation jigsaw that will allow true metamorphosis into a sentient and connected enterprise. Automation is the key to making this happen because it improves business efficiencies, reduces errors, and improves agility. All of which leads to a better and differentiated customer experience. Automation Anywhere makes this happen by offering a complete platform that can automate end-to-end business processes and this is a key differentiator in the RPA space. Most RPA vendors are focussed on simplifying back office processes such as accounts and payroll. However, through their digital workforce platform, Automation Anywhere is able to automate end-to-end process from procurement, finance, shipping, sales and customer experience. This capability elevates the value of RPA into a completely new league.

Automation Anywhere's key strengths are its coherent web-based, cloud native platform, relatively low-cost entry point and total cost of ownership (TCO), its extensive partner network, considerable R&D resource and its community developer edition which is available as a limited free tool to users of all types and skill levels. It has the most extensive eco-system of all the RPA exponents with more than 1,400 global partners, has certified more than 240,000 professionals through its Automation Anywhere University (where students can access hundreds of free training courses) and has more than 150,000 people in its A-community – a hub for developers to collaborate. It also has nearly 600 staff working in R&D – significantly the most of all the RPA players – as it continues to enhance both the platform, its extensibility and intelligence across its offerings.

Forrester's latest RPA market report points to strong references for the ease bots can be bought (from Bot Store) and the speed they can be configured and deployed. Enterprise A2019 – the latest version of its RPA platform – has a web-based interface that allows users to develop bots and configure workflows in a highly scalable 'zero-coding' environment that delivers the same experience whether your platform is on-premise or in the cloud. Forrester says this creates 'an easier design environment for business users and developers to collaborate on both simple and complex use cases.' It allows for instant configuration with drag and drop functionality and zero coding, or you can build advanced

RPA IS NOT JUST A TOOL TO ERADICATE THE PROSAIC NATURE OF REPETITIVE TASKS, IT IS ABLE TO SET PEOPLE FREE TO ACCOMPLISH THINGS THAT WERE PREVIOUSLY OUT OF REACH OR AT LEAST VERY HARD TO COME BY

THERE ARE MANY OBVIOUS BENEFITS TO RPA LIKE THE COST SAVINGS AND ERROR REDUCTION BUT ULTIMATELY WITHOUT AUTOMATION YOU CAN'T CREATE THE EXPERIENCES THAT YOUR CUSTOMERS AND EMPLOYEES EXPECT. PERIOD.

automation using your own proprietary code and the inherent API architecture to maximise extensibility and customise RPA for unique business requirements. The platform also offers a variety of intelligence tools such as its self-learning automation engine that allows users to automate end-to-end processes with built-in AI capability to optimise tasks and workflows. Importantly, the platform delivers enterprise grade privacy, security, governance and control with granular RBAC (role-based access control) with encryption at rest, in use or in motion – meaning your data is always secure.

The recent introduction of 'Discovery Bot' is another significant breakthrough in their offering. The AI-driven solution is capable of searching out the best automation opportunities in a system by automatically capturing and analysing user actions to uncover common, repetitive steps as workers navigate between business applications. It then prioritises automation opportunities by ROI and creates the appropriate bot autonomously which can then be deployed in seconds. It is claimed that this process will accelerate an enterprise's time-to-automation by a factor of five and Shukla says the introduction of this new tool is the culmination of years of development work.

"Discovery Bot accelerates the automation journey for organisations using artificial intelligence to automatically capture and analyse user actions to determine what business processes to automate. Then, with a single click, it can create a software bot. This is a vision we've had for years – a bot being able to create another bot."

CAN YOU AFFORD NOT TO EMBRACE RPA?

The arguments for RPA are compelling. Digital transformation is having a profound impact across all sectors of commerce as enterprises seek out the best ways to buy, sell and deliver services. However, optimising processes built around human capabilities will only take an enterprise so far. Becoming seamless in end-to-end intelligent automation is the holy grail. Business leaders must adopt the most efficient, cost effective and accurate tools in their quest to remain competitive and, in many cases, RPA is that tool. If you take two identical businesses and embed RPA into one and leave the other to run on human effort alone, there will only be one winner.

Yes, there are some social considerations to think about. But whether we think about them or not, RPA is here and it's here to stay. In researching for this article I was surprised at just how few people in the industry really understood RPA – some had never even heard of it at all. Ever wondered how Amazon manages to deliver things so quickly? That's RPA. Thought about why your mortgage application only takes two minutes now when it used to take two weeks? That's RPA. Impressed how comparison sites find you the best deals? That's RPA. And there are literally thousands of other consumer interactions that are powered by RPA that we already take for granted. Imagine doing a comparison of insurance quotes and having to manually visit each site and type the same information in 20 times – we would never do that in our personal lives and don't think about the automation that happens behind the scenes. Consumers are always the testbed for enterprise technology and RPA is no different - just look at how UIs in ERP systems have changed so they mirror the interactions we have all become used to on our smart phones.

As I said in the opener to this piece, RPA is likely to be the most transformative technology to emerge from the digital revolution and any enterprise not embracing it will almost certainly be left trailing those competitors that do. The threat RPA poses is not to the human workforce; it is to any enterprise that fails to grasp the opportunity. Business leaders should not be daunted by this but must take steps to ensure that they understand the opportunities and threats posed by RPA and start asking questions now.

"The first question I ask is can you afford not to do this? In a world where all businesses are becoming digital enterprises, where customers are demanding instant results, instant delivery, instant response, there is this culture of instant gratification that customers everywhere are demanding. What was acceptable five years ago is no longer acceptable.

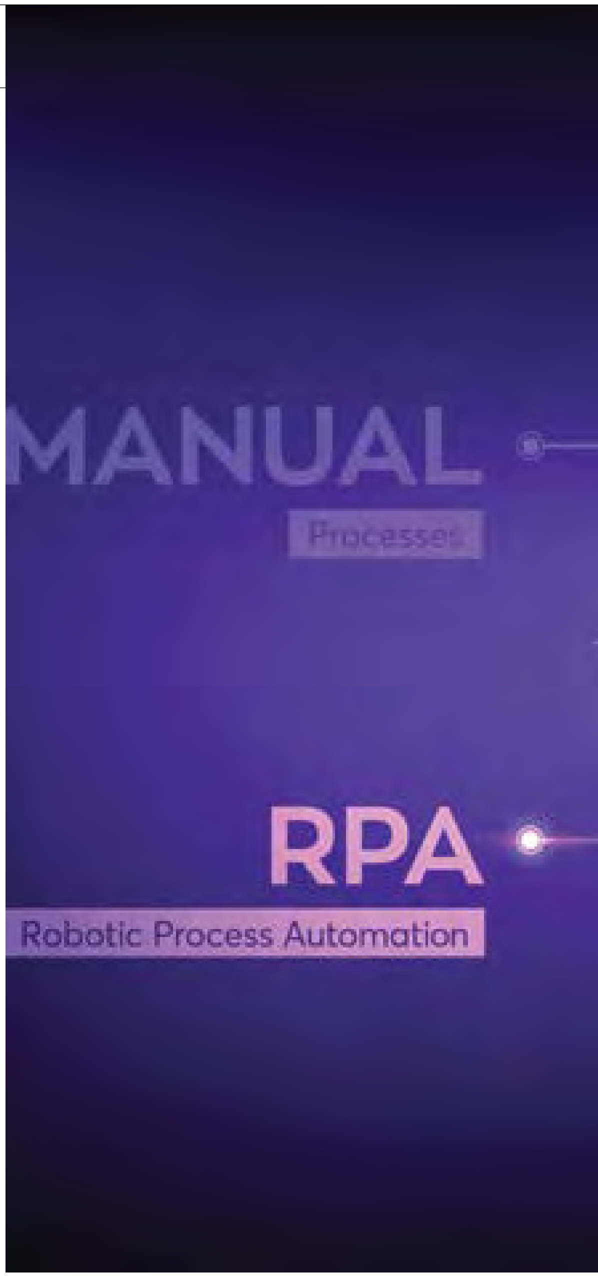
"The world has changed, and we expect instant results across everything we do from calling a cab to reading a book or ordering a pizza. We expect instant personal experiences from our banks, insurance companies and retailers. And in that world, can you afford not to adopt these technologies? Without them you are so far from the expectations of your customers. There are many obvious benefits to RPA like the cost savings and error reduction but ultimately without automation you can't create the experiences that your customers and employees expect. Period." ■

WHAT'S THE DIFFERENCE BETWEEN PAID FOR CONTENT AND PLATFORM MARKETING?

RPA

The power of RPA

– a Milestone on the Quest for Enterprise Acceleration



There is a lot of hoopla around the term robotic process automation (RPA) and it is well deserved. However, we may have witnessed the height of the hype cycle for RPA already. Enterprise leaders need to realise that RPA is a key step towards enterprise acceleration, but not the final destination.

BY HOLGER MUELLER

REPORTING

Zoom back to the 1950s; if an enterprise was advanced it would use a mainframe. In an almost religious ritual, business people would hand over their punch cards at end of business on Friday so the IT specialists (they were wearing scientist's white robes back then) could run their reports over the weekend. Typically these would be delivered on Monday morning and business leaders would then determine the course of action based on the reports. Needless to say all reaction was manual, people would be instructed via phone calls, if super urgent via telegram, and if less urgent via letter. The speed of the enterprise was a slow crawl at best with reaction times in a week or so.

ENTERPRISE RESOURCE PLANNING

In the 1970s the first ERP system emerged bringing together finance automation and manufacturing and allowing to close books and evaluating and executing manufacturing plans. The combination of automating multiple areas of an enterprise created better visibility and faster actions. Enterprise leaders would know exactly what a product would cost to manufacture and could adjust pricing accordingly. Unfortunately, ERP vendors kept adding functionality to their ERP

system in a siloed, functional way, so cross functional area automation was not possible. For instance, the pricing adjustment of the end product for a differently costed ERP run would still happen via calls, mail and if advanced email. Individual worker productivity was gated by their speed to use the software and enter information. Reaction times at best were still in hours or so.

ROBOTIC PROCESS AUTOMATION

The grandparents of RPA are keyloggers and macros that started to appear in the late 1980s. The power of the PC created room for additional programmes to run and operating systems started to standardise. More importantly these tools gave workers the opportunity to automate their own workplace handing over repetitive tasks to the 'RPA' tool of the time. **Microsoft** offered macro recording and writing to automate sophisticated task inside of Microsoft Word and Excel. Of course, all the optimisation was on an individual worker level, nonetheless nice for workers with the ability to make themselves more productive.

Of course, these first tools have nothing to do with the market leading RPA tools of current times. Today, RPA tools are implemented inside of IT projects and help enterprises to make their workers more productive, cross the functional silos of ERP applications, and in the most advanced cases, cross business application boundaries. Tools have not lost the ability to help the individual worker, which is key, as the proverbial 'long end of the (automation) hockey stick' exists - no matter what the tool is. Most recently, RPA processes have moved from being completely prescriptive to add more versatility and flexibility – with the addition of AI/ML capabilities, where the automation can morph and adapt, a key new feature to allow business to move faster. Finally, these RPA tools will do work without workers being present or even needed. Reaction times can now be at the speed of data and speed of automation.

The five phases of automation toward enterprise acceleration

PHASE	TIME	FOCUS	PLATFORM	REACTION TIME	ENTERPRISE ACCELERATION POTENTIAL
Reporting	Weeks	Visibility	Mainframe	1 week	Low
Enterprise Resource Planning (ERP)	Days	Automation	Client/Server	1 day	Low
Robotic Process Automation (RPA)	Hours	Process	PC/Browser	Hours	Medium
Business Acceleration Cloud (BAC)	Minutes	Automation + Process	Cloud	Minutes	High
Sentient Enterprise	Seconds	Visibility + Automation + Process	Cloud	Seconds	Very high

RPA

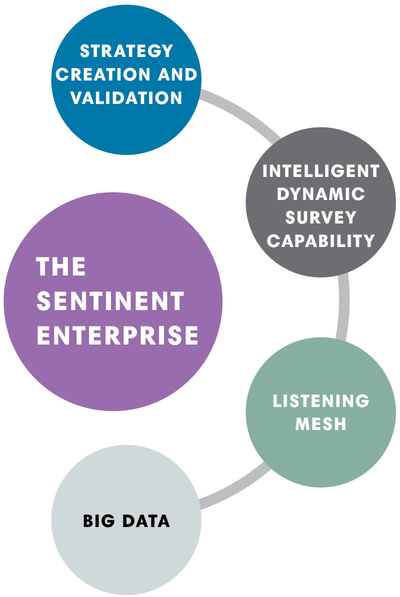
BUSINESS ACCELERATION CLOUDS (BACS)

When we look at the frontier of business automation we see a new category emerging - business automation clouds (BACs). In the realisation that all enterprises are becoming powered by software, there is an insatiable need for software environments that help enterprises to run, execute and differentiate in their markets. BACs take the hard work out of ad-hoc creation of software environments that are needed for running software that helps an enterprise. On top of that BACs have key SaaS applications available that can run on top of these software environments automating higher level business processes from the value creation process all the way to collaboration. Importantly, BACs are able to be created by business users with reasonable tech expertise. The consequence for enterprises is that BACs can be launched at the speed of business. Reaction times are now also at the speed of business with minimal lag.

THE SENTIENT ENTERPRISE

Ultimately the rise of 'infinite computing' will propel enterprise into the AI stage, if not onto the final, deep learning stage. This is when all digital artefacts and digital exhausts of an enterprise are available for deep learning processes and derived automation. Effectively the enterprise is 'listening' (therefore the designation of sentient) to its own business, including inside and outside the relevant enterprise factors. The 'sentient enterprise' then automates accordingly, without human intervention, initially to gain the trust of those (still) at the controls and over time expanding its trusted automation range. The 'sentient enterprise' not only manages to continually delight business users with the automation that they have wanted to see for a long time, but also manages to automate businesses in ways that have not been conceived due to the lack of visibility and automation options. In its first phase the vendors providing solutions for the sentient enterprise will shy away from the automation and focus on strategy validation and creation, powered by a listening mesh, BigData and an intelligent, dynamic survey capability.

The components of the sentient enterprise



THE RECOMMENDATIONS

Determine your enterprise acceleration strategy. CxOs need to know where their enterprise stands in regards to agility and speed and then craft an enterprise acceleration strategy. That means to get going with a set of strategies, and RPA needs to be one of them.

• Aggressively bring RPA to fruition for your enterprise. RPA is a proven technology and when an enterprise is not using it towards the fullest extent it risks lowering employee engagement and falling behind in the marketplace.

• Evaluate further. The next thing behind RPA is coming and it's the transformation of enterprises into software powered enterprises. For that enterprises need BACs to become part of their digital operations.

• Measure enterprise acceleration progress. Needless to say, if you do not measure it you cannot manage it. This applies to enterprise acceleration as well. CxOs need to install measurement programmes to see the effectiveness of their enterprise.

THE TAKEAWAYS

It is key for CxOs to realise that RPA is only a step – not the final destination toward enterprise acceleration. That does not mean that enterprises should not embark on RPA projects and should not use RPA tools. Anything that helps enterprises move faster and become more agile is a key technology and tool to operate in the current competitive marketplace. Increasing worker productivity with RPA is a very good strategy especially when workers are tied down with monotonous and tedious tasks. Automating these will increase the employee experience in the workplace and with that contribute a key factor to retain talent. Happy and engaged employees serve customers better, don't look for work elsewhere and create an attractive workplace. Moreover, the automation reaped from RPA will open up capacity for higher value tasks for workers, opportunities for training and create a more human workplace. Software agents powered by RPA can help an enterprise scale and become more agile, effectively moving faster and achieving enterprise acceleration.

The key realisation however has to be that automating current processes, as experienced and executed by workers, is only a small part of what is really happening in an enterprise. Improving existing processes will only make enterprises increase efficiency (are we doing things right?), not asking the effectiveness question (are we doing the right thing?). Many business causalities are not seen and therefore not yet understood and the enterprise cannot react with appropriate automation in response. So, the key takeaway is to realise a way that can store both the digital artefacts and digital exhaust of an enterprise. BigData is well understood and enterprises need to find a way to continuously operate their Big Data assets. Coupling BigData with cheap compute available in the public cloud must lead to ML/AI applications. The execution on these insights has to happen in software, so BACs are a key software category to look at. Operating with more software requires more software and therefore requires more automation. Driving an enterprise automation and digital nervous system with a sentient enterprise approach is the holy grail – for now. ■

'Automated' data migration dreams

There are many products in the marketplace that profess to deliver an automated data migration experience. But is this really possible?

BY STEVE PULLEE

Data migration is the process of moving data from one, or typically multiple, data sources into a target solution. In my early career that involved numerous business users or 'temps' furiously typing data into a newly developed software solution, just in time for the business to cutover – the results were predictable.

Fast forward to today and the emphasis has been completely reversed with the ERP customer now expected to provide the data, ready for loading in pre-defined load files, for a solution that they typically will not know in any detail.

In reality, in order to deliver this successfully, the migration process must contend with many competing elements, including; source data extraction, mapping, validation, cleansing, transformation to load specifications, and loading into a target solution. All of which incidentally evolves throughout the whole programme. On top of this data should be reconciled and validated at each stage.

This process, once built, needs to be repeated several times over the course of an implementation programme to support test cycles and to demonstrate various KPIs on quality are met. This all leads to the point where cutover is performed and the new solution goes live.

But is automated data migration possible? The short answer is no. Well in reality, not out of the box it isn't. I hate to debunk the myth but there is no magic tool or wand that can be waved to make this happen and allow us to all sit and pat ourselves on the back for one of the most essential stages of an ERP system upgrade. While there are several processes that can be automated in delivering a repeatable DM solution there is still a considerable amount of manual input required to make this achievable. It is this human element of input that requires careful planning and governance to ensure that the right stakeholders are involved along with the buy-in and accountability to deliver a quality outcome.

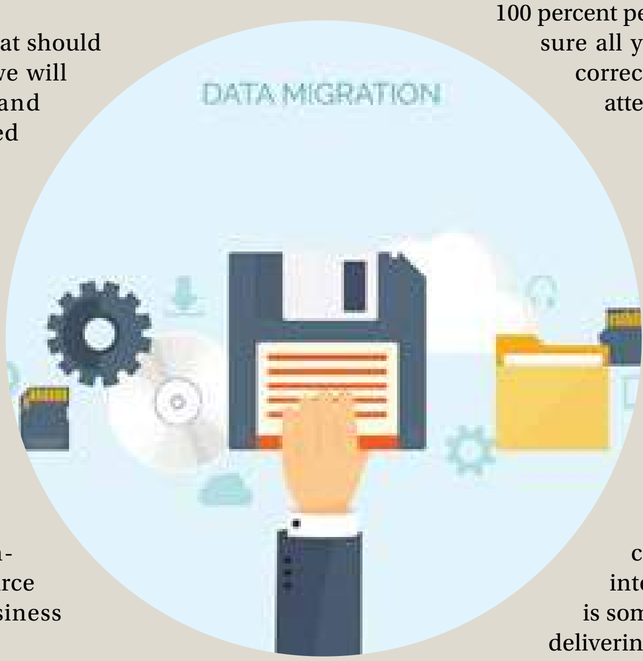
> **"I hate to debunk the myth but there is no magic tool or wand that can be waved to make this happen**

A perfect example of this is in the area of data mapping. Data is mapped from legacy to target along with definition of any transformation requirements. This needs inputs from the data migration team (having analysed the data set in question to define all the variants and scenarios), the business data owner (who understands their own data in its existing context), and finally the SI (who understands the target solution). Given the target solution evolves through design and testing phases this process is re-visited in several iterations.

Another example of human input is in the scope definition which is agreed in the data migration strategy with inputs from the business. Although often desired, it is not always practical or viable to migrate all legacy data to the target solution. It is therefore a requirement that the business stakeholders define, by data set, the rules by which the data is extracted and filtered before any transformation takes place.

Key areas for automation

Focussing on the key areas that should be utilised for automation; we will start with data validation and transformation. As mentioned previously, these processes will need to be repeated in a controlled environment. Ideally, as an output to this process the business will require reporting to identify data validation and cleansing issues. There will be opportunities identified to cleanse or rationalise the data through the transformation process. However, there will always be a requirement to cleanse more complex and unique issues at source through the appropriate business channels.



There are several ETL (Extract, Transform and Load) products on the market to support these functions. Some are better than others and some considerably more expensive than others. Unfortunately, none of these products can be installed out of the box and instantly transform and validate your data. They all require configuration for the inputs and outputs of each data set as well as all the agreed mapping definitions and transformation rules. There will also be some tinkering required to set up all the boundary tests to refine the validation outputs. This requires a considerable amount of effort for a most ERP programmes.

Once all of the above has been completed the process can be run over and over again. The files output can then be presented to the loading interface of the ERP target solution. There will obviously be maintenance throughout the project life cycle as the design of the target solution evolves, upgrades are applied, and variations appear in the source data as new extracts are processed through the toolsets; but this is to be expected.

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> **Whilst massive strides have been taken the machines are not taking over yet.**

Another area of consideration for automation is in the reconciliation process. One of the typically more complex, critical, and resource intensive areas of ERP to reconcile is payroll. Obviously, it is important to get all implementations 100 percent perfect, however if we don't make sure all your employees are being paid correctly this will likely create a lot of attention at go live and beyond.

Again, there are proprietary toolsets on the market that perform legacy payroll to target comparisons and report differences to the penny, prioritising and categorising differences. This is sometimes delivered through performing (typically) three months worth of payroll parallel running, post cutover. However, with the right approach, toolsets and testing strategies, it is possible to incorporate parallel payroll testing into the standard test cycles. This is something I successfully witnessed delivering for some of the largest clients on ERP platforms to date.

From a best practice perspective, the reconciliation and validation process should be exercised during each and every ETL in order to highlight issues. With timing constraints of any normal programme, utilising toolsets in this space not only reduces the validation window but also increases the quality to a measurable outcome.

Hopefully, by the time cutover finally arrives, the ETL process will be both seamless and automated with very few exceptions or human interactions other than quality approvals.

In summary, automation can only ever be as good as the human that controls and instructs it. Where there is a high level of repetition of a given task then automation will, more often than not, be the best solution. However, when strategic or business-impacting decisions are required, especially where there are multiple stakeholders, then there is no substitute for human intuition.

So, whilst massive strides have been taken in improving the capability of automation in the data management space, the machines are not taking over (yet). ■

AI is moving from the 'why' to the 'how'

The next stage of AI development will be the instigator for innovation but answering the skills shortage will be key to maintaining the UK's momentum.

BY GURPREET JOHAL

When it comes to the growth and applications for artificial intelligence (AI), UK business leaders are enthusiastic. Ninety-three percent say that they have increased their investment over the last fiscal year and around the same number are planning to increase it again next year.

With many business leaders confident about the impact AI will have on the future, much of the hard work of convincing people of the technology's value has already been achieved. Now we've established why AI is important for business growth the question many are now turning to is how it will be important for organisations.

Currently, AI is frequently adopted in order to solve a multitude of business challenges. Part of the problem is the 'AI hype' that is circulating within the market. Many are trying to grapple with the technology to solve problems of all shapes and sizes. Getting a clear strategy on how AI and other related technologies can help a business is an area that still needs more work. As does the question of how to maximise the impact of AI and related proof of concepts that proliferate an organisation.

For instance, I have seen some organisations looking to develop AI systems to create personalised responses to customer complaints as they are no longer able to respond to these individually. The main challenge in this is that the number and complexity of complaints they are receiving is growing and this needs a broader solution. AI is an enabler to this - not the only answer.

Additionally, cost reduction is seen by many in the UK as the key rationale behind AI development. Many organisations view the technology as a straightforward way of freeing up workers for more value-add tasks and optimising processes like marketing and sales. Although it's true that AI will be effective in pursuing these strategies, companies seeking a step change competitive advantage must build upon learnings from current priorities such as cost reduction to enable broader applications.

> "Many business leaders are confident about the impact AI will have on the future

AI is not a sticking-plaster for business challenges, but an innovation-instigator

To ensure that AI is not only developed to react to problems, but also proactively to pre-empt business challenges, the first step is to invest time in understanding the complexities of your business and the frequent challenges that customers and employees face.

Having worked for over 25 years in financial services, including insurance, one of the most frequent problems cited by clients is the struggle to collect high-quality, accurate and up-to-date risk data.

In the world of commercial property insurance for instance, this data is relied on to produce risk assessments to inform the pricing, the monitoring of aggregate exposures, etc. However, teams are under increasing time and resource pressures and so collecting relevant data is a challenge. On-site visits are expensive and becoming less frequent and legacy information systems are quickly becoming outdated. In fact, it's often impossible to visit all sites and in some cases only ten to 15 percent of commercial properties that are underwritten are fully assessed with an on-site visit.

I have been involved with the development of an AI tool which provides a digital print of any location across the world and access to the associated real time, on-demand data.

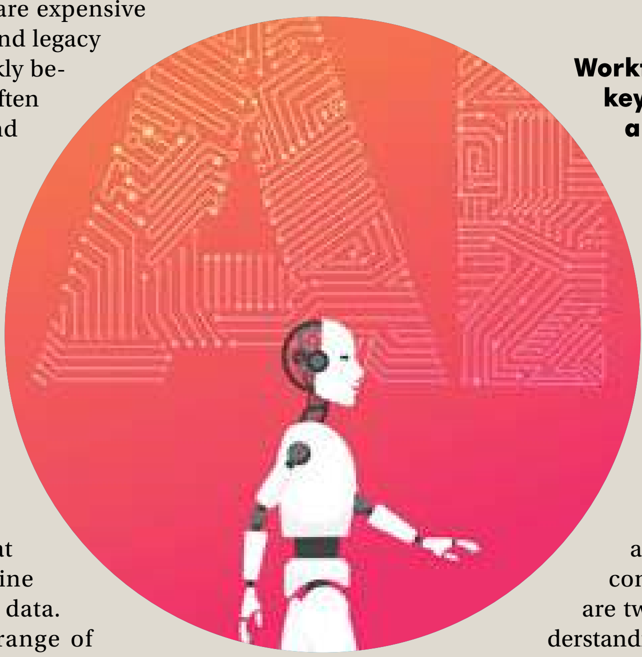
The system is built on machine learning algorithms that extract, transform and combine unstructured and structured data. The algorithms draw on a range of sources, from open data, satellite and aerial imagery, social media, news, light detection and ranging (LIDAR) technology, and maps data.

Built on **Google** cloud, the risk modifier data is then presented on a digital platform alongside additional analytics such as local surroundings, weather, and related history.

Users of the tool have had their time freed up as they do not have to request and rely only on information from their customers and brokers. They are also able to rely on real-time intelligence rather than site visits and optimise which risks require physical inspection.

Fundamental to the development of this tool was ensuring that it incorporated data from globally and locally available sources of data and that users have easy access to understand how and where the data was collected. This ensures that teams have full trust in the tool and the recommendations it is making. In addition, this is more than just data, algorithms and cloud technology as it shows how AI solutions need to be engineered in order to make them scalable.

Research shows that currently UK business leaders are half as likely to be using AI to create new products as business leaders in the US, Canada, China, Australia, France and Germany. Shifting our perception of AI as an innovation-instigator will be fundamental to ensuring that the UK remains a competitive market for the technology's development.



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AI has a tremendous opportunity to develop business, create new products and change our working lives

Workforce preparation will be key to successful innovation and keeping pace with global competition

UK companies today report more acute skills shortages than other countries particularly in technology roles. The biggest gaps in skills shortages in the UK compared to the rest of the world are in business leaders, change management and transformation.

Workforce preparation will be key to successful execution and keeping pace with global competition. The reasons for this are twofold. Firstly, with a solid understanding of how AI technologies work and an awareness of the necessary data and infrastructure they depend upon, teams will have a greater ability to identify areas of where the technology could be applied to improve their day-to-day roles and increase innovation. Secondly, they will have a better understanding of how their roles will be adapted to work with the new systems once they are activated and the ethical considerations that must be contemplated when developing the technology.

AI has a tremendous opportunity to develop business, create new products and change our working lives for the better. However, AI is not the full solution and needs to be incorporated with other technologies to unlock the business potential. With the vast majority of business leaders now awake to the potential for the technology's development and the impact it will have on their organisations, the next step will be to ensure that it is used to solve the right challenges in order to spark new innovation. Workers at all levels will be central to this task and it will be vital to invest in training at all levels to ensure that the UK continues to act as a leading market in AI's development on the world stage. ■

How epic failure changed the world

Heard of Steve Jobs? Bill Gates? Steve Wozniak? Marc Porat? Likely not the last on the list but that's about to change.

BY EMMA SINCLAIR MBE

On a 2016 trip to Silicon Valley with a group of 12 female entrepreneurs, I sat next to Brit, Sarah Kerruish. She told me about a side project she was working on. Having left the Isle of Man in the late 80s to take up a place at an American university, she scored her first job at a now failed startup called **General Magic**. More than thirty years later, she was gathering footage about this company that none of us had heard of to make a full-length documentary about a fascinating but cautionary business tale.

