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Editor's Words

What future do we want?

Peter Drucker, one of the original business thought leaders, is famous for pioneering the philosophical and practical foundations of modern commerce. As early as the 1950s, Drucker advocated decentralisation, outsourcing, collaboration and corporate responsibility as key tenets for successful businesses.

Drucker was ahead of his time, advising companies like **General Motors**, **Sears** and **IBM** on effective business strategy with a particular focus on people and management. The challenges of modern day life were not fully understood in the mid-twentieth century but when Drucker said, "The best way to predict the future is to create it," he highlighted an idea that has big implications today.

In the past, creating the future was a glacial process. It took years, sometimes decades, for an idea to be developed and executed. That slow pace of change afforded time to check and balance progress and if an idea turned out to be bad it was easy to alter course.

In today's breakneck economy there is no luxury of time to appraise the direction of travel - we conceive and create the future as quickly as technology will allow. New concepts are developed on the fly without guiding principles to steer them and we deliver the future for citizens, workers and the planet without asking if it's the destiny they want.

Until recently our ability to influence ideas at scale had been limited - we simply didn't have the tools and technology to make an impact on a global scale. In 2022, the way that we live, work, eat, travel and communicate is dictated by higher forces and new technologies that evolve and mutate almost as quickly as the virus that held the world to ransom.

Our world, both at home and at work, is defined by technology. In many cases tech makes our lives more convenient but it's unclear to me whether it's actually making it better? Is an infinite choice of serial killer documentaries on **Netflix** better than the joy of taking a trip to **Blockbuster**? Is the convenience of endless **Zoom** meetings more rewarding than saying hello in person? Does social media have a positive impact on society or not? Is a virtual world something that we want or need? We're told that technology is making our jobs more satisfying but are we working harder than ever?

Of course, there are many examples where technology has made very clear improvements to the human condition. But aside from obvious benefits in science and medicine, can we see a straight line between technological evolution and human happiness?

Last week I read that **Accenture** is proudly onboarding its new recruits via the metaverse. Is that what 20-year olds who are just starting their career in consulting have asked for? Whenever we speak to our **YPN** members their number one criticism of the industry is that it feels remote and disconnected from real life. At this rate it won't be long before five year olds are sending invites to virtual birthday parties.

Our future is being designed for us and we have very little say in the process. Drucker told us we could predict the future by designing it, the only question that remains is what kind of future do we want? ■

Paul

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Learn more at oracle.com/erp

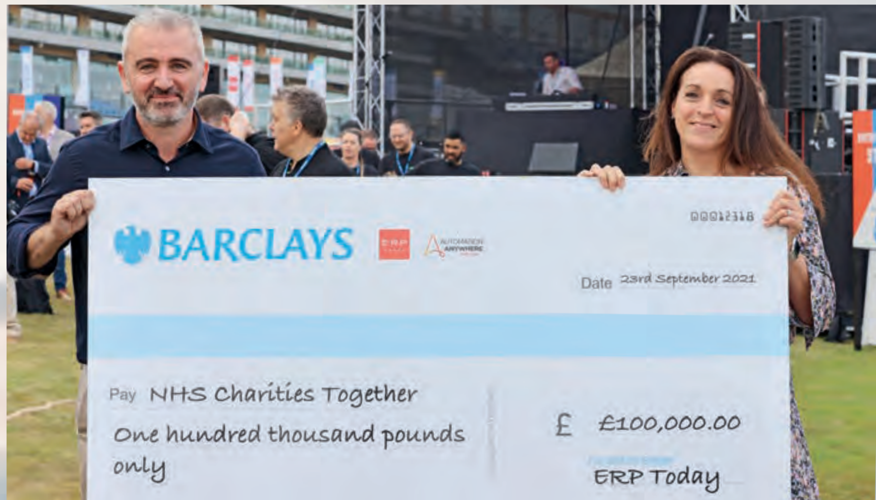
THE ERP TODAY AWARDS & FUNDRAISER

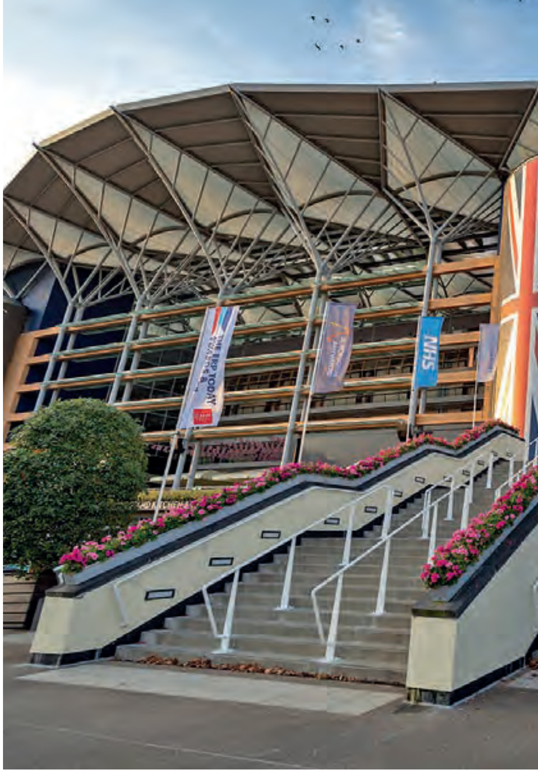
ASCOT RACECOURSE, 22ND SEPTEMBER 2022

THE ERP TODAY AWARDS & FUNDRAISER HAS SET A NEW BENCHMARK FOR IN-PERSON EVENTS COMBINING FUN, AWARDS AND FUNDRAISING IN AN OUTDOOR FESTIVAL-STYLE SETTING.

The inaugural event was attended by 1,000 tech execs and 150 NHS frontline staff who enjoyed a day that few will forget in a hurry. More than 100 brands from the industry celebrated, laughed, danced and competed in the splendour of Ascot Racecourse while raising more than £100,000 for the NHS.

The ERP Today Awards & Fundraiser has instantly established itself as the must-attend event of the year – we look forward to seeing you again on Thursday 22nd September 2022.





NOMINATIONS ARE OPEN UNTIL 30 JUNE

AWARD CATEGORIES

TRANSFORMATION PROJECT OF THE YEAR

ERP VENDOR OF THE YEAR

TRANSFORMATION TEAM OF THE YEAR

OUTSTANDING LEADERSHIP AWARD (NOT CEO)

SUSTAINABILITY EXCELLENCE AWARD

YOUNG PROFESSIONAL OF THE YEAR

EMPLOYEE HERO AWARD

CUSTOMER HERO AWARD

ERP TECH INNOVATION AWARD

HR TECH INNOVATION AWARD

With award categories covering individual distinction, project excellence and product innovation, the ERP Today Awards provide a powerful opportunity to demonstrate innovative leadership, customer success and responsibility.

All entries will be judged on their merit and the size or scale of the product, project or initiative is not relevant.

THE ERP TODAY AWARDS & FUNDRAISER

NHS CHARITIES TOGETHER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NHS
NHS CHARITIES TOGETHER
AUTOMATION ANYWHERE
EPICOR
EY
Deloitte

SAP LANDS MEGA-DEALS WITH MICROSOFT AND IBM

SAP has landed two mega-deals for its flagship ERP product in the shape of global S/4HANA roll-outs with Microsoft and IBM. Both deals are underpinned by RISE with SAP.

Microsoft has chosen RISE with **SAP** for some of its internal IT systems, making it the first public cloud provider to adopt the solution while **IBM** will implement S/4HANA on IBM Cloud across more than 120 countries and 1000 legal entities. The IBM deal has been described as one of the world's largest ever transformation programmes.

Microsoft and SAP have a long track record of collaboration and the Redmond giant has run large parts of its internal operations on SAP ERP for decades. However, the announcement that it has signed up to RISE with SAP to deploy S/4HANA Cloud (private edition) is still a huge endorsement of SAP's cloud credentials.

RISE with SAP will allow Microsoft to deploy new capabilities and technologies faster and run its business on a flexible cloud-first solution that is integrated with the other SAP solutions. The decision to adopt RISE with SAP builds on its wide adoption of SAP technologies, including SuccessFactors, Integrated Business Planning, Business Technology Platform - all running on Microsoft Azure. This move not only deepens an already strong partnership between Microsoft and SAP, but will enable Microsoft to further develop greater expertise and best practices to better serve its customers.

The IBM project is focussed on improving business processes with the same S/4HANA Cloud private edition as Microsoft has selected. The transformation will eventually move more than 300 SAP instances and consolidate 500 servers with the RISE with SAP solution on IBM Power on **Red Hat** Enterprise Linux on IBM Cloud. Once the transformation is completed, nearly all of IBM's $58bn in revenue will flow through SAP software.

Commenting on the deal with SAP, Charlotte Yarkoni, president of commerce and ecosystems at Microsoft, said: "Our goal is to simplify and accelerate our own journey to SAP S/4HANA Cloud. Modernising highly complex, legacy SAP systems is directly relevant to us at Microsoft and to many of our customers. Leveraging the power of the RISE with SAP solution on Azure will give us the flexibility and agility needed to scale quickly, meet the needs of our own business and share that experience with our customers."

Arvind Krishna, IBM chairman and CEO, said: "Enterprise clients are seeking increased choice and control as they modernise their mission-critical workloads. Enabled by RISE with SAP, this is a milestone business transformation initiative for both companies due to its complexity and scale. With this move, and IBM's experience using RISE with SAP internally, we will be even better prepared to support our clients on their hybrid cloud and business transformation journeys."

BOEING CLOUD MEGA-DEAL TAKES FLIGHT

Boeing has strengthened its strategic partnerships with **AWS**, **Google Cloud** and **Microsoft** in a cloud mega-deal that will reduce the company's reliance on on-premise systems and provide employees with connected digital solutions.

Financial terms of the multi-year agreements were not disclosed, though it was reported last year that the three tech giants were competing for a contract with Boeing worth more than $1bn over several years. But rather than choosing just one cloud computing service, the planemaker has become the latest of a number of businesses that are reaping the benefits of adopting a multi-cloud strategy.

Most of Boeing's applications are currently hosted and maintained through on-site servers, managed by Boeing or external partners. Expanding cloud solutions removes infrastructure restraints, simplifies processes, creates easier and more secure access to information, and empowers Boeing developers to create applications nimbly, unleashing additional opportunities across all business units.

Putting significant investment in the company's digital future, Boeing will expand on its existing relationships with each provider and will create a single foundation for its approach to cloud computing in the years ahead.

Susan Doniz, CIO and SVP of information technology and data analytics at Boeing, said: "These partnerships will strengthen our ability to test a system – or an aircraft – hundreds of times using digital twin technology before it is deployed. Our partners will help Boeing take advantage of the best the industry has to offer while enabling employees to tap into leading tools, training and experts to improve skills and learn new ones."

"Our partners will help Boeing take advantage of the best the industry has to offer"

CLOUD DRIVES MOMENTUM FOR SAP IN Q1

SAP has reported 31 percent growth in cloud revenue to €2.82bn in its Q1 results. SAP's current cloud backlog was up 28 percent to €9.73bn, with the war in Ukraine reducing current cloud backlog growth at constant currencies by 0.8 percentage points. Significant growth was seen in SAP S/4HANA cloud revenue, up 78 percent, with SAP S/4HANA current cloud backlog expanding even faster, increasing by 86 percent. More than 500 customers chose SAP S/4HANA in the quarter, taking total adoption to more than 19,300 customers, up 18 percent year on year, of which more than 13,900 are live.

Christian Klein, SAP CEO, said: "Customers powered another quarter of strong cloud growth as they turned to us for solutions to make their businesses more sustainable, their supply chains more resilient and their enterprises more future proof. Our signature ERP offering SAP S/4HANA grew at record levels demonstrating the confidence customers place in us to support their business transformations."


Christian Klein

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HPE GREENLAKE

EDGE-TO-CLOUD PLATFORM

Hewlett Packard Enterprise

Deloitte invests $1bn in global sustainability and climate practice

Deloitte has significantly invested in and expanded Deloitte Sustainability and Climate, a global practice serving clients as they define a path to a more sustainable future.

The company is assembling one of the largest global networks of sustainability experience, including an investment of $1bn in client-related services, data-driven research, assets and capabilities.

Deloitte Sustainability and Climate will support clients as they redefine their strategies, embed sustainability into their operations, and meet tax, disclosure, and regulatory requirements.

"Taking action on climate change and sustainability more broadly is not a choice. It's imperative."

Punit Renjen

Clients will be able to transform at scale with the launch of the new Deloitte Centre for Sustainable Progress, which will focus on holistic, results-oriented thought leadership, data driven analysis, and accountability reporting.

Jennifer Steinmann, who will serve as the first-ever Deloitte global sustainability and climate leader, said: "Deloitte is committed to helping clients move from sustainability and climate commitments to action. We will do so by working with organisations to create a transformation plan as well as helping drive collaboration across a broader ecosystem – of suppliers, clients and customers, policymakers and alliance partners across industries."

Punit Renjen, Deloitte global CEO said: "Taking action on climate change and sustainability more broadly is not a choice. It's imperative. We all have a role to play, but it's the business community that's best positioned to lead the way on this. We have the resources, skills and influence to help build stronger and more sustainable communities and it's our collective environmental and societal footprint that has the potential to make or break this decade of action."

Asda partners with Workday to deliver engaging employee experiences

Workday has been selected by **Asda** to support its global workforce and deliver an enhanced employee experience.

With more than 140,000 dedicated colleagues, Asda serves more than 18 million customers who shop in its stores every week across the UK. In February 2021, the grocery giant was brought back into British ownership by Mohsin and Zuber Issa and **TDR Capital**, a leading private equity investor, with a view to implement and accelerate Asda's growth strategy. Currently undergoing a digital transformation, Asda will use multiple Workday solutions to gain a unified view of its workforce and to deliver personalised and engaging employee experiences that will help the organisation keep pace with evolving talent needs.

Carolyn Horne, president of EMEA at Workday, said: "Global organisations are embracing the opportunity to rethink their workplaces and invest in their workforces to drive future success. As a Workday customer, Asda joins some of the world's largest retailers, all of which are leveraging our platform to meet changing consumer demands and deliver engaging experiences for their employees. We look forward to partnering with Asda to help them ensure business and organisational agility, while providing them with the tools and insights they need to better plan and adapt for the future."

Hayley Tatum, chief people officer at Asda, added: "Workday's agile technology architecture means that we'll be able to take on tomorrow's challenges, helping to ensure that our colleagues have the support they need."

NewsDeals&Wins

EY to double size of consulting practice in the UK and Ireland

Alison Kay

EY has revealed plans to double the size of its UK and Ireland consulting practice in the next four years, backed by £75m of investment.

The growth plans will see EY Consulting in the UK and Ireland increase headcount from 5,100 to around 10,200 people by 2026. More than half of the new roles will be based outside of London, in cities including Manchester, Glasgow, Edinburgh and Birmingham.

The new recruits will reinforce the firm's existing strengths in finance, risk, supply chain, change management, cultural transformation, and strategy, and boost skills in areas including **SAP**, **Microsoft**, **ServiceNow**, cloud, data analytics and cyber.

"BOTH THE PUBLIC AND PRIVATE SECTOR HAVE BEEN GRAPPLING WITH A CONVERGENCE OF CHALLENGES"

According to EY, the expansion is being fuelled by increasing demand from clients implementing large scale, strategic transformation programmes, enabled by technology, data and people. To fuel its growth, EY will be recruiting across all levels, from partner level through to graduates and school leavers.

Alison Kay, UK and Ireland managing partner for client service at EY, is spearheading the company's growth plan in the UK and Ireland. She said: "In recent years, organisations in both the public and private sector have been grappling with a convergence of challenges, from the global pandemic, climate change, geo-political uncertainty, and operating in a post Brexit world. At EY, we are investing heavily to upskill and expand our workforce, to meet the demand from businesses embarking on transformation projects, to ensure they remain competitive, keep pace with change, and navigate ongoing market challenges."

Cloud strength fuels Microsoft in Q3

Satya Nadella

Microsoft's results for Q3 reveal an 18 percent year-on-year increase in revenue to $49.4bn.

The company recorded a 26 percent increase in intelligent cloud revenue to $19.1bn, a 17 percent increase in revenue in productivity and business processes totalling $15.8bn, and an 11 percent rise in revenue in more personal computing to $14.5bn.

Operating income for the quarter was up 19 percent at $20.4bn, while net income totalled $16.7bn – an eight percent GAAP increase.

Microsoft returned $12.4bn to shareholders in the form of share repurchases and dividends in Q3 2022, an increase of 25 percent compared to Q3 of fiscal year 2021.

Satya Nadella, chairman and chief executive officer of Microsoft, said: "Going forward, digital technology will be the key input that powers the world's economic output. Across the tech stack, we are expanding our opportunity and taking share as we help customers differentiate, build resilience, and do more with less."

ORACLE AND VERIZON EXPAND GLOBAL NETWORK WITH INNOVATION LAB

Verizon and **Oracle** have teamed up to explore how Verizon 5G Ultra-Wideband (UW) can transform different industries.

Partners and customers can now explore, create and test 5G use cases with Verizon 5G UW at the new 30,000 sqft. Oracle Industry Lab outside of Chicago.

The lab will provide customers with a hands-on environment in which to develop new ideas and create solutions, leveraging technology from Oracle and more than 30 industry partners.

Oracle launches employee experience platform

Oracle has launched Oracle ME, a comprehensive platform within Oracle Cloud HCM, which gives HR and business leaders a tool to support employee success and to streamline communications across the organisation.

The platform will allow employees to complete complex tasks and aims to improve talent retention by developing a much more supportive environment at work.

Oracle developed Oracle ME after learning that people's work expectations have evolved; according to the most recent Oracle AI@WORK study, 85 percent of the global workforce are not satisfied with their employer's support for their careers, while 87 percent believe their organisation should be doing more to listen to the needs of its workforce.

Oracle ME aims to deliver a better work environment by providing guided experiences that will strengthen workplace relationships, allowing employees to provide continuous feedback with their managers. It will also allow managers to track and act on real-time employee sentiment, helping HR teams to deliver personalised communications across the organisation.

The open platform extends across the Oracle Fusion Cloud Applications Suite with the ability to connect with third-party systems across multiple channels.

Yvette Cameron, senior vice president of global product strategy for Oracle Cloud HCM, said: "Oracle ME is all about converging workers' information, critical insights, workflows and preferences with a technology-enabled solution to give each individual something they can call 'my experience'. It's the only complete employee experience platform focussed on understanding the 'me' behind every worker, providing organisations with new ways to listen to, communicate with, support and develop their hybrid workforce."

IFS DELIVERS OUTSTANDING Q1 PERFORMANCE

IFS has delivered excellent Q1 results, with ACV bookings up 78 percent year-on-year and recurring revenues up a significant 45 percent year-on-year.