Fast forward to 2020 and despite being number one on iTunes (with zero marketing budget), despite the film winning **Tribeca** and a host of other major film festivals and despite **Forbes** describing the company as "The most important dead company in Silicon Valley" .... odds are you haven't heard of it yet.

What's all the fuss about?

General Magic is a story about how great vision, astounding perseverance and epic failure changed the world as we now know it - from the smartphones that sit in our pockets to an array of technologies we now take for granted today. Many of the ideas that now dominate the tech industry and our day-to-day lives were born in 1989 at this Silicon Valley start-up just outside of San Francisco, believe it or not.

> "General Magic is a story about how great vision, astounding perseverance and epic failure changed the world

The first smartphones; social media; e-commerce; touch screen; USB; even the beloved emoji. They all stem from this one company. And this was before the internet, before 3G, before **Google**, before most people had mobile phones.

Did you know that 98 percent of the world's smartphone market can be traced back to two people who sat no more than 10 feet apart at General Magic? That's Tony Fadell (iPod, iPhone and founder of **NEST**) and Andy Rubin (Android, so called because Andy loves robots aka droids, in case you were wondering).

So too in that office sat the original Macintosh engineer Andy Hertzfeld, **Apple**'s first head of marketing Joanna Hoffman (played by Kate Winslet in the Steve Jobs movie), Kevin Lynch aka the man behind the Apple Watch, the former CTO of the USA, Megan Smith, and Curtis Sasaki now head of product and innovation at **Samsung** - and a host of names who went on to great success and today are considered some of the best and brightest minds in business.

Watching footage of Marc Porat on screen, their visionary CEO, describe how we'd all one day be holding small devices which would combine a phone, fax and personal computer was mesmerizing – and predicting that one day it would all be available on a watch too, was surreal. He knew exactly what was coming. Here was a man who saw the future and led a team who came within a hair's breadth of changing it at the time – and carved the path for the phones we all live and die by today.

So why did it fail and what can we learn?

The film is a master class in the importance of ensuring diverse thinking at the table, the part timing can play, managing egos, understanding the market you are serving and how learning from your mistakes is the best training. It's a lesson for everyone building a product, a team or a business. But the film's success is proof that it's a lesson for life; how epic failure can be a precursor to your greatest success.

The company floated in 1995 and the stock spectacularly soared then rapidly nosedived. General Magic had an extraordinary team, the best of the best from the Apple of the 80s and 90s who knew what was coming but were ahead of their time. But was that the only reason it failed?

Timing played a part in that the world was not ready to hold the world in its hands when their handheld intelligent phone launched in the mid-90s. They spent too much time making a product with too many features. Too complex and expensive for the consumer, they had not considered whether the public was ready for so much change so fast.

Remember the iPod and how a new version came out every year? The first version was basic with barely any storage capacity in 2001, then came a touch sensitive wheel in the next version, a coloured screen in the next version. There was the shuffle, the mini, the classic and the touch. After the failure of General Magic, Tony Fadell knew that the key to success was getting a product to market fast and iterating – and the rest is history. Apple sold 400 million iPods.

Fierce competition and heartbreaking betrayal dominated behind the scenes too. There was an unhealthy hubris under their roof. The Magicians had an utter conviction that they were right about their uncompromising vision, by virtue of the fact that they had such an exceptional team.

> **"The lessons learnt at General Magic were instrumental in the creation of the iPod, iPhone, Android and eBay**

And whilst the team was remarkably diverse compared to today's world of business and technology, respect for differing opinions was the Achilles heel of General Magic. For example, they ignored the intern who said "hey everybody, the internet is coming." They dismissed the developer who came up with the idea of an online auction (Pierre Omidyar actually started eBay while working at General Magic). What if they had listened to more diverse voices or pivoted towards the internet? Would it have succeeded?

Food for thought

Many of us read books, keep abreast of industry thought leadership, skim newspapers, attend conferences, listen to podcasts and generally try to learn from lessons of the past and present to help our collective personal and professional futures. We are interested in innovation, disruption, technology and how the future will be shaped.

Watch the film. Show it at work events. Watch it with your family or friends. There aren't many films that have a vein of business threading through their story. Wall Street and Working Girl are two of my favourites but they're fiction - and 30 years old! General Magic is a timeless and true story of how easy it is to fail. It is the lesson that without diverse voices at the table, the best and brightest talent doesn't necessary equate to success.

But equally important is that while some never recovered from the failure that accompanied its downfall and bankruptcy, others went on to soar. The lessons learnt at General Magic were instrumental in the creation of the iPod, iPhone, Android, eBay, even in the corridors of President Obama's White House. And although General Magic died, those concepts and the people who worked there went on to change how the world connects today.

The documentary tracks the progress of anytime, anywhere communication from a thing of science fiction to our modern-day reality. It's quite incredible what has happened in thirty short years and a reminder that ordinary people can do extraordinary things when they work together. ■

RESURGENT AND TAKING ON THE MID-MARKET WITH INTACCT

SAGE IS A BRAND THAT WE ALL KNOW. IT IS ONE OF THE MOST ICONIC BRITISH COMPANIES AND HAS MORE THAN 600,000 CUSTOMERS IN THE UK – MORE THAN ANY OTHER TECH COMPANY BY FAR. KNOWN FOR ITS SMALL BUSINESS ACCOUNTING SOFTWARE, SAGE RECENTLY ACQUIRED INTACCT FOR A COOL £850M AND HAS SET ITS SIGHTS FIRMLY ON THE MID-MARKET OPPORTUNITY. PAUL ESHERWOOD SAT DOWN WITH SABBY GILL, UK&I MANAGING DIRECTOR, TO DISCUSS HOW SAGE IS REINVENTING ITSELF AFTER A DIFFICULT FEW YEARS WITH A RENEWED FOCUS ON CUSTOMERS, COLLEAGUES, AND INNOVATION.

sabby gill

SABBY GILL

Ask anyone to name a public address system and they will almost certainly say 'Tannoy'. Think of the stuff you wrap delicate objects in and most will say 'Bubble Wrap' and those little sticky notes you write on to remind yourself to do something are called 'Post-its'. All three are examples of brands that are so synonymous with a product that they have become the generic term. Ask the man on the street to name a company that sells accounting software and you will likely only get one answer - **Sage.**

Sage is one of the UK's most recognised brands with a heritage in small business accounting and more recently in enterprise resource planning for corporates. Its history stretches back almost 40 years and it is one of the very few companies to have occupied a permanent position on the FTSE100. In the 1990s Sage was the darling of the stock market and was the best performing company rising in value from roughly £3 per share to a high of £794 per share a decade later - a gain of 26,000 percent. Remember, this was all before the dot.com boom and very few, if any, shares performed as well. Even on the global stage in the same time frame Oracle's shares rose roughly a fifth of that. Anyone who put £500 into Sage in 1990 would have been counting out a cool £14m by the start of the new millennium. An unprecedented return on investment and testament to the meteoric rise in value and status of this once small start-up from Newcastle that made estimating software for printing companies.

However, a little like the aforementioned dot.com boom, Sage's fortunes over the last 20 years have not always been on the same unbounding trajectory as during its heydays. By 2003 Graham Wylie, one of the founders who had served as its long-time chairman, had stepped down and a few years later, Paul Walker who had been CEO for more than 16 years, also departed. During the first part of the last decade Sage appointed and lost three managing directors for the UK business and a further change in the CEO chair in 2017 – when Stephen Hare replaced Stephen Kelly – all amounted to a rather unsettled ship. Adding to this was the dramatic impact that digital and cloud was having on the enterprise software sector - coupled with Sage's stalling revenue growth - and it was clear that the company needed some fresh thinking and a renewed focus. Thankfully it got it.

Under the new stewardship in the UK of Sabby Gill, Sage's revenues are up - dramatically up from a plateau that lasted almost five years - and subscription revenue (the kind that all vendors like nowadays) exceeds £1bn. Gill joined Sage

I KNEW SOME OF THE INDIVIDUALS. ITS GOT GREAT PEOPLE. ITS GOT A SUPERB BRAND AND THE PRODUCTS – NOBODY COMES ANYWHERE CLOSE IN MY OPINION

SABBY GILL

18 months ago with a mandate to refocus and revitalise the business and he told ERP Today in this exclusive interview how he and the extended leadership team have breathed new life into this bastion of British commerce.

I start the interview by asking Gill how he evaluated the opportunity at Sage.

"The good thing about being based here in the UK is you can't avoid Sage whichever way you look at it. Not only did I compete against it when I was at **Oracle**, but more recently with the manufacturing product that we used to have with **Epicor**. I knew a lot of the individuals and I once ran my own small business so I've come from a user perspective as well.

"When I evaluated the opportunity I could see the challenges. We were coming off a particularly difficult period for revenue growth and to

make the transition from on-premise based perpetual licensing to a cloud based organisation is not easy. I've done it a couple of times and it requires a different level of execution, focus, people, processes and commercial models. But that was when I got more excited. The more I delved into it the more I could see where the opportunities were and how I could make a difference. I knew how great it used to be as an organisation. I knew some of the individuals. Its got great people. Its got a superb brand and the products – nobody comes anywhere close in my opinion."

PE: So what was going wrong at Sage? What is the new vision and what steps have been put in place to transform its fortunes?

SG: "When I came on board we definitely had a few difficulties around customer and employee engagement. We had just let go of some senior management as well as our CEO so there had been a lot of change and I think we lost our focus for a while. Sage is a company with a lot of heritage and being a super brand of the UK is something we take pride in. Being responsible for the UK and Ireland business where we have 3,000 employees and 600,000 customers is an important responsibility. For me, that was the real opportunity that I saw when I came on board.

"We recently released our financial results and you'll see last year was a good year for the company, and the UK has been called out as a top performing region from a growth perspective. Our recurring revenue is higher than where we were this time last year. The same thing on subscriptions - as a company, we generate £1bn worth of revenue through subscription, so we're back."

PE: How did that turn round from a difficult few years?

SG: "I think it really came down to one thing, which is focus. We were probably doing too many things and when you look back we weren't focussed as an organisation. We asked ourselves the question; what is it we want to be famous for and what's the journey that's going to get us there? If you want to be a SaaS company, which is what our vision and purpose is, the only way of doing it is by focussing on those things that will get you there – not trying to do an army of different things."

PE: Is that how you see Sage, as a SaaS company, cloud-first?
SG: "Yes, absolutely. Three or four years ago our subscription revenue was sitting nearer to £300 million. Now we're at £1 billion. You don't get to that without some element of focus, discipline and really having a clear vision that everybody adheres to.

"The other important aspect that our CEO, Steve Hare, brought in last year was some guiding principles. We call them our three pillars and everything put all my focus on the individuals, the people, the training, the career development, and ensuring that Sage as an organisation has all the means and resources to be successful."

PE: That's no small task when you've got 3,500 employees. How do you go about starting?
SG: "It really does come down to listening and understanding what is it that makes our people tick and what help and assistance they need in order to be better engaged as an organisation. When I came on board just over a year ago our employee engagement level was at 50 percent, which is not a great place to be. Our employee MPS scores was a negative by a big number – I could scream it was so bad. Here we are a year later and we've just finished our latest employee opinion survey - our engagement level is sitting at 85 percent."

that we do has to be augmented around these ideas; colleagues, customers, and innovation.

"If we found ourselves doing anything that didn't align with those core principles then we stopped doing it. That level of action, discipline and attentiveness is what really made the difference. Most organisations talk only about customers – and I've said this to our customers too – you can't always automatically just say, 'It's all about the customers' although they are obviously very important. I firmly believe that it's just as important, if not more important, to look at an organisation from a colleague's perspective and I have

PE: That's a huge turnaround given that cultural shift, whether within an individual or just the DNA of the company, is not something that can be changed overnight, if at all.
SG: "Yes, I'd agree but we managed to do it. Best practice says in any given year you can probably move five to ten points. We moved 65 in the last year, so we went from a major negative to a big positive."

PE: Did you just pay everybody more?
SG: "Actually, do you know what? Salary doesn't necessarily do it for everybody. For me, the most

important thing isn't money it's recognition. Standing up in front of your peers and being told that this individual knows what they're doing and they're really good at it and getting that element of recognition, I would say is probably more important to individuals than the money.

"But of course being paid properly is important so we changed our bonus scheme to be much more focussed on the individual rather than company performance. It was an easy change to make and it's made a big difference. We are also in constant dialogue with all our employees throughout the year rather than having quarterly or half-yearly reviews so that everyone knows how they are doing; we know when they need extra support and we all work together towards our common goals.

NOT ONLY IS OUR ENGAGEMENT LEVEL THE HIGHEST IT'S EVER BEEN BUT OUR ATTRITION LEVELS ARE THE LOWEST THEY'VE EVER BEEN

"Another great indicator that we are moving in the right direction has been the new engagement with our foundation. Since last year we've had a 48 percent increase in the number of days that people have volunteered. In 2019 we did 6,371 days of volunteering and that's a real testament to the way our employees feel about Sage and the work we are doing.

"The combination of refocussing ourselves as a company and making a few simple changes to the way we engage with our employees has made a huge difference overall. Not only is our engagement level the highest it's ever been but our attrition levels are the lowest they've ever been."

PE: Were there any surprises when you joined? Was anything either better or worse than you had expected?

SG: "If it was anything that took me by surprise it was the belief. From a product perspective, no organisation in the UK has as many customers as we do. Nobody has the reach that we do through our accountants' networks. We've got these superb products like Sage People, Intacct and X3 and when you couple that with the extraordinary belief and that passion from our people we really have got all the elements to be great again."

PE: Moving on to products, do you see Sage as a vendor of enterprise software, as a small business accounting provider, or a payments company?

SG: "We're absolutely focussed on financial accounting. That's our background, it's our forte and it's where we've got a lot of experience."

PE: The Sage brand is universally known. You've got more customers than anybody else and you pay more people than any other company does. Is that something that actually holds you back from winning enterprise customers because the perception is that Sage is only for small businesses?

SG: "Actually that's a really good question. I would say it has held us back because traditionally that's what we're known for and that's what we're famous for. When you look at the 600,000 customers, about 90 percent sit in that lower segment, which is the reason why when you look at the products that we have, Sage People through the acquisition of **Fairsail**, the largest number of customers at our install base sits here in the UK. **Intacct**, will be the big differentiator."

PE: I was leading into Intacct because it's not an inconsiderable acquisition at £850m. How will you recoup that investment at the smaller end of the market?

SG: "It's not in the small end of the market, which is the reason why it's not going to be a product that we will be selling in that segment. It's a medium segment product.

"There is no clear winner in that mid-market at the moment and that's where we see Intacct being a game changer for us. Lots of small vendors are trying to move up and that's difficult because you can't move to digital and build a field sales team overnight. And the bigger players are reluctant to drop down because they have been so used to hunting for the biggest deals. Despite that, there's a lot of competition in the mid-market and that's where Intacct is going to sit.

"It has been built as a cloud-native product from the outset so there's no history to undo or re-engineer. We have 12,500 customers globally, predominantly in the US, but that's a great set of customers to look at and learn from. We've launched in Australia and very recently rolled out in the UK and signed our first customer, **Arlington**, almost immediately.

"In less than four months we've gone from a complete start-up in the UK to a team of 18 people. I've got a direct sales organisation, a platform organisation, and a cohort of partners already signed up. We've signed a strategic relationship with **PwC** and identified the larger accountants in our network that can help us drive the proposition."

PE: So where is the market for Intacct? Existing customers migrating from a different Sage product or are you going after new business?

SG: "My primary focus is on the net new. If you look at why Intacct has been successful, they have a play book like most ERP organisations have. But the unique thing about this play book is that we know every industry vertical where they've had experience, where they've been successful, and where the references are. We know the seven or eight sub verticals in our first edition launch where we know we will absolutely be successful and we can also backtrack in our X3 market where maybe we've missed a few opportunities."

PE: Sage spent £850m on Intacct and if you are only going after net new customers that's a lot of business to win isn't it?

SG: "Don't get me wrong, I said primarily net new."

PE: So does that mean you will transition some customers from X3 to Intacct? Isn't that robbing Peter to pay Paul?

SG: "Some may move but it's not my primary focus. Intacct will be for new Sage customers and the most important thing for me is there is no clear winner in the medium segment and I really do believe it's a big opportunity.

"We've got a great message. We can say to people 'here's the value that we have in our products and the functionality that will make the difference to your organisation. And by the way, here's a whole list of references and individuals that we know will absolutely stand by it'. If you take a strong financial product like we have with Intacct and then you go and wrap around all the services that you have with PwC – name me any organisation in the medium segment that has the footprint and the opportunity that a combination of those two could give you; there isn't anybody."

PE: What's the one thing that you would like those CFOs and CIOs to know about Sage?

SG: "It's simple, we've got your backs. Sage is a brand you can trust. We've got amazing products that work for businesses of all sizes whether they are in the small segment and use Sage 200 or larger enterprises that use X3 and Intacct.

"Nobody has the breadth, the experience, and the longevity of understanding the UK more than us. The fact that we've got our customer service, customer support, development, sales organisation, partner network and eco-system all here in the UK. We've got the largest number of customers and the most extensive network of accountants all on our side.

"The important thing for people to understand is that, when you're out there looking for a partner, who's going to have more experience than us?" ■


sage.com/uk/elevate

ANTON CHILTON

Speed wins out over size

Paul Esherwood sat down with Anton Chilton, CEO at QAD to discuss their new Adaptive ERP and how it works with global manufacturers to ensure they have the tools to be competitive in a highly disrupted sector.

QAD is one of the original ERP vendors with a history dating back more than 40 years. The company was founded by Pamela Lopker almost by accident when she wrote some software to help a friend run his micro business selling sandals and leather goods. It turned out to be so good that they soon forgot about shoes and handbags and turned their attention to developing the software and launching QAD.

A five year plan after 40 years in the game

Anton Chilton, who has been with QAD for more than 15 years, took over as CEO in December 2018 with a mandate to deliver a bolder strategy focussed on new business growth and the continued evolution of its Adaptive ERP platform.

Chilton said: "It's the first time that we have gone out and said, 'this is what we're going to look like in the next five years and how we're going to do it.' It's based around our vision of the adaptive enterprise. Manufacturers need solutions that are going to help them become agile and adapt to all of the changes in a disruptive market. We've painted a vision and we're going to launch it fully at our big customer event, Explore, in May."

Vertical focus

QAD is a vertically focussed ERP solution that is used by manufacturers that make the same or similar things from standard components in high volume. If you're not in one of these sectors you would be forgiven for not having heard of QAD. It is a relatively small player with annual sales of $333m, but despite its size, they have a globally distributed customer base, a very loyal following and a suite of products that are more than a match for any of the tier 1 vendors.

Chilton said: "The areas that we're really strong in are automotive, life sciences, food and beverage production and contract manufacturing for pharmaceuticals. Those are the main industries and we have about 24 sub-segments that we target there too. We focussed exclusively on manufacturing from the start and we've been true to that core ever since. We had some great partnerships with people like HP in the early days and that took us into some very large customers and gave us a platform on the global stage."

Adaptive ERP and transition to the cloud

The Adaptive ERP solution combines deep manufacturing ERP and supply chain capabilities with a modern platform and user experience. It harnesses capabilities from emerging technologies like AI and machine learning and helps manufacturers effectively respond to changes in their industry, simplifying the experience of running a secure and dependable ERP. It is available as both a SaaS and on-premise solution with QAD claiming that about 15 percent of its current install base is on the cloud with the bulk of customers planning to transition over the next five to ten years.

"We started the transition to becoming a cloud company about ten years ago and we've been successfully converting existing customers from on-premise into the QAD Cloud. But there's going to be a fairly long tail and I would expect the majority of our customers would move within the next decade. I know that's a big window, but that's what we see and we aren't in a rush to move our customers to the cloud. When we meet our customers we don't start the conversation with a discussion about cloud, or AI or blockchain. We start by asking what issues are they dealing with; what challenges are they facing; what are they trying to achieve? We then look at our products and services and offer solutions rather than trying to push them down a particular path," said Chilton.

All QAD cloud customers are deployed on their own private environment in a single-tenant architecture. Again not the direction of travel for most other vendors but Chilton points

to unique difficulties with multi-tenant architecture for customers that operate in their verticals and notes that even those vendors that claim to be 'multi-tenant' are in fact running a lot of their largest customers in a private cloud environment.

"We took a very deliberate decision to stay away from multi-tenant; we have a single code line, a common set of architectures but every customer is in their own virtual environment. That gives them the independence and the control without having to participate in unsolicited upgrades on a regular basis."

Products that deliver value in rapid time

And what about the products themselves? How does QAD stack up in terms of its core applications and complementary product lines? In its 2019 ERP Value Matrix, **Nucleus Research** positioned QAD in the 'expert' quadrant highlighting a depth of capability in its focus verticals and the DynaSys demand planning application was recognised as a 'major player' by IDC in its 2019 MarketScape report. Another key benefit of the QAD product range, and particularly its architecture, is the ease with which it can be implemented and upgraded. Customers stay with QAD because upgrading applications is relatively effortless when compared to some other vendor products and ease of use and time-to-value is quoted by many as another key differentiator.

Chilton said: "In the re-architecting of our product we've done a couple of things. We've done a lot on the functional side including improvements in the user experience, embedded analytics and personalised dashboards. But architecturally the big difference from how other vendors have gone is that we've separated the application into 17 business components, each of which can now be independently upgraded.

"We've completely taken the legs out of where **SAP** is today with their strategy. Let's say you're on ECC 6 - at some point you're going to have to move to S/4HANA. But there's no migration path so you better get ready for another 36 month project. Our view is that you never want to be in that situation – where you're facing what we call 'the death cycle of ERP.' Design my requirements today, take years to implement, and by the time it's finished, it doesn't fit what we wanted and everybody's got Excel work-arounds and customisations. Our time to implement and time to value is a massive differentiator and if you're measuring against SAP we have a five or a 10 times advantage in terms of speed."

We don't start the conversation with a discussion about cloud, or AI or blockchain. We start by asking what issues are they dealing with; what challenges are they facing; what are they trying to achieve?

Fast fish eats slow fish

Vendor selection is more critical than ever. Historical lock-in may have handcuffed customers to their ERP vendor because migrating to a new platform was far worse than staying with your incumbent provider – no matter how unhappy you were. But today there is a different type of lock-in – one that is not peddled by the vendors but by the market economics of SaaS and cloud. It is virtually impossible to create a rational business case to move from one SaaS provider to another – it just doesn't make sense to do so. Therefore, when you are choosing your next ERP partner you really need to think long term. Perhaps it's a marriage for life. This daunting prospect should encourage ERP buyers to think much more creatively about their choice of ERP provider and not necessarily go for the safe option of **Oracle** or SAP, if that's the perception. ERP buyers need to ask themselves what kind of relationship do I want with technology and how does technology integrate with my business objectives. ERP buyers need to look for vertical expertise, platform architecture, ease of implementation and above all else, time to value. What is the problem you are trying to solve? And what is the technology you need to solve that problem? Most importantly, ERP buyers must have the tools to adapt to changes quickly. If you are an intelligent enterprise and you spot something in the supply chain, need to react to a customer demand or a new competitor springs up – you have to be able to respond to that quickly. That's why a platform that supports rapid integrations and offers agility is paramount. QAD's 40 year expertise, its robust set of applications and adaptive platform which allows for easy integrations should put it on the watch list for any manufacturer wrestling with the dynamics of a rapidly shifting market.

Summing up Chilton said: "The world is changing and that pace of change is only going to get faster. If you're worrying about that or at least planning for it, include QAD in your thought processes because I think we're a really well-kept secret. It's no longer the big fish that eat the small fish. It's the fast fish that eat the slow fish. That applies to ERP but we also think it applies to our customers and we can help manufacturers of all sizes become more agile and faster to respond to the challenges of a disruptive world." ■

Where is the new money for ERP?

INSIDE DATA PRIMED FOR VERTICALS AND EMPLOYEES

BY MARK SWEENEY

In the cloud era, the ERP market that serves an organisation's back office business operations is dominated by the tier one players of **SAP**, **Oracle**, and **Workday**, supplemented by the tier two vendors such as **IFS**, **Unit4**, and **FinancialForce** et al who have focussed upon the smaller to medium sized enterprises. The software vendors' proposition that has served them so well over the past decade, as cloud platforms and SaaS took hold, is itself now changing.

The argument around feature-function servicing finance, procurement, HR, payroll and supply chain – either in silos or for those who were smart enough to re-engineer their applications for the cloud - is no longer enough. The markets they serve are now learning from their experiences of dealing with customers through the front office and they are putting their employees front and centre, not only in how we build systems, but fundamentally how we 'work'. Don't underestimate the impact of this as it is more than just the next fad of IT as it affects workplace culture and ultimately an organisation's performance.

Giving employees more power to shape business

The conversation is changing and it's going to have a profound impact on the back office enterprise. It is this that suggests a new frontier of opportunity for those with entrepreneurial flair.

The old adage *"look after your employees and they will look after your customers"* is very real. Taking the lessons learned from the front office, and two decades of unprecedented learning from the powerhouse platform known as **Salesforce**, we are in a new era where we are replicating the move from 'customer service' to 'customer experience' but now focussed on the 'employee experience'. In doing so relatively new players like **ServiceNow** (definitely the one to watch in my opinion) are coming to the forefront and opening up the experience economy.

> "The conversation is changing and it's going to have a profound impact on the back office

No longer are we talking about which software vendor has the best feature-function in the cloud. It is assumed, rightly or wrongly, that all the major players have basic standard process capabilities. Now we are looking across an organisation's enterprise and recognising that employees will interact with various 'data sets' outside the core functions of the ERP platform.

This move is more than subtle as we transition from being process driven to data driven. Machine learning and adaptive intelligence (a subset of artificial intelligence) are taking hold to play greater roles in deciphering what we need to know, when, and what to execute. So, finally, we are seeing that tech platforms can be even more useful in helping employees to maximise customers. To take this up a level, employees need to be fully engaged with the tech best suited to their market.

Where to focus innovation today

With market economics in full flow and the oligopoly of the tier 1 players firmly secured, coupled with consolidation of the tier 2 players, just where are these new opportunities? I believe we find them in two areas.

Innovation usually comes from start-ups and the 'S' in 'SME' so, for me, this is the place to look. Success in the cloud game favours those suppliers that can provide niche industry solutions to operational problems. And there is nowhere better to look to find breakthroughs right now than the UK, not only in London, but with regional tech hubs emerging all over the country. The large vendors don't focus upon industry solutions (save for IFS and **Infor** that have highly specialised applications for industries and micro-verticals), they leave this to the wider ecosystem to use their platforms to solve these problems.

But real innovation in the ERP market today has to start with the basic premise that the world doesn't need another ERP or HCM SaaS application in the cloud. However, what is required are solutions to those industry functional specific gaps, or gaps focussed on the employee to untap new ways of working that to date have not really been considered or leveraged. If you can bring both elements together then so much the better. In doing this there will be an element of connecting the front office to the back office seamlessly and leveraging new data driven technologies to predict and inform employees as to what's next in the world of work.

Challenges for changing up

By carving out a high degree of specialism with vertical solutions, such companies are then easily targeted once they are proven to be snapped up by bigger fish in the sea. This is the natural order of things, before the cycle starts again as usually the original founders of such companies become the new business angels for the next generation. However, innovation - often unproven at scale - usually has its detractors and the challenge for many start-ups or SMEs is to convince someone to 'give it a go'. Whilst risk can be mitigated through minimum viable products, prototypes and pilots, it is those corporate sponsors that are brave enough to metaphorically 'put their head above the parapet' who we should all be really grateful to. The problem is finding them.

Paul Sheppard, founder and chief executive of start-up **We Build Bots**, said: "I have long believed that the public sector, especially central government, can be the catalyst for innovation and change. Contrary to belief the public sector environment is extremely fast moving and the challenges constantly mounting from the demands being made. But in order to take advantage and benefit from such innovations, government needs to be brave and buy the offerings the SME market has to offer. It is the SME market that often, in the face of great adversity, will try to solve problems that the larger software vendors do not necessarily see as priority. We have to constantly encourage and educate the buyers in government to look at what is coming."

And Pamela Cook, CEO at **Infotech** and panel member of HM Government SME, commented: "Whilst not every solution is 'GovTech', it is one of the biggest growth markets and possibly the hotbed of future innovation for the private sector. A reversal for what for many years has been private sector advances influencing the public sector."

> **"**
> **The challenge for many start-ups or SMEs is to convince someone to *'give it a go'***

Follow the money...