The company continues to report growing demand for its cloud technology, resulting in an increase in cloud revenues of 67 percent, despite market challenges and geopolitical disruptions.

Darren Roos, CEO of IFS, said: "For the last four years, IFS has consistently outperformed the market and Q1 is an extension of this trend. Our first quarter of 2022 has delivered exceptional results across the board, and I am proud that these continue to be a validation of our strategy."

Constance Minc, CFO at IFS, added: "Q1 shows a continued shift in the quality of the revenue mix with 70 percent of the total revenue base now being recurring. These strong results highlight the relevance of IFS in its market and demonstrate we have

New investment boosts value of IFS and Workwave to $10bn

Hg, a leading software and services investor, is set to become a significant minority shareholder in **IFS** and **WorkWave**. Long-term investor **EQT** remains the majority shareholder with Hg and **TA Associates** as significant minority shareholders.

The transaction values IFS and WorkWave at $10bn and will provide a platform for both brands to further capitalise on their market-leading positions in their respective sectors.

IFS launched its cloud offering last year and has continued to carve out a serious niche amongst asset-heavy enterprises that make, distribute or maintain goods and services. IFS Cloud provides customers with a single platform for FSM, EAM and ERP which can be deployed in a variety of environments with functional parity and a composable architecture.

"We have outstanding technology and remain obsessed with customer success."

Workwave, which was acquired by IFS in 2017 and then spun out to EQT to form a standalone entity in 2021, operates in the same vertical sectors as IFS although its focus is on smaller enterprises and mid-market customers.

Darren Roos, CEO of IFS and chairman of WorkWave, said: “We’re proud to have built two amazing software brands – and we continue to go from strength to strength. We are structured to scale, we have outstanding technology and our people and partners remain obsessed with our customers’ success. These have been the foundations of our success at both IFS and WorkWave, and now, with the additional backing and software expertise of Hg alongside EQT and TA, we have the ability to accelerate even faster.”

IBM EXCEEDS Q1 EARNINGS ESTIMATES

IBM has reported better than expected Q1 2022 results, with revenue up 8 percent year on year as the company continues restructuring its business around hybrid cloud platforms, software infrastructure and consulting services.

With analysts predicting the company would report earnings of $1.38 a share on revenue of $13.85bn, IBM beat expectations with adjusted earnings of $1.40 a share on revenue of $14.2bn.

The company’s software revenue was up 12.3 percent to $5.8bn, while consulting revenue rose by 13.3 percent to $4.8bn. Hybrid cloud revenue also increased by 14 percent to $5bn.

Arvind Krishna, IBM chairman and CEO, said: “Demand for hybrid cloud and AI drove growth in both software and consulting in the first quarter. We are off to a solid start for the year, and we now see revenue growth for 2022 at the high end of our model.”

Arvind Krishna

Thoma Bravo software spree continues with double acquisition

Thoma Bravo has made two new acquisitions, demonstrating the rising private equity interest in the cloud-based software space.

The first deal in March saw the company acquire **Anaplan**, the SaaS financial planning tool, in an all-cash transaction valued at approximately $10.7bn.

Based in San Francisco, Anaplan has over 175 partners and more than 1,900 customers worldwide, with clients including **Vodafone**, **Bayer** and **Autodesk**. The company uses proprietary technology, to allow customers to contextualise real-time performance and forecast future outcomes.

Less than a month after acquiring Anaplan, Thoma Bravo entered into a definitive agreement to acquire **SailPoint** in another all-cash transaction, valuing the enterprise identity security brand at approximately $6.9bn.

Thoma Bravo has history with SailPoint, having first bought into the company in 2014 and taking it public in 2017.

"SAILPOINT'S PLATFORM PROVIDES THE AUTONOMOUS AND INTELLIGENT APPROACH THAT THE MARKET REQUIRES."

Frank Calderoni, chairman and CEO at Anaplan, said: "We are thrilled to partner with Thoma Bravo to build on the strength of our innovative platform."

Seth Boro, managing partner at Thoma Bravo, said: "SailPoint's market-leading identity security platform provides the autonomous and intelligent approach that the market requires today, especially among larger enterprises and as hybrid working becomes more common. We look forward to partnering with SailPoint's talented team to drive the next chapter of growth."

INOAPPS ANNOUNCES MAJOR ABRY PARTNERS INVESTMENT

Abry Partners has taken a substantial stake in **Inoapps**, resulting in joint control with founder and CEO, Andy Bird. The investment is planned to accelerate both acquisition-based and organic growth, along with increased headcount for the Aberdeen-headquartered business.

Inoapps has doubled equivalent revenue in H1 FY22, compared to H1 FY21. It has also seen 70 percent employee growth globally, launched a new Indian operation and secured its largest ever global contract win.

Andy Bird, CEO of Inoapps, said: "Abry Partners has a proven track record of helping technology-based businesses capitalise on both the North American and European markets. In addition, the operational support team with experts in various disciplines made the culture a perfect fit for our next phase of growth."

"Operational support team with experts in various disciplines made the culture a perfect fit."

News Deals & Wins

Google Cloud and SAP expand partnership

Google Cloud and **SAP** are expanding their partnership and have unveiled new integrations between Google Workspace and SAP's flagship cloud ERP, SAP S/4HANA Cloud.

The native integrations will allow customers to connect core SAP software with the collaborative capabilities of Google Docs and Google Sheets to change the face of working across the enterprise.

Customers will benefit from the efficiency of ready integration, be able to export and import data between SAP software, Google Docs and Google Sheets for instant access, and will have a clean data source due to the one-step integration.

The initial set of features are planned to be included as standard functionality in SAP S/4HANA Cloud later this year and will be built on the SAP Business Technology Platform.

Philipp Herzig, senior vice president and head of intelligent enterprise and cross architecture at SAP, said: "This integration will further pave the way for people to work collaboratively on any business documents and manage them closely along with their most critical business processes and data managed through SAP – all in the cloud."

Javier Soltero, vice president and general manager at Google Workspace, said: "The move to hybrid work signals enterprises can no longer rely on legacy toolsets that can create silos and barriers to collaboration. With the expansion of our partnership with SAP, these new in-depth integrations will enable employees working in complex data sets within SAP S/4HANA to tap into the real-time collaboration capabilities of Google Workspace."

Kyndryl expands SAP partnership to boost digital transformation

Kyndryl has expanded its strategic partnership with **SAP** to focus on developing new solutions to assist its customers in solving complex digital business transformation challenges.

The expanded partnership will leverage SAP's Business Technology Platform (SAP BTP) and Kyndryl's expertise in AI, data and cyber resiliency to accelerate and enable a

cost-effective path to the cloud for customers.

In addition, SAP and Kyndryl will collaborate on ERP solutions, including modernisation services, data and AI services for SAP BTP and cyber resiliency services.

Justin Battles, global VP, strategic growth partnerships, partner ecosystem success at SAP, said: "As a strategic partner, Kyndryl brings its technology integration expertise and landscape management capabilities to support the RISE with SAP offering. Our expanded partnership is paving the way for our customers to begin or advance their cloud transformation journey with RISE with SAP."

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NewsDeals&Wins

Wipro acquires SAP consulting firm Rizing for $540m

Wipro has acquired **SAP** consulting firm, **Rizing Intermediate Holdings**, for $540m, significantly expanding its breadth of capabilities in helping businesses transform into intelligent enterprises.

With its industry expertise and SAP consulting experience in enterprise asset management, the acquisition of Rizing will be instrumental in advancing Wipro's position as a sought after advisor for clients' SAP transformations.

Headquartered in Stamford, Connecticut, Rizing is home to more than 1,300 employees in 16 countries across North America, Europe, Asia and Australia, and was previously owned by private equity firm, **One Equity Partners**.

As one of the leading strategic partners in the world for SAP, Rizing will become a critical extension of Wipro's SAP Cloud practice and Wipro FullStride Cloud Services. This joint offering will enable Wipro's clients to surface unique business opportunities and new competitive advantages through SAP cloud implementations.

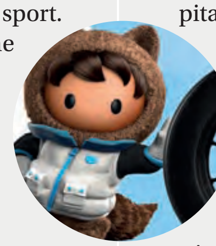
"Rizing's domain expertise and our cloud solutions will help unlock new value and build agile businesses."

Rajan Kohli, president of Wipro's iDEAS business, said: "Our clients' digital transformation needs are rapidly evolving, and they are turning to us to help them become intelligent enterprises. Rizing's domain expertise, combined with our cloud and digital solutions, will allow us to help clients unlock new value and build agile businesses for a new era of digitalisation."

Mike Maiolo, CEO of Rizing, said: "With Wipro's backing, we will be able to enhance the value we deliver to our current clients and bring our differentiated offering to a broader universe of businesses. Combining the two firms will allow us to scale our services and expand our footprint in the market. We are thrilled to join a company that shares our values and vision."

Salesforce accelerates F1 fan engagement with five-year partnership

Salesforce has joined **Formula 1** as a global partner to power and grow engagement and strengthen fans' connection to the sport.



As part of the multi-year deal, F1 will also work with Salesforce to gain actionable insights from its carbon footprint, helping to accelerate its mission to reach net zero emissions by 2030.

Salesforce will utilise F1's marketing and B2B platforms through trackside signage, digital content and hospitality at Grand Prix races. By leveraging the technology and expertise from Salesforce to create innovative digital experiences and accelerate sustainability efforts, F1 hopes to build and develop the most engaged fanbase in sports.

Colin Fleming, executive vice president of global brand marketing at Salesforce, said: "Working with F1 to transform their approach to fan engagement and sustainability will give existing fans even more to love and open doors for new audiences as the sport continues its rapid growth."

IFS CLOUD GETS ITS FIRST MAJOR UPDATE FOR 2022

IFS has released the first of two updates to its IFS Cloud product for 2022.

The IFS Cloud April 2022 release delivers improved predictive capabilities and more intelligent analytics for faster time-to-insight. Heightened automation in the update requires fewer human inputs, allowing employees to focus more on high-value activities as well as reduce the risk of human errors.

New specific analytic enhancements include new models for EAM, CRM, HCM, and manufacturing and self-service analytics.

Strong customer growth for Unit4 in Q1

Unit4 reported a solid Q1 performance, with cloud subscription revenue up by more than 20 percent year-on-year.

The company signed over 20 new customers in Q1 and reported a total of 36 successful go-lives. Following the general availability of ERPx in April 2021, Unit4 now has 126 customers signed up across all regions and industries.

According to Unit4, the company's focus for 2022 remains on innovation, leading edge technology, and supporting customers on their digital transformation journeys.

Mike Ettling, Unit4 CEO, added: "We are investing in our growth, and that of our customers, by building a robust platform using smart automation tools, AI and microservices, to give our customers a competitive edge. Our approach will redefine the role of ERP and help our customers shift their ERP from being a back-office system of record to becoming the backbone of their organisations' digital transformation strategies."

WORKDAY CREATES 1,000 JOBS IN DUBLIN WITH NEW EUROPEAN HQ

Workday has unveiled its plan to create 1,000 new jobs over the next two years at its European headquarters in Dublin, Ireland, with construction planned for a new European HQ in the city.

Supported by the Irish Government through **IDA Ireland**, the investment will increase Workday's Ireland-based workforce by approximately 60 percent.

The new headquarters will be a highly sustainable 550,000 square foot campus across approximately four acres in a strategic development zone, adjacent to **Technological University Dublin** in Grangegorman.

Martin Shanahan, CEO IDA Ireland, said: "Workday's investment in the planned Grangegorman campus and the addition of 1,000 new roles demonstrates the company's long-term vision for its Irish based European HQ. The economic impact of this investment through the capital spend and creation of high-value employment is both a significant win for Ireland and a huge vote of confidence in Ireland's technology ecosystem."

Capgemini delivers record growth in Q1 2022

The **Capgemini Group** has experienced strong momentum in Q1, primarily driven by growth in cloud and data.

Q1 2022 revenues were €5.16m, up 17.7 percent at constant exchange rates, while the company saw bookings of €5.47m, an increase of 26 percent at constant exchange rates.

Aiman Ezzat, CEO of Capgemini, said: "This is the fourth consecutive quarter with double digit growth. It clearly demonstrates the change of the Group's growth profile and our ability to gain market share."

Workday expands ESG offering

Workday has introduced new solutions and expanded capabilities to help its global customers meet the demands of evolving environmental, social and governance (ESG) regulations and corporate accountability.

The company's two new solutions – social reporting for ESG and supplier risk and sustainability – will offer customers the opportunity to gain visibility and insight into data that is critical to meeting ESG requirements.

Customers can expect streamlined workforce reporting to measure ESG, increased access to data to help select sustainable suppliers, and tailored solutions from partners built on Workday.

Pete Schlampp, chief strategy officer at Workday, said: "Workday is committed to being a proactive partner, driving continued innovation to help customers advance their ESG initiatives. We're not only meeting customers where they are today, but through our own investments and openness, we're extending the value we bring to customers through our ecosystem to help them get to where they need to be in the future."

"WORKDAY IS COMMITTED TO BEING A PROACTIVE PARTNER, DRIVING CONTINUED INNOVATION."

Partners Group acquires majority stake in Version 1

Partners Group has agreed to acquire a majority stake in **Version 1** and become its new partner for the company's next phase of growth.

The acquisition follows a successful five-year period of ownership by exiting shareholder **Volpi Capital**, which saw Version 1 triple in size.

Tom O'Connor, chief executive at Version 1, said: "Partners Group's sectoral knowledge and international reach will be as important to Version 1 as their investment and endorsement of our growth strategy."

Benoit Laclau

EY ACQUIRES BLACKDOT TO STRENGTHEN CUSTOMER TRANSFORMATION

EY has acquired specialist customer consultancy **Blackdot Consulting Ltd** to strengthen EY transformation, customer and growth capabilities.

The acquisition will assist EY teams in serving clients to develop and implement customer-centric growth strategies, including design, user experience, digitisation, omni-channel, go-to-market and commercialisation.

Benoit Laclau, managing partner for consulting UK & Ireland at EY, said: "The acquisition and significant investment involved shows the commitment to supporting new and existing EY clients across the UK and the world. We look forward to welcoming the Blackdot team and clients to the EY organisation at what is an exciting period of ambitious growth and development."

Blackdot founder and CEO, Marty Nicholas, will join EY Australia and will be based in Sydney, while 64 Blackdot staff will join other EY member firms around the globe including 18 people based in the UK.

NewsDeals&Wins

McKinsey and SAP join forces to maximise business transformation value through cloud solutions

SAP and **McKinsey** have formed a strategic alliance that merges technology modernisation with strategy execution, thereby driving business results and addressing critical business challenges.

With an initial focus on the consumer products, retail, automotive, and manufacturing industries, SAP and McKinsey now offer an end-to-end design for a migration to SAP S/4HANA. The alliance is part of McKinsey's open ecosystem of alliances and acquisitions designed to advance client impact in a rapidly changing world.

Bob Sternfels, global managing partner of McKinsey, added: "Technology enables speed, and it can play an outsized role in driving sustainable, inclusive growth. SAP and McKinsey's relationship brings together strategic thinking with technical implementation, helping the boldest leaders find enduring solutions to our most urgent challenges."

UiPath appoints Robert Enslin as co-CEO

Robert Enslin has been appointed co-CEO of **UiPath**, where he will work alongside the company's founder and current CEO Daniel Dines.

With more than 30 years of enterprise software experience, Enslin joins UiPath from **Google Cloud**, where he served as president of cloud sales. He also spent 27 years at **SAP** in various leadership roles across sales and operations.

Enslin said: "Partnering with Daniel to lead the company he co-founded more than 15 years ago is an enormous privilege. I'm committed to helping UiPath build on its momentum as we look ahead to the company's next phase of growth."

"I'M COMMITTED TO HELPING UIPATH BUILD ON ITS MOMENTUM."

Codestone acquires Clarivos to create 'SAP cloud powerhouse'

Codestone has acquired technology consultancy **Clarivos** to enhance its expertise in the delivery and management of **SAP** Cloud ERP, data analytics and enterprise performance management solutions.

Clarivos' capabilities will bolster Codestone's digital platform, enabling next level cloud transformation for SMEs to large enterprises.

Jeremy Bucknell, co-founder and CEO of Codestone, said: "This agreement is perfectly aligned with our customer-centric, cloud-first strategy and will drive greater focus on strategic execution and operational excellence to the group's already significant value creation."

PwC and SAP

PwC unlocks the value of cloud to solve tomorrow's challenges **today**

Sights set on the cloud

PwC is a network of professional services firms, offering assurance (including audit), advisory, as well as tax and legal services. It employs 295,000 people across 156 countries. In line with its strategy, termed 'The New Equation', it focuses on delivering sustained outcomes for clients, building trust, and offering solutions that are human-led and tech-powered.

To strengthen its competitive advantage and make it easier for staff to work with clients everywhere in the world, PwC's firms in four territories (Germany, Austria, the Netherlands and Switzerland) decided to move to SAP S/4HANA Cloud as part of a multi-national digital transformation. The cloud migration's aim was to boost business agility, reduce costs, and foster better sharing of knowledge and experiences both internally and with clients.

The project reflects the importance that PwC puts on both creating positive relationships and ensuring consistency. Stefan Frühauf, Partner PwC Germany and Head of Project and Change Leadership at PwC, said: 'Standardising how our firms work everywhere they operate, will make it easier for our professionals and clients to collaborate across the PwC network. Consistency means clients get the excellence they expect from us time and time again.'

Embracing process

To achieve its goals, PwC transformed its business and finance operations by working with SAP to create industry-specific technology for professional services. Its new business processes are built on SAP S/4HANA applications running on the public cloud.

PwC used the SAP Signavio process management solution to design, simulate and document the new business processes. This resulted in streamlined processes, greater transparency, and improved information-sharing.

To maximise the benefits from the transformation, PwC has integrated the new SAP solutions with multiple existing systems – including its HR, procurement, travel and expenses, customer relationship management (CRM), resource rate management and timesheet applications. As a result, PwC employees have access to real-time, accurate information without having to transfer data manually between different systems.

Delivering immense value

Following a successful go-live, almost 30,000 PwC employees from four countries are using the new cloud-based SAP S/4HANA applications. They're benefitting from improved transparency and seamless information-sharing that improve their working experience. Furthermore, moving to the cloud has empowered PwC to introduce standardised, highly efficient business processes that streamline collaboration within local teams as well as internationally. This transformation empowers people to deliver value both within PwC and for clients more efficiently.

That's not all. Embracing public cloud has cut the cost of implementing and managing the new SAP applications by a staggering 23%. It also reduced the solutions' environmental impacts, helping PwC progress towards meeting its net-zero commitment. It's great news all round.