Time will tell if my observations are right, but by judging how much business angel, private equity and VC money is now focussing on the 'enterprise' and B2B applications, rather than having to deal with 'fickle' consumers in the B2C market, the new decade will see an influx of start-ups and niche SaaS solutions focussed on the employee and industry vertical solutions. At the extreme, by the time this new decade ends, we probably won't be talking about ERP platforms anymore and the very acronym could be finally consigned to the history books. Paul – you might need to rename the magazine by then! ■

Disclaimer: *The opinions expressed here represent my own and not those of my employer, companies I invest in or am associated with. In addition, my thoughts and opinions change from time to time and I consider this a necessary consequence of having an open mind. This article is intended to provide a semi-permanent point in time and as such any thoughts or opinions expressed within out of date posts may not be the same or similar to those that I hold today.*

Using data

TO MAKE THE WORLD A MORE CIRCULAR PLACE AND REDUCE PLASTIC WASTE

Every day we are wasting data that could make our oceans cleaner and our world more sustainable

BY STEPHEN JAMIESON

The worth of the global plastics market is estimated at £1.2bn but, from the moment it leaves the shelf, single-use plastic is perceived as retaining no value. The only way it can recoup value is through reuse or recycling. However, despite public outcries, government and corporate commitments towards reducing plastic waste, the economy is in fact becoming less circular, and as such, recycling plastics is getting harder.

In early 2019, the EU exported around 150,000 tonnes of plastic waste per month. That is down by nearly half from the 300,000 tonnes recorded monthly in 2015 and 2016. This sharp drop is due in part to import restrictions that have been informed by a lack of data around the types of plastics being exported. Plastic recycling is not a 'one-size-fits-all' mould.

In the UK alone there are 39 different rule sets for the materials that can be recycled. These vary from county to county. However, there is currently no single source of data that can help consumers, manufacturers, sellers and waste management firms make more sustainable choices on the types of plastics that are being produced, purchased and recycled.

> **"In the UK alone, there are 39 different rule sets for the materials that can be recycled**

The role of data in combatting the plastics problem

Most companies consider data an owned asset. Data contains valuable insights that can help a business connect better with its customers and inform efficiencies. But data only contains value when it can be analysed and acted upon. For example, it's valuable for a grocer to understand what items and brands a customer prefers. However, within that purchase, there is also data about the type and weight of plastic being purchased. That data could be shared to serve a higher purpose.

Healthcare gives us one clear example of how this works. **The World Health Organisation** routinely uses data retrieved from government reports, social media, news sites and other sources to help officials more accurately predict how far and how fast outbreaks will spread, what type of people are most likely to be affected and where medicine needs to be distributed.

On a local scale, when it comes to recycling single-use plastics, there are three main players: the manufacturers, the retailers and the waste management companies. By sharing data on the materials, weight and size of the plastics being produced, sold and recycled, organisations will be better informed and can work together to develop and sell plastics that can be recycled by local waste management companies.

On a global scale large amounts of plastic waste have an enormous economic value. By granting access to data we can ensure that plastic waste has value to the export country, and that its transport meets fast changing regulations.

Collaboration to clean up our environment

The lack of information around plastics recycling is not something companies can ignore. According to a recent global survey by SAP and Qualtrics of more than 10,500 people across 30 countries, people saw a lack of recycling programmes and not knowing how to participate in programmes as the biggest barriers to recycling. Those same respondents were widely enthusiastic about taxing polluters and most respondents believed their country was doing too little to protect the environment. Governments are beginning to respond to public pressure and they will place the burden of change on manufacturers and retailers. By working together across the plastic supply chain, companies can begin to address these challenges head on. Shared data holds the key and data companies have a big role to play.

Fortunately, there are powerful allies in this cause. SAP recently joined the **World Economic Forum**'s Global Plastic Action Partner community, a key partner in the aim to create a cleaner ocean by 2030. As part of the programme we have updated our Plastics Cloud which helps companies produce products more responsibly by providing global insights to enable better understanding about what materials are used and their fates.

> **"The UK Plastics Pact is an inspiring collaborative initiative that will create a circular economy for plastics**

The new Plastics Cloud offering also links to a secondary materials marketplace based on Ariba Network, which connects packaging and consumer products companies globally to new sources of recycled plastics and plastic alternatives. This will complement initiatives such as the UK digital waste map announced last year by waste-insights company **Topolytics Limited**.

In addition, businesses can collaborate with organisations like **WRAP** - which works between governments, businesses and communities – to create impactful partnerships and deliver on sustainable initiatives that support a circular economy. The **UK Plastics Pact** is an inspiring collaborative initiative that will create a circular economy for plastics. It brings together businesses from across the entire plastics value chain with UK government and NGOs to tackle the curse of plastic waste.

Partnerships and collaboration between stakeholders will be significant to facilitating the reduction and reuse of questionable resources, while providing alternate suggestions. But, central to that will be the exchange of information. Not only do businesses need to plug into the data matrix for reuse insights but they must also factor these kinds of initiatives into their business models to support circular objectives.

I think many would agree that as individuals we are all doing too little to help save our environment. Businesses are often even more guilty of this truth. Yet, unlike people, businesses hold the key to improving the production and processes that can help turn things around within their infrastructures. Initially held up as the intrusive and scary bogeyman of digitisation, data has become the golden nugget of hope that can empower businesses in the march towards a more sustainable economy. ■

Blockchain

SUSTAINABLE TECHNOLOGY FOR A SUSTAINABLE WORLD

BY WAYNE LLOYD

As the effects of global warming become more prevalent year after year it will become increasingly difficult for politicians to water down and undermine the effects much longer.

Whilst some politicians around the world still choose to continue their rhetoric of denial and other political parties drag their heels when it comes to implementing meaningful environmental policies, it is clear that whilst they lag, society is becoming increasingly in tune with the alarming effects that their lifestyle choices have had on the planet's well-being.

As a consequence we are demanding that businesses and institutions do the same, pushing towards creating a more environmentally friendly and sustainable world in which to live. This article will provide a high-level overview of society's shifting attitude towards the environment, why businesses cannot wait for the government to take the lead and examples of the important role blockchain technology can play. In 2019, a **YouGov** poll found that a quarter of Britons (27 percent) placed the environment as one of the top three issues facing the country, whilst amongst young people (18-24 years old), 45 percent believed it to be the most pressing issue behind only Brexit. For brands and business leaders alike, operating across every industry and all sectors, it means that for them to retain relevance and competitiveness in this fast changing world, they will have to place being sustainable as a key metric of measurable success. This means making sustainability front and centre to their short, medium and long term strategy in addition to making it a key component of their culture and values.

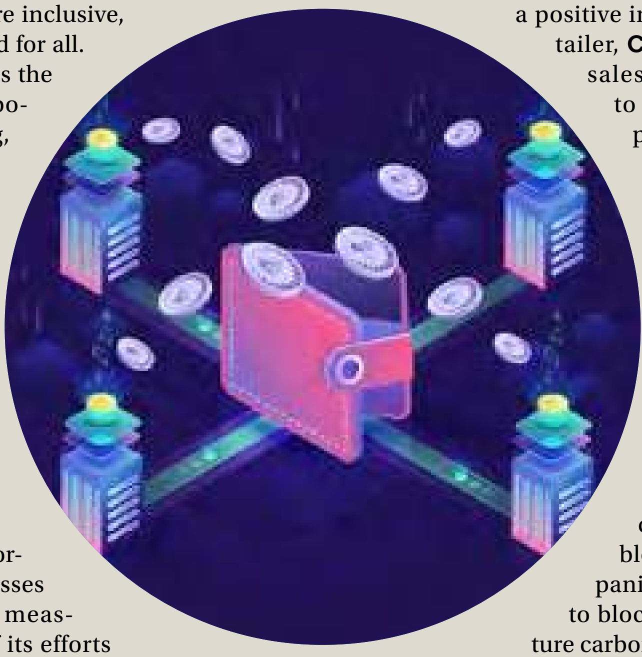
> "This means making sustainability front and centre to their strategy

Sustainable technology

This is a view supported when we consider the results of the recent Edelman Trust Barometer (2020), which found that 64 percent of consumers expect brands to act in their best interests, stating their belief that because brands can be a powerful force for change they should exert their influence to solve societal problems. Indeed, as society's concern for the effects of global warming and sustainable business practice intensifies; brands will be duty bound and consistently scrutinised in their approach towards solving it.

The study also left a stark warning to CEOs and business leaders given that 74 percent of those interviewed had also stated their belief that CEO's should take the lead rather than wait for government to impose change on issues such as climate change and income inequality. So whilst some global government policies might be in favour of big business today, consumers will not support big businesses that hide behind this, making it clear that 'my wallet is my vote'. Such changing dynamics mean businesses can no longer focus on just achieving profits for its shareholders. Ultimately they are unsustainable targets to focus on when stakeholder concerns are focussed on sustainable objectives.

At Smarter Contracts we believe in the values of the 'embedded economy' (**Raworth**, 2017) as it aligns with our views on the fundamental principles of blockchain, a technology we believe can be used to create a fairer, more inclusive, efficient and trustworthy world for all. An embedded economy places the natural world as a core component of economic modelling, for there can be no economy of any kind if there is no living world available for it to function in. Brands, business leaders and economies that subscribe to traditional economic models such as the Circular Flow diagram have to consider their claims of being sustainable when such a model has no intrinsic link to the environment that makes it possible.



To be seen as a sustainable organisation brands and businesses will be required to capture, measure and report the success of its efforts in real-time. We believe that in the future it will be information requested from regulators, carbon tax specialists, consumers, investors and business partners alike. It is for this reason why blockchain and its convergence with other emerging technologies, such as the Internet of Things (IoT) has such an important role to play.

Sustainable technology

In a world without blockchain, the evidence suggests that efforts made towards being seen as a sustainable business have largely been unsuccessful, especially when we consider statistics from the **European Commission** which state that only six percent of EU citizens trust producers' claims about their product's environmental performance. With the right governance structures in place and blockchain's ability to push typically mundane, back-office processes front and centre, it will be possible to have a significantly positive impact on those numbers and with it, customer trust.

> **"Only six percent of EU citizens trust producers' claims about their product's environmental performance**

Whilst we have provided reasons why companies will have to change their approach to doing business, leaders should look to embrace this opportunity mindful that there is evidence to suggest such an approach can have a positive impact on numbers. French retailer, **Carrefour SA**, cited a boost in sales when blockchain was used to provide information on food products at the point of sale. The information captured related to the quality of the items consumers were buying, helping them to avoid genetically modified products. When we consider large organisations such as **PUMA** have stated that 94 percent of the environmental impacts of its products occur along their supply chain it is perhaps easy to understand just how impactful blockchain can be. Indeed, companies such as **DNV-GL** are turning to blockchain, using VeChain to capture carbon emissions data for the carbon trading market we should all envisage in the future as governments and companies pledge to become carbon neutral.

The financial services industry can also be offered immense energy savings when we consider its current inefficiencies across trade finance, foreign exchange, payments, trade and transaction reporting, and settlement accounting not to mention the huge cost inefficiencies that can come from running outdated trade processing platforms. According to **Coco** et al (2017) blockchain could bring a potential cost saving of 70 percent on central finance reporting due to more streamlined and optimised data quality, transparency and internal controls.

There is already so much opportunity for blockchain technology when it comes to improving global sustainability standards and we have only really just begun. ■

PURPOSE AND PROFITS

Purposeful profit

We're finding it harder to find real value because the nature of value has changed. It's more complex than ever.

BY ZAHRA BAHROLOLOUMI

Businesses are becoming more and more tech savvy. Technologists are constantly getting smarter and business leaders have their fingers on the pulse of the latest tech. And yet, we're still facing a lot of challenges around how to get the most value from technology. The dilemma is real: we know more about technology than ever, but sometimes we feel like we're getting further and further away from really seeing the value in it.

This is not a discussion about how pervasive technology is, and how we need to have a more integrated technology infrastructure – although of course both of these things are truer than ever. And an infrastructure that embraces the inter-connected nature of the technology ecosystem is vital, by the way, but this discussion is focused on something else.

Proving value is difficult, so is defining it

The way that we realise commercial value from investments is less transactional and less linear than in the past. While value previously was often derived from efficiency gains, that's difficult to justify in isolation today.

In the modern environment – what we have dubbed the 'post-digital' era – value also comes from the experiences we can deliver to customers, employees, partners and anyone else in our ecosystems.

While most businesses are already in tune with that the next few years will see those goalposts move again. We will have to think more deeply about how our purpose creates or contributes to value. It will be the difference maker for a lot of organisations.

It's actually not as far off as you might think. What you stand for and the way you behave as a business is already coming to the fore. We will soon start to see exactly how impactful that becomes. But it's not a quick fix, so companies should start thinking about it now.

Some companies are already doing it. **Bosch** puts 50 percent of its R&D spend into technologies that support conservation and environmental protection. On top of that, its Bosch eXchange programme remanufactures used car components. This initiative cuts 23,000 metric tons of CO_2 each year compared to new manufacturing.

Sky Ocean Rescue is another great example of purpose in the new age.

In 1994 'Built to Last' showed that throughout most of the 20th century purpose-driven companies were six-times more profitable than those that were primarily driven by profit.

Not only has the company taken part in tremendous global projects to reduce plastic in the oceans, but it has overhauled a lot of internal processes too. From the supplies in the office to packaging and supply chain practices, the company is living and breathing this purpose.

It's a mission that more and more companies are starting to take seriously. The Business Roundtable's Statement on the Purpose of the Corporation was signed by 181 CEOs in the US – including Accenture's Julie Sweet – signalling their commitment to all stakeholders, not just shareholders.

When we start to think more about the people around our businesses – customers, employees, suppliers, communities, as well as shareholders – purpose starts to come into better focus.

This commitment to a less self-focussed way of doing business is an important part of a company's evolution. If we look at the context of the techlash, being a more responsible business could be a make or break change of direction.

We actually believe that techlash slightly mischaracterises what is happening at the moment. That term suggests that people are rejecting technology, but that's not really true. Technology is a bigger part of peoples' lives than ever, from everyday tasks performed by virtual assistants, to online services for banking or utilities, to healthcare, shopping and food, technology is woven into our lives.

What's happening instead is that the expectations that people have of technology are so high, and in some cases so emotionally charged, that those businesses that cannot or do not meet those standards will feel a fall out. It's something we call tech-clash.

Back to value

A lot of this discussion feels more like it's a perception or PR challenge. Many will ask why is it relevant to value?

There's a historical link between purpose-driven companies and success. In 1994 'Built to Last' showed that throughout most of the 20th century purpose-driven companies were six-times more profitable than those that were primarily driven by profit.

Bring that into the present day and our own research shows a similar correlation. Nearly two-thirds of consumers prefer to buy goods and services from companies that stand for a shared purpose, when that purpose reflects their own personal values and beliefs. And they're ditching those that don't.

Living by a clear purpose could impact your bottom line. If you can re-engineer your company to live by something you believe in, then there's a big opportunity to connect with customers on more than just a transactional level.

Can we, but should we?

Knowing the value that's associated with actions and reputation should prompt new ways of looking at how we operate our businesses. If we think about the tech-clash that exists today, it's the result of unintended consequences. We were 'so preoccupied with whether or not we could, we didn't stop to think if we should'.

Now that's paraphrasing Dr Ian Malcolm, who at the time was talking about breeding dinosaurs in Jurassic Park, not about technology. However, the sentiment applies.

To be successful in the new era of expectations and purpose, we need to put more thought into what we should do, and not only think about what we can do.

That idea of 'should' is inextricably linked to the people around your business that we mentioned before. Some customers/employees/partners will have strong passions about a specific issue, clearly others won't. But if we guide ourselves by the ideas of what will be genuinely beneficial to those people (and not just to the bottom line), then we are on the right track to finding real value.

It's an important responsibility for every organisation and the guiding principle around purpose is that it must be authentically your own. If it's not, it will be transparently false and people will not connect with it.

What's the next step?

As technology experts, our natural inclination is to find the answers within technology. They hold such great possibilities, it's true. However, value isn't about the tech.

That is over-simplifying a bit, but it's true. We all do tech. It's everywhere. But value isn't and that's because too often we think that the tools themselves are the differentiator. They're the tools… and like anything if you're not using them correctly they won't work.

Value comes when you go further in relating the tech to the people using it. People-centricity by being relevant, responsive and respectful of people has to be a core strategy. What we need to find are the instances where that technology can have a positive effect on the way people work and live.

We do, however, find our way back to technology when we consider questions of how to deliver these great visions. If purpose is at the heart of your business, the strategies to live by it should be technology-first. It should be the platform for innovation and growth, not simply a business support function.

To deliver in an ultra-competitive era of mobile, social, AI and purpose we need radically different operating models.

There is a strong correlation between revenue growth and pace of new technology adoption, depth of adoption and organisational change. The leaders in this sense are around 15 percent better off in terms of annual revenue than those who really struggle. But that will grow to 46 percent in the next three years.

But tearing up what we have is not the answer. Although 70 percent of CEOs think legacy technology hinders business growth, 83 percent still see value in keeping it. We're not heading back to rip and replace.

The way to have your cake and eat it here is to re-think how each technology contributes to the business. Many systems can be re-purposed to become the platforms for innovation and growth that are needed to thrive in this new purpose-driven world. So it doesn't need to be yet another overhaul, but we do need some re-modelling! ■

Zahra Bahrololoumi is head of Accenture Technology, UK and Ireland

| SECTOR FOCUS |

WHAT DOES THE TECH PRESCRIPTION FOR THE UK HEALTHCARE SECTOR LOOK LIKE?

While electronic health records remain the most used digitalised ‘tool’ across the sector in most establishments, this is just the tip of a massive movement to upgrade systems and integrate intelligent and automating applications. In this special section Georgina Elrington looks at some of the sector’s recent deployments, and some of the sticking points for total transformation of the healthcare system.


COMMUNICATION
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HEALTHCARE

The movement to electronic health data records (EHR) was one of the first epic shifts to streamlining the healthcare sector. It opened up a wealth of opportunities for applications and IT infrastructure advancement to turn healthcare into a joined-up, digitally smart UK asset. But when compared to other industries, such as banking, finance, and retail the healthcare sector at large has a long way to go.

ERP Today heard from Lorant Horvath, the UK Healthcare and Public Sector lead at **Infor** regarding the development of transition objectives. "In the UK, few public sector projects offer as much promise or incite as much emotion as the idea of improving the efficiency of healthcare. The reason is unassailable: in the UK healthcare means the NHS. Yes, there is a growing private market but the vast majority of UK healthcare is still under the NHS and the various trusts therein," he said.

Across this vast 'brand' most vendors are involved to one degree or another - often a lot less than their marketing collateral would suggest. There are a few pilot projects of new technology and of course, ongoing attempts to bring the productivity and efficiency savings of enterprise software to the sector. Consequently, within the NHS there is still a lot of legacy technology, especially when it comes to finance systems. Trusts typically surround these systems with third party applications to complement their functionality in areas such as procurement, contract management, inventory management, etc. and as a result often miss the opportunity to realise the benefits that enterprise software could yield by providing an end-to-end, integrated back office system which allows better visibility across the organisation to better manage scarce resources.

Horvath offered that the reason for this may in fact be the lack of credible case studies that would give the assurance senior NHS leaders need to invest in cutting edge technology in this field. "We propose that a more global outlook is needed. From asset management in the Middle East to integration in the US, the current Infor global roster has some strong examples on how the UK can move forward," he said.

LORANT HORVATH
INFOR

IN THE UK HEALTHCARE MEANS THE NHS. YES, THERE IS A GROWING PRIVATE MARKET BUT THE VAST MAJORITY OF UK HEALTHCARE IS STILL UNDER THE NHS

Regional enterprise technology deployments

One establishment taking strides to modernise its infrastructure is London's **Barts Health NHS Trust** which looks after more than 2.5 million people. It is working with **Capgemini** to revamp its ICT (information and communications technology) to deliver cloud services for its five hospitals, with Capgemini assisting with the assessment and migration of mission critical workloads to multiple cloud providers, security, and management solutions. Elsewhere, **NHS Arden & GEM** has been appointed to provide business intelligence and data management services for **NHS Herts Valleys Clinical Commissioning Group** to support the delivery of joined-up and easy access healthcare services for 638,000 citizens.

Casting the transformation net a little wider, **Medtronic** wanted to support healthcare provider customers in the transition to more efficient and value-based care models. Its Integrated Healthcare Solutions (IHS) business is partnering with more than 100 hospitals in Europe to develop evidence-based, best practice-informed pathways that deliver superior outcomes at the lowest possible cost. IHS recently enlisted **Lumeon**'s care pathway management (CPM) platform to create more effective care coordination for surgery optimisation and chronic disease management. The platform uses real-time data captured from patients, care teams and bi-directional integration with software such as EHR to keep everyone on course, in effect presenting a 'care-traffic control' view of patient progress, automating tasks where possible, and adjusting activities to deploy the right resource required for individuals.

Home-care could do with a little help

For the home-care industry, some agencies are already great examples of digital users, but not all of them are there yet. I have a friend who works in delivering home-care and her day involves driving around client's homes often for back-to-back appointments. Each of her 30-minute client visits entail 25 minutes for actual care duties and five minutes to fill out a report before flying out of the door to get to the next person. While the week's rota is delivered via a secure app on her smartphone, the reporting for each visit is with a pen, on paper, and left in a folder at the client's home. When there are staff changes, or more than one person working with a client, hasty handwriting and reporting information methods can change from person to person. This is one area that could be more securely managed with notes submitted to a cloud for access by other approved staff, be clearer to read, with reporting prompts to ensure that the right data has been captured.

Over in Ireland at the back end of last year, **Advanced** acquired **CareWorks** which is a provider of cloud based case management software for health and social care organisations, used by more than 50,000 care professionals and clinicians and in excess of three million citizens. It brings a single shared information system for community nurses, mental health social workers and therapists to record the care they provide while allowing other integrated parties to access electronic care records. The absorption of CareWorks, which also operates in the UK and US, will help to deliver interoperable software to support the healthcare sector's move to more integrated care systems. From a local perspective the deal helps to meet the Irish Government's plans for a health reform.

Cloudy outlook for future clarity

I asked Ric Thompson, Advanced's managing director for Health and Care at the company what he thought about cloud confidence in the healthcare sector in general. He said: "There are still confidence issues based on myths around the security of cloud computing. The reality is that most NHS services now rely wholly on the availability of digital patient records and operational IT systems in order to provide safe patient care. It is cloud technology that enables us to provide such critical services in ways that previously were not possible. Well implemented cloud solutions are built with security in mind and they are highly available, always up to date and expand to meet times of peak demand, all features which are key to ensuring the continuity of digitised NHS services which operate 24/7.

RIC THOMPSON
ADVANCED

THE REALITY IS THAT MOST NHS SERVICES NOW RELY WHOLLY ON THE AVAILABILITY OF DIGITAL PATIENT RECORDS AND OPERATIONAL IT SYSTEMS IN ORDER TO PROVIDE SAFE PATIENT CARE

"Fundamentally," Thompson said, "the biggest single golden nugget is a connected network of cloud based software solutions with APIs that allow for interoperable health and care systems across the NHS and care sector. This adoption of true interoperability would speed up digital transformation, in a safe and secure manner, with a focus to deliver the best possible patient care, a healthcare system fit for the future."■

HEALTHCARE

REORGANISING HEALTHCARE RESOURCE PLANNING

Workforce management and integrated healthcare

Being quite tall, and a bit clumsy by nature, I didn't see a glass shelf in the kitchen at a friend's house and banged my head on it. By the evening it was clear that I had a concussion. The doctor's clinics were shut so off to A&E we went. On arrival one of the first things we saw was a digital display board informing us there were 43 people already waiting and the estimated time to see a doctor was four and a half hours. My friend had taken a book to read. I felt too sick to do anything except sit and try to be a patient patient. As the hours ticked by I appreciated how useful that screen was in a) keeping people up to date, which b) kept the pressure off the overrun reception desk crew having to answer the same question over and over: How long now?

I also wondered if I really ought to be there taking up precious time when the room was already full with terrified parents accompanying sick children, people with broken bones, various 'Saturday night' injuries, and others who were looking very grey indeed. Everyone was tired and suffering and some even gave up after several hours and left without seeing a medical professional at all. It was the middle of the night when I eventually made it into triage where my friend and I chatted with the nurses about coping with the unrelenting strain in A&E. They told us that there were (at the time) some 43,000 vacancies for healthcare staff. Today it stands at more than 100,000 and in ten years it could reach 350,000 in England alone.

Handing the control to those who need it most

With an aim to ease the burden of trying to service some 30 million outpatient visits a year, the NHS Long Term Plan hopes to empower people with more access to telephone consultations with their own doctors by April 2020; and video consultations are to be catered for by 2021. Another step to address staffing resource issues is to put more healthcare elements into the hands of patients and increase the use of AI (artificial intelligence). Those living around Wolverhampton may see this happening soon thanks to a new partnership between, **Royal Wolverhampton NHS Trust** (RWT) and the digital healthcare company, **Babylon**. Babylon has an international workforce of AI experts, engineers, scientists, and doctors to support its mission to enable healthcare and advice via apps and wearables for the real-time monitoring of diseases. It can also help front-line staff to use AI for anticipatory care.

With a 24/7 digital support system, linked to a national network of medical staff, Babylon can deal with more symptom checking and video consultations. Enabling patients with access to care advice faster, in the comfort of their own homes, with the ability to manage their own appointment bookings should help to free up precious time for staff in clinics and hospitals. But positioning yourself as a resource to rely on in such an important sector is a heavy responsibility. Babylon must manage its mission well in order to do what it has set out to do on a global scale: make healthcare more accessible when it is needed. To help stay on track the company recently enlisted workforce management provider, **Quinyx** to ensure that medical staff are available at the right time and in the right place. The software will be rolled out to 1,000 of Babylon's employees in the UK, US and Canada with modules to help with scheduling, budgeting and forecasting, engagement, and communications.

Are we on the way to clearer ways of working?

As healthcare transformation inches forward trust by trust, region by region, department by department, so do interoperability and regulation concerns. David Hancock, Industry Co-Chair of **INTEROPen** told us that, for the interoperability of clinical data, this is consistently the biggest issue identified by healthcare CIOs in the NHS. "Interoperability is the ability for data to seamlessly and securely flow around a healthcare system to wherever it is needed. However, we cannot achieve 21st century interoperability if we don't have 21st century identify, authentication/credentialling and access control. ERP solutions should be the systems of record for all permanent and contingent staff along with their credentials. They are therefore central to supporting the interoperability agenda of the NHS and social care," he said.

In terms of trying to set some foundations the NHS has issued an Interoperability Toolkit which is a set of common specifications, frameworks, and implementation guides to support cohesion across local health and social care communities. This type of consistency could also be beneficial for clinical decision-support solutions such as the focus on the development of AI and ML (machine learning).

"Given the context of the biggest challenges that the NHS is facing - an ageing population that is pressurising services, especially emergency services, out of hours access, and the increasing demands on GPs - the biggest opportunity (as well as challenge) is the delivery of an interoperable connected system that allows healthcare organisations to prioritise the adoption of technology to improve the delivery of patient care and also the flow of patients through the NHS, such as utilising the right pathways," said Ric Thompson, managing director of Health and Care at **Advanced**.

For more intelligent workflow automation using AI, Advanced is working on a research programme looking into how AI can automate the review of correspondence that a GP spends valuable time overseeing. For example, as patients are transferred from a hospital back to the GP there are often a number of actions (review of medication, follow-up appointments etc.) which involve correspondence that needs to be reviewed by the GP to ensure the right path. Advanced is trialling the use of AI to automate this process to determine whether the review of such correspondence could actually be handled by someone else in the GP practice. Some claim that this could eradicate 80 percent of a GP's involvement, thus reducing workloads and in theory free up more time for patient care. An important point here is that AI is not left to make all the decisions. Staff at all levels will need educating and reminding that AI is an 'assisted information' tool that absolutely needs reviewing before taking action.

Where is artificial intelligence in the future of healthcare?

AI can also play a beneficial role in early detection of illness and subsequent diagnoses. This has the potential to drastically reduce the need for future care and therefore predictive resource allocation which in turn can take the pressure off already strained staff and budgets. "As is the case with most illnesses, early detection saves lives. And with increasingly sophisticated AI technology being able to rapidly identify abnormalities in human patients more efficiently than humans, and at a lower cost, doctors can focus their attention and resources on treating the patient," said Ero Georgiades, COO of **Fountech.Solutions**. She went on to say: "I believe the biggest obstacle preventing the health sector from fully embracing AI is a lack of understanding about the technology itself. For many in the sector AI can seem confusing and perhaps even intimidating. There is also the perception that it is inherently expensive, which only deters organisations from embracing it."