Transforming the transformers

PwC took several key steps that helped to make this project a success. Here are three actions that PwC kept in mind to make this cross-country and cross-competency programme succeed:

1

Focusing on change management

It's vital that employees understand how the new technology will empower them to work more productively and deliver even greater value to clients. Thorough training and communication are essential.

2

Taking the leap to cloud

Cloud can deliver significant improvements to operational efficiency, carbon emissions, standardisation, the bottom line, and more.

3

Addressing local requirements

This is key to ensuring that the new solution will deliver maximum value right across the business.

PwC and SAP solving together for next-generation innovation

As a Platinum Partner, we are committed to our alliance with SAP. We have 14,000 dedicated SAP resources around the globe that specialise in SAP technology and solutions.

Learn more at pwc.com/sap

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News Deals & Wins

Accenture and SAP launch joint offering for large enterprises


Julie Sweet

Accenture and **SAP** are introducing a new joint offering to help large enterprises move to the cloud and deliver continuous innovation.

Combining RISE with SAP and SOAR with Accenture, the new offering will bring together essential components that large enterprises need for cloud-based transformation, including integrated delivery, cloud infrastructure management, application management and operations services, in an integrated delivery model.

Accenture is the largest SAP partner to offer services entirely designed to help large enterprises across industries plan, implement and manage deployments of RISE with SAP in the cloud.

Julie Sweet, chair and CEO of Accenture, said: “The most successful companies will undergo total enterprise reinvention over the next decade, transforming every part of their business through technology, data and AI, and new ways of working and engaging with customers as well as new business models. SAP and Accenture are now offering the ability for large enterprises to dramatically accelerate their transformations and new opportunities for growth.”

Christian Klein, CEO and member of the executive board of SAP, said: “SOAR with Accenture is a great complement to RISE with SAP. Together, Accenture and SAP provide a comprehensive solution to support our customers in becoming intelligent and sustainable enterprises.”

NOKIA DIALS IN TO ORACLE FOR HR SYSTEMS MANAGEMENT

Nokia has selected **Oracle** Fusion Cloud Human Capital Management (HCM) to consolidate and replace its human resources systems in the cloud.

As part of the company’s global digitalisation programme, Nokia will use a worldwide deployment of Oracle Cloud HCM to manage all HR processes, including recruitment, compensation and performance management, for the company’s global workforce in its 130 countries of operation.

Cormac Watters, EVP of applications EMEA at Oracle, said: “Nokia has a culture of innovation that has enabled it to lead its industry for years.

With Oracle Cloud HCM it now has an integrated platform, powered by the latest emerging technologies, to support its current and future HR needs.”

Lisbeth Nielsen, head of people experience at Nokia, said: “Optimising employee care and experience is a central part of our people strategy. Oracle Cloud HCM provides a strong foundation to build digital experiences with true user-centricity.”

Capgemini takes Airbus to multi-hybrid cloud

Capgemini has been selected by **Airbus** to provide a fully managed service of the business' core cloud infrastructure.

As a strategic partner, Capgemini will drive transformation through unifying and modernising existing services and managing both private and public clouds to achieve the flexibility needed to meet the future needs of Airbus Commercial Aircraft and Helicopters.

It will also facilitate the modernisation of applications, moving the environment to a multi-hybrid cloud solution. A 'pay-per-use' model will be deployed to support the continuity of Airbus' activity, while allowing flexibility.

To align the delivery of services against Airbus' sustainability ambition, Capgemini will provide a next-generation cloud and infrastructure platform, adopting a holistic 'sustainability by design' approach to achieve an infrastructure carbon impact reduction across the service lines and help Airbus Commercial Aircraft and Helicopters to reach carbon neutrality by 2024.

"We are fully mobilised to accompany Airbus' programmes for sustainable aerospace operations"

Nive Bhagat

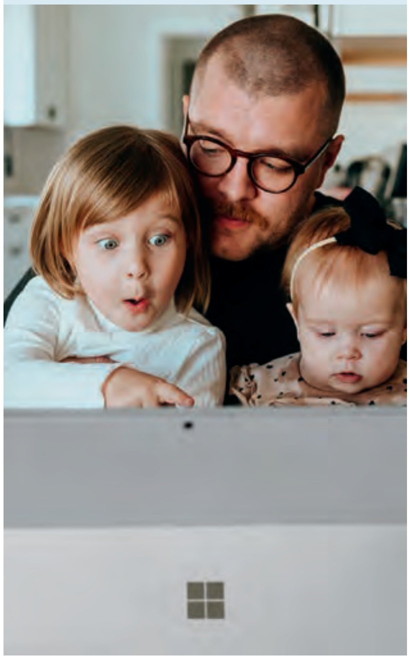
Nive Bhagat, CEO of Capgemini's cloud and infrastructure services and member of the group executive committee, said: "Innovation and sustainability are the top priorities for industry leaders today. We are fully mobilised to accompany Airbus' existing and future programmes for sustainable aerospace and resilient operations, bringing together the best of Capgemini's expertise in cloud combined with transformation and innovation enablers."

TALKTALK ROLLS OUT MICROSOFT VIVA TO BOOST EMPLOYEE EXPERIENCE

TalkTalk is implementing **Microsoft** Viva Suite as a tool to help improve the employee experience.

The company will roll out Viva Connections, giving thousands of its staff a personalised destination where they can discover relevant news, conversations, and the tools they need to succeed, as well as Viva Learning to help staff discover and share professional training resources in the flow of their day-to-day work and track their learning progress. Viva Insights and Topics will also be made available to staff at a later date.

Nick Hedderman, senior director of modern work at Microsoft UK, said: "Microsoft Viva, used alongside Microsoft 365, gives TalkTalk crucial insights to help experiment and create new ways of working in a hybrid way, that will improve their employee experience and business outcomes."



NatWest, Accenture and Microsoft team up to improve customer engagement

NatWest has partnered with **Accenture** and **Microsoft** to build a new customer engagement platform that will replace its multi-system, legacy frontline architecture.

The new platform will integrate all of NatWest's legacy front office systems across its contact centre and branch networks, customer messaging, video banking and complaints channels onto a single digital platform.

As customers of all ages become more accustomed to engaging digitally with their bank, expectations for a quick and convenient experience are higher than ever. Banks need to ensure that staff are meeting customers' complex needs in important moments that require the human touch, as the pandemic and the rising cost of living continue to have a material impact on people's financial situations.

In the first part of its transformation, the bank is launching a new appointment booking service, replacing multiple systems with a single, real-time booking platform accessible to colleagues and directly by customers. This will reduce appointment booking times by up to 75 percent and significantly improve customer experience.

Nina Raphael, managing director in Accenture's UK financial service practice, said: "The creation of a single digital platform to support all of NatWest's customer service and support functions will not only improve speed and efficiency of service, but it will enable many more hours to be dedicated to the human side of banking. This is particularly crucial given the financial challenges that many in the UK are facing with energy price hikes, bigger bills and tax increases. Improving digital capabilities will significantly free up NatWest staff to focus on providing support in these times of financial difficulty for many."

Rob Smithson, business applications lead at Microsoft UK, said: "By combining the expertise of Accenture and the power of Microsoft's Dynamics 365 platform, NatWest can deliver exceptional customer experiences, building value and loyalty through deeper customer insights and relationships. This provides NatWest with a strong digital foundation that places customers at the heart of their business, allowing them to deliver the right products and services to the right people."

Wendy Redshaw, chief digital information officer of retail banking at NatWest, added: "Over eight million of our customers are regular users of our market-leading mobile app and alongside this our colleagues are there for important moments. Our investment in integrating all of our colleague support tools onto one digital platform will enable our staff to really focus on delivering personalised support for each and every one of our customers at every stage of their lives."

RED HAT AND ACCENTURE EXPAND ALLIANCE

Red Hat and **Accenture** have expanded their nearly 12-year strategic partnership to further power open hybrid cloud innovations.

The companies are jointly investing in the co-development of solutions in open hybrid cloud application and mainframe modernisation, automation, edge computing and sovereign cloud.

Stefanie Chiras, SVP of partner ecosystem success at Red Hat, said: "Our long-standing collaboration means that customers have access to the open-source solutions they need to grow their business where it needs to be – in the cloud."

Stefanie Chiras

SAP delivers innovation to address customers' most pressing needs

SAP has introduced a suite of products to help drive business transformation and agility for its customers as they embark on digital transformation journeys.

Revealed at its flagship Sapphire event in Orlando, the new innovations aim to deliver business value for SAP customers in four critical areas: supply chain resilience, sustainability, business process transformation and no-code application development.

Products introduced include a new suite of apps, as part of SAP's ongoing partnership with **Apple**, that will aid in streamlining the digital supply chain and empower workers with intuitive tools. The first two of these mobile apps – SAP Warehouse Operator and SAP Direct Distribution – are now available on the Apple App Store.

SAP Cloud for Sustainable Enterprises has also been unveiled, which aims to provide better insight into key areas of sustainability across business processes, while new SAP AI-powered innovations will help businesses to intelligently optimise end-to-end processes, including lead-to-cash, design-to-operate, recruit-to-retire and source-to-pay.

In addition, SAP announced new supporting solutions for RISE with SAP and SAP Service Cloud to promote agility with better case management and forecasting capabilities.

Christian Klein, CEO and member of the executive board of SAP, said: "For 50 years, SAP's mission-critical solutions and deep industry expertise have helped businesses around the world run their best. We're uniquely positioned to continue enabling our customers' success in a rapidly evolving world by driving cloud-based digital transformation that solves customers' most pressing challenges, from supply chain resilience to sustainability."

"SAP HAS HELPED BUSINESSES AROUND THE WORLD RUN THEIR BEST"

BT AIMS FOR £25M IN SAVINGS WITH SERVICENOW PARTNERSHIP

BT Digital is consolidating its legacy service management platforms with **ServiceNow** as part of a large group-wide transformation programme, which is forecast to save the company over £25m by 2027.

ServiceNow will roll out across all of BT Group, replacing 56 legacy applications and 76 different ways of implementing service processes.

Working closely with BT on the deployment, ServiceNow is supporting BT's own culture change programme, with DevOps and AI perspectives from the ServiceNow team reinforcing and embedding BT's Digital Way culture change process.

Early read-outs are showing a 50 percent reduction in efforts required to deliver service requests, and a 20 times boost in the speed of deploying changes into customer services.

Harmeen Mehta, chief digital and innovation officer at BT, said: "We are focussed on building great products and platforms, and ensuring that we provide brilliant service on them. Our AI and cloud first approach is a core part of how we unlock this at pace and at scale, so we're delighted Bill and the team at ServiceNow share our vision for the AI Ops model as the way to transform the way we deliver across BT."

Bill McDermott, CEO of ServiceNow, said: "Under Harmeen's leadership, BT's Digital Unit is investing with urgency in technologies that deliver business impact. The era of digital business is in full flight at BT. BT and Harmeen understand differentiated innovation must be built. Together, we are expanding the use of this powerful platform so BT can transform the world's great challenges into the biggest opportunities."


When faced with transformation,
will cloud be your silver lining?
This time of change allows us to look ahead through a new lens. A chance to reframe the future, uncover unseen opportunities for organizations to ask new and different questions, and create unexpected answers. EY and SAP can help your organization generate long-term value, using innovative, industry-focused, cloud-based technology.
Find out how EY can help you uncover new opportunities with SAP.
Reframe your future | ey.com
The better the question.
The better the answer.
The better the world works.
EY
Building a better working world
SAP
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News Deals & Wins

Lupin goes live with SAP S/4 HANA on HPE Greenlake

Lupin Limited has selected the **HPE** Greenlake edge-to-cloud platform to run its advanced SAP S/4HANA mission-critical environment to accelerate digitisation, transform critical business processes and improve performance.

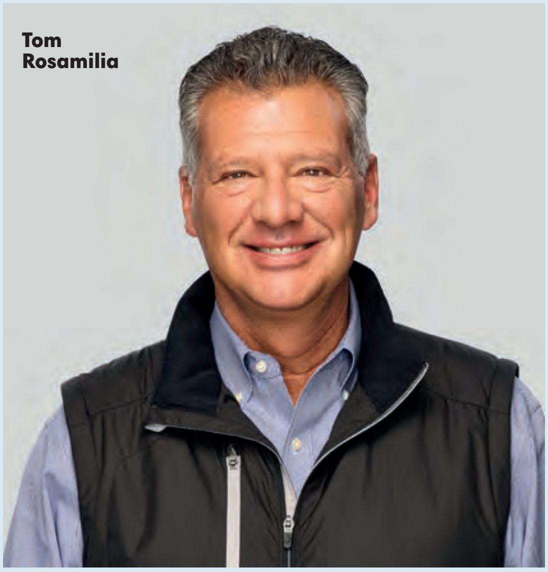
Headquartered in Mumbai, India, Lupin is a leading global pharmaceutical company with 15 manufacturing sites, seven research centres and more than 20,000 professionals working worldwide. The company develops and commercialises a wide range of branded and generic formulations, biotechnology products and APIs in over 100 markets globally.

The HPE Greenlake platform was selected by Lupin due to its scalability and delivery of its cloud experience through a pay-per-use model. The platform offers a dashboard to monitor and plan the daily consumption of resources and provides complete visibility of IT spend to improve budget planning and forecasting.

"CUSTOMERS ARE CHOOSING THE HPE GREENLAKE PLATFORM"

Som Satsangi, SVP and managing director of HPE India, said: “We are excited to partner with Lupin and offer them the HPE Green-Lake platform to obtain the best on-premise cloud experience to address their current and future business challenges. Customers are increasingly choosing the HPE GreenLake platform to obtain the best cloud experience for their industry-critical workloads.”

IBM to deliver SaaS on AWS in new agreement


Tom Rosamilia

IBM has signed a strategic collaboration agreement with Amazon Web Services (**AWS**), with plans to offer its software catalogue as Software-as-a-Service on AWS. This first-of-its-kind agreement will provide clients with quick and easy access to IBM Software that spans automa-tion, data and AI, security and sustainability capabilities. It is built on Red Hat OpenShift Service on AWS and runs cloud-native on AWS.

The two companies are also committing to a range of joint investments to make it easier for clients to consume IBM Software on AWS, including integrated go-to-market activities across sales and marketing and developer enablement and training.

Tom Rosamilia, SVP of IBM Software, said: “By deepening our collaboration with AWS, we’re taking another major step in giving organisations the ability to choose the hybrid cloud model that works best for their own needs and workloads, freeing them up to focus on solving their most pressing business challenges.”

SCAN TO LISTEN
TO CHRISTIAN'S
OWN WORDS

CHRISTIAN KLEIN

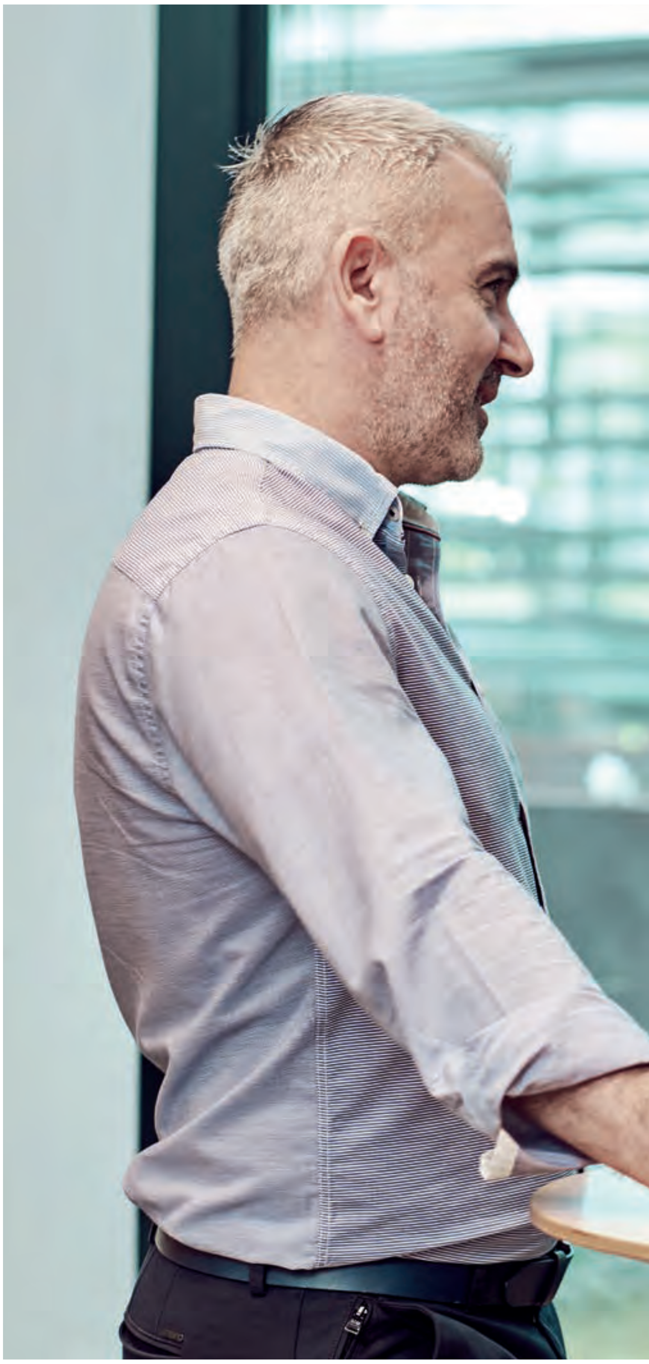
"WE'RE JUST GETTING STARTED"

WORDS / PAUL ESHERWOOD

PICTURES / KURT REBRY

CHRISTIAN KLEIN

50 YEARS AGO,



five former IBM executives started the conversation by forming a company called Systemanalyse und Programmentwicklung. Since then, new protagonists have emerged, markets have shifted, share prices have fluctuated and products have evolved, but one thing has remained constant. SAP is the market leader....by a mile.

In April 2022, I went to SAP HQ to meet CEO, Christian Klein, to talk about football, parenting and the next chapter in SAP's history.

The **Fortune** Global 500 tells a compelling story - the world's biggest companies trust SAP to run their operations. On top of these enterprise credentials more than 400,000 other businesses rely on SAP technologies for finance, procurement, sales, HR, planning and supply chain management. A blue thread runs through the heart of global commerce emanating from a small town in Germany called Walldorf and stretching out to all four corners of the world.

I used to doubt SAP's claim that it touched 80-odd percent of world GDP: having spent so much time researching SAP's credentials, the only surprise is that figure isn't higher. Ninety-nine of the world's 100 largest companies are SAP customers - and for those who think they are all legacy clients, 85 are already running S/4HANA.

SAP generated €28bn in revenue last year - €9.4bn from the cloud. This year those numbers should top €30bn and €12bn, and by 2025 expect to see SAP generating more than €20bn from cloud alone. By any measure, SAP is the dominant force in enterprise technology and there are no signs that its young and gifted CEO has any intention of letting that title slip.