ERO GEORGIADES
FOUNTECH. SOLUTIONS

Thankfully the whole AI discussion is very much on the agenda. Matthew Gould is the CEO of **NHSX** which ensures that staff and patients have the technology they need. In January this year Gould invited 12 organisation and regulatory heads to a meeting focussed on the progression of artificial intelligence in the healthcare sector. Outcomes of that session included aims to set up a single platform; bringing all the regulatory strands together to create a single point of contact, advice and engagement; a joined-up 'regulatory sandbox' for innovators to test their AI systems; and an intention to gather expertise by convening with experts, practitioners and regulators and move along with machine learning.

There is a national priority to transform the NHS by 2024 and that objective needs to encapsulate all providers across acute, community, primary and mental health. At the moment that seems to be a tall order. According to a report by the **Deloitte Centre for Health Solutions**, published last year entitled 'Closing the digital gap; Shaping the future of UK healthcare', highlights that without additional investment it is difficult to see how most trusts will be able to achieve the level of digital maturity expected by that date. The top three words used to describe the digitalisation of the healthcare system in the comprehensive study were: slow, expensive, and inefficient. Less than 10 precent of the high level participants involved said that they were using more innovative technologies such as artificial intelligence, virtual reality, and robotics. Given the nature of the sector, it didn't surprise me to read that many were also unsure how these technologies might impact efficiency, effectiveness, and perhaps most importantly patient safety. Many also felt that it would take more than ten years to reach a fully digital health system citing funding, leadership, and interoperability as the three major challenges to progress. Hopefully, the conversations in progress and the innovations already available will help the NHS to become the best it can be. ■

HOWEVER, WE CANNOT ACHIEVE 21ST CENTURY INTEROPERABILITY IF WE DON'T HAVE 21ST CENTURY IDENTIFY, AUTHENTICATION/CREDENTIALLING AND ACCESS CONTROL

CASE STUDY

JOUR

PART ONE OF FOUR

BY PAUL ESHERWOOD

Throughout 2020, ERP Today will be tracking the fortunes of M Group Services as they transition from a multitude of legacy systems to the Oracle cloud. With unprecedented access to the inner-workings of an enterprise level project, ERP Today will chart the progress of the project with four detailed reports – the first part of which includes the business case rationale, vendor selection, implementation partner selection and contract negotiation (procurement). Graeme Cross (project director) and Martin Beesley (CFO) spoke exclusively to Paul Esherwood about the business case for the project, the considerations in selecting a vendor and implementation partner, and set out the predicated benefits of a significant investment in new technology and infrastructure.

NEY TO THE ORACLE CLOUD

COMPANY	M Group Services
TURNOVER	£1.2bn
EMPLOYEES	9,000 (+9,000 contingent)
LOCATION	Stevenage, UK
PROGRAMME SPONSOR	Martin Beesley, CFO
PROGRAMME DIRECTOR	Graeme Cross, Business systems director
SOLUTION	Oracle Cloud Applications
INFRASTRUCTURE	Salesforce Cloud, OCI
LEAD PARTNER	Evosys
OTHER PARTNERS	Lumenia Consulting (project planning and governance), Egress (data migration), Searchlight Consulting (contract negotiation), KPMG (project audit)

M Group Services (MGS) is the holding company that umbrellas the activities of more than a dozen utilities, engineering, infrastructure, transport, and telecoms entities. It is a private enterprise, owned by PAI Partners since 2018 and has grown significantly through a series of acquisitions. Group revenues top £1.2bn and it directly employs more than 9,000 people along with a further 9,000 contractors.

ERP Today has been on the look-out for a suitable candidate for this four-part case study for a while. Following the highs and lows of an ERP project will give other ERP customers valuable insight into the decision making processes behind each stage of the journey and hopefully offer-up some important lessons that they can take into their own projects.

However, my initial thought was MGS would be unlikely to have the ingredients to make for a great project or a compelling story. The history books are bursting with failed IT projects in this sector and the evolving shape of MGS, as it continued to make acquisitions during the project, meant that it had the potential for significant complexity. The board is hardly a picture of diversity and it's not uncommon for businesses that traditionally 'do stuff

CASE STUDY

with their hands' to have fairly luddite views. Not exactly the recipe for progressive and dynamic decision making. Or so I thought.

The reality at MGS could not be further from my original misplaced conceptions. The management team exhibit all of the characteristics required for a successful enterprise transformation project and they have approached the initiative with openness, modesty and a clear vision from the start. If they didn't know something they admitted it and found someone they could trust to advise them. They went out and spoke to other CxOs who had been in similar situations and asked for advice and tried to learn from their experiences; they brought in external experts to help shape and define the programme and governance structure; they partnered with an organisation that could provide insight into the inner-workings of the technology vendor to ensure they got the best deal; and they engaged with market leaders to tackle each element of the project.

Lumenia is an expert authority on vendor selection, programme governance and project planning. **Evosys** has brought more customers to the **Oracle** cloud than any other partner globally. **Egress** has completed more successful DM projects than any other data migration specialist in the UK. And finally, in Searchlight, they found a partner that understood Oracle and its intricacies helping them shape an agreement that provided the flexibility it needed to deal with an evolving landscape.

Buy-in for the project

Without buy-in from the top your project can't succeed. And if you don't win hearts and minds with the rank and file you are investing in something that will never reach its potential. Engaging stakeholders at the earliest phase will ensure that your project has the momentum it needs to power through the difficult moments and MGS identified this from the outset and ensured that the project had the full weight of its employees behind it.

Beesely said: "We were moving from a burning platform – well, almost burning platform. We knew we had to get off our finance, HR, and payroll systems so the business case was really won on that alone. But we didn't feel that was good enough and we wanted to add more value into the business case. The stakeholders from within the business were involved early so they didn't perceive this as something that has been to done to them. They're actually part of it. The focus has been about reducing the admin burden, providing better reporting, an increased focus on value-add activities. All the things that most stakeholders and users really appreciate.

"We've done quite a lot of workshops to move people from 'we can't because' to 'we could if' and in some cases it's been quite stormy, but ultimately they accept that the system is the system. It's a standard process. It works in a way that is considered best practice and they understand what they need to do to adopt that process."

> **We were moving from a burning platform – we knew we had to get off our finance, HR, and payroll systems**

Legacy landscape

MGS' legacy landscape included a core **Mentor** solution for finance, HR.net for human resources and payroll and a collection of other products and platforms that had been integrated and bolted on either through acquisitions or to enhance the core applications. The Mentor system was more than 20 years old and over time, like many other legacy systems, it had been heavily customised. Significant technical debt had built up and MGS was struggling to get any value from it.

The HR.net solution was also more than a decade old and it too had become weighed-down by an escalation in data volumes and an increasingly complex payroll. **ADP** acquired HR.net back in 2010 and all but stopped investing in the platform shortly after. With no new functionality on the horizon and a solution that was barely able to keep pace with the business demands, MGS decided that it would look for an integrated HR and finance provider to deliver its future technology platform.

Cross said: “Most of the group was using finance systems that were twenty-five years old. It was literally a green screen that they’d made work on a PC, so it doesn’t even work with a mouse, but it did the job for us and we used that for payroll too. We could have done upgrades on Mentor but there wasn’t an upgrade HR.net. We realised we were on very old legacy systems that wouldn’t support ambitious growth and it would be a backward step for most of the companies that we were acquiring to put them on our failing platforms.

> **Ultimately we found a partner in Evosys that really understood what we were trying to do**

“In December 2017 I got board approval to go ahead and review the market place. We engaged with Lumenia early and they worked with the businesses to help shape the requirements. They ran a series of workshops long before the tender process and that helped identify other opportunities where the proposed new technology could add some additional value.”

In addition to the finance and HR solutions MGS also runs a number of

other systems that support workforce management, work scheduling, fleet and asset management, and stock management. The decision was taken early to leave these non-core systems out of the scope of the new ERP in order to ensure that the core solution was delivered as quickly as possible and with minimal disruption to the business.

Too often, ERP customers (especially ones that have not taken on an enterprise-scale project in the past) rush to replace everything at once – usually on the advice of the vendor who is all too keen to sell the full arsenal on day one. A circumspect approach to deciding what is in scope and what is out of scope is a key milestone in building a solid business case and project plan and MGS’ decision to focus on ‘what is most important’ is a lesson many other ERP customer can learn from.

Vendor Selection

In some cases the vendor choice is somewhat determined by the type of business sector in which you operate. In other cases there will be a much broader set of applications that could be suitable. MGS is pretty much in the middle of both scenarios. It is an enterprise with sales of more than £1bn so it is likely that some of the smaller vendors would not be able support all of the business’ needs. It is vertically focussed to an extent but it isn’t a pure play telco or utilities business where the options may be more defined. MGS needed a technology partner that could meet the broad operating units’ requirements, provide the scale that supported its growth ambitions, and implement an integrated solution. They chose Oracle Cloud Applications.

Cross said: “We did a beauty parade, took references, and did all the usual things you have to do. We filtered it down from a long list to a short list of two, IFS and Oracle. In the end we went with Oracle because it was an integrated platform. IFS came in with CoreHR and did a great job, a very good job individually, but they didn’t convince us that they would work together during the implementations to make the join seamless. I felt that would remain our problem to effectively get two suppliers to work collaboratively together and I thought that it might actually result in delays to the implementation.”

Implementation partner

Choosing an implementation partner is a bit like getting married. It used to be that the technology partner was your spouse but today they are more like your sibling – it’s a lifelong commitment and you are unlikely to ever build a rational business case for switching sides. Whereas your implementation partner is someone you will do your best to get on with but you know there are other options if things don’t work out. That said, like in marriage, choosing wisely is at a premium - making a mistake with your implementation partner can be costly in terms of time and money. Continuing the relationship theme; it’s all about culture and fit. You have to find a partner that talks your language, that you get on with, that understands you, and ultimately makes you happy. All of the SIs offer a good service – some are differentiated by unique specialisms – but in the main they all do the same thing, just in slightly different ways. Anyone who has had more than one relationship in their personal life will understand the analogy. Think

CASE STUDY

carefully about who you choose to lie down with. The technology always works but it's the magic between the customer and the partner that often determines success or failure.

Cross said: "Originally we were going to go with Inoapps. They'd been introduced to us by Oracle so they were the package. Evosys came in December 2018 and it was a recommendation that I got from another CIO who had been involved with a large Oracle project. The main complexity was that we pay 9,000 contingent workers. We have CIS and difficult taxation to deal with and Oracle out of the box doesn't support that very well. We needed an extension to deal with it; Inoapps had a solution and Evosys had another. We set out all the pros and cons in a document and circulated to our key stakeholders and it was pretty much unanimous. I was quite surprised, but then the two methodology were very different as well. Inoapps did a great job but ultimately we found a partner in Evosys that really understood what we were trying to do. Their approach of putting 'boots on the ground' gave our FDs and senior stakeholders the comfort they needed and it's been a great collaboration so far."

> **That has been invaluable as we haven't got any wastage and we won't be paying for stuff that we're not using**

Contract negotiation

It's very common for the bill of materials (BOM, the document that sets out what you agree to buy from the vendor) to include all of the licences and environments that you will need at the peak of utilisation. In reality, that peak may never be reached or it will be a slow process ramping up to it. Customers that do not include some flex in the BOM will most likely end up paying for everything from day one and if the scope changes and you need to buy more of something you will still have to pay for the stuff you aren't using. Remember, you don't pay for what you use you pay for what you provision.

Dealing with any technology vendor can be challenging, and with Oracle even more so than others. They are hardened sales professionals that are expert at selling as much of their kit as possible. That doesn't mean you don't need their kit or they are mis-selling their products, but as you can read in the aforementioned article on vendor selection 'you will be dealing with professionals who sell to people like you every day - and they're very good at it'.

Cross said: "We engaged another external expert, a company called Searchlight, to help us navigate the contractual negotiations with Oracle. If you've not done it before it can be a daunting prospect negotiating a deal with one of the world's biggest tech companies. They knew where the bottom was in terms of price and came up with some things that I wouldn't have thought about putting into the contract. We've negotiated the right to tear up the bill of materials in favour of a 'price holder' which effectively means we commit the same amount of money but we can flex how we spend it.

And for us that has been invaluable as we haven't got any wastage and we won't be paying for stuff that we're not using. If you've not dealt with Oracle before all of the modules can be baffling. I know what I want to get out of it as a business but what do I actually need? Having Searchlight help us navigate that and say, 'right, okay, I know exactly what you do and don't need' has been invaluable."

What has been achieved so far

As far as foundations go, MGS has made a tremendous job of setting themselves up to succeed. I phrase it that way because all too often new ERP customers stack the deck heavily against themselves by making fundamental mistakes from the outset. As Tom Calder sets out in his excellent 'The ERP Jungle' article elsewhere in this issue, following some basic steps, having a set of guiding principles – and sticking to them – is the bedrock of success. Rushing in, not gaining executive sponsorship, inadequate documentation, poor contract negotiation, lack of engagement from within the business, and dare I sat it – ego, are all basic issues that thwart many projects.

To date, MGS has run more than 83 design workshops, nearly 150 CRPs (conference room pilots – meetings used to test scenarios for the new solution) and involved more than 200 employees in the decision-making processes. At the time of the first interview they had met all of their milestones and were underway with the design phase of the project. By the time you read this, save for any disasters, some of the functionality will already have been built and in a few short weeks the first phase of HR and payroll will start to be rolled out into the business.

In the next instalment of this series we will look more closely at the second key stage in any ERP project; requirements and design. Whilst many of the high-level requirements for the overarching solution will already have been identified – in fact they will have been determined in the original business case – the gathering of functional requirements is a different story altogether. We will get much closer to the Evosys team over the next few weeks and interrogate their approach to the design phase. Tune in next issue for an update on the progress and observations on the next critical stage in MGS' journey to the Oracle cloud. ■

> **If you've not done it before it can be a daunting prospect negotiating a deal with one of the world's biggest tech companies**


ERP
TODAY
Q2
ERP IN MANUFACTURING
HR SYSTEMS
BUILDING A BUSINESS CASE FOR SAAS
ARTIFICIAL INTELLIGENCE
BLOCKCHAIN
CHANGE MANAGEMENT
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CSR
WHAT'S COMING UP THIS YEAR

2020

Q3

ERP IN RETAIL

SUPPLY CHAIN MANAGEMENT

FIELD SERVICES

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INVOICING AND PAYMENTS

MANAGED SERVICES

TECHNOLOGY IN SPORT

WORKPLACE CULTURE

IoT

Q4

ERP IN PUBLIC SERVICES

SHARED SERVICES

CLOUD PLATFORMS

WOMEN IN TECHNOLOGY

ENTERPRISE SECURITY

THE FUTURE OF WORK

APIs AND MICROSERVICES

DATA MANAGEMENT

ML

modern

E A

enterprise asset

Fit and profitable asset strategies

Profiteering the opportunity for platform suppliers and the enterprises that use EAM properly, Georgina Elrington looks at some of the considerations for a relevant and comprehensive asset management plan.

M
management
considerations

ASSET MANAGEMENT

Most enterprises in most industries are benefitting from enabling 'things' for monitoring performance and maintenance requirements. And these days assets in perfect working order are capable of providing more than just task duties. Linked into an EAM (enterprise asset management) platform, companies have access to real-time performance data as well as predictive recommendations that can cut costs, increase uptime, and engage more customer loyalty. But a modern EAM strategy cannot be static. It needs to be a valuable and flexible asset in itself, one that aids data-based decisions for enterprise resource planning (ERP).

Currently the fastest growing adopters of EAM globally are the metal, mining, and retail (including super- and hypermarkets) sectors. Others include manufacturing, healthcare, transport and logistics. If we consider the thousands of assets involved in any of these industries it is hardly surprising. "The opportunity for asset management as a discipline has never been stronger in my view, as companies look to increase the longevity of their assets whilst managing risk," said Lee Sands, EAM practice manager at **Sapphire** Systems. "Cutting-edge technologies such as IoT, AI, drone technology and augmented reality are set to exacerbate this potential further, offering new capabilities which will really amplify cost savings and asset performance improvement."

EFFICIENCY AND SERVITISATION OPPORTUNITIES FOR EAM PLATFORM SUPPLIERS

"The historical focus for EAM has been on efficient asset operations and cost reduction," said Kate Dowle, UA development architect for **SAP** Intelligent Asset Management. "However, companies are increasingly looking at assets to provide differentiated and new customer experiences and services, and to use the digital potential of Industry 4.0 along with new technologies such as predictive analytics and simulation.

"Companies are turning to asset performance management to extend the life of their assets and to get more value from them. This includes adopting best practices in risk and reliability-based maintenance and to tightly integrate risk and reliability with asset operations and maintenance, real-time sensor data from smart assets, and Industry 4.0. The result is a move from reactive and planned maintenance to predictive and prescriptive maintenance.

"The boundaries between suppliers and operators of assets are also blurring. Companies are differentiating themselves through new, collaborative processes and digital content, enabled by connecting stakeholders involved in the asset life cycle, both internally and across networks. However, we know that the maintenance market is conservative and is not yet benefitting from the same level of digital transformation maturity seen in areas like supply chain, procurement, or commerce. The time is perfect for a digital transformation in asset management, embracing new technologies to make assets a critical contributor to company growth and profitability," said Dowle.

"The maintenance market is conservative and is not yet benefitting from the same level of digital transformation maturity seen in areas like supply chain, procurement, or commerce."

KATE DOWLE / UA DEVELOPMENT ARCHITECT FOR SAP INTELLIGENT ASSET MANAGEMENT

It is a valid point. If assets are not functioning well – be it due to mismanagement in the set up or a degeneration of the asset itself - then an operational chain can become compromised. This will have a knock-on effect for the end users and customers both of which can impact a company's competitive edge. Incorporating many levels of enterprise efficiency

"The opportunity for asset management as a discipline has never been stronger in my view."

LEE SANDS / SAPPHIRE SYSTEMS

for greater customer satisfaction is where the servitisation element of EAM meets ERP. Working together these two platforms can trim costs and aid appropriate planning for maintenance with minimal disruption.

KEVIN PRICE / INFOR

PLANNING FOR PROFITABILITY AND PEOPLE

While EAM can help to predict what might need fixing two or ten years down the line - so that parts can be sourced, ordered and delivered on time – ERP needs to get involved in the matter of how that asset will be tended to either with physical attention or via maintenance software. Whatever the business, an EAM strategy needs to consider the cost factor of servitisation, as in: which different kinds of experts will be involved and how often, if those resources are employed or contracted in, and what can be carried out remotely by software. Chatting with Kevin Price, **Infor**'s technical product evangelist, CloudSuite EAM about servitisation in the heavier industries brought up the topic of skill sets needed for maintenance. By way of example the utility and energy enterprises are heavily reliant on asset management for all manner of monitoring, inspection, maintenance and delivery tracking and therein lies a requirement for a handful of different disciplines: people for initial installation, more for hands-on upkeep, on-premise or remote electronics experts, data scientists and software engineers.

Once an EAM system has identified what maintenance is or will be required the ERP side can kick in to plan for resources. Knowing what replacement parts, people and/or technology will be necessary to complete the work can help with business planning that can stretch years and even decades into the future. This becomes even more helpful when the delivery route from the supplier to destination has a tendency to be convoluted, or if the parts are hard to source, are subject to lengthy export and import complexities, or if delivery could be hampered by weather, industrial strikes, or political implications.

Jay Ratliff, solutions architect at **Aptean** added more to the profitability factor in the manufacturing environment, one which is constantly looking to trim costs. "Manufacturers are leveraging enterprise asset management to aid in that effort. EAM systems provide the relevant insight to enable maintenance to deliver maximum availability, capacity and quality to operations, which translates into bottom line savings. When seeking to improve the predictability of production output, by employing EAM systems to manage equipment reliability, manufacturers can benefit from better margins and higher schedule attainment.

> **"Reliable operations are important to stabilize and predict production schedules and costs that impact customer results and satisfaction."**

JAY RATLIFF/ SOLUTIONS ARCHITECT AT APTEAN

"It is important to ensure the proper care and maintenance of a manufacturer's equipment since that equipment health is key to reliable operations. Reliable operations are important to stabilize and predict production schedules and costs that impact customer results and satisfaction. Those results and satisfaction allow a company to be more profitable and competitive overall," said Ratliff.

SERVITISATION FOR LOYALTY

Mark Brewer, global industry director for service management at **IFS** highlighted that it's not just manufacturers that are looking at the servitisation model. "When is a manufacturer not a manufacturer? When it's a service provider," he said. "Not a great punchline but a profitable move, and an evolution many traditional manufacturers are choosing. And it's not just manufacturers either; companies in sectors like automotive, utilities and energy are also embracing servitisation. Why? Customer expectations have moved beyond simply providing a physical asset or product, particularly in more commoditised industries. Whether that's a hotel installing an elevator, a homeowner buying a boiler or a business deploying a fleet of printers, the desire is not to procure and maintain a product but to derive an outcome, i.e. efficient people flow, a warm environment or a quality printout on demand.

"This landscape has enabled digital-first players to muscle into markets traditionally dominated by a handful of legacy providers, presenting tough competition. Agile and able to adapt rapidly to market changes, these disruptors are using data to analyse and enhance their relationship with their customers. They're demonstrating the value of going beyond simple transactional relationships and instead creating lifelong customer loyalty by offering outcomes to their customers. This has the added advantage of elevating the status of the relationship to one of true

> “Infor CloudSuite EAM not only helps prioritize asset investments, extend life, and ensure compliance, but also makes reliable plant operations into a differentiator—where customers take note that deliveries are always on-time, as ordered, and with unwavering product quality.”

KEVIN PRICE
Technical Product Evangelist & Product Strategist, Infor

Make asset management a key part of your enterprise strategy

Infor CloudSuite™ EAM is a complete software solution developed with high usability in mind

- Best-of-breed application without the limitations of add-on modules
- User experience design catered to the mobility needs of field employees
- Asset performance management to provide visibility into critical maintenance
- Recognized as Gartner® Magic Quadrant Leader for EAM software

ASSET MANAGEMENT

"Expectations have moved beyond simply providing a physical asset or product, particularly in more commoditised industries."

MARK BREWER / GLOBAL INDUSTRY DIRECTOR FOR SERVICE MANAGEMENT AT IFS

business partner, providing a capability that is intrinsic to the customer's success. If incumbents fail to follow suit, they risk customer experience deteriorating, and missing out on a significant new revenue opportunity.

"The success of transitioning to a servitisation model is dependent on acquiring and using rich data sets, as well as having total visibility into every area of their business, the entire life cycle of their assets (often via IoT), and their customer relationships. This is possible using enterprise resource planning and enterprise asset management software, which enable companies to realise benefits far beyond the value of the asset offering.

"Users of such solutions are able to collect, analyse and manage data from across their business in real-time, and – crucially – for the insights gained to be acted upon immediately via AI and machine learning, without the need for human intervention. This enables such things as asset performance management (APM), allowing business users to maximise the life cycle and revenue potential of their assets," said Brewer.

EAM IMPLEMENTATION CONSIDERATIONS

Both ERP and EAM platforms are capable of arming us with a lot more information than, more often than not, actually gets used. But trying to take on too much info at once can be overwhelming and result in under-use, lost profits, and perhaps a disappointing experience overall. This need not be so if integration and adoption is carried out in stages and the initial objectives are enabled first. Frequent review sessions with your EAM (and ERP) platform and application providers can unlock more functionality as time goes on.

"It's absolutely important at the very early stages of engagement with customers that they are led by their own requirements and that they involve users and management in this process. Especially for mid-size enterprises and subsidiaries of large enterprises it's important to find a balance in rich functionality without too much administrative handling," said Ewout Noordermeer, CEO of **Ultimo Software Solutions**. "In the end it's all about increasing uptime; managing costs; increasing lifespan; compliance with laws and regulation and managing a safe working environment. And simultaneously increase the effective hands-on-tool time. Important criteria should be usability and fully collaborative mobile tooling. It absolutely must be fit for purpose. It must focus on a single source of data enabled by smart integrations."

ACCESS TO INTEL AND SECURITY CONSIDERATIONS

Having masses of information available is only beneficial if it is easily understood. Modern asset intelligence needs a helpful user interface. Data dashboards have not always been that good looking but over the last few years many platform providers have gone back to the drawing board to concoct better ways to present asset intel. While a dashboard beauty parade is one thing it is even more important to consider how user-friendly these data screens and alerts will be to the purpose, and how easy they make it to enable any necessary action for the actual people using them. It is important to consider how to make it easy to engage users at all levels in order to achieve maximum adoption of EAM refinement – and therefore maximum benefit.

We also now have app-enabled access to the data that allows us to tend to defects and act on KPIs (key performance indicators) anywhere at anytime

EWOUT NOORDERMEER / CEO OF ULTIMO SOFTWARE SOLUTIONS

"Maintain your maintenance system, which means periodical revisions of maintenance programs and to consistently maintain the quality of your data."

on smartphones and tablets. Therefore, security levels need to be reviewed not just every so often but all the time. There are three high-risk points: the asset itself, the data in transit, and the device accessing that data or asset. An EAM strategy needs to frequently scrutinize who needs to see what, when, and how. A further consideration is to assign asset information to a separate network to help avoid a malware hit entering the corporate network.

Marco Rottigni, chief technical security officer EMEA, **Qualys** said: "Embedding 'eyes' across your digital estate to get consistent information from every environment - cloud, containers, mobile devices, travelling workforce endpoints, and traditional data centres - is one step, while using passive network scanning to spot what comes up as unmanaged onto your network will help round out the picture. The most important item here is that this is not something that you can schedule to take place once a week or once a month, it has to be a continuous process. It has to feed a single source of truth that you can use to support multiple processes: IT, security, SecOps, DevOps, Compliance, and so on."

known device detection users can install a self-updating agent to turn the device into a managed asset or launch a vulnerability scan.

As well as knowing about every asset, every objective also needs to be identified and fully understood by all stakeholders. This should encompass both short-term and long-term asset management goals that align with the business plan. "It's absolutely important at the very early stages of [our] engagement with customers that they are led by their own requirements and that they involve users and management in this process," said Noordermeer. "In conjunction with your business process functional requirements, wide considerations need to be made upon your technical functional requirements, your ERP and IoT integration, you need to ensure existing data is identified, cleansed and moved to be managed completely within your EAM software. One Source, One truth. Dual registration needs to be avoided for all existing asset data and planned asset data that you are expecting to log as part of future investments."

"Embedding eyes across your digital estate to get consistent information from every environment is one step."

MARCO ROTTIGNI / EMEA, QUALYS

HOW DO YOU CHOOSE A PLATFORM FOR BI INTEGRATION?

As with ERP systems, enterprise asset management platforms address specific industries and have been refined to take care of different priorities. To name just a few examples: **Ramco** EAM manages critical assets for power plants, manufacturing plants and buildings, and airports (amongst others). IBM Watson connects, manages, and analyses IoT data which can help with business models and informed, real-time decision making; and **IBM** Maximo optimises performance, can extend asset life cycles, and help to reduce operational downtime and costs. Customers have the option to choose a core version and then select different modules to add on depending on particular requirements. **Oracle**'s EAM provides comprehensive planning as well as the tracking and execution to support optimal asset monitoring and performance. It offers condition-based maintenance strategies for plants, property and public infrastructure along with an integrated asset repository to help ensure best practices and quality global compliance. It can also eliminate excess and obsolete spare parts inventories, promote environmental, health and safety policies, and improve coordination of production and maintenance schedules.

Noordermeer leaves us with a final note to build in. "The average lifetime of an EAM system is more than ten years. Your goal needs to enable growth over the next five to ten years, and that your new EAM platform will mean that application management and data management is now well organised and used as that single source. You will have to maintain your maintenance system, which means periodical revisions of maintenance programs and to consistently maintain the quality of your data. Remember it's not just an IT program." ■

ABSOLUTE ASSET MANAGEMENT

And before even picking up the phone to invite a potential provider to visit for a demo, be sure that you know about every asset in place. Tools such as Qualys' free asset discovery app automatically creates a continuous, real-time inventory of known and unknown assets across a global IT footprint. It can span on-premise, endpoints, multi-cloud, mobile, containers, OT and IoT with options to classify and categorise as well as detect devices that connect to a network. Should there be an instance of un-

Ultimo worked on the ADP (asset data platform) project at **London Gatwick Airport** in 2018, a program to help manage and maintain a £2.3bn asset base. The project was part of a business transformation rather than a stand-alone undertaking. "Gatwick succeeded as, right from the start, they identified key users who invested time in cleaning, updating and rationalising data. It also provided a great and balanced project team which ranged from system administrators to maintenance policy engineers and cLevel commitment," said Noordermeer.

MINING PROFITS FROM TODAY'S OIL&GAS OPERATIONS

The stakes are high in a complex environment of multiple assets, complicated sites, global supply chains, and heavy regulations. Georgina Elrington looks into some of the issues hindering this particular industry's transformation and what the enabling providers are doing to help shift the movement up a gear.

From seismic data collection and analysis, managing uptime and maintenance of extraction and refining plants right through to forecourt delivery, just about every stage in modern O&G (oil and gas) production can be enhanced with tech. But for the O&G executives - namely the CIOs - involved in the ongoing digitalisation and automation of processes it is difficult to sift through the vast benefits of field-ready transformational options such as: AI, RPA, IIoT, data analytics, and even (more tentatively) blockchain to find the right mix. Further, on-boarding the workforce to maximise what has been implemented so that those benefits can be properly enabled is another challenge; all the while trying to turn a profit in a volatile and fluid market.

The costs involved in each stage of production are enormous, the elements are numerous, it is dangerous, and skill sets across the entire effort are retiring at one end while not emerging fast enough at the other. While some O&G companies are well on the way with a DX asset and business-optimisation plan about half still appear to be struggling to find the right way forward. And who can blame them? It's a vast industry with hundreds of suppliers and thousands of assets on a global scale. Get it wrong and the effects can be disastrous. So yes, being tasked with business continuity in such a setting seems more than a little daunting. But CIOs should not be trying to take it all on their own shoulders. Collaboration is the buzzword right up there along with digitalisation and transformation.

Putting it another way, without all the 'isations', progress is easier when people plan to work together. Sounds simple enough but that does not necessarily mean that it is an easy route. A report from **Deloitte** conducted in the summer of 2019 entitled, 'From strategy to action overcoming barriers to change' features analysis from UK Continental Shelf (UKCS) participants. Some of the ongoing difficulties of moving from a strategy to actuate more effective working relationships between operators and suppliers are highlighted as: legacy structures, outdated ways of working, complex contracts and procurement processes.

Modern production processes need more than sticking a sensor on it to push (IIoT) data into a cloud for real-time ops. That said, many in the O&G sector have done a pretty good job to optimise what they already have. It is a sector that is no stranger to the need to monitor and react on data. But technology keeps leapfrogging in terms of available methods for intelligence, insight, and action options. For these gigantic enterprises the need for laser focussed consideration is paramount. This can slow down the digitalisation process.

COLLABORATION IS A BUZZWORD RIGHT UP THERE WITH DIGITALISATION AND TRANSFORMATION.

O&G ERP IS A HEAVY RESPONSIBILITY

By its very nature the O&G industry is one of the heaviest examples of data in/data out scenarios on the planet and it fluctuates by the minute. So it stands to reason that any ERP platform designed for the sector need to be intrinsically intricate and intelligently flexible. As well as the usual administration of a business these platforms need to be aware of, and handle, adherence to international and regional legislation, strict health and safety regulations, and increasingly prove their commitment to environmental considerations. Miss an update or fail to file a document and an O&G company could face an explosive disaster in terms of millions in fines and/or a potential plant shutdown for investigation.

The need to understand and react to these aspects has pushed some real innovation over the years, and this is very much the case for enterprise asset management and deeper insight into asset performance. A couple of examples of long standing O&G enterprise enablers are **General Electric** (GE) and **Infor**. GE offers Predix Private Cloud, a real-time asset monitoring capability with alerts for elevated risks. It also has Predix Asset Performance Management which looks after the actual assets (IIoT) involved in the wide cast landscape that is the oil and gas industry, helping with remote monitoring so that faults can be addressed and potential asset problems better planned. For process and operational efficiencies, GE's platform can assist with managing maintenance and inventory costs at the same time as lowering incidents for environmental, health and safety - all of which help to increase uptime and availability of service and enhance workforce productivity. Infor also enables a watchful eye on processes thanks to years of dedicated R&D that brought mobilised asset management right into the hands of those that need to know. And its CloudSuite EAM asset infrastructure helps operators to look after oil and gas activity right the way through, be it upstream, midstream, downstream, or field based.

THE O&G WORKFORCE PROBLEM IS HERE TO STAY

We're at a point, generally in the tech sector, where we know that artificial intelligence and machine learning can go a long way towards helping the industry, via predictive and prescriptive maintenance, either automatically or at the touch of a smartscreen. Roustabouts manning oilfields are being increasingly enabled with tech in hand. Wearables that can record and transmit data are also a novel addition nudging onto the scene.

However, the shortage of skilled engineers - both existing and entering the field – is an ongoing challenge. On the labour side RPA is increasingly able to take on the more mundane manual, and even dangerous (such as drones for inspection at height and other dangerous environments) tasks which helps to lessen some of the burdens of staffing and risk control.

Another issue is that the upper end of the traditional workforce in many an oilfield is approaching retirement. While this makes room for more digitally-akin staff to lead on modernised operational strategies, there is a lack of the right data scientists to fill those roles. The oil and gas companies that can find and keep these new-world entrants to lead on new ways of working will be the ones with the best insights to cut costs, realise more business efficiency, satisfy investors and keep ahead of the energy price game.

OUTDATED SYSTEMS MEAN OUTDATED PROCESSES

Over the years various legacy systems have been meshed together (somehow) largely due to the lack of a better option existing at the time. This means that, for many operators, it is difficult to introduce more efficient ways of working to elicit better returns on the barrel. Adding to the legacy burden are decades of business mergers and acquisitions all of which come with their own way of doing things, i.e. different systems and data filing. Trying to meld one company's widgets and structures into another even just once creates tangled data strings to deal with. The task of streamlining before moving to a clean enterprise platform needs a strategy in itself. That strategy needs to track down duplicates and file away the excess (just in case), fix mismanaged and forgotten access rights, and probably stumble across some odd storage ideas on outdated networks.

ERP systems based on manufacturing environments may have formed part of a base blueprint but the oil and gas sector is a unique and giant undertaking. It has many nuances that are not found in other industries such as sensors down mines and on the seabed with special connectivity needs, security concerns with disastrous effects if compromised, legislation and health and safety considerations, multiple global supplier party involvement, complicated logistics, volatile markets screwing prices to the ground and back up again, which are accompanied by all the usual business factors such as staffing, invoicing, offices, overheads, and customer satisfaction. **DEACOM ERP** is one O&G tailored offering that can help with inventory management and regulatory compliance, as it does at **Pinnacle Oil Holdings** to help keep pace with business demands. The ERP platform provider (which also helps companies involved with the business of sausages, cannabis, and confectionery) recently announced a new presence office in Frankfurt, Germany that should help companies advance production in Europe.

THE CHALLENGES OF GLOBAL COLLABORATION STRATEGIES

The lean cost challenge for production and logistics goes much further in that the industry supply chain relies on OSVs (operational service vessels) which bring supplies to the people working on platforms and vessels, as well as healthcare and sustenance. All of these parties, if onboard with a universal enterprise management system, can help move towards a more efficient and cost effective business. And it is a big 'if'. Joining up all involved parties is no small undertaking. ERP and associated technology providers have noticed the opportunity to help overwhelmed cLevel O&G executives enhance production efficiencies for greater profit. One example of this is the acquisition of **Global io** by **Deloitte Canada**. Global io helps with integrated operations for the mining, energy and utilities sectors, specialising in breaking down the organisational silos and third parties that can hinder progress. It will now become part of an operations transformation offering with Deloitte to help with better focussed processes and decision making.

Another comes from a Texan land drilling operator, **Endeavor Energy Resources** which has a whole division specifically tasked with efficiency objectives. It monitors the needs across trucking, well services, construction, roustabout, wireline etc to help with business growth for both field service and manufacturing operations. The division, called Endeavor Energy Services, recently enlisted help from ERP platform provider, **IFS** which already has several customers in the oil and gas space including: **Interwell, Technip, Maersk Drilling, BW Offshore, Trans-Northern Pipelines Inc.,** and **Rosenberg WorleyParsons**. Implementing IFS Applications to streamline services in the field should enable more value for Endeavor at the same time as bringing various business operations together such as: internal asset management, facility maintenance, facility construction, and billable field service work. Field ticketing and work orders via mobile devices and up to a general ledger, automated updates of inventory records and tracked job statuses will help to contain costs for the work and staff involved.

DECADES OF MERGERS AND ACQUISITIONS ONLY ADD TO THE BURDEN FOR A CLEAN IT INFRASTRUCTURE.

SECURING THE INFORMATION OF THINGS AND ENLISTING COLLABORATORS

The streamlining of administrative processes is also nudging at the potential blockchain movement but there is still an education period to go through. Aside from trading, blockchain can help with security, document optimisation (the removal of paper based processes for supplier contracts, invoices and payments), and the secure logging of extraction asset data. A blockchain that links up involved suppliers can also assist with adhering to the multiple regional regulations and stringent legislation for safe and legal practice. But understanding how and where to apply a blockchain as background muscle is taking a little time – and so might be convincing all the parties necessary to be involved in order to make it work at best capacity.

"In my view, almost every industry is still in proof-of-concept mode when it comes to blockchain and this almost definitely is the same in the oil and gas industry," said Wayne Lloyd, founder and CEO at **Smarter Contracts**. "Regulatory uncertainties, regional regulations, cultural silos, legacy technology stacks and inefficient data and processes are often the ingredients of poor customer journeys, inefficient reconciliations and consequently, inaccurate or unreliable reports that lead to endemically poor customer experiences. Blockchain technology and its convergence with other emerging technologies is certainly well placed to address many of these problems but there is no quick fix, no silver bullet. We find that it all starts with education but that is something that takes time. You have to understand the technology and its principles before you can start applying new business models on an enterprise level." ■

BP LEVERAGING TECHNOLOGY

TO TACKLE THE WORLD'S HARDEST ENERGY PROBLEMS

BY PAUL ESHERWOOD

As you drive into the BP village in Sunbury you start to get a feel for the scale of the company. Of course, BP is one of the world's most recognised brands and it goes without saying that most people already know it's a big business.

That magnitude is brought home as you enter the sprawling location that houses its International Centre for Business and Technology. As I drive through the site not only am I considering the vastness of its facility I also ponder how you architect an IT solution for a company of this scale; one that operates in a further 77 countries, employs more than 73,000 people and is in the middle of an energy revolution that is driving fundamental change to its entire business model.

BP is a global powerhouse in the energy sector and is the world's fifth most valuable energy brand. Its operations stretch from the deep sea to the desert, from rigs to retail, and they deliver energy products and services to people around the world. It provides customers with fuel for transport, energy for heat and light, power for industry, lubricants to keep engines moving and petrochemicals used to make everyday items such as paints, clothes, packaging, and even your mobile phone.

As all enterprises begin to adapt to the brave new world of modern commerce powered by digital transformation and underpinned by the need for purpose and sustainability, BP (and the other energy giants) is grappling with both a shifting technological landscape and root and branch change to the demands and expectations of the energy sector and those who consume its produce.

In early February, newly appointed CEO, Bernard Looney, set out a new low carbon ambition for BP: "To be a net zero company by 2050 or sooner and to help the world get to net zero."

BERNARD LOONEY

WE ARE AIMING TO MAKE ABSOLUTE REDUCTIONS, TO NET ZERO, OF AROUND 415 MILLION TONNES OF EMISSIONS – 55 MILLION FROM OUR OPERATIONS AND 360 MILLION FROM THE CARBON IN OUR UPSTREAM PRODUCTION

Looney introduced a package of 10 aims underpinning this ambition which included being net zero on greenhouse gas emissions from BP's operations and on the carbon in BP's oil and gas production, both on an absolute basis and both by 2050, or sooner. In addition to these absolute reductions, BP aims to halve the carbon intensity of the products it markets, again by 2050 or sooner.

"We also aim to be net zero on an absolute basis across the carbon content of our upstream oil and gas production. We are aiming to make absolute reductions, to net zero, of around 415 million tonnes of emissions – 55 million from our operations and 360 million from the carbon in our upstream production. That is not far off the total emissions of the UK – the world's 6th-largest economy and the second biggest national economy so far to set a net zero aim."

MOVING TOWARDS A NEW ERA FOR ENERGY

It is estimated that global energy consumption will increase by 30 percent over the next 20 years while the clamour for more sustainable and responsible energy production is finally condensing into a more meaningful narrative. Energy companies, car manufacturers, airlines, retailers, environmentalists and politicians have been talking about the energy crisis for decades; it seems that we are rapidly approaching a point where talk will be replaced by action and the global energy producers are front and centre when it comes to shaping the future of how we power our insatiable need for energy.

BP began evaluating its technology landscape more than a decade ago when cloud technologies were in their infancy and the tide of opinion around climate change and sustainability had only just begun to rise in earnest. Since then the technologies have matured and the trickle of meaningful action on climate change and energy consumption has burgeoned into a tidal wave of activity. New thinking and an urgent need to address carbon emissions demands significant re-evaluation of business practices in order to remain competitive and to live-up to the expectations of an increasingly exacting population.

So what is driving change at BP? Is it the challenge of meeting the increasing demand from consumers, along with the need for cleaner and more sustainable energy? Or is it the emergence of new technology that is offering up improved and more efficient ways to extract, refine, market and sell its products?

DIGITAL TECHNOLOGY HAS UNLEASED HUGE POTENTIAL AND IS ALLOWING US TO ADDRESS THE THREE THINGS THAT ARE FUNDAMENTAL TO OUR BUSINESS

STEWART FRY

According to Stewart Fry, global vice president for IT&S, new and emerging digital technology is one of the key drivers that will enable BP to deliver its net zero ambition: "BP has been active in advancing the energy transition for many years – by reducing emissions from our operations, improving our products and investing in low carbon businesses. We agree the world is not on a sustainable path and there needs to be a rapid transition to a low carbon future.

"It's very exciting to introduce BP's new ambition, which builds on much of what the company has already been doing.

"Digital technology has unleased huge potential and is allowing us to address the three things that are fundamental to our business. The first one is how do you deal with emissions and become more productive? How do you do the same thing only cleaner, cheaper and more efficiently? Technology is absolutely at the heart of that.

"The second one is how do you improve your products? How do you extract gas without the need to do lots of new projects which in themselves require steelwork, lots of concrete, and are high in carbon emissions through their creation.

"And thirdly is the creation of new businesses and opportunities. BP owns the biggest EV charging com-

pany in the UK, **BP Chargemaster**, and we've just partnered with **Didi**, a transport platform in China – the world's largest market for electric vehicles – to provide EV charging. In December last year, we completed our joint venture with **Bunge** in Brazil - a leader in agriculture, food and ingredients - that will create a bio-energy company in one of the world's largest fast-growing markets for biofuels.

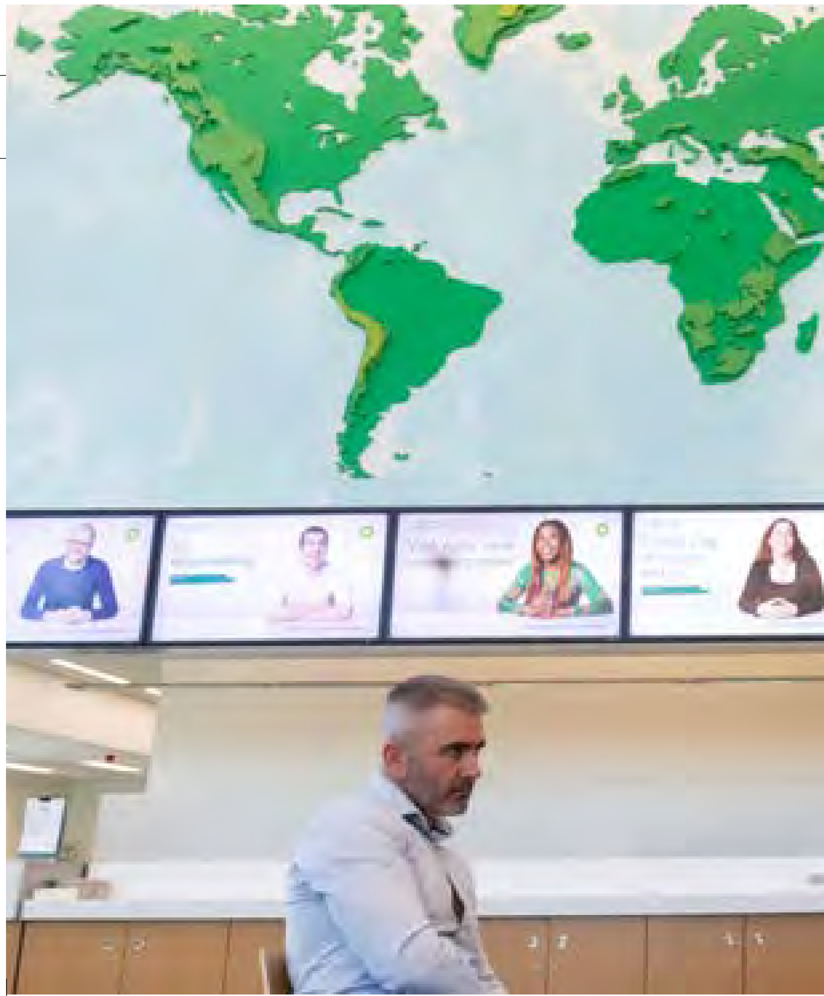
"We also see solar as having huge potential and by 2040 it could generate 12 percent of total global power based on recent trends or as much as 21 percent in a scenario consistent with the Paris climate goals. We have a 50 percent share in **Lightsource BP**, one of Europe's leading developers of solar projects which is rapidly expanding its global presence."

Global energy businesses usually have two key operations; upstream and downstream. The upstream business (sometimes referred to as exploration) is everything that the company does to find and produce raw materials such as crude oil and gas. The downstream business includes the refineries, plants, and retail outlets that ultimately process and deliver the products and services.

At BP, the upstream or exploration function has been responsible for renewing BP's resource base through access, exploration and appraisal, while the reservoir development function is responsible for the stewardship of the resource portfolio over the life of each field. The global wells organisation and the global projects organisation are responsible for the safe, reliable and compliant execution of wells (drilling) and major projects. And the global operations organisation is responsible for operations such as midstream transportation and processing activities.

The downstream business together with global oil supply and trading activities, has made up BP's integrated fuels value chains (FVCs). BP sells refined petroleum products including gasoline, diesel and aviation fuel, and has a significant presence in the convenience retail sector and a growing presence in the advanced mobility and low carbon sectors. It also manufactures and markets lubricants and related products and services to the automotive, industrial, marine and energy markets globally. These products are produced using industry-leading proprietary BP technology, and are then used by others to make essential consumer products such as food packaging, textiles and building materials. The petrochemicals business alone operates 16 separate manufacturing facilities in ten countries.

However, along with the launch of its ambition, BP has also announced plans to retire these divisions, undertaking probably the most far-reaching reorganisation in its history, with the intention of becoming a more integrated, more focussed company to deliver on its aims.



BP is a long-time customer of **SAP** and its operations are intrinsically linked to SAP technology in both its upstream and downstream businesses utilising ECC as its core ERP product. It also takes advantage of SAP's acquired platforms such as **Ariba** (procurement), **Concur** (expenses) and some **Fieldglass** (workforce management).

Jens Amail, UK&I managing director at SAP, said: "SAP is delighted to be the global technology partner for this energy powerhouse and we look forward to continuing our support for BP as it transitions to the next stage in its business growth. SAP's Intelligent Enterprise is at the heart of BP's efforts to tackle the world's energy demands and its move towards cleaner and more sustainable energy production."

BP also has an array of other systems and niche solutions which sit outside of the core SAP landscape and power business units such as the lubricants operation which runs some **JD Edwards** and its own proprietary system called ISP. In addition, there are other niche parts of the business which remain on very old platforms such as the lubricants operation in Greece which is still running SAP 4.0B – a solution that is more than 20 years old but, according to BP, runs like clockwork, costs peanuts to maintain and is doing everything they need it to.

THE LEGACY LANDSCAPE

The global footprint is complex and back in 2010 there were more than 90 separate instances of SAP ERP, BW, SCM and other applications stacks deployed around the globe. In order to meet the challenges of a rapidly evolving energy market BP has embarked on a journey of rationalisation and digitalisation in order to reduce its footprint, become more efficient, identify new opportunities and transition towards cleaner and more sustainable energy production.

"We're simplifying and modernising our enterprise activities. This means we can be much more flexible in supporting the business, and bring new, lower carbon activities on-line quickly, as well as develop innovative digital solutions," said Fry.

The target landscape is still a heterogeneous mix of nearly 40 different instances but the deployments of ECC have dropped from 31 to 20 with a rationalisation of BW from 23 to 15 and the migration of 75 percent of all workloads to **AWS** has already been completed. BP is also integrating S/4 and HANA into its business although these are baby-steps for now and full-scale adoption of SAP's flagship product is some way off - and probably much further in the future than SAP would like despite the recent news on extended life for Business Suite 7.

BP works with SAP, **Accenture**, **IBM**, **Wipro** and **SNP** on its many and varied projects with the latter most notably involved with several POC projects to further assess the migration path to S/4.

Ben McGrail, managing director at SNP, said: "We were delighted that BP chose SNP to help automate and accelerate its SAP transformation programme as part of its Modernise IT agenda. Together we have built up a track record of success including projects to carve out, merge and upgrade SAP systems along with software-led S/4HANA assessments and proofs of concept."

As it stands today, BP has one S/4 HANA instance live since 2018 primarily running MDG, and is currently carving out its EHSM system into its own S/4 HANA instance with the help of SAP. The refineries business in Europe is also starting to transition to S/4HANA where it will be able to take advantage of significantly improved reporting and analytics coupled with real-time data to support mission critical decisions. However, despite several other S/4 exploration exercises in the wider business, BP will retain ECC as its core ERP platform for the time being.

Ian Stubbings, engineering lead at BP, said: "We've been looking at S/4 HANA since 2014 and we have run

various proof of concepts with mixed results. At the moment, EHSM and the refineries are transitioning to S/4 and we will continue to evaluate all options as the technology matures and our business demands change. One of the major drivers for moving EHSM is the reporting capability of S/4 which delivers real-time analytics and that is a big change from having to pump everything into BW and getting data from yesterday."

Asked why BP's plans don't currently include a full-scale transition to S/4, Stubbings said: "Like a lot of SAP customers, over the past decades we built our own functionality on top of the standard SAP solution, and will need to retain a lot of this in S/4. The scale of the task means this will not be an easy transition and requires careful planning to ensure the new S/4 HANA based landscape will meet current and future requirements with the right mix of flexibility, agility and cost. Consolidation is no longer the key driver it once was, with some systems already being migrated to S/4 to pave the way. However, there will be options to move systems to new templates as the new landscape evolves."

MIGRATING WORKLOADS TO THE CLOUD

Like most enterprises, BP also considered its infrastructure options, as a maturing proposition from the hyperscalers means the value, flexibility and reliability of enterprise-grade cloud hosting outweighs the incumbent cost and value of retaining physical servers.

BP's Information & Technology Services (IT&S) organization manages many SAP applications used by thousands of employees globally. These applications are essential to the company's day-to-day supply chain, order to cash, procurement, and finance activities.

BP initially started the cloud journey for SAP workloads by implementing an SAP HANA–based 'agile analytics' reporting and insights system in AWS. BP uses the solution to deliver analytical dashboards to executives and provide financial data to the BP finance organisation. It was the success of that implementation that led to BP moving its first production ECC to AWS back in 2017. The solution utilises Amazon Elastic Compute Cloud (Amazon EC2) R4 instances. The R4 instances are memory-optimised instances that can run large in-memory applications.

However, as digital technology opened up new opportunities, BP needed to be able to respond very quickly. "We made a strategic decision to adopt a company-wide, cloud-first approach, so we could be more agile and flexible, as well as improve operational efficiencies," explained Fry. "This includes shutting down all on-premise mega data centres, and accelerating our digital ambition through workplace, network and cloud transformation programmes."

BP is now moving its entire SAP landscape to the cloud to take advantage of the agility, flexibility and performance stability it offers. Currently 75 percent of the workloads are running on AWS with a plan to migrate the remaining instances shortly. In just one operating unit (the **Castrol** business), BP historically maintained 11 physical servers, including database and application servers, to support the production instance and those servers can now be decommissioned. In addition, the system was under-utilised when it was hosted in the on-premise data centre. On AWS, BP only pays for what it uses and can flex the system size according to processing needs, which helps control costs much more efficiently. Moving to AWS has also increased the performance of the ERP systems, and in terms of average response times, they are running around 40 percent faster on the AWS Cloud.

As BP continues to focus on simplifying and modernising its activities, the IT&S function has needed to make a step change in agility and flexibility to support business initiatives. "Exiting our European data centres and migrating to AWS supports our digital transformation agenda, and we're excited about the possibilities for increased flexibility, operational efficiencies, and opportunities to innovate while helping

to advance the energy transition," said Steve Fortune, BP CIO. "We knew we needed to consider options that would give us more flexibility and allow us to be more responsive. Our strategy has evolved. We need the agility to be competitive when prices, policy, technology and customer preferences are changing – and that's what we get with AWS".

The two European mega data centres, the largest that BP operates globally, host data from across all BP's businesses. Moving to AWS enables BP to use a broad and deep portfolio of cloud services, including machine learning, analytics, storage, security, databases, and compute to gain greater insights and automate processes.

"We are pleased to expand our relationship with BP as the company moves its largest mega data centres, which host mission-critical data applications, to AWS," said Bill Vass, VP technology, storage, automation, and management at AWS. "AWS is the world's leading cloud, with an unmatched portfolio of cloud services, proven performance, and operational expertise, which is why global companies like BP trust AWS to support their digital transformations."

DUAL CHALLENGE OF INCREASED DEMAND AND CARBON NEUTRALITY

Going back to my original question; what is driving change at BP? Is technology disrupting the energy sector or is it a sector being disrupted by the environment? The obvious conclusion is that it's both. BP is more agile, more efficient and more responsive with a decreased footprint, increased SaaS capability, hosted infrastructure and an array of digital tech that delivers richer experiences for customers, employees and partners. But BP's investment in technology goes far beyond just trying to remain competitive and boost employee engagement.

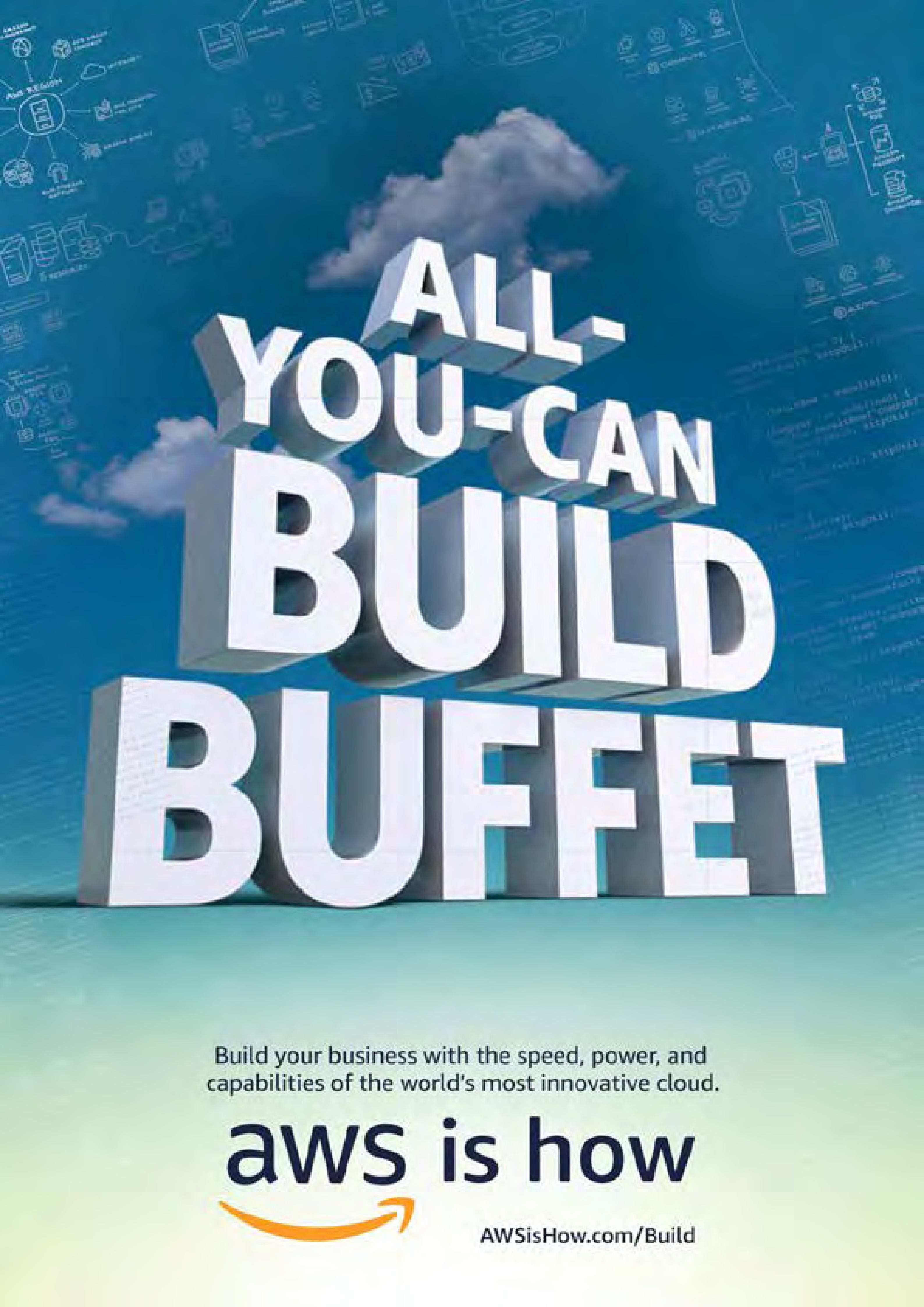
There is a deep commitment to tackle carbon emissions and technology is playing its role in enabling BP to produce energy more efficiently and sustainably. But technology on its own isn't going to win the battle and BP along with the other energy providers are fostering new business models to remain competitive and responsible. The UK government's recent announcement that the internal combustion engine will be eradicated from all new cars by 2035 (five years sooner than the original proposal) is further indication that whilst the energy needs of the world are set to increase, the demand and toleration of fossil fuels is on the slide.