Write a list of your dream dinner party guests and a German tech exec with a penchant for detail and numbers is unlikely to make the cut. It's easy to stereotype and make assumptions but within two minutes of meeting Klein most of mine were dashed. The man at the helm of the world's biggest enterprise software vendor was instantly engaging and charming. I've interviewed enough people to know the ones who are feigning a persona because they have been media trained and those who are genuinely at ease with the situation. Klein presented a calm and measured personality, unfazed by my photographer's instructions and eager to tell his story in pragmatic language uninhibited by corporate PR.

His authentic and relaxed approach set the tone for a two hour conversation that covered lessons learned on the football pitch, the demands of parenting young children and the monumental task of reshaping SAP into a cloud-first business that would meet the challenges of the next 50 years.

Make no mistake, the assignment ahead of Klein was seismic. Its flagship ERP product has not followed the same adoption curve that previous SAP products have enjoyed. Its customer base is largely on-premise and is stubbornly ignoring the cloud. Its own cloud infrastructure ambitions had been shelved in favour of partnering with the hyperscalers. And, most fundamentally of all, there has been a disconnect between its narrative and its customers' experiences. Add to this Klein's personal aspirations regarding sustainability together with SAP's responsibilities as a global influencer and it becomes clear

A blue thread runs through the heart of global commerce emanating from a small town in Germany called Walldorf and stretching out to all four corners of the world.

that the scale of change required would be like nothing else in SAP's 50 year history.

Klein told me: *"There's certainly not a lack of workload! The challenges are complex, the stakes are high but if you walk into the office with the right mindset you can deal with whatever is in front of you."*

GETTING STARTED

I start the interview by asking Klein if he remembers his first day at SAP - he replies by telling me his first job was unpacking monitors in an SAP warehouse aged just 15. Not the grandstand beginning I had expected but he goes on to say that his first day actually ended before it even started.

"I got sent home on my first day at SAP. The person who hired me had become a father the night before so he didn't make it into work. When I arrived for my first day no one knew who I was or why I was there, so they told me to go home."

The sorry start didn't deter Klein and after finishing his education he began his first full time job as a support consultant. Klein's CV is a matter of record so I won't detail every job and promotion he enjoyed at SAP, but scroll forward a few years and he moved to San Francisco to work for Lars Dalgaard, founder of SuccessFactors, which was by then an SAP company. Klein moved back to Germany in 2013 to head up corporate controlling and then global controlling before landing the COO role in 2016. Three years later, incumbent CEO, Bill McDermott, announced his intention to leave SAP - a move which catapulted him into the top job in a shared capacity with Jennifer Morgan. Just seven months into that role, Morgan moved on and Klein became the sole-CEO.

Klein was just 39, one of the youngest CEOs of any major tech business and one which needed an overhaul. SAP had been the dominate player in the ERP market for decades and had grown through a series of acquisitions under McDermott's tenure. Those acquisitions had propelled its market cap skywards and created an organisation that included best of breed solutions for every aspect of an enterprise's operations. But, along with its successes, SAP had been subject to criticism for the lack of integration between its products, for the hulking nature of its solutions and the sheer complexity of running a large-scale SAP estate.

It's important to note that despite this need for change, Klein expressly commended his predecessor on a job well done. Bill McDermott had ruled SAP for a decade and during his tenure SAP's value had rocketed by more than $100bn and turned the German software firm into an international *kraft zu rechnen*.

"Every strategy has its time and Bill's tenure was dominated by a lot of important acquisitions which created a lot of value. My tenure is definitely more around how do we bring this together? Not like we did in the last 50 years - that would be a mistake. It's about turning SAP into a cloud company and helping our customers become intelligent, sustainable enterprises."

At the same time as these domestic challenges, the macro outlook was presenting a new paradigm for the way businesses, people and technology coexisted. CEOs had a new set of priorities which included baking sustainability into the core of their business model. Enterprise leaders were more experienced in the digital economy and buying preferences were changing - companies around the world were facing generational challenges which were inextricably linked to each other. The issues can be succinctly summarised in just one sentence: how do you build a sustainable business with reliable supply chains in the cloud?

In addition to these internal and external forces there was also a tectonic shift in the fundamental nature of what customers were buying. SAP had grown up on transactional proprietary software - the kind of traditional business applications that once ruled the world. In the past you bought an ERP to manage your back office functions - it was a system of record that controlled finances, inventory and sales data. Today, an ERP is just one component of a business' technology landscape which must also include the tools for innovation, analysis, planning, recruiting, training, ESG activities and customer engagement. There is no longer any separation between a company's business model and its technology platform - they have become one and the same thing.

By the time Klein assumed full control of SAP, global commerce was being played out on a transient landscape where business models and entire industries were being reshaped almost as quickly as new technologies could be conceived and deployed. In order to find an answer to this conundrum Klein had three key challenges ahead of him: how to move SAP's existing customers to the cloud; how to drive adoption of S/4HANA; and how to deliver against SAP's ambitions to help the world run better and become more sustainable. Klein found an answer to all three problems in the shape of RISE with SAP, but before we look at exactly what that offering is, let's examine how and why SAP arrived at that solution.

SAP'S TRANSFORMATION

There's a phrase in enterprise software that I don't much like but perfectly describes SAP's journey over the last three years - dogfooding. The process of consuming your own product and eating what you serve to others. When Klein took over as CEO he realised that root and branch change was needed - not just in the product portfolio but also in the way the company was set up to meet the needs of a new generation of customer.

Klein started by rebuilding his executive board: Thomas Saueressig was promoted to head of product engineering, Juergen Mueller became the new CTO, Scott Russell ascended to global head of customer success and, more recently, Sabine Bendiek and Julia White were hired from Microsoft to lead people, operations and marketing. SAP's executive team look like the poster children for modern enterprise and Klein now sits at the centre of a powerhouse team that has the youth, experience and determination to understand and execute a strategy that is fit for modern commerce.

"There was leadership change because we need people thinking beyond the point of sale," Klein told me. *"The way we are structured internally is very different now and we are with you every step of the journey. We reorganised our teams so that technical, sales, delivery and customer success all work together and are incentivised around a common goal."*

As SAP began its own journey of cloud modernisation it learned some valuable lessons - some of which may have been difficult to swallow. Implementing a large-scale SAP ERP solution is no small task and as SAP went through the process itself the pain of bringing all the elements for a successful transformation together became apparent.

"I gained a lot of experience during SAP's own transformation. It was impossible to serve our cloud business model with just a technical upgrade so we then started thinking about how we could better serve our customers who also wanted to make a similar journey. That was the point of time when I put a few people into a room almost day and night and said we need to make it easier for our customers. A transformation is not only about technology it has to go to the core - to the heart of business processes. We acquired **Signavio** *to have this business process capabilities, but we also needed a different engagement model that made us more accountable for the outcomes of our customers' investments."*

The issues can be succinctly summarised in just one sentence: how do you build a sustainable business with reliable supply chains in the cloud?

LEGACY

We talk about legacy in a negative way. SAP itself is often described as a legacy technology company and the term usually characterises a set of circumstances, a product or service that is from yesteryear, and as such, should be consigned to history.

SAP's legacy is somewhat different. Put simply, there is no ERP without SAP. There is no Oracle or Workday. In fact, without SAP there is no enterprise tech industry - its legacy has paved the way for virtually every brand in the industry (save for IBM which can lay its own claim as a pioneer)

and SAP's rich heritage defines the sector as much today as it did decades ago.

"Our legacy is our gift. When you have 400,000 customers to learn from it's a huge advantage," said Klein. *"SAP has customers in more than 25 different industries so we can always test our assumptions, benchmark our roadmap and challenge our strategy against the depth of install base and industry knowledge from our customers. Of course, it's challenging to move such a large install base from one environment to another - but that's the challenge that we have at SAP and one that we are ready to take on. It's our biggest challenge but also our greatest gift."*

SUSTAINABILITY

No other tech company has banged the sustainability drum as loudly as SAP, or for as long. In fact, in the early days of SAP's mission to propel ESG into the spotlight, some argued that there was too much noise around saving the planet and not enough focus on other areas. Of course, that was at a time when the world was only just waking up to the urgent and imperative nature of ESG action. Today, sustainability is a core component for virtually every business - big or small - new or old - tech or industrial - everyone has a narrative, but few are as compelling or complete as SAP's pursuit of green commerce.

Klein told me that sustainability could no longer be separated from other business objectives and that SAP was the only technology company with the scale and scope to address the world's greatest challenge. It's sheer reach into global enterprises and supply chains means SAP collects and analyses more commercial data than any other organisation. That blue thread which runs through the heart of global commerce has the potential to morph into a green ribbon combining the data of half a million businesses and supply chains to provide actionable insights for enterprises around the world.

"We have taken action on our biggest carbon impacts with data centres and car fleets, and we already made very important decisions how to move to carbon free operations in the years to come. But the bigger challenge is how can we help our customers become more sustainable? How can we use SAP technologies to give our customers the visibility they need? When it comes to ESG, our customers tell me, 'I have a lot of good intentions, I have potential actions, but I have zero transparency.' We

That blue thread which runs through the heart of global commerce has the potential to morph into a green ribbon combining the data of half a million businesses and supply chains.

realised we needed to expand our data model and embed sustainability metrics in every process because when you can give customers the transparency, it's the foundation for taking the right action."

To achieve these aspirational outcomes and deliver against good intentions, businesses must find ways to address the fundamental challenges of data transparency. An overwhelming majority of organisations are dissatisfied with the quality of data at their disposal to drive sustainability transformation, which is reinforced by the fact that 86 percent of companies still use spreadsheets to measure emissions data. Furthermore, one third do not know how to integrate sustainability into their core business strategy and barely 20 percent of sustainability initiatives embrace business model change.

SAP is able to solve these challenges at the scale required to meet the urgent environmental demands. The majority of global commercial data sits in, or can be accessed by, an SAP system demonstrating the potential for SAP to address sustainability transformation at a global scale. SAP technology can help organisations gain the industry-specific insights and intelligence they need, combining operational, financial and experiential data across entire value chains. With these insights, organisations can embed sustainability into business processes across their organisation and expanded business networks, building sustainability metrics into every function of the business and ultimately undergoing the type of transformation required to become intelligent, sustainable enterprises.

SAP's sustainability portfolio includes SAP Cloud for Sustainable Enterprises - a comprehensive platform that allows businesses to design sustainable products and services underpinned by a holistic view of data, process and regulations by industry. It also partners with the world's biggest consulting firms like Accenture, EY and IBM to co-innovate and combine industry expertise to create frameworks like SAP Responsible Design and Production which helps organisations gain greater visibility into the environmental impact of their design choices. SAP also works with startups and early stage inventors through SAP.iO - a cohort of innovative trailblazers that focus on solving sustainability problems with SAP technologies.

If you attended one of the Sapphire events that took place in May, you would have been left in no doubt that sustainability and the environment are as intrinsically linked to SAP and its culture as S/4HANA and BTP.

While many assert that sustainability is a key tenet of their DNA, few if any can support those claims with the kind of credentials that SAP brings to the table. Senior leaders within the enterprise tech community often speak to me about their ESG charters - only to jump in a V8 Mercedes after they have told me how committed they are to saving the planet. With Klein you get a different, authentic, believable narrative that he is personally invested in SAP's mission - a mission that goes way beyond any corporate PR point scoring.

Klein is a leader who truly believes that SAP has the same inherent responsibility to the planet as it does to shareholders. While others have touted sustainability to bolster their image, SAP has invested heavily in a comprehensive portfolio of solutions that genuinely lead to a more promising future for the environment.

RISE WITH SAP

When Klein announced RISE with SAP back in January 2021, the market was split: was it just a clever commercial proposition or was it an industry-first that would revolutionise the way tech was sold and consumed?

RISE promised a single handshake deal that provided a pathway to the cloud for any customer, irrespective of starting point or complexity. Delivered on a subscription basis (hence, sometimes called Transformation-as-a-Service) it positions SAP as the responsible party for the end to end transformation of a business independent of any third parties that are also involved in the process. In addition, SAP completely reorganised its internal structures so that every team in the end to end process was aligned with incentive plans pointing everyone in the same direction.

"As much as I like the sales forecast calls, we now have delivery calls where we go through all our RISE customers and ask, where are we with the business process redesign? Where are we with the back to standard? How many modifications can we get out? Where are we with the platform adoption, and finally the cutover to S/4."

A single point of contact for SLAs and clear line of sight to the responsible party for business transformation, application services and infrastructure is a breakthrough proposition for customers. SAP had been searching for a compelling carrot to lead its install base to S/4HANA for nearly seven years and RISE delivers that and more.

SAP's guiding principles for RISE, in fact its north star for all customer engagements, has four simple components: use Signavio to understand and redesign processes; partner with hyperscalers and move workloads to the cloud; migrate to S/4HANA while maintaining a clean core; augment the solution and build innovations on BTP.

In addition to this simple four step plan, RISE also delivers a plethora of other business benefits which includes one of SAP's most important but often overlooked offering - SAP Business Network. This new combination of product, services and platform has been in the making for years but it wasn't until Sapphire 2022 that the moving parts coalesced into what could be one of the most significant contributions by SAP to the global economy since its inception.

The SAP Business Network is a network-as-a-platform for transacting, managing, analysing, and optimising the panoply of processes needed to do business in today's complex global economy. While the full realisation of the Business Network is still a few years out, it's already well-positioned to begin supporting the underlying mechanisms of global trade: buying, selling, procuring, supplying, planning, servicing, transporting, operating, partnering, financing, and certifying, to mention just a few. All within a single, many-to-many business platform.

"The Business Network is a big differentiator because now when you are connecting companies

Klein is a leader who truly believes that SAP has the same inherent responsibility to the planet as it does to shareholders.

RISE is a 'business model as a service' and one that is finely tuned for the complexities of modern commerce.

we can not only help with the commerce side of things and with supply chains, but also it has a big role to play in ESG. If you are a car manufacturer and you want to reduce carbon then you have to look outside of your own enterprise. You need to analyse the whole value chain and measure the end to end impact. With the Business Network customers will be able to build these reliable supply chains and measure their sustainability across the entire value chain."

To answer my own question: RISE is not just a mechanism for a commercial engagement. It's not just a go-to-market play. It provides infinitely more than just a route to the cloud. I'd go as far as to say it's not just transformation as a service either - it goes way beyond that. RISE is a 'business model as a service' and one that is finely tuned for the complexities of modern commerce. In one handshake both new and existing customers can build a business around an end to end offering that covers every conceivable aspect of doing business.

RISE may well have been originally conceived as an accelerator for cloud and S/4HANA but as the proposition has evolved it has developed into a template for twenty-first century commerce encapsulating the full spectrum of cloud, applications, supply chains and sustainability.

CONCLUSION

For five decades SAP has been many things to many people. Its forefathers created an industry that supports millions of jobs and provided the foundations for global commerce to flourish. Many of the business process blueprints that we take for granted were conceived by SAP in the 1970s and today it is creating new standards that will become the code for commerce in the digital age. S/4HANA will power the finances and supply chains of the world's biggest companies. BTP will provide the platform and architecture that companies use to construct new business models and innovate. The Business Network will be the foundation for a global consortium of intelligent enterprises that design, manufacture and sell the produce that citizens, companies and countries depend on. Above all else, SAP will be the company that provides the technology to convert aspirations into action - both in terms of business performance and sustainability - creating the next generation of industry leaders with the tools and insight to drive global commerce and a green agenda. In short, SAP was and still is the brand that defines an industry. In Klein's own words, *"We are just getting started."* Here's to the next 50 years. ■

THE STORY BEHIND THE COVER

We were expecting a challenging meeting when we arrived at SAP HQ in mid-April. The conflict in Ukraine was taking a huge amount of focus at SAP and its entire leadership team were also gearing up for multiple Sapphire events around the world. Our experience could not have been any more different to what we anticipated. Klein and his team were patient, welcoming and accommodating and made our experience one to remember. Particular thanks to Sam Finnegan and Thomas Leonhardi for facilitating.

17th November 2022 | The Cutty Sark

The ERP Today Young Professionals Awards

ERP TODAY is proud to recognise the talent and efforts of young professionals who will be creating the future of enterprise technology

We're thrilled to be hosting an awards ceremony dedicated to celebrating exceptional under 30s in the enterprise tech sector, alongside the companies and mentors who are invested in their development. There is no cost to nominate a young professional, mentor or company and tickets for the event will be available by invitation only once the shortlisting process is complete.

NOMINATIONS NOW OPEN

OPINION

YOU CAN'T SPELL ENTREPRENEUR WITHOUT ERP

BY CHRIS GABRIEL

Ask any entrepreneur what drives them, and for most it's the simple ambition of growing their big idea into the next big business.

Of course, no five year old startup or scale-up investor plan would ever predict flat growth, and no company is going to become a unicorn overnight. But from those early days of ideation and investment, the end goal is always growth, and - if you can manage it -hypergrowth. Because who wouldn't want to be the next unicorn in the forest, or become the next Elon Musk?

Hypergrowth, a concept first coined by Alexander V. Izosimov in a 2008 issue of **Harvard Business Review**, is the rapid growth of a business by at least 40 percent compound annual growth rate.

If you have time to go back and read Izosimov's original article - and it is worth a read - you can see that the priority of a hypergrowth focussed business has to be selling. Or, in his words, sell first and ask questions later.

Sales define hypergrowth, and a sales-first approach is the only way to become a big player in any market. You don't plan your way into a perfect business; rather, you grab the wave you want to ride and grapple with the problem of having to grow as a result.

Entrepreneurs have to be both great dreamers and great salespeople, and

let's be honest, sometimes they need a little bit of luck. But there is a lot less luck and a huge amount more judgement than you'd think behind the growth success stories we all admire.

There is skill at play here, and the leaders of our new unicorns are actually phenomenal at executing the right things at the right time. While they need to have a true passion to see their startup or scale-up grab market share quickly, they must also understand that through each stage of growth they absolutely must put in place the people, process and platforms that can ensure the business moves forward sustainably.

"A BUSINESS OFFER WITHOUT A SCALABLE BUSINESS OPERATING MODEL WILL TURN A POTENTIAL UNICORN INTO A DODO."

In today's hypergrowth world you have to be ready to go - and go as hard and fast as the market demands.

Research from the **World Economic Forum** talking to 200 growth businesses back in 2018 identified the biggest priority for hypergrowth companies as that of being able to scale at the speed of growth. Of course they also need a fantastic product or service as well, along with the right talent and funding.

But with the right external market factors sweeping them up, they will get hurled forwards faster as they catch the proverbial wave. Fair warning - a fantastic business offer without a scalable business operating model will at some point stall and turn a potential unicorn into a dodo.