Combatting this dichotomy is the key challenge facing BP and Fry was keen to summarise by setting out the factors that are driving increased demand and the challenges of meeting environmental targets.

"The world is likely to need 30 percent more energy by 2040. That's being driven by three things. Firstly, there are still over 800 million people in the world with no access to any electricity. Secondly, the work we've done at BP suggests that 80 percent of the world's population today live in countries where energy consumption is so low, that increases in energy tend to go hand-in-hand with significant improvements in human development And finally, it's simply about overall growth in population.

"All these factors combined drive the increase in demand we are expecting. That increase in energy consumption has to be balanced and offset by a significant reduction in global carbon emissions and BP believes that a rapid transition is needed.

"At BP that's what we are focussed on. We have now outlined our new ambition to become a net zero company by 2050, or sooner, and to help the world get to net zero. We will be using the huge potential that digital and advanced technologies offer to help us achieve that ambition." ■


ALL-YOU-CAN BUILD BUFFET
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Data shown are for demonstration only

DIGITAL

TRANSFORMATION 2.0

ADNOC (Abu Dhabi National Oil Company) has been one of the key drivers for the UAE's economy for the last 40 years. It is the twelfth largest oil producer in the world generating in excess of 3 million barrels per day and has the seventh largest reserves globally - an estimated 100 billion barrels. **Paul Esherwood** spoke to Abdul Nasser Al Mughairbi, senior vice president of digital at ADNOC, about its digital strategy and journey towards a more sustainable future.

ADNOC is the most progressive of all the Middle East oil and gas companies and is currently implementing more than 200 separate sustainability and ESG (environmental, social and governance) programmes across its value chain. Its carbon capture and utilisation storage (CCUS) programme started back in 2009 and has the capacity to store 800,000 tonnes of CO_2 each year with a plan to increase capacity by a factor of six times with two new CCUS facilities. It is also aggressively adopting digital technologies across both the upstream and downstream businesses, all of which feed into its incredibly impressive 'Panorama' centre, pictured on the previous pages. The Panorama centre houses a 50 metre screen that allows visualisation of more than 120 dashboards and over 200,000 data points from across the enterprise. Historically, ADNOC operated as 14 separate companies covering upstream, midstream and downstream. The Panorama brings together all operating units into one single visualisation in order to identify value optimisation opportunities and a single source of reference for senior managers.

The facility is powered by **Aveva**'s unified supply chain management solution which is used to run techno-economic optimisation scenarios and 'value chain optimisation'. The company claims that just one run of the full system capabilities can save between \$60m and \$100m through AI power optimisations. ADNOC also has more than 10 million sensors across its facilities which all feed into the Panorama and allow finely tuned predictive maintenance scenarios to be visualised. The predictive maintenance capability is powered by **Honeywell**'s asset-monitoring and predictive analytics platform and provides a centralised view of thousands of assets across ADNOC's upstream and downstream operations. The platform leverages machine learning and digital twins to help predict equipment stoppages, reduce unplanned equipment maintenance and downtime, increase reliability and safety, and enable substantial cost savings.

Abdul Nasser Al Mughairbi, senior vice president of digital at ADNOC said: "With digital technology we can really optimise costs and generate value for money. It's not always about reducing the costs, it's how much value you can generate. When we do simulation modelling we are 14 companies on one single value chain. If one unit shuts down for maintenance it impacts the upstream and the downstream. Aligning these turnarounds using simulation and AI not only tells you the best way, it gives you alternatives, and gives you the value generated by those decisions. Unless I generate value repeatedly, I don't have the license to operate. It's as simple as that."

STRATEGY 2030 – DIGITAL TRANSFORMATION AND SUSTAINABILITY

ADNOC's digital transformation journey started in 2017 underpinned by 'Strategy 2030' – a bold plan that would not only transform ADNOC into a digital-first company but would also see the enterprise remodelled from an oil and gas business into a modern and sustainable energy company. Despite popular misconceptions, The UAE is a very progressive and forward-thinking country and embracing change – from both a technological perspective and in its broader culture - was something that came relatively easily.

Al Mughairbi said: "For us it was much easier for two main factors. Firstly, we have a younger workforce and they are all very used to working with modern technology and dealing with change. Secondly, change is a constant factor if you live in the UAE. The city changes, the people change. We live in a society where 80 percent are ex-pats so we meet different cultures all the time. We're very tolerant and accepting of change so it wasn't really difficult for us to embrace change in our business. We are still a traditional country. You see us always wearing our national dress and that is very important to us. But we're also very progressive and most of the change is driven by the young people. In my team I'm the oldest one, the rest are in their 30s and they're all highly qualified with PhDs. They're amazing UAE nationals that are very capable and they're the ones who are driving us really. It's the young pushing us to change."

But it's not just the relatively young workforce and smart graduates who have been driving change across Abu Dhabi. ADNOC's own CEO, Dr Sultan Al Jaber has been a key influencer in the new direction for the company and its efforts towards a more profitable and sustainable future. He holds a BSc in Chemical Engineering from the University of Southern California, a PhD in business and economics from Coventry University right here in the UK and an MBA from the California State University at Los Angeles. He is also a staunch advocate of alternative energy and sustainable development and under his stewardship ADNOC has invested significantly into remodelling the business into a progressive and digital energy provider.

Al Mughairbi said: “Dr Sultan (Al Jaber) has had a huge influence on the direction we have taken. When we first started this journey, after just a few months he had a lot of questions and wanted to know what we were doing right, what we did wrong, and how can we do better? He looked at everything from the human capital to the technical workstreams and wanted a complete overview of everything that we were doing across the 14 businesses. One of the issues that we faced was information availability and information accuracy and multiple versions of the truth. In reality they were all truths. There are multiple versions, but they’re all true. It depends on what space and time and from which angle you’re looking at that question, where you answer. We developed the Panorama to be the single version of the truth – the one place that our engineers, our analysts and our CEO could see everything that we do, in real-time, across the whole value chain.”

SUSTAINABILITY IS A KEY PART OF OUR JOURNEY. OUR RESERVOIR IS GOING TO LAST FOR A LONG TIME, BUT IT WON’T LAST FOREVER

ABDUL NASSER AL MUGHAIRBI

SAP AND CLOUD

ADNOC’s underlying technology is SAP S/4HANA with all 14 operating units either being currently live or transitioning to S/4. Previously, there had been a mix of other vendors supplying ERP and infrastructure services but the current direction of travel is to move everything to SAP. Hosting had always been a key consideration for ADNOC – not because of security concerns – but due to data sovereignty – and the sheer volume of data that was now being collected and analysed necessitated a shift to the public cloud – albeit, likely in a private environment.

Al Mughairbi said: “We believe that cloud environments are very secure in terms of cyber security, better than anybody that you can hire to do the internal site. But in terms of data jurisdictions and data ownership, that’s our concern. Having a cloud in the UAE is very important to us. Microsoft has built one and SAP is also building one. There are quite a few happening in the area and that will make us move into that cloud. The cost of doing everything on your local servers is very high. Also, most of the software that we want to use is designed for cloud – to run the type of workloads that we are looking at, cloud is the obvious choice for us.”

At the time of the interview SAP may have been planning a UAE data centre but its recent announcement to move out of infrastructure and focus on its applications business, coupled with a new partnership with Microsoft should mean that ADNOC’s cloud ambitions can still be realised.

SUSTAINABILITY

When you think about any of the Gulf states you naturally think of oil. You don’t necessarily think of renewable energy, sustainability and environmental considerations. But that’s the Middle East oil companies of old – today many of the region’s producers are amongst the most sustainable and responsible on the global stage, and ADNOC is at the head of the field when it comes to environmental considerations and developing a sustainable business model.

“Sustainability is a key part of our journey. Our reservoir is going to last for a long time, but it won’t last forever. Remember, we operate in Abu Dhabi and at the same time we live in Abu Dhabi. We don’t have a license or a concession to operate in other countries. We live and work in the same environment so we need to be sustainable and responsible,” said Al Mughairbi.

“Thirty years ago we had a vision that it would be ADNOC that sold the last barrel of oil. We wanted our reservoir to last forever and we thought our oil would sustain the world. That was a strategy that led to a conservative approach to reservoir management, but today the vision is very different. It’s probably not going to be us selling the last barrel of oil. When we sell our last barrel of oil that will mean we have completed our journey to diversify.

“As the market changed, as the world changed, we realised that there’s other things to consider and a new vision emerged. That vision came from the senior government and now we will celebrate when the last barrel of oil is produced and sold.” ■

VENDOR SELECTION

HOW TO GET WHAT YOU WANT IN THE ERP JUNGLE

BY TOM CALDER

Changing core business applications can be a daunting challenge. Finding a single solution for your entire organisation and integrating it with your existing IT estate is not a simple thing to do. Apart from third parties you will have to work with stakeholders across your business, all with their own priorities, as well as varying states of numerous legacy systems.

A coherent and well managed vendor selection process is vital when moving through the tender process for a big ticket IT contract. When you engage with the ERP vendors in your bid you will be dealing with professionals who sell to people like you every day and they're very good at it. Not exactly a fair contest is it?

Here are 10 simple steps to help you chart through the 'ERP jungle', articulate your requirements to a credible shortlist of vendors, objectively evaluate their bids, select the most suitable solution and negotiate fair contracts. All this while staying in control of the bid process!

WHERE DO PEOPLE GO WRONG?

Being in too much of a hurry: Managing an ERP/vendor selection process takes longer than most people think. Allow at least six months before you plan to sign contracts. You will be in a relationship with the chosen vendor for more than 10 years so take the time to get it right.

Focussing on product and functionality: Too often the best solution is assumed to be the product with the strongest functionality but this is rarely the deciding criterion. There are other differentiators and nothing is more important than the people that you partner with.

Not controlling the bid process: Frequently, buyers engage with vendors before they know what they require or how to proceed. Vendors will influence the buyer by increasing the sense of need, offering solutions and speeding the selection to an early conclusion.

Very poor quality documents: Often buyers produce documents that lack structure or consistency. They are full of jargon and acronyms, are incomplete and too brief. From the other side, sometimes vendors offer templates to the buyer which means the vendors have control.

Poor contract negotiation: This is often done far too quickly. This contract will define your relationship with the vendor for the term of the contract. There are so many clauses to be checked that a thorough review of contracts by solicitors specialising in IT contracts is essential.

Of course, it is possible to make all of the mistakes above (and more) and still buy a great system from a vendor leading on to a successful implementation. However, the deal will be on their terms and you won't appreciate the impact of that until there's a problem which, one day, there will be.

WHAT SHOULD WE BE DOING TO GET IT RIGHT?

The approach to be adopted can be summed up in a single word: control. Control comes from asserting your authority from the start, gaining knowledge of your priorities and using a robust but simple process that will be followed by all participants.

The 10 steps below set out an approach that is methodical and auditable. There are key activities and outputs that will build a document set to support all subsequent decisions. Risk of failure will be reduced (not eliminated – nothing does that) and even if an incorrect decision is made, the basis of that decision will be understood.

Also the participating vendors will understand how to engage with you. They will know where you are coming from, why you are in the market, the scope of the opportunity, the approach to the selection, the time frames and the protocol for the engagement.

These first three steps should be completed before you engage with any vendors:

PHASE 1: PROTECTING YOUR BUSINESS IN THE ERP JUNGLE

STEP 1 DEFINE A CHANGE STRATEGY

This should describe your current circumstances and the business drivers behind the decision to buy a new ERP system. It should include relevant sections of your business and IT strategies and an application strategy. The success measures of the selection should be defined including the benefits of the change, time frames, and an indicative budget.

STEP 2 TREAT THE SELECTION LIKE ANY OTHER PROJECT

Make sure that you have an actively involved sponsor who is senior enough to make or influence the big decisions and interested enough to be available. Likewise, don't compromise on the project manager. Appoint someone who understands vendor management.

Document all of the usual details that you would find in any Project Charter or PID and make sure that all identified stakeholders agree to it.

STEP 3 DEFINE YOUR ERP SCOPE AND YOUR SELECTION CRITERIA

You need to define those areas of the business that will be in scope and to generate a master process list that will set out the extent-scope of the ERP.

Selection criteria need to be defined so that consistent decisions may be made about bids received during the selection process. These criteria will include high-level non-functional requirements such as IT standards and ISO compliance. Also they will include corporate information such as industry sector presence and details of financial performance.

It is important to concentrate the selection criteria on those aspects that actually matter to you. Too many criteria at this level will not enable simple and clear decisions.

At this stage, you may be ready to speak to vendors.

You may send out a 'Request for Information' (RFI) in which you ask vendors to provide the information required to assess them against your selection criteria. This is useful if you wish to generate a shortlist for the bid. Just make sure that the vendors sign a 'non-disclosure agreement' (NDA) first.

STEP 4 DEFINE YOUR REQUIREMENTS THOROUGHLY

Well drafted and concise requirements are a powerful tool for determining how vendors will respond to your bid and how your stakeholders will be able to assess these responses. The basis of these requirements should be the scope and selection criteria defined above.

Remember, non-functional requirements are just as important as functional and process requirements. From this you can generate a consistent basis for evaluation of the responses, for example a scoring matrix.

Do not ask the vendors to write these for you or use their templates. Unsurprisingly, this will lead to a definition of your requirements that matches perfectly with their system's capabilities.

STEP 5 GENERATE YOUR VENDOR SHORTLIST

There are numerous sources of information from which you may derive a shortlist. Companies like **Gartner**, journals, and surveys published on the internet are an excellent source of information. However, don't let these sources unduly influence the selection outcome: the key decisions are all yours. Also remember that many of the authors that publish surveys – like Gartner, **IDC** and **Forrester** are commercially supported by the vendors so it's vital that you do not rely entirely on what you read.

STEP 6 PREPARE A PROFESSIONAL DOCUMENT SET FOR THE VENDORS

The documents prepared so far will be the basis for a set of bid documents for the vendors. Typically, there are four components:

- 1. An introduction to your company, with the project background, selection criteria, engagement protocol, selection stages time frames and the approach to the selection
- 2. Requirements: functional and non-functional including the master process lists
- 3. A basis for the vendor's response
- 4. A request for a proposal (RFP)

The quality of this documentation will dictate the accuracy of the vendors' understanding of your needs and their responses. Remember to get all vendors to sign an NDA before sending them the document set if you haven't done this already.

VENDOR SELECTION

STEP 7

EVALUATE ALL BIDS AND VENDORS FAIRLY, MAKE YOUR DECISIONS FIRMLY

All vendors must be treated equally and professionally. You have told them that they will be fairly assessed and you should do just that. Your selection exercise will be more successful if you do.

When you need to eliminate the weaker bids, make sure that those vendors understand the reasons and don't allow them to reverse the decision. Be respectful and grateful - they have done a lot to help you with your selection and they will have nothing to show for it.

STEP 8

DEEP DIVE INTO THE REMAINING VENDORS

After the 'first cut' elimination, subsequent investigations will seek higher quality information from product demonstrations, discussions about IT, support and implementation and 'proof of concept' workshops for critical business processes.

This is very important work that will help you to truly understand how the remaining vendors will deliver a solution and support you with a positive long-term relationship into the future. These events must be prepared for thoroughly in advance and be well controlled.

Once you have chosen your final vendor (or two), you must take up references. Seek references from companies that are similar to you (sector and scale), use a standard questionnaire and take up enough references to gain a consensus view as any one single statement may not be significant.

STEP 9

FINANCIAL SENSITIVITY ANALYSIS

When assessing the financial bids and illustrations, make sure that you pull these apart thoroughly and understand their sensitivities. The lowest cost quote may turn out to be the most expensive if your user volumes increase (for example).

The number at the bottom of the analysis is highly unlikely to be what actually gets charged, once proper sizing has taken place. In particular, bear in mind that 'fixed price' deals will have a risk premium built into the costs and variation clauses in the contract which will allow the price to rise if any assumptions turn out to be misplaced.

STEP 10

CONTRACT REVIEW

As stated earlier, I cannot emphasise enough how important it is to complete this step thoroughly and not to sign too early. Bear in mind that there will be contracts for SaaS, application support and for implementation. Perhaps others too, such as hosting.

Things to look out for include negation of warranties, termination clauses, liabilities under the contract, remedies for failures, service level agreements, reciprocity and much more. Use a solicitor who specialises in IT systems and service contracts.

Remember, once you have agreed the contractual and financial terms and conditions and signed the contract, you have no more leverage. The deal is done.

PHASE 2: LET THE IMPLEMENTATION COMMENCE!

Everything has been leading up to this point. However, one missing ingredient is often the lack of sufficient resources to actually deliver on the project plan. Don't skimp on the resources. Always bring the best people from within your business to the project team. If the business says that 'they cannot do without someone' for 12 months then that is precisely the person that you need on the team. For more information on how to correctly resource your team you should read 'how to get a tune out of your project team' in the June 2019 issue of ERP Today.

You should be in a good place to start the implementation project, working closely with the vendor or their implementation partner. Everything you've done so far will flow straight into this phase: the change strategy, project charter, stakeholder analysis, success criteria, scope and processes and such like.

Make absolutely sure that you have very strong change control procedures and that any impact assessment takes account of the implementation fees. Appoint really strong people to be the business and technical design authorities to control the implementation consultants.

SUMMARY

You can follow all of the above steps and make none of the mistakes I highlighted, and it can all go horribly wrong. You can ignore any form of sensible practice and be plain lucky. As we have said in previous articles on this subject "even the best ERP projects take some casualties," so be prepared to manage difficulties but make sure you give yourself the best chance of success by following the steps above. Bear in mind that by managing out the uncertainty (as much as is possible) and by establishing yourself as being in charge, you really have done as much as you reasonably can and stand a much better chance of achieving a great outcome with your ERP project.

One final selection hot tip for you. The vendor that wants the contract most will try the hardest and you'll probably notice that. They'll be quickest to respond and nothing is too much trouble. The references will probably be compelling. If all other things are equal, that's your partner.

Just remember, there are two types of disaster: disasters for which you are forgiven and disasters for which you are not. Best practice is the difference. ■

Tom Calder is a qualified accountant and management consultant with 30 years of experience. He has helped clients of all sizes to define application strategies and requirements and to select ERP systems using his own methodologies and artefacts.

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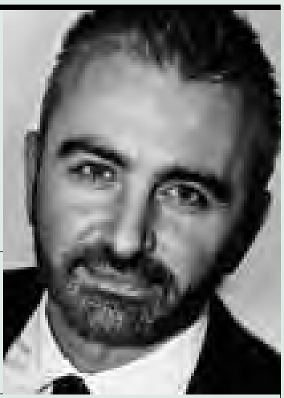

The quality of the offerings from the major vendors continues to multiply as the top players develop specialisms and deliver greater value to customers. **BY PAUL ESHERWOOD**

The ERP marketplace is being disrupted and the opportunities for ERP buyers could not be better. Acquisitions, partnerships, new products and challenger brands are all making plays and the net result is greater choice, better tools and lower costs for customers.

Historically ERP was a product; a set of applications that you bought, installed and maintained. It was a monolithic beast that sat at the centre of an enterprise with its tentacles spread far and wide controlling every aspect of your business. Applications were customised and ERP systems were enhanced creating a sprawling network which required significant hardware to operate it. If you wanted a new process, report or piece of functionality you built it into the core of the system which created an increasing burden of complexity. Footprints grew as different environments were required for development, testing and production, and after years of tinkering and upgrading, most of them were a mess.

The vendor's proposition used to be built on the strength of their applications and the only 'value-add' was the bit they sold you post implementation to keep the whole thing going. Typically, an ERP project would be a huge undertaking that required a significant investment in time and money and often meant widespread business disruption. Little wonder that many ERP customers who had been through the mill on a previous implementation did everything they could to postpone the next instalment of ERP misery that would inevitably be required when it was time to upgrade.

Today, ERP is very different and the vendor proposition has changed to focus much less on the product and more on ERP as a foundation for innovation. Modern ERP is more of a platform than an entity. It's the building blocks that enterprises use to support front and back office functions keeping their core processes inside the ERP and their non-core firmly outside. Customers are moving towards simpler systems and adopting integrations instead of customisations which keep the core clean and allow for joined-up interactions between lines-of-business, different systems and processes. Differentiation between the various suites of applications is far less obvious than it was 10 years ago and vendors position themselves as providers of enterprise intelligence through a portfolio of offerings, of which ERP is just one element.

Despite the lack of differentiation between some of the core applications, several vendors are increasingly becoming specialised; if you are in aerospace, IFS will be high on your priority list. If you are a manufacturer you will probably be talking to QAD. And if supply chain functionality is a priority then Infor is a good bet. These are just three examples and in each case the choice isn't binary. There are lots of good ERP systems that work in these verticals and as specialisms become more ingrained it will become easier for customers to identify the vendor and product that best fits their needs.

SaaS applications are often written for specific industries – in some cases for micro-verticals that sit inside broader sectors – but it is the depth of industry knowledge, not the application itself, that is the key differentiator for the vendors today. Historically, when a vendor wanted to break new ground they built a set of applications, put a new badge on it and hired a sales team. Today, vendors have deep industry expertise and vertical specific propositions are built on the foundations of that knowledge. This all amounts to good news for ERP customers as they can be confident that they will be dealing with vendors that can walk as well as talk.

So how do six of the top ERP vendors that we have featured in this report shape up from a strategy point of view?

MICROSOFT

Microsoft may win less big ticket ERP deals than their global reputation suggests they should but that could start to change as enterprises switch their focus from 'applications' to 'platforms'. Microsoft is investing heavily in its enterprise offerings (and its sales teams) with an aggressive plan to go out and win more business. In the US alone they have recruited 1,000 new sales specialists and it won't be long before the effort ramps up in Europe as well. The latest release of D365 Finance and SCM, which until recently was called D365 Finance and Operations, has more than 400 enhancements and updated features and in a recent blog post, James Phillips, president of business applications, said: "We're making enormous investments in Dynamics 365 across the company and across the globe. It's a scale-up velocity unlike anything we've ever done at Microsoft."

Microsoft has always been a major player but our prediction is that they will become increasingly visible in the market as they look to leverage their global sales force, incredible brand strength, public cloud dominance and boundless R&D resources.

UNIT4

Unit4 has been reborn under the new stewardship of CEO, Mike Ettling, and its recent financial results bear testament to the wisdom in taking the business in a new direction. Ettling has set a course that he is familiar with – people – and the newly branded Unit4 has made its play in that space. Focussing on just four verticals – professional services, public services, education and not-for-profit - Unit4 is the 'people's choice ERP'. Its products are built with users in mind, its platform has been developed using a microservices architecture and the ability to use a cloud-based extension kit, and its relationship with Azure is mature and delivers excellent TCO for users.

Unusually for a private company, Unit4 published an unadulterated version of its financial performance for 2019, which showed some impressive numbers. Perhaps not in comparison to some of the larger vendors but progress none-the-less. From a relatively low base and generally poor market perception, Ettling has transformed the business in under 18 months and positioned it for serious growth. Plans to roll out a single multi-tenant code line later in 2020 will ease analysts' minds and reduce cost burden while also providing greater agility.

We expect Unit4 to continue the upwards trajectory in its chosen verticals and make more gains, particularly in the education sector. Its recent deal with **Galileo**, a network of 42 European schools, could give it the springboard and references to make a dent in the UK market.

IFS

IFS is also under new leadership, and ownership, and is another challenger vendor that has made huge strides in the last 18 months. A 'sleeping giant' that had a very messy corporate structure and disparate business model has been refocussed as a coherent contender with lofty ambitions and an aggressive growth strategy.

Darren Roos is the new CEO who set about remodelling IFS by harmonising the business units, refocussing the strategy and developing a solid partner eco-system. IFS is very vertically focussed on asset-heavy industries and has an impressive book of clients across aerospace, defence, manufacturing and utilities.

Smart strategic acquisitions and a useful tie-up with **Acumatica** (read all about them in the next issue of ERP Today) has given IFS several new strings to its bow - a bow that Roos is pointing squarely at his former employer, **SAP**. IFS is ambitiously taking a swipe at SAP in its marketing efforts and that may not be such a bad play. IFS' big selling point is its time-to-value proposition and with many SAP users looking at S/4 and realising the complexity of the migration path there may well be some disgruntled customers that would welcome the IFS approach. However, if IFS is going to seriously challenge at the upper end of the enterprise sector they will need to invest more heavily in their sales teams, partner network and marketing. Picking some low hanging fruit will be possible but Roos is ambitious and predicts £1bn in revenues by the end of next year. That will take some serious effort but I think they might just do it.

SAP

SAP is still the dominant ERP vendor globally and despite some misgivings about the way S/4 was conceived and brought to market, it still retains its number one status. The recent announcement to continue support for Business Suite 7 until 2027 (and 2030 if you are in the process of migrating to S/4) will give some comfort to ECC 6 users – but it doesn't solve the problem entirely.

SAP is an indomitable force in the enterprise tech space and it will take more than a few rumblings from analysts to knock them off course. However, a slowdown in cloud revenues left some disappointed with just 17 percent growth in Q4 2019 – and 10 percent of that was attributed to a single customer. However, they did add 1,200 S/4HANA customers in the quarter bringing the total installed base to 13,800.

SAP has all-but abandoned its infrastructure ambitions in favour of partnering with the hyperscalers and concentrating on its SaaS business – a decision that also affected its top line performance but will likely pay dividends in the long term.

New co-CEOs, Jennifer Morgan and Christian Klein, have only been in the job for a few months so it will take time to see how the restructuring and refocussing shapes up. The SAP partner network is one of the vendors biggest strengths and with the likes of **IBM** and **Accenture** so heavily invested in the SAP proposition any minor bumps in the road will be ironed out and forgotten about over time.

INFOR

Infor is the world's third largest vendor of enterprise applications and has recently been bought by **Koch Industries** – a US-based conglomerate that was already a 50 percent owner. There had been a lot of talk about an Infor IPO but the news that Koch had stumped up the cash to buy the business outright put an end to that speculation. On the face of it I would say this is good news for Infor and its customers. Koch is a huge business with very deep resources and the stability of private ownership coupled with the cash that Koch will invest should put Infor in a very happy place.

Infor's strengths lie in its very detailed and niche products. Its applications are finely tuned for micro-verticals providing off-the-shelf tools that are primed for best practice. It has taken many years and much investment to engineer these products and the granular nature of Infor's applications is a real differentiator.

Kevin Samuelson, Infor CEO, is a smart guy and he has overseen much of Infor's growth and strategy over a long 16 year career (apart from a brief hiatus between 2013 and 2016). Samuelson was instrumental in most of Infor's acquisitions in the last decade and then more recently occupied the role of CFO where he oversaw significant revenue growth.

The only concern with Infor now that they are owned by Koch is around the future strategy – which at present is unclear. Since Koch first invested in Infor back in 2016 it has rolled out the Infor product to a number of its subsidiaries which at the time would have been great news and an easy win for both sides. But as Infor looks to increase its market share and penetrate the markets where Koch operates and competes with potential new customers – could this be seen as blocker? Will company X buy from Infor if company X competes with Koch? Perhaps it's not so much of a worry and any issues are far outweighed by the financial clout and flexibility that comes as part of the package. As Samuelson put it to me: "We are all super excited and feel that we have degrees of freedom and financial stability that is unmatched in tech." Financial stability for sure but let's reserve judgement on the freedom until we hear more about the long term strategy under new private ownership.

WORKDAY

Workday's may be close to stealing the crown from Oracle as the brand of choice for the modern enterprise. Its cloud-native heritage and deep reach into the HR workings of many global enterprises has given Workday some incredible reference points. It has positioned itself as the platinum option by only going after marquee-signings and is more than a contender for global projects that require both cloud HCM and more traditional finance/ERP.