Don't be a dodo in front of dragons

I'm a big fan of Dragons' Den, enjoying the TV show pretty consistently since it started, hiding behind a pillow every now and again while watching some pitches. But to my recollection, I've never seen an entrepreneur stand in front of the Dragons and pitch for £75,000 for a 15 percent stake in their business and say it's because they need to buy an ERP system or new IT operations management platform.

While they never ask for it outright, (they always want the cash for branding, or marketing, or social influence) at some stage Deborah, Peter or another Dragon are going to sit them down and tell them that the business leaders who consistently invest in the right areas are the ones that catch the growth curve faster and more consistently than their competitors.

To that end, putting in place the right digital operating platforms to run finance, supply chain or IT sys-

tems must be on the radar of any hypergrowth hopeful.

Sébastien Ricard, CEO and founder of **LumApps**, hit the 'scale nail' on the head when he said that despite all the other challenges of a hypergrowth business (people, products, innovation, data), "after a certain point, your systems and operations break down. You don't account for important IT problems such as infrastructure or software scaling.

"Systems that worked with 10 employees are pushed to the limits with 50 and a major hindrance with 1,000. Then, you have to spend even more money modernising them."

"IT'S ALWAYS A TREAT SUPPORTING HYPERGROWTH BUSINESSES AS THEY MAKE THE JOURNEY FROM STARTUP TO SCALE-UP."

And here I have a little saying: you can find the term ERP in entrepreneur as it also is in enterprise, and to move from one to the other you are going to need a business operating platform that helps you run your business well - both while it is small, but also when you hit the accelerator so as to keep your business intact.

In 2022, your hypergrowth leadership needs the ability to scale the business, and **SAP** is at the forefront of this - putting the ERP into entrepreneur to ensure you can become an enterprise of the future.

Grow by SAP is a fantastic offering to high-growth companies which puts the power of a hyper-scale operating platform into the hands of a business of any size, giving them access to an ERP system that ensures they can move successfully from a cash-burn business to a cash flow business, from spending their investors' cash to revenue streams from a growing customer base.

With the support of the Grow by SAP programme, growth companies can get advice, access to business networks and the assurance that the back office can scale to support the growth of the front end.

Built around SAP's cloud-native ERP, the concept of Grow by SAP is to put a foundational platform in place before the business needs it, to pre-load scale and growth potential in those key operating areas and also open up advanced capabilities such as intelligent automation RPA, making it easier to scale the size of the business without scaling people as the first option.

SAP is also putting money and expertise on the table.

Eligible businesses get their first six months for free, which means they can manage their overall cash burn more intelligently while getting to grips with using the platform inside their business.

And before you can say "but it will take six months to implement!", SAP has developed a rapid deployment methodology which allows them to implement the platform in as little as four weeks.

It's always a treat working with hypergrowth businesses, supporting them as they make the journey from startup to scale-up. So it's very exciting to be part of this SAP programme which shares our passion for investing in great businesses to help them realise their potential as the next big thing.

Grow by SAP is perfectly designed to help create the next unicorn, and that my friends is not an idea that is away with the fairies. ■

Chris Gabriel, chief strategy officer, Sapphire

SAP INNOVATION AWARDS

SAP Innovation Awards

SAP INNOVATION AWARDS

CELEBRATE PIONEERS DURING TIME OF DISRUPTION

BY KEITH E. GREENBERG AND MICHAEL M. KURE

SAP marketing contributors

Solving energy poverty, stopping accidents before they occur, rotating to a work from home system in the midst of COVID-19, using AI and machine learning to reduce risk to workers at a major utility company.

These are some of the advances that were honoured this year in the ninth annual 2022 SAP Innovation Awards.

Since its founding 50 years ago, SAP has strived to create positive economic, environmental and social impact, and the Innovation Awards reflect that mission.

The one common factor bonding the different entrants is their use of SAP products to fuel innovation and spread opportunities across borders and cultures.

Global scope of the SAP Innovation Awards

The SAP Innovation Awards honour and celebrate the achievements of forward-thinking companies and individuals that have harnessed the power of the latest SAP products and technologies to become an intelligent enterprise, thrive in new business realities and create positive economic, environmental and/or social impact to help the world run better.

The Innovation Awards is an opportunity for companies to showcase their successes and highlight their innovation leadership. And just as importantly, it offers a valuable venue for participants to build or expand their brand within the SAP ecosystem.

Each year, the SAP Innovation Awards winners set new standards for creating value, contributing to communities, and improving lives through technology innovation - essentially making a difference in improving people's lives.

Initially dubbed the HANA Innovation Awards in 2014 - after SAP's data management system - the ceremony was rebranded four years later to include the multi-national's entire portfolio.

In recent years, that portfolio has expanded, widening the creative options users have in order to effect change.

Over time, interest in the SAP Innovation Awards has increased, as categories shifted and the potential for transformation grew vaster. Regardless, though, the criteria for victory have been fresh thinking and originality. This is exemplified in the diversity of submissions, which have grown year-over-year by 44 percent.

Likewise, there has been an upsurge in attention to the SAP Innovation Awards. In 2021 alone, there were more than 400,000 views about the annual honour online. Since the programme began, that number has exceeded two million.

It should be underscored too that since the start of the Innovation Awards, more than 1,600 companies from around the world have participated in the programme - with no drop-off in sight.

The benefits of participating

How is it that the Innovation Awards draw in so many SAP customers? It's because of the significant benefits that come with participating. For example, a customer can:

1 Celebrate their project success and...

• Gain global recognition as an innovation leader
• Win a trophy and prizes, a virtual badge, and other assets for promotion and social media
• Get support from SAP to create and promote their story

2 Share their expertise in exclusive promotional opportunities and...

• Engage with SAP executives at a dedicated exclusive celebration event
• Get their brand amplified via the Innovation Awards promotional materials
• Participate in SAP activities such as webinars, podcasts, interviews, videos, blogs, social media and more

3 Extend their professional network and do good as well as...

• Connect with their industry peers and other prominent business leaders
• Support social causes through charitable contributions (more information about this below)
• Improve people's lives by supporting a good cause (see the following section for details)

Expanded opportunities

As for this year's awards, of the 200 submissions SAP received, 60 finalists and 25 winners were chosen based on their abilities to capitalise on SAP's technology to improve business and contribute to the betterment of society.

Alongside each winner enjoying the benefits just described, there were the altruistic benefits of winning. Winners were bestowed a $1,000 SAP4Good voucher to be donated to the charity of their choice. Each year, the company also commemorates the Awards with a large contribution to an organisation making a difference around the world.

This year, SAP bestowed $20,000 to **Theirworld**, a group dedicated to childhood education - particularly in the developing world.

Masters of innovation

While resilience, agility, and philanthropy are always prized by the judges, 2022's selections stand out because of the time when the advances took place. All embody the challenges of the past two years as

businesses attempted to craft safe workplaces for employees, maintain operational continuity and use the power of innovation to drive transformative change.

Here are some examples of our outstanding winners and what they accomplished.

In 2022, the winning selections were divided into eight categories - among them 'Cutting Edge Genius', 'Transformation Champion' and 'Social Catalyst' including one commemorating the 50th anniversary of the company's founding by five former **IBM** employees in 1972.

The '50th Anniversary Legend Award' winner, **Freudenberg Home and Cleaning Solutions** was selected for dispensing with old manual systems and increasing efficiency by using a hybrid architecture based on data and analytics solutions founded on the SAP BTP.

With its improved platform, planners could go to one source and strategize in a harmonised way, avoiding discrepancies between financial and operational plans.

By doing this, the German company both lived up to its own slogan, 'Innovations that make life easier,' while embracing the SAP credo of turning to the cloud to rise above obstacles.

"The smart combination of sales plans, forecasts, and operative plans in one integrated global… platform truly accelerated the decision-making," said Andreas Hass, Freudenberg's corporate IT Manager, overseeing analytics processes and systems. In some ways, this quote expressed the attitude taken by all the Innovation Awards entrants.

ENGIE, a French-based multinational utility, invests in solar systems (not the extraterrestrial kind), developing renewable and clean energy internationally. The company specialises in solar farms - large collections of panels that absorb energy from the sun and convert it into electricity for distribution and consumption.

Its 'Industry Leader Award' is based on its use of a digital twin, a virtual representation of a physical site that mimics the conditions of its real-life counterpart. Enriched with that data, the digital twin allows decision-makers to not only observe the present, but understand the past and forecast the future.

With the digital twin's help, ENGIE was able to free workers from repetitive tasks, anticipate maintenance costs and save carbon emissions by avoiding unnecessary travel. The twin's accuracy allowed the company to track down the exact location of broken fuses and quickly arrange maintenance. ENGIE now also has an enhanced ability to anticipate component failures and put preparations in place to fix them.

Bboxx is a British-based next generation utility company. Its expertise includes the manufacture, distribution and financing of solar systems close to the sites of consumption in developing countries. With offices in such places as the Democratic Republic of the Congo, Rwanda and Togo, Bboxx's efforts have enabled economic development in off-grid communities.

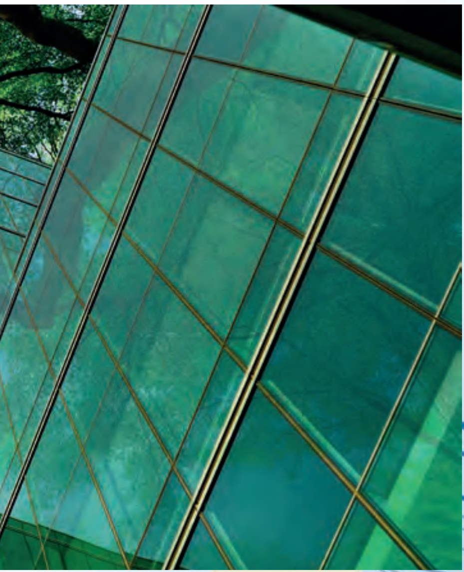
But to continue its quest to solve energy poverty, Bboxx needed consistent processes, greater automation, and the use of best practices across the company. By using SAP's Business ByDesign cloud solution, the company had the tools to plan and implement logistics in supply chain networks and improve workflow. Most crucially, the platform helped accelerate growth sustainably, supporting global processes while serving local needs.

A safer workplace

Not only do the SAP Innovation Awards bring attention to companies that make the workplace a more agreeable environment, critical safety measures developed by several 2022 winners will have long-lasting effects on a number of industries.

For example, 'Cutting-Edge Genius Award' winner **Avangrid**, a US-based sustainable energy company that owns eight electric and natural gas utilities serving over three million customers in New York and New England, was honoured for what is being called a paradigm shift in field work maintenance.

Its new overhead network inspection system takes advantage of forward-looking technology to prevent employees from placing themselves in danger.



After Avangrid mounted cameras on the company's maintenance trucks, workers inside the vehicles could utilise computing devices to see high resolution images that automatically detected visible defects on the poles and wires overhead. Through the use of artificial intelligence and machine learning algorithms, damages could be spotted with 90 percent accuracy.

Similarly, 'Adoption Superhero Award' winner **Netze BW**'s innovation enables employers everywhere to quickly respond to workplace emergencies.

The German company owns and operates low, medium and high voltage electricity grids, serving more than two million customers. But service technicians often work alone - 24 hours a day - making themselves vulnerable to threats, accidents, or emergencies. In early 2022, Netze BW implemented a solution to protect their health and safety.

Each worker would now go into the field with an app on his or her iPhone or **Apple** Watch that could deliver precise information in times of need. In cases when a worker fell or collapsed, an alert would immediately inform emergency services.

A full 95 percent of all jobs could now be performed with additional safety, resulting in 50 percent fewer accidents.

These examples are but the tip of a very large iceberg of innovative and forward-thinking companies. You can check out the full list of the 2022 SAP Innovation Awards winners opposite. ■

SAP Innovation Awards

CATEGORY	WINNER
50th Anniversary Legend	Freudenberg Home and Cleaning Solutions
Adoption Superhero	Kanton Zürich
Adoption Superhero	Netze BW
Business Innovator	Air Canada
Business Innovator	Barclays
Business Innovator	Carrefour
Business Innovator	Hamburg Ministry of Finance
Business Innovator	Los Alamos National Laboratory
Business Innovator	REHAU
Business Innovator	Sycor
Business Innovator	Umicore
Business Innovator	Verizon
Cutting-Edge Genius	AVANGRID
Industry Leader	ENGIE
Industry Leader	Martur Fompak International
Partner Paragon	Exnaton
Partner Paragon	NTT DATA
Social Catalyst	Arpa Industriale
Social Catalyst	Bboxx
Transformation Champion	Clariant
Transformation Champion	Flo
Transformation Champion	Fulton County Schools
Transformation Champion	Schnellecke Logistics
Transformation Champion	Team Liquid
Transformation Champion	Zuellig Pharma

Scan to learn even more about the 2022 SAP Innovation Awards winners, finalists, and honourable mentions, as well as how to enter the 2023 awards or visit www.sap.com/innovationawards

SUSTAINABILITY

HOW ERP IS BECOMING A STRATEGIC ENABLER OF SUSTAINABILITY

BY DEREK PRIOR

Ever since my 1976 PhD (titled Pollutant Minimisation By Blue Flame Staged Combustion – fancy a copy?) I have been passionate about sustainability in the environmental sense. But in the last two years, sustainability has dramatically rocketed up the agenda of all businesses and the public sector.

Smart leaders of all organisations know that by looking through a 'green lens' into their enterprise they can better manage their environmental footprint. They can squeeze energy costs, reduce wastage, and become much more efficient. As such, profitability and sustainability are inextricably linked.

There are many examples of smart enterprises which are already carbon negative, whereby the amount of carbon dioxide emissions removed from the atmosphere is bigger than those put in from their operations, and I have saved vast sums of money from their bottom line. One of the best examples that I have come across is the huge applied technology company **3M**. As a leading manufacturer, waste management has always been a top business priority for the enterprise. Its 'Pollution Prevention Pays' programme has saved an incredible $2.3bn since 1975. Is that big enough of an incentive for you?

But what's all this got to do with ERP, I hear you ask?

Managing bottom-line costs, top-line revenues and overall financial reporting has long been the domain of back-office ERP. To enable and support sustainability initiatives, ERP must now add a 'green line' to calculate the environmental footprint of any business initiative. This means extending ERP basic business processes like order to cash and embedding KPIs into them, e.g. greenhouse gas emissions per unit of revenue.

This ERP transition is already happening. **SAP** has produced sustainability reports for its own business since 2008. At its Sapphire user conference last month, the CEO, Christian Klein, announced a strategy of zero emissions, zero waste, and zero inequality to gradually build a green line into S/4HANA, SAP's strategic ERP solution. It is unclear when SAP will actually deliver this green line product capability to customers. But S/4HANA already includes product compliance modules for the chemicals industry.

In addition to embedded ERP functionality, SAP today offers the **SAP Cloud for Sustainable Enterprises** product range, which includes:

- **SAP Environmental Health and Safety** (EHS)
- **SAP Product Footprint Management**, for minimising carbon emissions
- **SAP Responsible Design & Production**, for minimising waste in the circular economy
- **SAP Sustainability Control Tower**, for holistic sustainability reporting

In my opinion, Sapphire 2022 sustainability highlights were, firstly, the ability for customers to share carbon data across their value chains for the first time and, secondly, the inclusion of carbon footprint within S/4HANA sourcing and procurement functionality.

With such products, ERP customers may be able to drive further sustainability in their organisation. But such a drive depends more on simply having the right software in the enterprise toolkit.

WE HAVE TO CHALLENGE OUR EMPLOYERS, PARTNERS AND CUSTOMERS ABOUT WHAT THEY ARE DOING IN SUSTAINABILITY

What are the next steps?

A recent survey of ours, below, revealed a surprising variance in opinion amongst ERP customers about how ERP could drive sustainability within their organisation.

But what can all ERP customers actually do right now after hearing the SAP messaging coming out of Sapphire? And how should they enable the right course of action?w

To maximise the value from large ERP investments over the longer term, smart ERP customers have always maintained their own internal team of ERP experts after they go live. This team is usually termed an ERP Centre Of Excellence (COE). It typically integrates business and IT technical experts from the enterprise that know both their own ERP business processes in detail and how the complex ERP application software has been configured to enable them. The primary role of the ERP COE is to keep these processes running reliably and fully up to date. A highly effective ERP COE provides both agility and huge cost savings for an organisation.

Research shows that the most successful ERP COEs measure and optimise business benefits from their previous ERP investments by working with business process owners to identify and measure process KPIs, e.g. order to cash cycle time. These are regularly measured to improve processes and demonstrate the business value predicted in business cases. Sounds easy, yet most enterprises find it hard in practice.

All ERP COEs can renew their focus on measuring business value by addressing sustainability initiatives. They can directly support sustainability reporting and audits. They can also participate in business-led green lens projects to help reduce the current environmental footprint of the enterprise across its value chain.

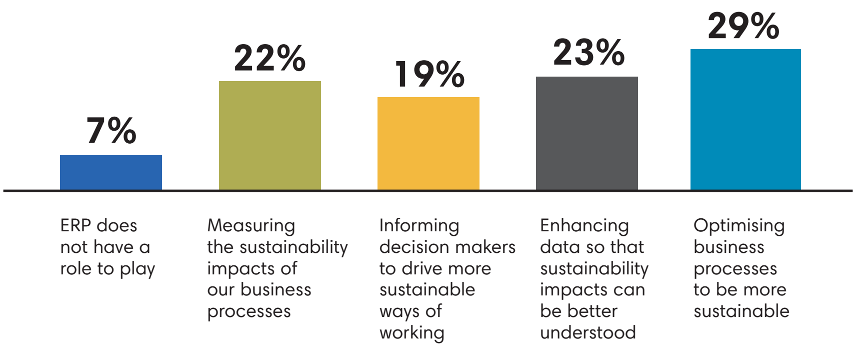
But this is just the beginning. What if modern technologies could actually optimise these core processes? What if much-heralded predictive analytics technology could predict optimum product fulfilment for your top five customers, six months out, showing you the direct impact on your greenhouse gas emissions?

In 2022 we all have to get active. We have to challenge our employers, partners and customers about what they are doing in sustainability.