It is heavily invested in developing its offerings with the latest technology and at its global user conference last year went big on machine learning as a core capability. At the same event Workday also took the wraps off its newest UX, called People Experience, which also relies on ML to deliver an intuitive user experience. Its PaaS offering will also be generally available soon and this will add a new dimension for enterprises that require differentiation in their platform layers. However, Workday still needs to transition from its in-house cloud operating platform to a public cloud platform. For Workday to succeed with its push for ML, it will need to move more customers to the public cloud to benefit from the infinite storage and compute resources the public cloud offers.

A word about our partners


John Donagher


Ian O'Toole

ERP TODAY has collaborated with Lumenia on our first annual ERP vendor review. Lumenia is an independent boutique consultancy that specialise in vendor selection and ERP planning and despite their size, are one of the most respected vendor-agnostic authorities of ERP knowledge in Europe. I have worked with the Lumenia team for nearly a decade and their expertise and impartial acumen sets them apart from all other sources of ERP know-how. Lumenia does not sell software and their independence means that they have no vested interest in pushing clients towards particular software solutions. They focus instead on how enterprise applications can best be used to transform business processes and deliver measurable business benefit to their clients, whether this is through the deployment of new software or by getting more value from systems that are already in use.

Lumenia has developed unique methodologies that allow clients to undertake ERP and business change programmes using structured processes that maximise the likelihood of project success by promoting business ownership, minimising risk and controlling cost, while ensuring that planned business benefits are realised.

Over the following 10 pages, the Lumenia team have brought together a comprehensive product assessment for each of the vendors in this review. None of the vendors have paid for their inclusion and the analysis which follows is our collective independent view of the respective offerings.

Oracle declined to participate in this review.

ERP trends

lumenia

Lumenia was delighted to partner with **ERP Today** in the production of this vendor review. 10 of the leading ERP providers are profiled over the following pages. The individual profiles cover products that fit different organisation sizes and different industry verticals. The vendor organisations themselves range from mid-size to some of the largest global enterprises operating today. Despite that, there are market trends that are discernible across the ERP and enterprise software sector overall.

Functionality Trends

Business software in general has seen the impact of the consumerisation of IT on user expectations and has had to respond. Newer generations of users expect all software interactions to be as simple as the mobile apps and websites that they use outside of work. ERP vendors have had to respond. The clunky interfaces of legacy suites have largely been replaced by more user-friendly intuitive interfaces. User interaction constructs have been deployed by many vendors that mimic our interactions on social media or with chat bots.

Most vendors have incorporated functionality or tools to leverage AI and RPA capabilities now widely available. These are bringing efficiencies to repetitive and administrative tasks and freeing up capacity for higher value and fulfilling work. IoT data-feeds are being incorporated into ERP processes, particularly in manufacturing and asset intensive implementations.

HCM has become a key focus of many ERP vendors as it was one of the first lines of business that lent itself to a cloud ERP model where implementations that touched physical processes, such as manufacturing, were slower to adopt.

Cloud Trends

This migration of ERP to the cloud has continued at pace albeit after a slow start. The variety of cloud solutions can be seen in the following pages. There is still a variety of cloud deployment models reflecting the need amongst buyers for options as much as differing pace of development and technical evolution amongst vendors. With few exceptions, ERP vendors are pushing this trend. Whether this is a reaction to customer demand for OpEx based investment or technology vendor shareholder demand for predictable revenue is questionable. Regardless of the financial aspects of the cloud migration, most CIOs and IT managers are happy to move some of the technical overhead of managing complex ERP solutions outside.

SAP's recently announced slowdown in cloud bookings and extension of support for its legacy ECC6 (non-cloud) suite however are examples illustrating that there is not, and probably never will be, a one size fits all approach to cloud ERP.

Architectural Trends

There has been a trend in recent years to decouple the components of the vendor suites into their constituent parts. This is partly enabled by technology (SOA based integration), partly driven by market dynamics (acquisitions are easier to integrate in a SOA environment than to bake into a different code base) and partly driven by commercial considerations (enabling clients to pick subscriptions from a shopping list of options). Almost all of the leading suites described over the following pages are actually made up of multiple components now. ERP buyers should understand this. Contrary to many tech commentators' views that big suites are too complex, many buyers still like to think that one solution supporting everything is easier to manage than multiple moving parts with different integrations to manage. This may not be what they are buying, despite branding.

Commercial Market Trends

Finally, it is worth stating that the ERP market remains vibrant, if not as headline grabbing as some newer technology markets. The reality is that many of these new technologies enable most benefit when integrated to, or coupled with, processes that are recorded and transacted in ERP systems. Continued equity investment in the market (see Infor and Advanced notes in the coming pages) and continuing acquisitions are testament to this vitality. As ERP vendors' offerings continue to mature, they are broadening their reach into CX and other digital technologies. The future for ERP is bright.

Product Range		
PRODUCT	**DEPLOYMENT OPTIONS**	**LICENSING OPTIONS**
CLOUD FINANCIALS	Cloud	Subscription
CLOUD HR	Cloud	Subscription
BUSINESS CLOUD ESSENTIALS	Cloud	Subscription

Notable UK Customers	
ST ANDREWS HEALTHCARE	Charity providing psychiatric services
HARVEY NICHOLS	Luxury department store – retailer
NHS	National Health Service

Advanced is a large UK-based provider of business software solutions (including ERP) which provides a variety of solutions targeted at businesses ranging in size from SME's to larger mid-size or enterprise organisations. Of the products listed above Cloud Financials and Cloud HR are targeted at mid-size to enterprise organisations across all markets while Business Cloud Essentials is targeted at small to medium manufacturers. Advanced also has a very broad range of line-of-business offerings covering areas such as payroll, procurement, membership and fundraising, rostering, sports ticketing and many more. In addition, it provides a solution called MyWorkplace which is a unified, open-standards cloud platform that enables deployment of multiple Advanced solutions together with a unified user interface and single sign-on with additional workflows and apps. Advanced also provides outsourced IT operations, managed services and application modernisation services. Cloud products are updated either bi-weekly or monthly.

The Advanced product range is cross-sectoral in scope and serves public and private sector organisations and verticals such as legal, education, healthcare and non-profit. The range of lines of business supported across the product range include finance, HR/payroll, procurement and document management as well as specific solutions for each of the verticals mentioned above. These include;

• Vertical solutions for non-profit, membership and sports

• Healthcare: out-of-hours, urgent and unplanned care, document management/workflow for primary and secondary care, EHR community and clinical decision support

• Legal: case management solutions for solicitors and barristers, plus legal forms software.

• Education: student information systems for schools, academies/multi academy trusts, further education and private training providers.

Advanced is a private company with co-controlling stakes from two private equity investors **Vista Equity Partners** (since 2015) and **BC Partners** (since October 2019) – the most recent round of investment valued the company at £2bn. Advanced global revenue for financial year ending February 2019 was £239m with subscription revenue accounting for £41m of that. Advanced claims 19,000 customers in the UK with 3,600 of those subscription based.

It is growing through acquisition as well as development with four acquisitions completed in 2019 (**Oyez** - legal forms solutions for legal practitioners; **Kirona** - cloud based field service management solutions; **Modern Systems** - application modernisation business that transitions customers from legacy systems to modern environments; **Careworks** - cloud-based integrated health and social care solution). In addition, the core product range has continued to be developed with the current focus on further developing the cloud platform MyWorkplace in line with its cloud-based solution strategy.

With more acquisitions to come Advanced will need ensure they retain their focus on building value-add capability where products and services dovetail rather than building a disparate set of applications.

EPICOR

Product Range			Notable UK Customers	
PRODUCT	**DEPLOYMENT OPTIONS**	**LICENSING OPTIONS**	**LONDON ELECTRIC VEHICLE COMPANY**	Manufacturer and retailer of electric commercial vehicles
EPICOR ERP	On-premise, multi-tenant, single-tenant and dedicated tenant	Perpetual & SaaS	**WD-40**	Manufacture, sales and distribution of maintenance, homecare and cleaning products
EPICOR ADVANCED MES			**KMF GROUP**	Supplier of precision sheet metal fabrication and engineering solutions service
EPICOR TROPOS				
EPICOR BISTRACK				

Epicor's range of enterprise software solutions for the UK and Ireland market includes two ERP solutions, an MES system and a niche product for timber and builders' merchants. Customer size varies from SMEs (<20 users, <£20m) to enterprise (>2500 users, >£1bn), with a core focus on midsize manufacturers (100-1000 users).

Epicor has a long pedigree in the enterprise software market with many different ERP product offerings over the years. Headquartered in Austin, Texas, the business is a global player in the sector and has offices and customers in Europe, Asia, Australia, Africa and Latin America. The business has been owned by global investment firm **KKR** since 2016 and does not disclose revenue figures. The company is understood to have around 4,000 employees.

Epicor provides a range of deployment and licensing options for its products with major releases for SaaS products every six months. Like other enterprise vendors the number of SaaS customers is growing and now accounts for 30 percent of UK customers. Epicor has a strategic partnership with **Microsoft** to deliver cloud solutions on the Azure platform with Epicor incorporating Microsoft's technologies in areas such as AI, IoT and machine learning into its products.

Epicor ERP is a full ERP suite aimed primarily at discrete manufacturers and can be deployed in the cloud or on-premise. It is a broad-based ERP solution which is a very strong candidate for mid-size manufacturing organisations and claims particular suitability in aerospace and defence, electronics, fabricated metals, industrial machining, medical devices and rubber and plastics. Other target sectors include distributors and engineering field services. The system supports various manufacturing modes, including design-to-order, engineer-to-order, make-to-order, configure-to-order and assemble-to-order. Epicor ERP gains regular plaudits from industry analysts for its depth of functionality for manufacturers although **IDC** point out some gaps in relation to quality management.

Epicor Advanced MES, formerly known as Mattec MES, provides real-time shop-floor monitoring and control for discrete manufacturers.

Epicor Tropos is an ERP solution for process manufacturers. Part of the Epicor UK stable since 2012 when it acquired **Solarsoft Business Systems**, Tropos has historically been a very successful solution for process manufacturers, with a strong track record in specific industry sectors such as distilleries, bakeries and pharmaceuticals.

Epicor BisTrack is a leading construction supplier software solution on the UK market tailored to the unique needs of the building supply, manufacturing and distribution industries.

Recent notable product developments include the introduction of artificial intelligence with Epicor Virtual Agent, Epicor IoT to connect machines to Epicor ERP and Epicor Collaborate, a cloud-based integrated digital messaging platform. Epicor also acquired 1 EDI Source to further enhance EDI capabilities.

Epicor sells its products directly and through a partner channel. Some partners have developed particular expertise in sectors outside of Epicor's usual sweet spots and can provide innovative solutions built on Epicor's flexible technology platform.

Product Range

PRODUCT	DEPLOYMENT OPTIONS	LICENSING OPTIONS
IFS APPLICATIONS	On-premise Single-tenant cloud	Perpetual Subscription
IFS FIELD SERVICE MANAGEMENT	On-premise Single-tenant cloud	Perpetual Subscription
IFS MAINTENIX	On-premise (some cloud options)	Perpetual Subscription

Notable UK Customers

BABCOCK INTERNATIONAL	Asset and infrastructure management
PUKKA HERBS	Organic herbal tea and supplements producer
AUTO WINDSCREENS	Automotive glass repair and replacement

IFS' range of enterprise applications are targeted at upper mid-market enterprises and lower large-enterprise customers that manufacture and distribute goods, maintain assets, and manage service-focussed operations. IFS specifically focusses on five vertical markets; manufacturing; engineering, construction and infrastructure; energy, utilities and resources; service industries; and aerospace and defence. It also has specific expertise in a number of associated sub-verticals.

IFS is headquartered in Sweden, where it was originally founded in the early 1980s, and has over 3,500 employees and operations globally. Owned by Swedish private equity group **EQT**, its financial results for 2019 continued to show strong growth, with net revenue of $668m. IFS has traditionally relied on their own consulting team to deliver implementations but this approach is changing and a partner channel is actively being developed. IFS now has strong relationships with the likes of **Tech Mahindra**, **TCS** and **Accenture** to implement its technology on the global stage and also works with an increasingly diverse range of partners in the UK such as **Anthesis**, **Vanilla Solution** and **Mitec**.

IFS' policy is to offer customers choice in what they buy and where they deploy it and they offer a range of licensing and deployment options. Customers can choose traditional on-premise deployments with perpetual licensing, or the IFS Managed Cloud, a single-tenant solution deployed on **Microsoft Azure**, with perpetual licensing or SaaS subscription. Updates are currently released quarterly, however a change to a bi-annual release cadence is planned.

IFS' longest-established and best-known product is IFS Applications, a modular ERP solution covering financials, human resources, quality management, document management, customer relationship management, business intelligence, sustainability management and other core functionality to facilitate full lifecycle management of products, assets, customers and projects. IFS is known for its particularly strong offering for asset-intensive and project-based organisations and has invested in the new wave of technology augmenting traditional ERP capabilities, particularly in areas such as enterprise mobility, IoT, artificial intelligence, machine learning and an updated user interface.

IFS Maintenix is a best-of-breed aviation maintenance management solution.

IFS Field Service Management is a leading product in the sector, providing work order management, spare parts management, service contract management, warranty management and service project management capabilities for enterprises across multiple sectors. To augment this capability, IFS acquired the leading global field service management software company, **Astea International**, in December 2019.

IFS has their own well-defined implementation methodology although partners have latitude to use their own methodologies. The IFS strategy is to position themselves for delivery of larger and more complex or strategic implementations, with partners delivering SME projects.

IDC positioned IFS Applications as a 'major player' in their 2019 MarketScape report, noting their deep expertise in their target sectors, the product's flexibility and IFS's commitment to innovation. **Gartner**'s 2019 magic quadrant for Field Service management positioned IFS as a 'leader' in the market segment. Both reports noted that IFS could improve their marketing to drive brand awareness.

infor™

Product Range			Notable UK Customers	
PRODUCT	**DEPLOYMENT OPTIONS**	**LICENSING OPTIONS**	**BAE SYSTEMS**	Defence, security and aerospace
INFOR CLOUDSUITES (Industrial Enterprise; Industrial; Financials; Automotive; Aerospace and Defence; Fashion; Distribution; Equipment; Food & Beverage; Retail)	Infor claim the dominant deployment method across their application range is multi-tenant cloud. Most core ERP components are available on-premise, multi-tenant or single tenant.	Subscription primarily with perpetual available for on-premise deployments.	**LIBERTY SPECIALITY STEEL**	Industrial metals
			TRIUMPH MOTORCYCLES	Motorcycles

Infor's range of applications suites target mid-size to large enterprise organisations across a variety of sectors. Traditionally, Infor was strong across various facets of manufacturing with particular depth of capability in certain micro-verticals. So, for example, within food and beverage Infor has particular strengths in brewing, meat processing and baking. Infor's breadth of products now cover such verticals as automotive, industrial manufacturing and equipment, hi-tech, food and beverage, construction, distribution, equipment rental, retail, fashion, aerospace and defence and chemicals. Beyond core ERP solutions, Infor has products with strengths in sectors such as hospitality, facilities management, financial services, professional services, public sector, healthcare, non-profit and 3PL logistics providers.

Infor's product range has evolved through acquisition and development. The solutions are grouped together into CloudSuites with a particular industry focus. These CloudSuites are often comprised of a core ERP product like Infor M3, Infor LN or Infor Syteline with additional components and workflows integrated using Infor integration tools (ION) and deployed on Infor OS cloud operating platform (usually on Amazon AWS). In addition to the core ERP products Infor has a range of strategic solutions including SunSystems (financials), Infor EAM (enterprise asset management), Infor Nexus (networked supply chains), Infor Coleman (AI) and Birst (analytics).

Infor claims that its vertical focus with pre-configured CloudSuites means that preconfigured industry processes and predefined industry analytics shorten the time to value. The breadth of Infor's product offering means that a very wide variety of business processes are supported by their ERP applications, including finance, HR, distribution, manufacturing operations, supply chain and customer services.

Infor's CloudSuite's are primarily deployed as multi-tenant cloud solutions with a monthly update release cycle. However, other deployment models are available and customers can choose single-tenant or on-premise options for most applications.

Headquartered in New York, Infor recently became wholly owned by (former majority shareholder) **Koch Industries** in a deal that values the company at $13bn. Infor claims 68,000 customers globally of which 13,500 are cloud customers. Total revenue for the last financial year was $3.2bn. Infor has a significant presence and customer base in the UK.

Historically, Infor has implemented directly using its own services organisation. It has been aggressively developing a partner channel over the past number of years and now many smaller implementations are partner led.

In its June 2019 Technology Value Matrix, **Nucleus Research** placed Infor Cloudsuite in the 'Leader' quadrant highlighting continued strategic investment in industry vertical support and growth of its partner network. Similarly **IDC** positioned Infor as a 'major player' in their March 2019 MarketScape report for worldwide SaaS and cloud-enabled operational ERP applications highlighting that vertical specialisation can mean less customisation and faster implementations.

Microsoft Dynamics 365

Product Range

PRODUCT	DEPLOYMENT OPTIONS	LICENSING OPTIONS
DYNAMICS 365 FINANCE AND SUPPLY CHAIN MANAGEMENT	Single-tenant cloud	Subscription
DYNAMICS 365 BUSINESS CENTRAL	Single tenant or multi-tenant cloud or on-premises	Subscription

Notable UK Customers

DR MARTENS	Footwear
TGI FRIDAYS	Restaurant chain
RENAULT SPORT	Formula One team

Microsoft core ERP solutions are both branded within the Dynamics 365 suite of enterprise applications which also include customer engagement (CRM) and HCM solutions.

D365 Finance and SCM was until recently sold as D365 Finance and Operations. Now each element can be purchased separately and the suite has been rebranded as Finance and SCM. This product has a long pedigree having evolved out of the AX application suite. It is suitable for most industry sectors including manufacturing, distribution, retail, professional services, healthcare and financial services and particularly in global organisations ranging in size from mid-sized to large enterprise. D365 Finance and SCM is a broad application suite covering lines of business including core financials, project operations, manufacturing, warehouse management, asset management, supply chain and human resources.

D365 Business Central is more targeted at small to mid-sized businesses. It also has a long pedigree having evolved out of the widely used NAV solution. Business Central is also a broadly functional solution covering core financials, supply chain, sales, projects and more. It is also used across many industry sectors including manufacturing, distribution, retail, professional services and non-profit.

Both these Microsoft ERP solutions provide native integration or integration frameworks to a variety of other Microsoft products providing extensibility, analytics and productivity. These include Office 365, PowerApps, PowerBI and Microsoft's Azure cloud platform.

In line with the industry trends, Microsoft advocates subscription based Azure cloud deployments. Both solutions were available on-premise until recently but this is clearly not the direction of travel for Dynamics deployments. The release cycle for both products is twice per year.

Microsoft has a particularly wide channel and implements almost exclusively through its partners. These range from large consulting organisations and systems integrators such as KPMG and PowerObjects (an HCL company) supporting global projects to smaller niche focussed partners with particular vertical expertise and experience. In addition, many of these channel partners have developed Microsoft Certified Independent Software Vendor (ISV) solutions to extend the reach of both products. These range from extensions of functional reach to vertical focussed solutions. This channel tends to co-operate, so that one partner may team up with others to implement their ISV solutions as part of an overall D365 implementation. Historically, Microsoft has acquired some of these solutions and fully integrated them into the core product sets – warehouse management and asset management are two examples in the D365 Finance and SCM product.

IDC positioned D365 Finance & Operations (now Finance and SCM) as a 'major player' in their March 2019 MarketScape report, highlighting their global partner ecosystem as a particular strength citing more than 300 ISV solutions and in excess of 1,000 ISV partners. Its ISV network and rapidly expanding sales force will see Microsoft making gains in the mid-market ERP sector. However, Microsoft often struggles to win big-ticket global ERP projects due to the structure of its partner network.

QAD

Product Range

PRODUCT	DEPLOYMENT OPTIONS	LICENSING OPTIONS
QAD ADAPTIVE ERP	Single-tenant cloud	Subscription

Notable UK Customers

CATERPILLAR	Industrial machinery
GKN AUTOMOTIVE	Automotive driveline technology and systems
IMPERIAL BRANDS	Tobacco and related products

QAD's application suites are targeted exclusively at manufacturing organisations with a particular focus on six manufacturing verticals; automotive, life sciences, consumer products, food and beverage, industrial and high-tech.

QAD claims to take an active role with industry groups and standards bodies in these verticals to comply with new manufacturing practices, provide innovative solutions to give customers a competitive advantage and deliver capabilities to address regulatory compliance. Furthermore, it continues to research into emerging industry issues and leverage its manufacturing sector experience to develop products and services to address industry-specific needs.

QAD has a long ERP heritage in these sectors and can rightly claim to have deep manufacturing ERP capability. QAD users range in scale from global enterprises to mid-market manufacturers with many being 'life-long' users of QAD products.

The Adaptive ERP suite covers the broad range of business processes that a manufacturing organisation will require including financials, customer management, supply chain, manufacturing, service and support. It also provides capabilities in analytics, business process management and integration. As well as the core ERP product QAD's portfolio of related solutions includes products addressing quality management, supply chain management, transportation management and B2B interoperability.

QAD is deployed as a single tenant cloud solution with the option to deploy on dedicated virtual hosts. It is subscription based with enterprise subscription licencing available in enterprise scale implementations. The release cycle is twice per year.

Over the last decade QAD has re-engineered its applications to be geared for the cloud and has made significant improvements to its UIs, dashboards and analytics making for a much-improved user experience. It has also integrated emerging technologies like AI into its capabilities and developed its platform to allow for easy integrations with other systems.

QAD is headquartered in California and listed on the NASDAQ. It has in the region of 2,000 employees and revenues of $333m to financial year end 2019. QAD implements directly and through channel partners. It is well represented in the UK market with 245 customers with almost 20 percent of those either new cloud customers or having migrated to QAD cloud solutions.

In its 2019 ERP Value Matrix, **Nucleus Research** positioned QAD in the 'expert' quadrant highlighting a depth of capability in its focus verticals as well as recent functional and UI improvements. QAD's DynaSys Supply Chain Demand Planning application was recognised as a 'major player' by **IDC** in their September 2019 MarketScape Supply Chain Demand Planning. While DynaSys is not explicitly in the ERP space this perhaps illustrates QAD Adaptive Applications reach into related lines of business for manufacturing organisations.

sage

Product Range			Notable UK Customers	
PRODUCT	**DEPLOYMENT OPTIONS**	**LICENSING OPTIONS**	**CITY CRUISES (SAGE X3)**	Sightseeing cruise operator
SAGE X3	On-premise Cloud	Subscription	**PUKKA PADS (SAGE 200CLOUD)**	Stationery manufacturer
SAGE 200CLOUD				
SAGE INTACCT	Cloud	Subscription	**ARLINGTON**	Portfolio management
SAGE PEOPLE	Cloud	Subscription		

Sage is one of the best known names in business software. Often associated with payroll and basic accounting tools, Sage also has a range of enterprise products.

The Sage Group plc is headquartered in Newcastle and has over 12,700 employees worldwide. The business operates globally, and although the bulk of its £1.9bn revenue in 2019 was in Europe and North America it also has a significant presence in Africa, Middle East, Australia and Asia. A notable landmark for Sage in 2019 came with the news that subscriptions accounted for over half of revenue for the first time. This is in line with the stated aim of 'transitioning from an on-premise licence-based model to one of subscription and the cloud.' All four Sage products considered in this report are available as SaaS offerings with updates three or four times a year depending on the product.

Sage X3 is Sage's full ERP suite targeted at a broad range of sectors including manufacturing, wholesale, distribution, and services. After a brief sojourn, when the name was changed to Sage Business Cloud Enterprise Management, the snappier and more memorable X3 moniker has now been reinstated. It's typically aimed at business with over 200 employees and a turnover between £20m and £450m and provides a full range of functionality covering everything from procurement to production, warehousing, sales, customer service and financial management. Sage offers on-premise and cloud (managed by Sage) deployment options, both with subscription licensing.

Sage 200cloud is an entry-level ERP product, with a broad range of functionality suitable for many sectors. It's aimed at small to mid-sized businesses with between 10 and 200 employees and turnover between £1m and £20m.

Sage Intacct is a cloud-native financial management suite aimed at small to medium enterprises. Acquired by Sage in 2017, the product originated in the US and has a strong track record in the North American market. It is now being sold in Australia, the UK and South Africa as part of the internationalisation of Sage's key cloud-native products. It scored the highest product score for Core Financials for the Lower Midsize Enterprises use case in the 2019 **Gartner** report Critical Capabilities for Cloud Core Financial Management Suites for Midsize, Large, and Global Enterprises.

Sage People is a comprehensive HR solution aimed at organisations with between 200 and 5,000 employees in a wide range of sectors.
Recent Sage acquisitions include **CakeHR**, a cloud native HR solution, and **AutoEntry**, a data entry automation solution.

IDC's 2019 ERP MarketScape placed Sage X3 as a contender, citing strengths in the Sage partner and developer ecosystem (with a marketplace for a range of add-on vertical business solutions) and the mobile experience. Gartner named Sage Intacct as a 'visionary' in its 2019 Magic Quadrant for Cloud Financials, with very positive commentary on a number of fronts including functionality, customer satisfaction and commitment to cloud technologies. One of the main notes of caution was the limited presence outside North America. It was only launched in the UK last November so it will be interesting to see how quickly the product gains traction in the UK market.

Product Range

PRODUCT	DEPLOYMENT OPTIONS	LICENSING OPTIONS
SAP S/4HANA	Multi-tenant, single-tenant, hosted, on-premises	SaaS, subscription, perpetual
SAP BUSINESS BYDESIGN	Multi-tenant	SaaS
SAP BUSINESS ONE	Single-tenant, hosted, on-premises	Subscription or perpetual

Notable UK Customers

BP	Energy
DIXONS CARPHONE	Consumer electronics
NEWCASTLE UNIVERSITY	Education

SAP continues to lead not just the global ERP market but the broader enterprise systems space encompassing ERP, HCM, CRM (or CX) and more. Headquartered in Walldorf, Germany and operating globally, revenues are mainly concentrated in EMEA (44 percent) and Americas (41 percent). Revenue for FY2019 was up 12 percent to €27.6bn and employee numbers exceeded 100,000 at the end of 2019.

Although often mistakenly perceived as a tier 1 only vendor, SAP has three different ERP offerings fitting small to mid-size organisations as well as large enterprises across a huge range of vertical markets. In fact it would be difficult to identify a sector where SAP doesn't have an offering.

SAP S/4HANA is SAP's top end offering aimed at midsized to large businesses. It is available in various formats – a pure cloud SaaS version, updated quarterly, as well as on-premise and hybrid offerings. The functional depth and maturity of each differs so any organisation evaluating S/4HANA should be clear that the version selected fits their requirements. In addition, the cloud deployment models available have continued to broaden and we have even seen some deployments on Microsoft's Azure cloud in the past year.

SAP Business ByDesign is aimed at midsized businesses. It is a multi-tenant cloud-only solution, updated quarterly, covering finance, customer relationship management, human resources, project management, procurement and supply chain management, and offers a particularly strong solution for project and service businesses.

SAP Business One is a broad scope ERP aimed at small businesses. It can be deployed on-premise or in the cloud (single or multi-tenant), purchased by subscription or perpetually licenced and run on SAP's own HANA database or on Microsoft SQL Server. The system has a good range of functionality, covering financials, sales, purchasing, projects, inventory and distribution and light manufacturing. Business One also has a broad channel of ISV partners, many of which have developed niche or vertical specific solutions to augment the core offering.

As well as these ERP offerings SAP has C/4HANA (CRM), Hybris (eCommerce), Ariba (procurement network), Success Factors (HCM), Concur (Expenses) and has made further acquisitions to broaden and deepen its array of offerings.

SAP has a large portfolio of partners operating in the UK and Ireland each with their own specific focus in terms of SAP products and industry focus areas. Many have the scale to provide the global presence demanded by larger multi-national organisations.

As the enterprise systems market focusses more and more on customer engagement and digital transformation, SAP describe their HANA-based platforms and services as a digital core which can sit at the centre of digital transformation projects and developments. Positioned as a leader for SaaS ERP applications in the 2019 **IDC** MarketScape report, SAP has a clear focus on enabling intelligent enterprises, with technologies such as robotic process automation (RPA), machine learning (ML) and artificial intelligence (AI) being used to automate and speed up business processes.

UNIT4
In business for people

Product Range

PRODUCT	DEPLOYMENT OPTIONS	LICENSING OPTIONS
UNIT4 BUSINESS WORLD	On-premise, single-tenant (shared and dedicated deployment)	Perpetual licence Subscription
UNIT4 FINANCIALS	On-premise, single-tenant	Perpetual licence Subscription
UNIT4 PREVERO	On-premise, single-tenant, multi-tenant	Perpetual licence Subscription
UNIT4 STUDENT MANAGEMENT	Single-tenant, multi-tenant	Subscription
INTUO BY UNIT4	Multi-tenant	Subscription

Notable UK Customers

ST ANDREWS HEALTHCARE	Charity providing psychiatric services
HARVEY NICHOLS	Luxury department store – retailer
NHS	National Health Service

Unit4 offers a range of software solutions for medium to large people-centric organisations. Typical customers will have between 200 and 10,000 employees with turnover of £150m and upwards. Key target sectors include people-centred services industries, higher education, public services, not for profits and professional services, and Unit4's offerings are all very firmly focussed on these sectors.