In the future, ERP will help us respond to the inescapable challenge of our burning planet. And who knows, SAP may have started a 'green fire' to help ERP become a strategic enabler of sustainability. ■

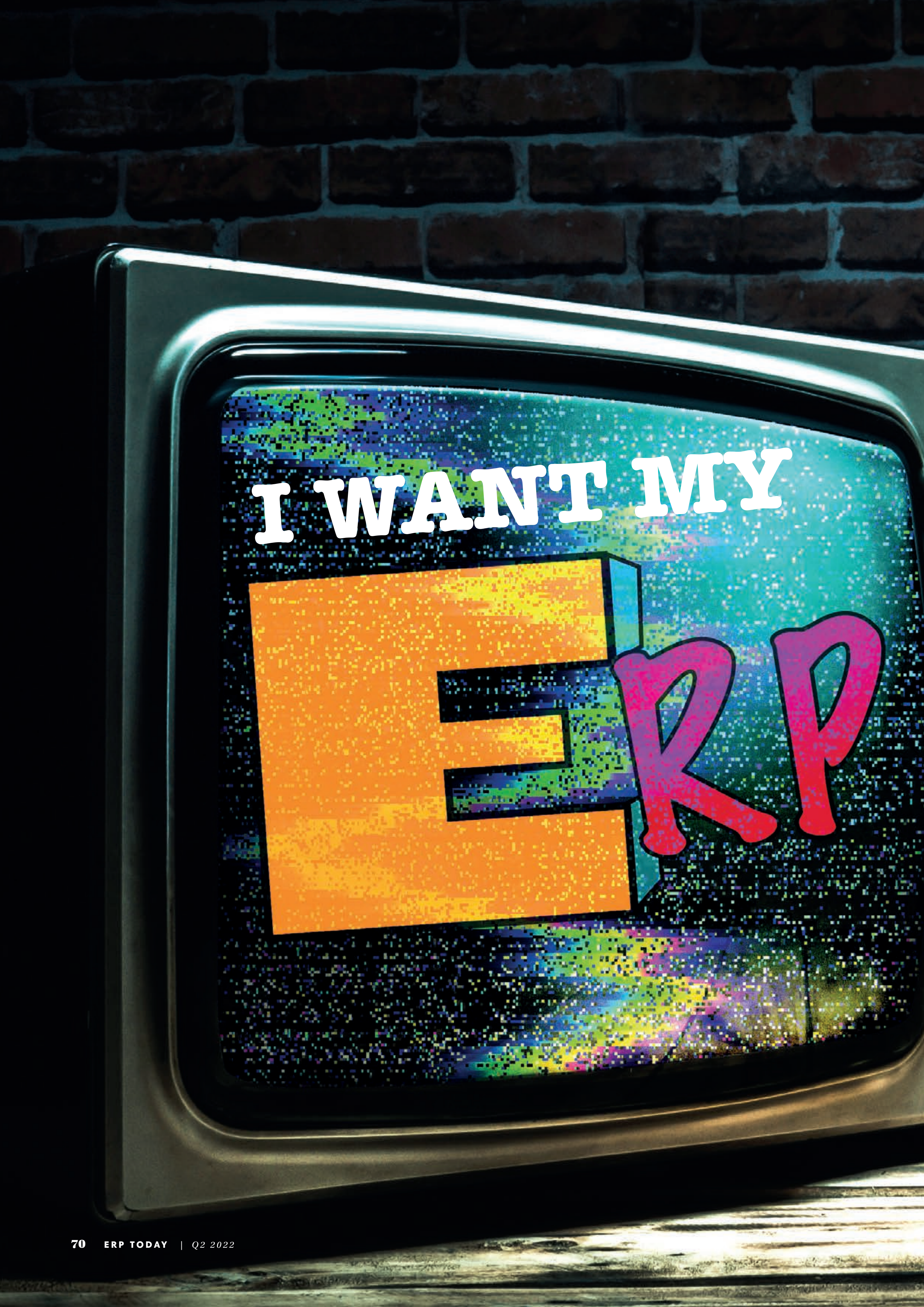
Dr Derek Prior spent 19 years as an ERP analyst at Gartner and is a non-executive director for Resulting, who specialise in measuring and maximising the success of SAP customers.

Which of the following ERP factors do you feel could drive sustainability within your organisation?



2022 Resulting survey of ERP customers on sustainability

I WANT MY ERP



LIKE MTV, SAP BROKE THROUGH THE NOISE OF A 1980s MARKET IN STASIS. BUT WHAT IS THE CURRENT PICTURE?

BY STUART BROWNE

You've probably heard that **SAP** is 50 years old this year. I mean, you can't really avoid the social media celebrations rippling out from the Walldorf epicentre, amplified by an eager to please SAP partner ecosystem.

My 50th celebrations last year were a little quieter. It was my son's 21st in the same week and as a family we'd looked forward to a joint party since his birth, but we unfortunately both 'celebrated' at different ends of the UK in the final days of lockdown.

Big birthdays have been on my mind recently - perhaps as you get older and your own mortality crystallises, you better appreciate the passing of time. Alongside my own big milestone last year, I looked back nostalgically as **MTV** hit 40.

Like SAP, MTV broke through the noise of a market that was in stasis. Radio was pervasive when MTV first aired on cable TV in 1981. Cable turned a steady trickle of TV content to a fire-hydrant deluge - from three stations to hundreds at the flick of a switch.

When there are limited choices in a market it isn't the best that succeeds, it's the least offensive. With three channels, you don't have to be great, you just have to not fail miserably. But with hundreds of channels, you need a competitive edge to stand out.

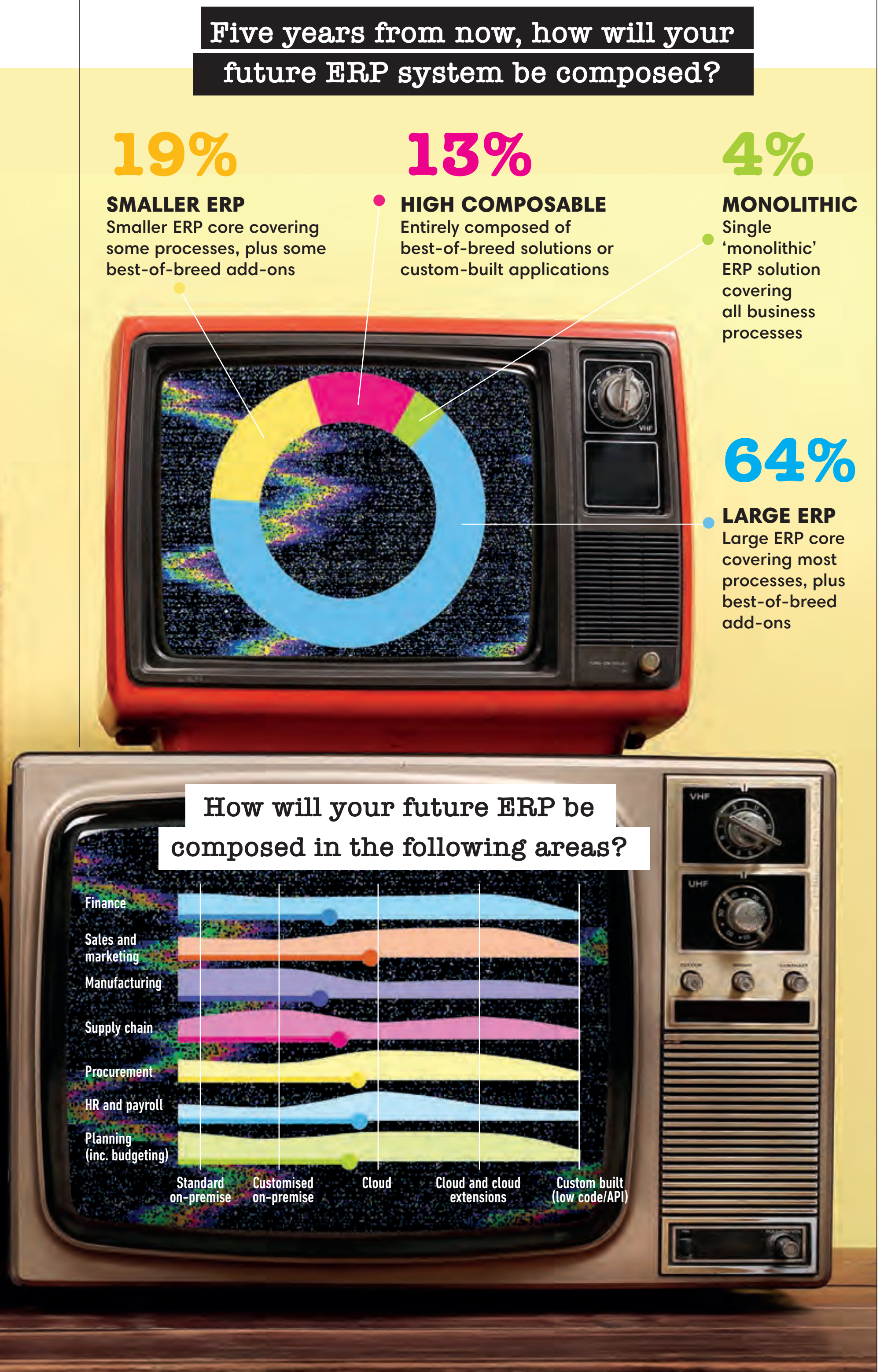
MTV's competitive edge in the early 80s was delivering a combination of music and video in a 24 hour always-on format. It became the backbeat of Generation X.

SAP's competitive edge was integration. They were the first to deliver a combination of business processes in a single application with tight integration across finance, sales, inventory, purchasing and manufacturing.

As first to market and with limited alternatives available, SAP didn't really need to be great, it just needed to work. And it worked very well.

But then at age 20 with the launch of R/3, SAP finally came of age. There was a late 90s clamour for this new world of integrated ERP, and a whole ecosystem evolved around it.

In the same way that artists and record companies switched to focus on creating music videos for MTV, the likes of **IBM**, **PwC**, **Anderson Consulting** and countless others jumped on the SAP bandwagon.



A new ecosystem emerged, symbiotically thriving in the slipstream of the SAP juggernaut. And, if you got it right, like Michael Jackson did with his epic Thriller video, the rewards came rolling in fast. You got all of the ERP airplay.

In the early days it was integration that mattered most to businesses. Having everything in one system created a paradigm shift in efficiency. It enabled huge headcount reductions by reducing double keying, and greater accuracy through a common data model with inbuilt traceability.

Integration also meant real-time results like instant stock checks, available-to-promise calculations, credit checks and pricing calculations, fast and accurate reporting and period-end closing.

This struck a chord with CFOs - never before had big business been so able to get an instant adrenaline rush of benefits.

Sure, the costs were high, but the benefits were huge.

A new beat

MTV moved with the times. Initially intertwined with the music industry, it evolved to produce its own programming content and even cartoons - Beavis and Butthead, anyone?

The millennial shift to **YouTube** and **Spotify** as the home of new music has forced MTV to recreate itself - for better or for worse. It's no longer the cool kid on the block, but it is still relevant to today's audience. The brand has shifted its audience appeal.

But fast forward from SAP aged 20 to the now grey-bearded 50 year old and you see a product that is struggling to keep its audience appeal.

Intrigued by **Gartner**'s concept of composable ERP, we undertook a research project in late 2021 to find out where SAP customers are heading next.

While the 1990s gold rush was for integration, these results showed that the opposite is true in the 2020s.

Across the 125 SAP customers polled, just four percent said that their future ERP would be a single monolithic SAP solution covering all business processes.

That's a pretty compelling percentage. 96 percent of SAP customers want the polar opposite of what they wanted 30 years ago.

So, what's changed?

Why did the world clamour for a single integrated ERP solution 30 years ago, then have a 180 degree about-turn to now yearn for business processes in separate solutions?

Has the benefit of integration gone away? Doubtful.

Has integration of disparate systems improved so much that it no longer matters? If it has, I've not seen evidence amongst our customers.

Maybe it's something else.

In the same way that YouTube came along and ate MTV's lunch, the likes of **Workday**, **Salesforce**, **Coupa** and others have chomped away at the functional edges of SAP.

By selling cloud native solutions directly to the head of business functions, and bypassing IT altogether, the notion of composable ERP isn't so much an IT decision as an architectural compromise.

The research plays this out - when we asked how future ERP will be composed by business area, there was a clear correlation between the pervasive shared service type processes moving towards cloud solutions, whereas the processes involved in moving materials around (e.g. manufacturing and supply chain) are more on-premise and customised.

Maybe the future of the monolithic SAP system is a single integrated supply chain core with bolt-on best-of-breed cloud solutions for supporting processes like human capital management, customer relationship management, procurement and planning.

There was little interest in custom built solutions, using low-code or APIs. But there are precedents that might point to a different future.

Content management systems (CMS) that are used to build complex corporate websites have evolved over the past 15 years or so. Open source platforms like **Drupal** and **Wordpress** are pretty much free, and have an army of independent developers continually building features and patches, all for the greater good.

Clever organisations have adopted platforms like this as headless CMS solutions, essentially using them as the backbone for their own custom solutions for ecommerce and content management, without adopting their UI and periphery features.

They then use JSON as an API model to build robust, real-time integrations to a slick custom-built front end. The development skills required for this are much more prevalent than SAP skills - more mainstream, faster to learn, and cheaper.

That ain't workin'

As the skills shortage of SAP consultants continues to bite, there may be practical and commercial reasons why SAP customers started to consider using the back-end of SAP as a 'headless' platform with a more modern, custom-built front-end.

Anecdotally, we're working with SAP on a greenfield RISE implementation today - where SAP's own architects are advocating IDOCs over APIs. It's like going back in time and having the Spice Girls writing interface specs.

And then we have the hyperscalers.

"SO, WHAT'S CHANGED? Why did the world clamour for a single integrated ERP solution 30 years ago, then have a 180 degree about-turn to now yearn for business processes in separate solutions?"

Perhaps the overhead of running a monolithic ERP solution that covers every business process, in every business unit, in every country is just too much.

We can learn a lot from the principles of lean manufacturing - cycle time is inversely proportional to the WIP in the system. Or, the more you have in a 'system', the slower things move for you.

The more monolithic the ERP solution, the more glacial change becomes.

This means that the business functions that want to move faster, innovate and transform now have to go at the pace of the slowest functions. Everything gets frozen into the same glacier.

Gartner's pace layering model is apt here - systems of record, differentiation and innovation, each moving at its own pace to underpin competitive advantage. Shadow IT is also part of this dynamic too.

10 years ago, SAP customers used proprietary BI solutions for analytics. They even invested in hardware appliances (remember the SAP BW Accelerator?). The same was true for **Teradata** - retailers and utilities bought their hardware appliances and licensed their software.

Today, businesses run open source data lakes on hyperscale storage and elastic compute. They pay not for the solution, but by the query.

As SAP reaches its 60s, will it be retirement time for the ERP system that the world's largest companies run? Or are we likely to see a resurgence from the aged rocker, morphing into a more cloud-native truly digital platform?

One thing's for certain: the competitive tension on SAP means that the 2030s won't be like the 'Money for Nothing' era of the 1990s. ■

Stuart Browne is founder & managing director of Resulting Ltd.

Why Ukrainians need UK business *to step up refugee support*

The story and personal history behind the RefuAid Ukraine business consortium.

BY EMMA SINCLAIR

My father's side of the family came to the UK from Ukraine. When they arrived in east London more than a century ago, fleeing persecution and pogroms, there were people who helped them in their darkest hour. I've heard stories about how neighbours with few means opened their homes and shared meals with new arrivals and it gives me enormous comfort to think that these outsiders to both city and country were not left to fend entirely for themselves.

My family spoke no English and had no wealth when they set foot on British soil. But today, here I am, the first in our family to go to university and now in charge of a software company. It's the stuff dreams are made of - and it's entirely due to the resilience and hard work of my family who made the difficult journey here all those years ago.

Since the conflict in Ukraine began this year, over 10 million people have been displaced. The news is devastating and we all sincerely want to help. Early in March many of us running businesses wanted to know how we could do that, and provide essential access to employment and other necessities required to overcome barriers that might prevent people fleeing the horrifying crisis from working in the UK.

It was not surprising, and it was also very uplifting to witness. There was - and is - an overwhelming desire to help refugees resettle and have meaningful lives, finding employment commensurate with experience, the latter being vital for dignity and independence when starting a new life.

Sadly, there is little or no support for refugees to gain employment that corresponds to skills and experience on arrival, and as a result many newly arrived refugees end up in what can be termed as survival jobs. Most skilled professions require intensive English language tuition and UK reaccreditation to practice, which usually involves undertaking exams and/or further training. This process is almost always prohibitively expensive for those who have sought sanctuary in the UK.

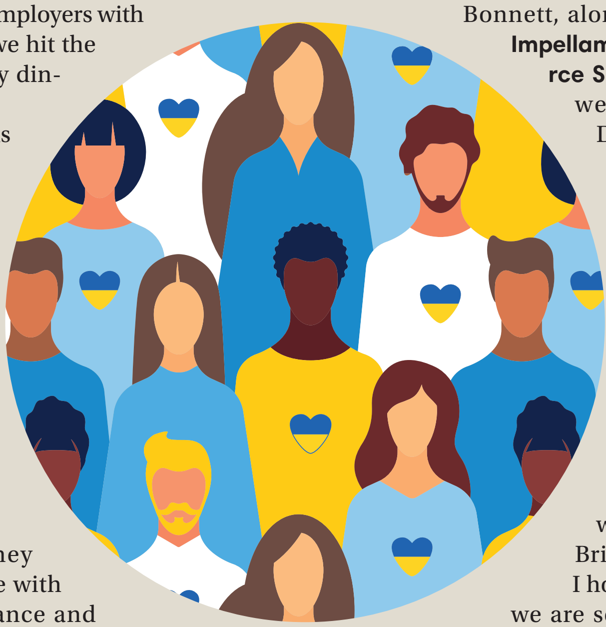
As a result, we have neurosurgeons working as care assistants, marine engineers driving us in the back of their cabs, teachers with no students and lawyers stacking supermarket shelves. There's nothing wrong with such jobs - I started my own working life in **McDonalds** - but if you had a career and were forced to lose it through no fault of your own, how devastating it must be to have no prospect of ever gaining that job satisfaction back, especially at a time when employers everywhere need skilled people.

Without structured, professional English language tuition and employment support, those from around the world who've sought sanctuary in the UK are unable to gain meaningful employment and, as such, are unable to rebuild their lives. The UK labour market has a very high level of over-qualification and underemployment among refugees. A 2017 study into Syrian refugees in Europe discovered a third were employed in either skilled work or professional services in Syria, yet 82 percent were unemployed in Europe. That serves no one.

Creating the consortium

I started receiving emails from people I know wondering if I had ideas of what to do. In particular, a message from the formidable Jacqueline de Rojas, president of **techUK** and NED at **FDM**, **IFS** and **Rightmove** moved me to take action. I knew I could count on her help (albeit at that point, I had no idea with what!)

There is a slow, bureaucratic process to set up a new life in the UK and I set about learning who was improving this with the support of 25 large employers with the same goal. A few days later we hit the **Sunday Times** front page and by dinnertime 25 became 45.



I've learned a lot in six weeks about what's wrong and how we can right some of that quickly. Some of it is just not that hard. Fortunately, Anna Jones, CEO of **RefuAid**, found me. RefuAid provides an innovative, practical, scalable and sustainable solution to employment for refugees in the UK focussed on jobs commensurate with experience and we immediately decided to collaborate.

Over the last three years, they have supported over 800 people with access to language tuition, finance and employment. We want to see that grow - and fast. Lawyers have requalified and secured legal roles within companies such as **Credit Suisse**, while a mother living in a homeless shelter with her two daughters requalified over three years and joined the **NHS** as a consultant on a six-figure salary. We want to speed that up, and allow them to help more people, whatever their country of origin.

Two weeks after connecting with Anna, we launched a pilot initiative to do just that with sponsorship and support from **FDM**, **PageGroup, PwC** and **Portman Dental Group**, sponsoring 50 RefuAid clients to learn English and receive resettlement support. People like Jonathan Young, CIO of FDM, swung into action not just in terms of the employment option but also asking how he could help and deploy resources such as access to training and computers. As he told me days later, "We are set up to welcome our friends from Ukraine with immediate effect."

> **"**
>
> **I hope through this consortium that we are seeing the beginning of a much needed blueprint for how to help refugees lead dignified independent lives**

PwC chairman and senior partner Kevin Ellis said: "A profession is part of someone's identity - we want to use our strengths as a training business to support refugees into the right work for them. This is a no-brainer for businesses looking for talented people, and we're delighted to work with other businesses to get moving on this important pilot which aligns with our existing activities to support refugees." And boy did we get moving!

We scaled up the recruitment desk with inspiring cross-industry collaboration from CEO of PageGroup Steve Ingham and their sustainability lead Joanna Bonnett, alongside software solutions from **Impellam** and the **Robert Walters Resource Solutions** team. Other initiatives were also born such as the **AA** Drive Confidence Scheme to give free refresher driving lessons to Ukrainian refugees.

A couple of months later and we have just announced a much larger group of sponsors taking this initiative to the next level, with support from a treasure chest of companies including **BP**, **Kier**, **Mulberry**, **TELUS**, **haysmacintyre** and **OVO Energy**. Smaller companies were also moved to help, such as British meal kit retailer **Gousto**.

I hope through this consortium that we are seeing the beginning of a much needed blueprint for how to help refugees arriving on our shores to lead dignified independent lives for everyone's benefit. There are currently 84 million displaced people in the world according to **UNHCR**. The challenges around displaced people, forced to leave their homes through no fault of their own, are not going away. At the same time, businesses are crying out for skilled employees and breaking down entry barriers to employment for the Ukrainian and other refugees.

By the way – we're now at over 150 companies voicing support, from **Caffè Nero** to **Capital One**, **Domino's** to **Dunelm**, **Mitie** to **Mondelez**, **Nando's** to **Northumbrian Water**, **Sodexo** to **Speedy Services** to **Wincanton** and **WPP**. Readers of ERP Today, can you help make a third cohort to scale this up further in July? ■

Emma Sinclair MBE, co-founder of EnterpriseAlumni


When it’s time to adopt a

dedicated ERP system Moving on

BY CHRISTINE HORTON

MID-MARKET ERP OPTIONS

The time will come when basic accounting software will no longer fulfil your growing business' requirements

There often comes a point within a relationship when one party realises it's time to move on. They feel they have outgrown the relationship, or that their needs are no longer being satisfied.

The same applies in business. The systems that may have served you well in the past will inevitably no longer be able to keep pace as the business matures. In fact, they could end up holding your business back.

But at what point should a growing business decide to move on from a long-term relationship with its basic accounting software? What is the tipping point for a firm to swap **Xero**, **QuickBooks** or **Sage** for a dedicated mid-market ERP system?

Often a firm simply outgrows its existing system and requires more integrated capabilities -particularly as it grows in revenue, employee base, customers or office locations.

For example, they may be using a single accounting software package but as their business scales, things like the volume of invoices and number of suppliers increase, adding complexity to the business. This can be particularly challenging if they are moving into new markets and need to be able to cover requirements such as multiple currencies, notes Chris Richards, regional president UK&I at **Unit4**.

"Mergers and acquisitions are another common cause as it is harder to integrate existing systems, so it makes more sense to adopt a new platform that covers all their requirements," she explains. "The customer may not want full blown HCM, but they do want a more integrated finance and procurement process."

"Something we're seeing more of now is that customers want to be able to do better data analysis across wider areas of the business. Given all the volatility we've seen in recent years, the ability to forecast more accurately is becoming even more important to businesses as they scale."

What are the red flags?

So what are tell-tale signs to look out for that your business is reaching a tipping point and needs to consider a proper ERP system?

The first is information loss, lost orders or paperwork in a failure to transfer key data from one system to another, according to Stephen Edginton, VP of product development at **Epicor**. This means data silos can occur because systems are not integrated, and customers are ultimately let down.

"The second is your accounting month-end close is often hard to reconcile, you only get limited insight

CHRIS RICHARDS
/ UNIT4

"Clients should have an honest conversation with the vendor and be transparent about who else they are talking to."

into key operational processes, you find it hard to see across your business units and determining the profitability of a product, project or customer is painful," he continues.

"Lastly, growth causes cracks in processes. We often see scaling issues where individuals have set up ways of doing things that become a critical cog in a business process. However, if they leave, the business is tied to that subsystem which is often not understood or flexible."

It's true that businesses without the perfect match ERP system can scale to some degree - but they will inevitably end up compensating for it through workarounds. This results in manual and unreliable ad-hoc processes, which are not designed or developed for your industry, so typically do not follow best practices or are not flexible enough.

"You pay the price for this over time," warns Edginton.

It's complicated

Elsewhere, John Case, CEO of **Acumatica**, says that one problem with general accounting software is that multiple locations require multiple databases, which is not conducive to a team that's expanding its number of physical locations or supporting a dispersed workforce.

"With cloud-based ERP software, companies can manage multiple locations using a single database, enabling mobility and productivity for employees on both desktop and mobile devices, from any location, at any time. Scalability and growth are much simpler with cloud-based ERP software," he says.

For example, says Case, a business in the manufacturing, distribution, or commerce industries is dealing with supply chain logistics, inventory tracking and warehouse management, among other things.

"Basic accounting software is not built to handle these complexities. These basic systems cannot integrate data across each line of business, which makes it difficult for decision makers to have a complete picture of the business. By implementing an ERP solution, the business can capture comprehensive business data in real time. This data enables the business to make more informed decisions and increases efficiency and productivity."

Don't leave it too late

But despite the tell-tale signs, many businesses don't realise they need to replace their existing software until it's too late.

It is common for a growing company to invest in a cloud-based customer relationship management system like **Salesforce** to enable them to scale their revenue. However, they often neglect their back office systems - which is where problems typically arise.

Indeed, Andy Campbell, global solution evangelist at **FinancialForce**, says the main reason why small companies go out of business is not due to a lack of turnover. Rather, it is because of cash flow issues as a consequence of not having a tight control over the business.

"As the saying goes, 'Turnover is vanity, profit is sanity, but cash is king'" he explains. "Growing businesses need to invest in robust, scalable, and flexible ERP systems that can support their operations and provide them with the information that they need. It also provides the basis upon which to make the right decisions to drive the business forward."

Campbell maintains that many smaller companies delay investing in an ERP until it is too late, as they have a perception that such a journey will be costly, complex and timely. Perhaps there has been some justification for that view, historically. However, with the new breed of cloud-based ERP vendors, this is no longer the case.

He continues, "If a business is growing, they need to ask the question: 'Will I still be trusting my business to run on spreadsheets in three years' time?' The answer is probably no. It is better to be in control of a decision than have a decision thrust upon you or wait until it is too late!"

STEPHEN EDGINTON
/ EPICOR

"We often see scaling issues where individuals set up ways of doing things that become a critical cog in a process."

JOHN CASE
/ ACUMATICA

"Scalability and growth are much simpler with cloud-based ERP software."

MID-MARKET ERP OPTIONS

Feel the benefits

It is therefore vital that businesses recognise that there is a world of difference between a basic accounting package and an ERP solution. The former focusses solely on supporting the finance function within the organisation. The latter typically provides a much broader range of functionality of which accounting is just a part - a true ERP solution will also include areas such as project management, billing, supply chain and even manufacturing. Put simply, it is an end-to-end business management tool that connects multiple departments and applications.

"Information from finance, sales, marketing, operations, and any third-party application desired coalesces into the ERP system, making it easy to access business-wide data in real-time," says Case. "The result is a 360-degree view of the business and real-time access to synchronised data."

Important too is that modern ERP systems will also have been designed to address the issues of growth. This means they should obviously be able to scale in size.

"The solution needs to be inherently flexible to easily accommodate ongoing organisational change and new business propositions such as subscriptions," says Campbell. "They also will need to support the challenges of the global economy including multi-company, multi-language and multi-currency."

The argument for investing in a dedicated mid-market ERP system is compelling. A **Forrester** study has found that companies that adopted a cloud-based ERP experienced significant benefits, including a 15 percent improvement in gross margins, a 15 percent increase in sales volume, and a 45 percent increase in employee productivity. The study also determined that organisations would experience benefits of $3.5m over three years versus costs of $2.1m, adding up to a net present value of $1.4m and a return on investment of 66 percent. The payback period for investing in the solution was 16 months.

THOMAS SUTTER
/ ORACLE NETSUITE

"True ERP helps deliver visibility, efficiency and automation of data and processes."

ANDY CAMPBELL
/ FINANCIALFORCE

"It is better to be in control of a decision than have a decision thrust upon you or wait until it is too late!"

Finding a perfect match

So, how do the smaller ERP vendors support customers that are looking to make this transition?

Unit4's Richards explains that one challenge is that customers moving from a single accounting application to an ERP platform sometimes underestimate the amount of time needed to think about how their business processes work together, and the knowledge and resources required to ensure these systems function well together.

This is where the vendor's expertise and tools should kick in.

"We recommend using an industry model approach, so that you are using best practice solutions for your sector," she says. "This ensures you have the relevant functionality for your business and adoption is easier and quicker. For example, we've just done this for an international hospitality and events business. Using the relevant industry model, they have been able to go live in three to four months which means the time to value is good."

Richards also says it is important to understand that adopting a best practice approach will require an acceptance there will be some change in how the business operates. This means the leadership team must consider what it will mean for the business in the future. They must also be seen to lead the deployment precisely because it will be a change management exer-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cise. The business leaders must pull everyone together to ensure teams such as finance and HR are collaborating to integrate processes.

Finally, Richards points out that the shift to an ERP solution might genuinely be too much at this stage for some companies.

"Clients should have an open and honest conversation with the vendor and be transparent about who else they are talking to," she says. "By simply looking at which vendors are on the short list you may find you are just looking for an upgrade to a more sophisticated accounting software package.

"However, ERP vendors should also be able to work with customers to provide flexible packages that can ramp up costs in line with the company's growth."

Time to split

As your company grows and your business needs become more complex, you'll find that entry-level accounting software has clear limits. As such, the time will come for you to re-evaluate your relationship with your accounting software.

"I encourage organisations to step back and ask themselves whether they have a system that provides the visibility, efficiency and automation of the data and processes they need to operate successfully now and in the future," says Thomas Sutter, finance centre of excellence, **Oracle NetSuite**.

"Do you have the capabilities that will take you where you want to go? As you grow and expand you need to be able to do more with less and find simple ways to manage complex problems. Your technology should be a solution rather than a hindrance on that journey."

At its most basic level, ERP software helps you integrate your various business functions into one complete system to streamline processes and information across the entire organisation.

"True ERP helps deliver visibility, efficiency and automation of data and processes so that employees stay laser-focussed on their product or service by freeing up the time and resources needed to drive innovation and remain competitive," adds Sutter.

"ERP systems can contribute to better decision-making, with built-in business intelligence and a single version of the truth to produce better, faster and more intuitive decision-making. True ERP can also help simplify the different departments across a business and automate manual processes to save time and free up resources to better serve customers. Compared to entry-level solutions, true ERP allows business leaders to run a global business with ease, by effortlessly managing multiple subsidiaries, business units and legal entities with one ERP solution, with data visibility at local, regional and headquarter levels. Plus, true ERP should be customisable and allow for integration with other business-critical applications to keep data connected and accessible."

Yes, breaking up is hard to do. But maybe the time is right to move on to a dedicated ERP solution that is right for your business. ■

ORBIS NON SUFFICIT

IS ANYONE ELSE BORED BY THE NUMBERS? DO YOU FIND THE RACE FOR CLOUD DOMINANCE A BIT DULL? ARE VENDOR BOASTS REMINDING YOU OF A RECENT TIME IN HISTORY WHEN GETTING RICH AND GRABBING MORE PLAYED OUT PRETTY BADLY FOR MOST OF US?

BY PAUL ESHERWOOD

Fundamental market dynamics dictate that big tech companies must sell more to satisfy shareholders but the persistent desire for growth is taking its toll on workers and the markets are finally realising that not every cloud business has a future.

The earnings call is an established measuring tool for publicly quoted companies with all the major tech vendors (apart from **Infor**) putting analysts and media people through the ritual of quarterly bragging sessions. These calls start with the headline numbers - how much has top line revenue grown? How much did ARR (annual recurring revenue) increase in the last quarter? And continue with more bluster on the number of net new customers, the growth in ACV (average contract value) and details on backlog (stuff that has been sold but not yet delivered). Once the aggrandising is over, a carefully scripted set of questions is put forward by analysts which provide the vendor with yet more opportunity to recount their successes and flaunt their progress.

In short, the earnings call provides vendors with a two hour opportunity to extol their own virtues and tell the world how well they are doing. However, I am yet to hear a major tech vendor talk sensibly about how the relentless push for more is impacting their workforce or to articulate a strategy to support and nurture its people.

Having sat through countless earnings calls from all the major cloud and tech vendors I have become immune to the swagger and now find them rather dull. The market mentality is focussed on growth - that's what everyone looks for on an earnings call and until very recently that's how the markets graded a particular stock. If a vendor demonstrated 40 percent growth it could expect to wake up to good news from the markets whether or not it was delivering value for its customers, creating a great place to work or operating profitably. The market cap of the major players was measured on a binary scale - more, more and more was the only metric that seemed to matter, until recently.

However, over the last few months there has been a correction to the way that stocks are valued and it is high time that cloud vendors took notice and started to think about alternative metrics to demonstrate their prowess. Yes, the markets are being impacted by global challenges like rising inflation, supply chain pressures and war - but these macro forces aside, the markets are realising that unchecked growth which is not supported by profitability, a sustainable business model and rational planning will not deliver the long term future that was once predicted.

Until recently there was only one trajectory for enterprise tech vendors – and that was upwards. For the remainder of 2022 and possibly beyond, we are likely to see that momentum slow for many, and for some, it could be the end of the road altogether. In my opinion, it will be the tech companies

CLOUD VENDORS

which place greater importance on their people that manage to ride out the uncertainty while those which fail to address the fundamental challenges faced by workers will see the sharpest declines.

The second gold rush

The scramble for cloud superiority and corporate wallet share has created a land-grab mentality amongst many cloud vendors. Fearful of missing out on 'the greatest growth market the world has ever known' and beholden to insatiable shareholder expectations – the dominant players in the cloud market have been filling their boots and the expectations are being felt by all of us.

Whether you are on the frontline selling cloud, in the background managing cloud, or riding along on cloud coattails (like we are) the incessant pace and unrelenting expectations must come at a cost, eventually. Where that cost will bite the hardest is yet to be determined but the toll is already evident in workplaces across the globe and responsible employers must arrest their rapacious need for more sales if it comes at the detriment of wellbeing.

> "WHETHER YOU ARE ON THE FRONTLINE SELLING CLOUD, IN THE BACKGROUND MANAGING CLOUD, OR RIDING ALONG ON CLOUD COATTAILS (LIKE WE ARE) THE INCESSANT PACE AND UNRELENTING EXPECTATIONS MUST COME AT A COST, EVENTUALLY."

During the mid-nineteenth century gold fever spread around the world like wildfire. The term 'fever' was used because those who were seduced by the possibilities of unearthing riches from the ground became 'feverish' and oblivious to anything other than lining their pockets. There is a strong argument that 'cloud fever' is having a similar impact today.

The Gold Rush in the 1800s had many benefits: an explosion in manufacturing followed as mining machinery, hydraulic equipment and timber products boomed. The abundance of new raw materials led to a surge in agricultural development, often coined as 'green gold'. And transportation and infrastructure services were transformed - examples include the building of the canal across the Isthmus of Panama, the development of The Pony Express for mail services and the first transatlantic railroad that connected the east coast with California.

However, while the 'rush' had many positive implications there was also an underbelly of death, discrimination and destruction that followed in its wake. Hundreds of thousands of people died in mining accidents and disputes. The environmental impact was devastating as rivers were damned, soil became polluted and forests were stripped bare. It also led to widespread bigotry, inequality and injustices as the rich got richer and the poor, well you know what always happens to the poor.

Similarly, there are many benefits to the explosion of cloud technologies that have the potential to solve the world's hardest problems. But there is equally a growing number of concerns connected to the claim modern working practices are having on individuals. Do we really want to look back on the cloud revolution to realise that instead of benefitting from all this new technology to make our lives better, the planet greener and society fairer - we actually spent all our time trying to grab more?

Looking for problems that don't exist, yet

The time to repair the roof is when the sun is shining - and believe me, the sun is shining brightly if your game is selling cloud software and accessories. Public cloud end-user spending is set to rise to a dizzying $500bn this year and that is just the value of the infrastructure spend (IaaS, PaaS and DaaS). Factor in how much money is going to be pumped into cloud applications and you can add another £150bn to that total, maybe more. Then consider how much ecosystem spend this creates and you can probably double the number - it's mind-boggling that companies are set to spend the same on cloud as the combined GDP of Saudi Arabia and the UAE.

So what's the problem? Cloud vendors are making hay, the ecosystem is booming, customers are benefitting from new innovations and everything appears rosy. Well, it is for now - but there is a fundamental concern at the back of my mind that just won't go away. How long can this pace be sustained before someone or something gives?

The pressure to grow

The pressure to deliver growth has never been greater - if your cloud business is only expanding by 20 percent you may as well pack up and go home. The market is demanding

40 percent - even more in some cases - but the world and its workers can only tolerate that level of avarice for so long.

The numbers (or the narrative) just don't stack up for a happy ending – or at least they don't bring us to the kind of conclusion we would like if we had the chance to stop and think for a moment. How can everyone be growing at 30-40 percent? How can everyone be hiring tens of thousands of new people? How can everywhere be a great place to work? As I look around the global technology community I see people working harder than ever, spending less quality time with their families and under ever more pressure to deliver.

Lessons learned

Corporate narrative changed after the financial crisis of 2008, and for good reason. We learned that greed could have severe implications for people when banks and financial institutions were revealed as gluttonous no-gooders. Millions of people around the world lost money, businesses went bust and institutions were wiped from the landscape. While there's no direct comparison between **Lehman Brothers** et al and today's cloud glitterati - the elements in the market and the dynamics between consumer, worker and provider are very similar.