Headquartered in the Netherlands and operating globally, Unit4 sell and deliver their solutions directly and through a partner network. The business has been owned by private equity firm **Advent International** since 2014, and while it doesn't publish detailed accounts the Unit4 website claims revenue of close to €500m and over 3,000 employees.

On-premise deployments and perpetual licensing are available for some Unit4 products, and their own news releases claim very strong growth in the last year for cloud-based solutions. SaaS products typically have two to four major releases per year.

Unit4's leading product is **Unit4 Business World** (formerly Agresso), which delivers a full ERP suite covering financials, human resources and payroll, procurement management, project management, and enterprise/estate asset management services. A digital assistant, Wanda, allows users to interact with the system using natural language and mobile apps to support and streamline common employee self-service tasks such as submitting expense claims or recording time.

Unit4 Business World can be purchased as an on-premise and perpetually licensed solution, but cloud deployments are increasingly popular. The Unit4 Business World Software as a Service (SaaS) solution provides a managed solution deployed in Microsoft Azure data centres, with shared and dedicated deployment options. A range of Azure data centre location options are available, covering UK, EU, Nordics, USA, Canada, Asia and Australia.

Unit4 Financials (formerly Coda) is a full financial management suite, which includes procurement, assets and billing as well as comprehensive reporting. The product is known for scalability and is suitable for global deployments.

Unit4 Prevero is a standalone corporate performance management and BI tool, often sold as an integrated solution with Business World to provide a more comprehensive offering.

Unit4 Student Management is a full Student Information System software package built from the ground up for higher education institutions where Unit4 is a well-established name.

Intuo, a cloud-native talent and learning management platform, is the newest member of the Unit4 family, having been acquired in 2019. It is available both standalone and integrated with Unit4 Business World, Unit4 Financials, and Unit4 Prevero via the Unit4 People Platform. As an employee engagement solution it has a much broader target market than the rest of Unit4's solutions.

Unit4's delivery methodology uses 'Value Accelerators' with pre-defined processes and best practices to establish the core solution for each workstream, then building on additional functionality and expansions to create the overall solution.

Nucleus Research recently named Unit4 as a 'Hot Company to Watch' in 2020, based on their performance in the market, the breadth and depth of their applications, and their ability to take on the tier 1 vendors.

workday

Product Range			Notable UK Customers	
PRODUCT	**DEPLOYMENT OPTIONS**	**LICENSING OPTIONS**	**LLOYDS BANK**	Financial Services
• Adaptive Insights Business Planning Cloud • Workday Financial Management • Workday Human Capital Management • Workday Payroll • Workday Analytics • Workday Professional Services Automation • Workday Student • Workday Cloud Platform • Data-as-a-service	Multi-tenant	Subscription	**UNILEVER**	Consumer products
			PRIMARK	Fashion

Workday provides a strong set of cloud only solutions with particular depth in HCM and financial management. Workday is deployed in large enterprises across all industry sectors and it has significant implementations in communications, energy and resources, financial services, government, healthcare, education, hospitality, insurance, life sciences, manufacturing, media and entertainment, retail and professional. Workday competes at the top tier of ERP projects where the scope is within its functional focus.

Unlike many cloud ERP suites, Workday was developed for the cloud and has no legacy pre-cloud technological heritage. It is a multi-tenant solution with a release cycle of twice per year. Workday highlights this single application in a multi-tenant environment as a key value enabler calling it 'the power of one'. This is meant to allude to a single application with a single experience, security model and code base compared to many other solutions which are comprised of many moving parts.

Workday is beginning to branch out beyond the single core solution and in November 2019 announced the acquisition of **Scout RFP**, a strategic sourcing and supplier engagement solution, which will extend the breadth and depth of the procurement capability in the Workday solution. As well as expanding through acquisition, Workday is continuing to develop its core product offering with multiple enhancements in both HCM and financial management announced at its Workday Rising conference in 2019. These range from blockchain-powered credentialling technologies to enhanced talent management capabilities and the application of machine learning technologies to bring efficiencies to labour intensive and repetitive finance processes.

Headquartered in California, Workday has significant presence in the UK, in Ireland and around Europe. It has in excess of 10,000 employees and posted revenues of $2.8bn in 2019, up 32 percent on the previous year and with 85 percent of that total coming from subscriptions.

Workday provides deployment services directly but also has a broad channel network which includes large global consultancies and systems integrators as well as some specialist or niche implementation partners.

Workday selects its customers with considerable diligence, often qualifying out of opportunities, and this leads to very strong customer references.

Workday is sometimes perceived as a solution that is limited to HCM processes. It does have very strong financial management capabilities too and was recognised in Gartner's 2019 Magic Quadrant for Cloud Core Financial Management Suites for Midsize, Large and Global Enterprises as a 'leader'. **Gartner** highlighted strong customer references as well as functional capability in this evaluation.


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Lumenia Consulting is a leading independent ERP consulting organisation and is not aligned with any ERP or other vendor of business software.
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Business process transformation
ERP selection
ERP readiness
ERP deployment services
ERP business change management
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VENDOR SELECTION

Are you in the market for a new ERP?

OR FRUSTRATED WITH YOUR CURRENT ERP SYSTEM?

The **Lumenia** ERP HEADtoHEAD event offers a unique opportunity to meet, compare and experience the leading ERP vendors and their products. Taking place on 24/25th March at the MK Dons Stadium in Milton Keynes, 12 of the UK's leading ERP vendors will go head to head to demonstrate their ERP solutions. This will be the fifth running of the event in the UK.

If you are planning to select, upgrade or replace your ERP system, then the ERP HEADtoHEAD event is a must attend event. It is the perfect opportunity for senior finance or IT managers to efficiently review and compare the leading ERP systems.

Solutions for all organisation sizes, from large corporations to SMEs, will be represented with demonstrations on **SAP** S/4HANA, **IFS**, **Oracle NetSuite**, **Epicor**, **Sage** X3, Microsoft Dynamics 365, SAP Business ByDesign, **QAD**, **Unit4**, **Advanced** and SAP Business One.

The ERP HEADtoHEAD event, was established by Sean Jackson, managing director of independent ERP consultants, Lumenia Consulting. "People should attend the ERP HEADtoHEAD event as it is a really good way to meet the ERP vendors that are active in the market and to meet other companies that are planning to start the ERP journey. You can get two months of work done in two days." said Jackson.

Sean Jackson and Paul Esherwood at last year's event

The event takes place over two days and is facilitated by Lumenia Consulting. On day one, all vendors take part in an 'elevator speech.' During this session vendors present a summary of their USPs to convince delegates why it would be a good idea to attend their demo. Delegates can then choose to attend sessions focused on finance, production, procurement, HR, supply chain, projects or sales. Each demonstration is based on defined high-level scripts which makes it easier to make system comparisons.

Day two includes the opportunity to hear a panel discussion, comprised of industry end users sharing their experiences on how to avoid ERP implementation mistakes. Attendees can also hear thought-provoking, vendor-independent presentations from Lumenia Consulting on 'Are you ERP ready?' and 'Characteristics of successful ERP projects.'

There will be lots of opportunities for delegates to meet with vendors within the expo area and to network and compare experiences with other organisations also planning to implement ERP.

For further information and to register check out the event website www.erpheadtohead.com

OPEN SOURCE

PART ONE OF TWO

Open Source IS THE DISRUPTION THAT ENTERPRISES NEED

BY THOMAS DI GIACOMO

Enterprises are now able to reduce costs and complexity, and accelerate product development cycles and infrastructure management, using open source software

An ideological movement founded in the last century is powering digital transformation for enterprises. Open source makes enterprise IT infrastructures more stable, secure, and cost-effective.

Companies of every size now use dozens, if not hundreds, of software programmes to manage their business. Frequently, software is at the very heart of their own business and differentiation as well. Integrating and maintaining software, however, is an expensive, time-consuming, and unreasonably complex process. Open source technology offers a secure solution with faster fixes, reduced costs, fewer bugs and a controlled upgrade push.

The beginning

Open source software has been around since the 1950s, although it was not then called 'open source.' At the time, that software was available because companies were running their business with hardware. Shortly after, companies closed the software and used it as intellectual property.

By the 1990s and 2000s, developers around the world were creating a technology revolution by collaborating and creating open source software that was universally available free of charge. Finally, developers were able to collaborate outside their own companies with other like-minded people. Those developers were the disruptors of the tech industry, fuelled by a democratic belief in free software for all. They wanted everyone to have equal opportunity to create technology, not just large companies that can afford to invest in development. And despite resistance from powerhouses like **Microsoft** and many others at the time, the movement proliferated.

During these years, companies like SUSE were founded to stabilise open source solutions for the enterprise. Companies could then develop and deploy open source software with the confidence that it is safe and secure.

Since then, millions of developers have created hundreds of thousands of applications using open source technology. Open source software has developed at a pace that could not be achieved by any single large enterprise. In fact, today open source technology is used to run the internet, super computers, mobile devices and pretty much most of the IT applications and devices on earth.

IT and product teams no longer need to spend time learning to use, run, and maintain software, with no assurance that it will work or be available when they need it. They can simply leverage open source solutions that have been tailor-made for the enterprise.

The worldwide open source communities continue to create innovation every day. Enterprises now enjoy a more stable business environment, save millions, and reduce development cycles by reusing available applications and establishing baseline standards. They no longer waste time and money re-inventing the same functionality over and over.

Enabling Digital Transformation

With most foundational software functions available in open source solutions, technology companies and enterprises have been able to focus efforts on product innovation and ex-

panding the use of technology to solve more and more problems. This 'digital transformation' has made companies more agile, enabling faster growth, more business development, and swifter expansion into new markets.

In fact, in this age of digital transformation, many companies' business models are predicated on their ability to implement open source technologies. It provides an ease and agility for integrating platforms and creating new products that is not otherwise possible.

Collaboration is the Open Source Superpower

Collaboration has been paramount for the success of open source and adoption by enterprises. To help ensure strategic alignment, the open source community created at least 100 foundations that drive the company-neutral agenda for open source projects, including the **Linux Foundation**, **Cloud Native Computing Foundation**, and the **Apache Foundation** for instance. Memberships within foundations can top 100,000 individual members and sponsor organisations range from start-ups to the Fortune 100 as well as research labs and governments. These foundations not only host the development of code, but enable consumers of the technology to collaborate as well. The increase of foundations in recent years has helped drive rapid innovation. And, to ensure that collaboration remains a hallmark of open source, each foundation requires that no single company drives a project and that every project has a feedback loop. Today, open source software is not used only for small needs; we have seen many epic collaborations. For example, telecom companies like **AT&T**, **Swisscom** and **Deutsche Telekom** worked with the Linux Foundation to determine how open source innovation could be leveraged for their own needs and for the creation and deployment of networks. Open source has proven to be such a successful business and technical development model that we are seeing the methodology being adopted in many other industries including manufacturing, services and education.

More recently we have seen remarkable open source innovation applied to the development of autonomous trucks and passenger vehicles. Car makers are leveraging open source and High-Performance Computing (HPC) to collect data and manage the billions of mission critical interactions that occur each second to operate these vehicles safely.

Open source solutions even help save lives. For example, Zentralanstalt für Meteorologie und Geodynamik (**ZAMG**) in Austria captures data from thousands of static and mobile sensors located under water, on mountains, glaciers, and even at the centre of the earth to create incredibly accurate weather forecasts and climate models. Open source software makes it possible to manage and share this data with more than 8,000 organisations around the world. Their predictive models are giving governments, first responders, and energy and transportation providers precious advanced warning of severe weather.

Open Source Accelerates Disruption

The growth of the open source communities can be likened to the snowball effect; the more developers and companies that create open source solutions, the more benefit that open source provides. We are already seeing increased rates of innovation that are proving disruptive and accelerating the rate of change.

SAP and its S/4HANA ERP is an excellent example of this snowball effect. 25 years ago, SAP's ERP was built on the Microsoft operating system and did not use open source technologies. Now it's all enterprise-grade Linux - open source solutions stabilised and secured the platform and it runs exclusively on open source solutions. And with the agility that open source offers, SAP is innovating faster and expanding the value of the platform faster than ever before.

Even Microsoft is a great open source citizen, and has not only fully embraced open source technology, but is one of the driving forces in the industry.

Stay tuned to this space for part two of this article, when Dr Di Giacomo will review the impact of open source on business and digital transformation. ■

President of engineering and innovation at SUSE

ORACLE

| PHOTODIARY |

ORACLE OpenWorld

BY PAUL ESHERWOOD

The second instalment of Oracle OpenWorld Europe took place at the Excel in early February. Unfortunately, our ticket must have got lost in the post and when we arrived 'non-invitari' we weren't given press access so there's not too much we can tell you about Oracle's messages over the two days. Undeterred, we pressed on and spent the next 48 hours talking to partners and customers and decided to write an alternative review of the event from the outside looking in.

It's true to say that if you are an Oracle partner, customer or even a casual user – OpenWorld is a great place to connect and collaborate. It's easily the biggest tech conference in the UK and the revised layout, which solved the registration issues from the first year, definitely gave the event a much nicer feel. The excessive branding had also subsided and there was definitely a whiff of, dare I say it, humility about the whole thing.

A legacy attitude Oracle has grown up by shouting at everyone that they are the biggest and the best - and to be fair to them - they have been. But the world has moved on from yuppy culture and the brashness of the Silicon Valley 'yahoo days' – business is much more cordial today and the world demands a 'nicer' way of doing things. Not to be confused with the purpose agenda, being cordial is about respect and manners and doing the right thing. Whether you are an Oracle-like megavendor or a tiny start-up looking for a break, the rules of doing business have changed; modesty, constraint and benevolence is now the accepted norm and it was a step in the right direction to see, and feel, that even Oracle may be moving in this direction.

That said, you may have noticed elsewhere in this issue of ERP Today that Oracle was the only vendor that did not participate in our annual ERP Vendor review. They were invited but sadly declined on the basis that they didn't see the value in it. Not quite the view they had when they wanted to be on the front cover a few issues back but nonetheless the argument for abstaining was backed up by one exec who said: "It's not like we are going to go broke if we don't work with you on this." Sure, and I'd agree, but given that many customers quote the same line "the only problem with choosing Oracle is that you have to work with Oracle" it may give management some pause for thought about whether arrogance is a trait that is best consigned to the history books.

Given that we didn't have any official engagements with Oracle I spent the first day meandering between the partner stands asking the same questions; to which I almost exclusively got the same answers. Interesting that the partner network seems so aligned on many of the 'hot topics' in the Oracle eco-system, but I will spare any blushes and potential lawsuits by saving the responses for another day. All the customers that I spoke to had equally polarised views on the event and Oracle at large; there is no doubt that its application suite is the most robust and extensive set of technology tools available – just keep moving in the direction towards being a bit friendlier please Oracle.

By far the most interesting conversation I had during day one was with Gary Barnes from **Evosys** and Prahlad Koti from **Mastek**. As you may have read elsewhere in this issue





of ERP Today, Mastek (who many of you may not have heard of) has bought Evosys (which all of you will know). It's a pretty stunning deal and not one that I anticipated – Evosys has taken more customers to the Oracle cloud than any other partner and it's a pretty big development in the partner eco-system. We will be featuring Mastek and their plans with Evosys extensively in the next issue so stay tuned for our exclusive story.

The socials As the day turned to evening there were three main social events for us to enjoy. We started at the **PwC** bash on the Sunborn and the main room was packed with customers enjoying some well deserved libations after a long day of networking. Our main takeaway was the conversation with Michael Wing, transformation director at **Direct Line Group** – another great household name that will be featuring in the next issue of ERP Today. Having already gone live with phase one (an EPM implementation) it should be live with the ERP project by the end of June. Wing was very complimentary about the work PwC had done and you can read a full case study on both projects in the June issue. Thanks to Sharon Castle and Scott Bailey for hosting and we are looking forward to collaborating soon.

Next on the list was the hottest ticket in town – the not so secret afterparty hosted by **Oracle Contractors** and a selection of other partners including **Innovate Tax**, **Enginatics** and **More4Apps**. It was a great turnout and was particularly pleasing to see how the smaller partners had come together to put on an event that was attended by a great cross-section of customers. Oracle Contractors is doing some great work, particularly in relation to IR35 regulations, and although it competes with my other business I am still a big fan of their approach to resourcing and the depth of industry knowledge that they have. Innovate Tax, headed up by the charming Andrew Bohnet, is the authority on tax technology – yes I know tax is boring but I'd rather be bored for a couple of hours and get my tax technology right than end up handing over wads of cash to HMRC. If you aren't thinking about tax as part of your ERP strategy you are missing a huge trick and Andrew and his team are the best in the business when it comes to understanding how tax and technology should work together. And finally, a word for More4Apps who take something that is often the bane of our daily lives – Excel – and turn it into something that all E-Business Suite users can fall in love with. They create automation and integration solutions with an easy-to-use Excel interface and a range of 'wizards' and task specific loaders that can be adapted for myriad specialist uses. If you're an EBS customer and you are looking for a better way to upload and download data to your ERP you should give these guys a call.

Our final pitstop was at the **Namos** social and although Mr Mason didn't officially invite us we managed to gatecrash proceedings just in time for me to hear about their incredible success being the only partner worldwide to achieve 'Cloud Service Expertise' designation. Not bad for a business that was started from a back bedroom just a few years ago and a great example of what can be achieved when drive, ambition and dedication is applied. Well done team Namos! ■

| PHOTODIARY |

re:Invent 2019

BY HOLGER MUELLER

AWS held its major yearly user conference in Las Vegas, in December. With over 65,000 attendees the event has quickly become the largest technology conference out there. And with the level of partnerships that AWS has, it has also become the annual come together of the IT industry, effectively replacing VMworld. European CIOs and CTOs should consider attending re:Invent, even when they are not AWS customers, as they can connect with all the relevant CxOs who are AWS partners in a week.

So, what are the key takeaways for European CxOs?

AWS comes on-premise with AWS Outposts. For more than two years we have been writing and researching about the next generation compute plane – which spans across the public cloud, all the way to the on-premise system. Although only a subset of the AWS capabilities is available on-premise, they are the key services which include AWS compute, storage, and database services. The local instance is completely managed by AWS, bringing the same AWS hardware infrastructure, services, APIs and tools effectively making it a (pseudo) AWS data centre. That has the substantial upside that system level management and operations are handled by AWS - as if it was the public cloud. The key advantage for European CxOs is that AWS Outposts can help request local data residency and privacy requirements as well as potential performance issues due to the local install. With AWS Local Zones, AWS has gone one step further and is offering more local data centre options, so customers can easily run latency-sensitive workloads in a specific geography. An alternative to watch in case enterprises do not have a data centre any more.

AWS bundles more – thus simplifies. For all its history AWS prided itself on the massive innovation push it has been built on. Fair enough, AWS is one of the most innovative technology companies out there and certainly one of the faster ones to deliver innovation. Every year AWS would demonstrate this with a chart showing more innovations being shipped than the year before. This chart was notably missing at re:Invent 2019. Has AWS slowed down? Given the continued pace of innovation, certainly not, but AWS executives seem to have (finally) understood that too many single products create an enormous level of complexity for enterprises. The problem is as old as the tech industry itself, and the answer is bundling into higher level solutions instead of shipping smallish products. For example, AWS License Manager has added Dedicated Host Management capabilities; Savings Plans offers a simplified way to save in simple one to three-year terms; developers can now access a collection of living articles about how Amazon architects in the new Amazon Builders' Library; and the Amazon Marketplace has announced a simplified fee structure.

Aqua – Time for infinite questions and answers. The cloud gives enterprises the option of an 'always on' operation mode when it comes to answering business questions with competent answers. The cloud is technically and commercially the only place to

put this best practice into place... and AWS has made it easier with the launch of Aqua, a new distributed and hardware accelerated cache. According to AWS, Aqua allows Redshift to run up to 10 times faster than other cloud data warehouses. Amazon Redshift has been a key element to power these next generation applications and given its flexibility Aqua now makes it easier and faster to get answers out of Redshift databases. Aqua is also a good data point that AWS keeps investing not only in new products, but also the established products like Redshift. This is a key confidence point for enterprises, as they have to run their successful next generation applications not for a few years, but for more than a decade and need to participate in continued innovation from their cloud platform vendor.

Code Guru – Machine learning for your NextGenApps. As enterprises become more and more powered by software, they cannot exclusively rely on standard code, but need to write strategic software that fits their unique needs, helps them differentiate and win in the marketplace. As enterprises regain the skills of writing software, they need any help from platform vendors that they can get to create that software faster and more successfully. Amazon CodeGuru is such a tool that helps enterprises in the software creation endeavor, using software and machine learning to review code and suggest changes and improvements. This is even more important as, in practice, code reviews are rarely executed due to time pressure and human intricacies: Every developer thinks their code is (almost 100 percent) perfect. By using software that is looking over the shoulder of developers to improve their code, it becomes a non-invasive but supportive way to write better code. Savings from code reviews easily beat the cost of them, so when building on AWS, this is a 'must evaluate' offering out of Seattle.

Amazon SageMaker – AI and machine learning is real and doable now. The cloud is the only place to power large, enterprise AI/ML applications, as it provides elasticity of both storage and compute, the essential ingredients for any AI/ML application. SageMaker is an AWS tool to help enterprises build, train, and deploy machine learning models quickly, and it has seen substantial functional expansion in the last 12 months. The key functional push at re:Invent was the addition of SageMaker Processing, which lets customers run analytics jobs for data engineering and model evaluation on Amazon SageMaker easily and at scale. This is important for enterprise model evaluation. This allows to take a lot of the 'magic' out of AI apps creation, while enabling best practices, the continuous running of models and picking the best one – not through humans but via software.

In closing, AWS has done what it takes to keep its leadership position across cloud infrastructure players. The firehose of innovation keeps running at full speed, but AWS has taken steps to make the innovation stream easier, digestible and manageable for enterprises. When looking at the cloud in Europe, AWS is and remains a vendor to shortlist and take a good look at when building next generation applications. ■

Modern tax technology

-BEARDS OPTIONAL

BY ANDREW BOHNET

The interesting thing about being a 'tax person' is the surprise most people get when they meet me for the first time. Imagine, if you will, what it might be like to meet an honest politician; shocking to be sure, and if I had to guess, that's probably what it's like to meet a tax professional who isn't just that 'old beardy guy in the corner who never talks at the office Christmas party'.

Of course, we all know that such perceptions are merely the vestiges of a bygone era and slowly but surely the realities of the modern-day tax profession are finally being seen.

And, that's because things have changed! Like most business activities tax has been hugely influenced by emerging technologies. These in turn have presented new and energising offshoots of tax industry-related specialisms. Tax careers are no longer just the preserve of the fuddy-duddy but an exciting pathway for men and women to unite technological passion with professional ambition.

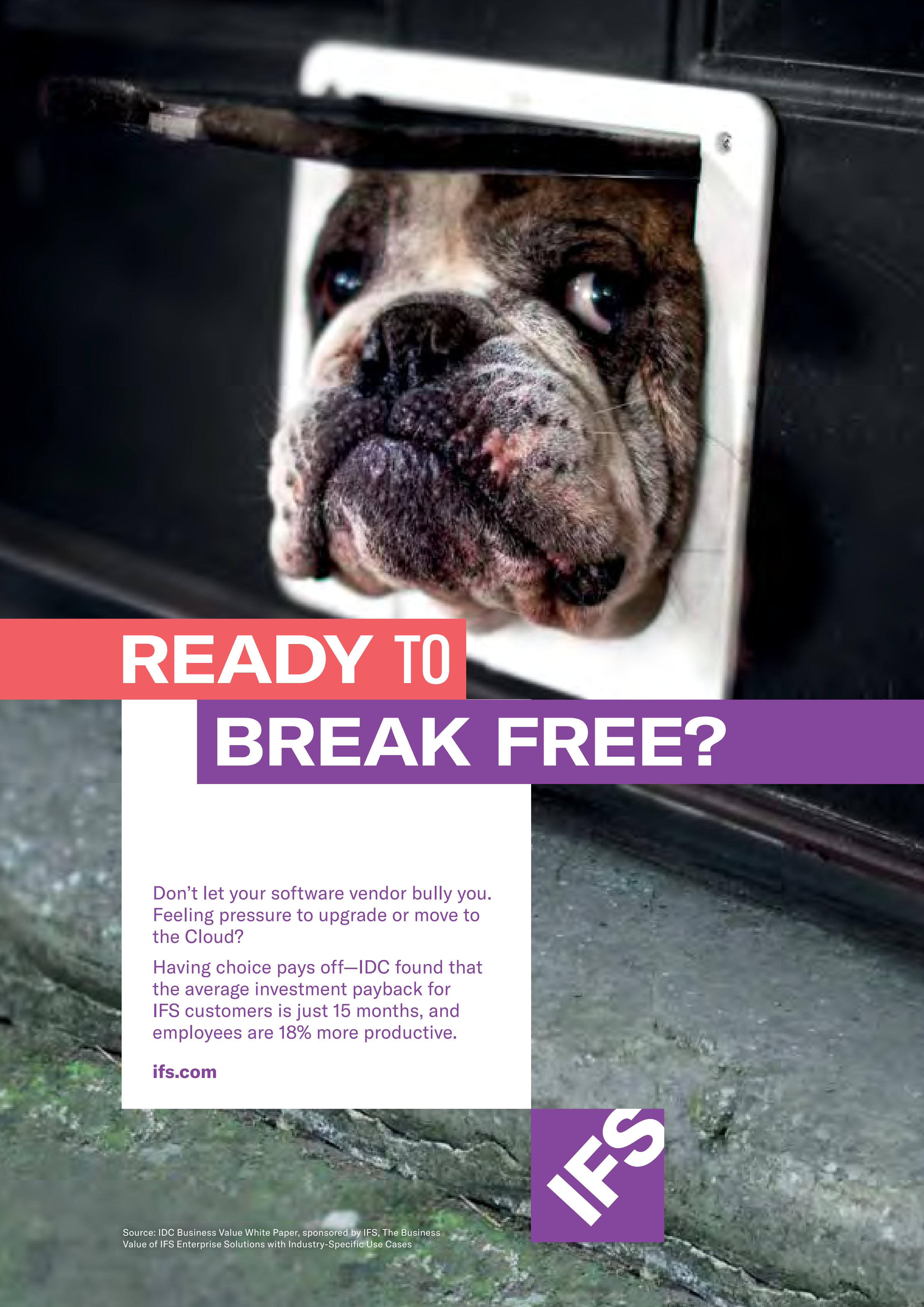
So, what's changed? Or, perhaps rather, who are the biggest precipitators of this 'tax digitalisation revolution' you ask? Well, for anyone looking after a global portfolio you'll already be keenly aware that scores of tax authorities across the world are ramping up their own use of technology when it comes to ensuring businesses are in the business of compliant reporting. They say that 'necessity is the mother of invention' and for tax compliance in particular, never has an adage rung so true.

Despite the obvious gains - that are proffered by any revolution - the digitalisation of tax has not been without its fair share of casualties; this is old school warfare being fought with 21st century tech. As far as the tax authorities and businesses are concerned, the rules of engagement are very different than anything that's come before - it's hardly surprising that some have found themselves unwittingly caught in the crosshairs. Take the HMRC's 'Making Tax Digital' initiative as a prime example of this. Conceptually sound but fundamentally flawed, the idea was to force businesses to digitally link their data source to the VAT submission. The problem was forgetting that, like most financial processes, the backbone of reporting is largely based on Excel. HMRC initially wanted us to dump the spreadsheet but when the droves of angry and vociferous business owners 'kicked off' over the impossibility of ditching their favoured tool, HMRC swiftly backpedalled in favour of allowing Excel under its definition of 'digital technology'.

> **"Most ERP systems consider VAT or other tax determination as an afterthought – often resulting in a very poorly designed and rushed job**

Therein lies the problem – Excel is needed because it allows rearrangement of data into a compliant format. The root cause is the poor quality of tax data and the often-shocking determination processes in our ERP systems. If the data going in is bad then it stands to reason that the data extracted is irreparably flawed too. Most ERP systems consider VAT or other tax determination as an afterthought – often resulting in a very poorly designed and rushed job. Other spanners in the works might include those pesky and capricious tax authorities that love springing a new reporting requirement in haste - placing the entire onus of meeting those requirements on businesses.

That's why it's so important to involve the new breed of tax professional within any ERP project from the start – who better to seek the right tax technology advice from? ■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