The financial crisis had been brewing for decades but we missed the signs which were hiding in plain sight. Yuppy culture started in the 80s when hedge fund managers drove white Lamborghini Countaches and success was measured by how much cocaine was consumed on a lunch break. These brash, pinstriped executives moved numbers on a spreadsheet and at a stroke made a fortune or lost it. Huge bets were placed and when the bets went wrong they bet some more to recover losses. We never questioned how or why because life was good: we could all access finance, interest rates were low, employment was high and the standard of living was on the up. Scroll forward just a few years and people were left scratching their heads when they realised we had all been asleep at the wheel.

The cloud industry isn't storing up dirty secrets in the same way the financial sector did and there isn't an impending crash on the horizon. But there are latent ingredients in today's cloud market that point to an unsustainable trajectory and a likely impact for those wrapped up in it.

The world is not enough

The 'world is not enough' is paraphrased from an ancient Satire called 'The Vanity of Human Wishes'. The term was later used by King Phillip II of Spain when he ascended to the Portuguese throne to underline the fact that Portugal was not the only conquest he had in mind. It was also used in a Bond film with slightly less significance.

The idea that we (as people, citizens and workers) should push ourselves to do more and strive forward is part of human nature - progress is in our DNA. But how we measure that progress must be aligned to the values that we hold as a civilised species. In the past, human endeavours were easily tracked to a humanitarian benefit: the agricultural revolution moved people from a subsistence living to one of plenty. The industrial revolution gave us machines that increased living standards. The digital revolution appears to be driving many of us into an early grave.

Just like the prospectors from the nineteenth century, millions of modern day workers are caught up in the cloud rush. The implications for us may not be as severe as they were for gold miners from 200 years ago but surely we have learned that there is only so much in the tank and people can only give so much. The demands and expectations that are being placed on workers, managers, board members, companies, supply chains and the broader environment have never been greater and the expectations are still increasing.

One thing is for sure, not every major cloud vendor will still have a seat at the table in 20 years' time – so what will determine the successes from the failures? Given that the merchandise itself is more of a commodity than a unique offering it is unlikely to be dictated by product superiority. Other factors, not currently valued by many, will influence the long term future of these global powerhouses – chief amongst which will be the ability to provide a supportive, rewarding and fulfilling environment for workers.

How will you remember the cloud era when talking to your grandchildren? By telling them how technology revolutionised science, tackled sustainability and created a more equal and benevolent world. Or by boasting about how much compute you sold? ■

The community contribution model of open source centralises around the practice of 'code commits' that sees users, teams and organisations actively working to share advancements for the collective benefit of others. Within this framework, what particular innovations can ERP vendors and customers give back to the collective pool of software?

BY ADRIAN BRIDGWATER

Open Source ERP is NO FREE LUNCH!

Before we try and answer the central question of what the ERP community can give back to open source, let's remind ourselves of how open frameworks actually function and operate. We need to establish this clearly, because some businesspeople still understand open source as being free software. The free element here is defined by a very specific measure of freedom.

As founder of the free software movement, Richard Stallman has famously explained on many occasions, 'gratis' and 'libre' are not the same thing. "Think free as in free speech, not free [as in] beer," said Stallman, in any number of his keynotes and seminars on this topic.

In working practice, enterprise open source is paid for via subscriptions that offer maintained, supported, stabilised versions of software. In some cases, enterprise versions will also come with extended platform and application functionality as well.

With the penetration that open source now has across the enterprise software stack, we know that many application tools, functions and data services today root their DNA in open source. Given this reality, what are ERP vendors and customers doing to ensure they 'give back' to the model that has shaped some of the technologies that they use every day?

COMMIT MEANS CODE... AND MORE

One important first consideration to bring forward here is that open source contributions generally come in the form of 'code commits.' **Red Hat** for example is the biggest code commit contributor to the **Linux** kernel, which although logical, is also a tangible validation for its position as an open source muscle player.


new architectures
user documentation
freedom
OPEN SOURCE
community
accessibility
great usability
open ERP feedback
user feedback
development environments

OPEN SOURCE ERP

Contributions can come in other forms. In order for open technologies to enjoy freedom, they also need accessibility. This means that open source needs people who are willing to work on creating or improving user documentation (and international language translation), plus all forms of business administration, marketing and more. Keeping the open ship afloat requires a full crew with a diverse skillset.

What many users don't realise is that, where they are using tools that are either natively open source or have been developed from open root, simply engaging with the core developer community behind an application and providing user feedback is an invaluable process.

Open source is all about openness, which in this sense means keeping the door open to advancement, improvement and progression; the software team behind any given project or toolset used in the ERP space will never know how truly effective it is unless we, the users, tell them. This open ERP feedback can come in the form of unstructured comments and messages on user forums. Equally, it can come from more structured reports that might include quantitative performance results. It all counts towards open evolution.

"Some of the world's largest ERP and ecommerce platforms are built on open source tech stack so active engagement in developer communities is essential to ensuring end-to-end supportability for proprietary enterprise-grade software. By applying the same open source philosophy to their own products, ERP vendors could create new developer communities making specialist skills more widely available, reducing cost and risk to customers. The ability to cheaply extend, customise and flex the product into new architectures, would answer some of the key questions in any product selection as well as driving the pace of evolution of the products themselves," said Joe Rodgers, **DXC** chief technology officer for **In-Sure Services**.

OPEN TRAJECTORIES

What we probably need to remember when discussing open source in this specific marketplace is that ERP starts from an inherently proprietary base. Although all major ERP vendors and their ancillary partners will have a shiny and welcoming open source fascia on their open technologies portal somewhere on their website, fewer of them will be actively giving back to the community contribution model in anything like the way we might see in hardcore Linux development environments.

Where we will see open source ERP toolsets developed is within the auspices of the open source foundations

and working groups. Sitting as a formalised project within the **Apache Software Foundation** (ASF), OFBiz is a suite of ERP-centric business applications flexible enough to be used across any industry.

This is free software built with a common architecture designed to allow developers to easily extend or enhance it to create custom features. Did we say free? Yes we did; Apache OFBiz is a project that is part of the ASF, which itself is a charitable foundation that produces software for the public good.

"It's not unusual for an open source enterprise automation suite such as Apache OFBiz to be flourishing within the ASF. Our 'scratch your own itch' ethos inspires our community to develop compelling software across a broad range of needs. Many Apache projects originate through hobbyist routes as well as commercial environments – the flexible, business-friendly Apache License 2.0 promotes innovation whilst limiting restrictions around commercialisation," explained Sally Khudairi, vice president of sponsor relations at the Apache Software Foundation.

"OFBiz was developed as 'Open For Business' in 2001, entered the Apache Incubator in 2006 and is used today in **Fortune** 500 corporations, leading ecommerce brands, and groundbreaking start-ups. Apache projects are available 100 percent free of charge, provide commercial-grade functionality, and are unencumbered by the constraints often imposed by proprietary software solutions," Khudairi added.

> **"The ability to cheaply flex the product into new architectures would answer key questions in any product selection."**
>
> **JOE RODGERS** / IN-SURE SERVICES

Having now worked in the software industry for 30 years, Khudairi has witnessed the progression path that open source has taken from **Microsoft** pariah to now become the darling of the current age. She served as the former deputy to Sir Tim Berners-Lee, as head of communications for the **World Wide**

Web Consortium (W3C) and assisted in the launch of the Apache Software Foundation itself in 1999.

In terms of modules and features, OFBiz is living proof that robust ERP tools can be built in the open source community. It has functions to service customer relationship management (CRM), order management, warehousing, inventory and supply chain fulfilment to name a handful.

WIDER TOOLS AND TURBO-CHARGES

Other tools in this space include WP ERP, a comparatively comprehensive ERP suite that runs from a **WordPress** dashboard. Designed to serve the smaller to medium-sized business end of the market, it includes functions for HR and CRM management, plus accounting functions too.

Also of note is **Odoo**, an ERP and CRM software solution written in the Python programming language. Odoo includes functions for accounting and ecommerce as well as capacity requirements planning, inventory management, purchasing and project management.

"The importance of ERP (and also CRM) being open source has never been more critical. The ability for developers to build APIs to ecosystems securely for integration with aged proprietary systems, or backend accounting and stock management platforms for near to real-time stock accounting and fluid movement of products and services actually relies on innovation," said Dick Morrell, a Linux veteran and open source developer of some 30 years' standing.

Morrell explains that typically, proprietary ERP systems have three fundamental tripwires:

1) A small amount of in-house developers who are working to maintain older releases, while building new solutions for retail, means mixed focus on deliverables.

2) An ERP vendor in the proprietary world needs to enforce playground rules to keep a customer in a specific branded wall garden where the vendor is responsible for third party integrations by virtue of a customer paying for those mods, or a systems integration relationship at a commercial level.

3) A proprietary vendor in both the ERP and sales order processing arena will attempt to control the customisation on a use case basis and so stifles the conversation with customers who would otherwise have the flexibility to benefit from transparent code base access.

"The importance of ERP and CRM being open source has never been more critical."

DICK MORRELL / SMOOTHWALL

"Odoo [and] ERPNext are just two open source alternatives [that] all have demonstrated flexibility and speed to major version releases by understanding that harnessing customer need allows the faster evolution of better product," said Morrell, who is a long-term **Red Hat** evangelist with a history in ERP customisation which goes all the way back to the very beginning of **Sage** accounting software and the foundations of custom ERP harnessing 4GL in the early 1990s.

The list of open source ERP solutions is growing and we should also note Dolibarr, Metasfresh, Tryton, BlueSeer, MixERP and EasyERP here.

"Our 'scratch your own itch' ethos inspires our community to develop compelling software."

SALLY KHUDAIRI / APACHE SOFTWARE FOUNDATION

THE BOTTOM LINE

Our key takeaway in this discussion must be related to users and usability, adoption and cooperation and (as always) the bottom line is a question of costs and remuneration.

If the users like it and its great usability, then it doesn't matter whether an ERP system is open source or not, as form and functionality will always win the day. If we build open source ERP right, then adoption and cooperation in terms of community contribution will come next.

How it is costed and paid for is actually the last consideration and that sentiment fits with the wider mindset that drives open source community engagement in the first place. Enterprise open source remains free as in speech, not as in beer... but we can offer you a taste and perhaps your first drink free. But as always, please remember to tip your waiter or waitress. ■

RED HAT

An open shift in the enterprise cloud

An interview with Matt Hicks, Red Hat's global executive VP of products and technologies.

BY ADRIAN BRIDGWATER

RED HAT

The world has of course been through a period of unprecedented change. Talk centred around global disruption; what might have raised eyebrows and pricked ears half a decade ago has now become the standard narrative across our news agenda. We don't need to list COVID-19, climate change, European war, energy crises and inflation to illustrate the point, but forgive me, for that's what I just did.

In the face of these penetrating forces, businesses have been forced to adopt a more modular, agile and changeable way of working. What with sometimes switching product or service markets within weeks, enterprises have had to become more open, hybrid and cloud-centric.

This new playbook for business operations has stark parallels with the core methodologies, mindsets and mantras that govern open source. Founded in the community contribution model of collaborative exchange, open source builds platforms, frameworks and individual elements that are open to continuous development, expansion and even forked repositioning.

President and CEO of Red Hat Paul Cormier has said that his firm's 'The State of Enterprise Open Source' report for 2022 found that 92 percent of IT leaders surveyed feel enterprise open source development models and solutions are important to addressing their disruption-related challenges, with COVID-19 marked out as the major change vector.

"This is not surprising to me, considering the moves I saw many businesses make towards the open hybrid cloud even before the pandemic. Whether an intentional architecture choice or a result of rapid market changes, cloud computing and always-on services built using the open source development model and open source code are increasingly crucial to nearly every organisation regardless of industry," said Cormier.

Re-racking the stack

Keen to progress this point of analysis, ERP Today discussed the state of the software nation with Matt Hicks, Red Hat's global executive VP of products and technologies. With so many ERP deployments existing as monolithic behemoths, what first steps does Hicks advise for enterprises looking to inject open agility into their already-operational enterprise stacks?

Matt Hicks (MH): Adopting open source products, especially in existing deployments, isn't an all-or-nothing approach. IT teams should look at how open source technologies can bolster or supplement existing deployments and, as needs change, slowly shift components of monolithic applications to open source counterparts when it makes sense. Disrupting a critical application is never the right path, but deliberately evolving into an open ERP foundation is absolutely a well-trodden and successful approach.

AB: Before we move to look at some of what Red Hat would count as its core competencies and ask where they apply to modern ERP deployments, let's consider the overall state of open source and the shape of the market today. Are the options for thoroughbred enterprise open source comparatively limited? To put it another way, if we leave **Microsoft** and every other vendor's 'born again' open source epiphany aside for a moment, how should we think about the open-first enterprise software market in general? Aside from Red Hat, **SUSE** and perhaps **Canonical**, should we look to **Github** and the **Linux Foundation** or the **Apache Software Foundation** to follow the bellwether trends?

MH: Open source movements have to start somewhere in the software stack. For many enterprise workloads, the foundation is Linux - it's the workhorse of modern IT and, more than likely, supports a lot of monolithic ERP deployments in some way or another, directly or indirectly. But on top of Linux, you have a vast array of software available depending on your needs. From distributed computing needs with technologies like Kubernetes or maybe machine learning (ML) capabilities with Tensorflow, the capabilities available today are almost limitless. Open source technologies are, almost by definition, modular - so it's about finding the pieces that you are comfortable with and can start implementing to add value with minimum impact.

Give... and ye shall receive

AB: Red Hat is 'famously' the biggest code commit contributor to the Linux kernel. In its new guise under the **IBM** family umbrella, what is the company doing to maintain its leadership position in open technologies? And, in parallel with that point, what should ERP vendors and large-scale ERP customers be doing to 'give back' and actively engage in open platform development?

MH: Red Hat still maintains its leadership position in enterprise open source - that hasn't changed with IBM. We continue to be open by default - everything we produce is available as open source code or will be, in the case of technologies that we've acquired. From an ERP customer and vendor perspective, giving back doesn't just mean contributing code, although that's certainly one aspect. It could be participating in community conversations, providing feedback on new releases or even reviewing documentation - coding is one part of open source communities, but organisations should not let technical contributions get in the way of how they engage in the open source world.

AB: Looking at key areas for Red Hat, we can see that edge computing is a point of central focus. Red Hat is investing in OpenShift and Red Hat Enterprise Linux (RHEL) in ways that are designed to drive adoption of the edge computing model. What are your specific plans in this space?

MH: Fundamentally, edge computing is the latest footprint of the open hybrid cloud, which already includes bare-metal and virtualised environments as well as private and public cloud deployments. In many industries, the devices at the edge represent these organisations' core business. What we are working to do is have Red Hat Enterprise Linux and Red Hat OpenShift follow our customers, in whatever footprint they operate and with whatever workload they use, across the hybrid cloud. This includes the edge - we are building edge features and capabilities into our products and services; it's not a separate offering. The hardware specifications may be different, the footprint will be probably smaller, but we believe that those edge devices will still integrate with and leverage resources at the datacentre to maximise their business value.

AB: With edge computing in mind then, while thinking about the implementation of Internet of Things platforms in industrial environments, can we suggest that ERP will need to continue being much more than just a system of record? To put it another way, is this the point where edge compute real-time data transmission will mean a level of re-architected planning and provisioning for existing enterprise systems - and what impact will the fact that devices are getting increasingly smarter and process more in-situ have on this whole discussion?

MH: The rapid rise of 'intelligence' in edge devices means that IT teams need to think of them as extensions of their cloud and on-premise environments. But these devices can't be isolated; they still have to retain connection and commonality to primary IT environments, otherwise sprawl and fragmentation are real concerns. They still need to be secure. They still need to be maintained. They are still a core part of the overall IT environment. To enable this, there has to be a fundamental, common platform that crosses the entirety of a modern enterprise's operations, from the farthest edge of the network to the largest cloud deployment. For Red Hat, this commonality is driven by Linux and by Kubernetes.

Smarter software suites and solutions

AB: Thinking about smartness then and how we should approach ML, what is Red Hat doing with its OpenShift Data Science offering to lay the foundation for AI applications?

MH: OpenShift Data Science is tailored specifically for data scientists and developers building intelligent applications. It's a managed cloud service, so the rigours of handling the underlying infrastructure, provisioning and deep technical administration are Red Hat's responsibility, not the users. This enables more rapid development, training and testing of machine-learning models in a contained sandbox that mirrors the production environment, making it easier to ultimately shift these workloads into the real world.

AB: How is Red Hat improving and expanding availability for Ansible Automation Platform, especially given that the company recently unveiled the first Ansible service on a major cloud platform via Azure?

MH: It's not just on-premise environments that need automation; the rise of hybrid cloud means that IT teams are facing an expansion of systems that have one foot in the datacentre and another in a public cloud, like Azure. Ansible Automation Platform on Azure gives IT teams familiar tools to automate complex cloud environments - it might be a new environment, but Ansible is well-known by many IT operations teams and provides a familiar touchstone to tackle a new set of challenges at cloud scale.

> "The rapid rise of 'intelligence' in edge devices means that IT teams need to think of them as extensions of their cloud and on-premise environments."

AB: Coming full circle let's return to Red Hat CEO Paul Cormier, who reminds us that some technology persists for decades if not longer. What this means is the decisions IT leaders are making today will impact their organisation's nimbleness and market response down the road, whether it's in two years or 20.

MH: As new infrastructure is being built out, you can't leave behind existing systems and tools. You need products and services that work with them. That's the value of open source. As CEO Cormier said in the very first report: 'The question is no longer whether your enterprise should adopt open technologies; the question is when - and how.'

If we accept the effect that open source has had so far - and has now come through its adolescence with a blistering spurt of growth in post-millennial times - then the lesson for ERP practitioners should be clear. Enterprise open source is all about flexibility, agility and scalability, but it is also about exchangeability, shareability and community interactivity. ■

The Rise of Industry Vertical Solutions

Both the platform vendor and systems integrator landscapes are changing. Where to put your money?

BY MARK SWEENY

SaaS cloud applications are continuing to evolve, and the innovation just keeps on coming. The first ten years of the cloud era saw the large platform vendors establish their back office enterprise platforms and go-to-market strategies with the mantra of 'standardised processes', driving economies of scale and cost. However, markets are cyclical in nature, and the current move to promoting industry solutions is nothing new and is a natural evolution. With most finance, procurement, HR and payroll processes being the same across any organisation and industry, it is the front of house and mid-office cross-cutting processes that really drive differentiation and competitive advantage.

This is not saying that the core ERP foundation platform is now obsolete - far from it - but industry vertical solutions are tailored to reflect how a given industry works. Consequently, the importance of the wider implications of the experience economy and providing personalised experiences over standardised processes becomes even more important and relevant as it is an enabler for innovation with digital disruption driving competitive advantage.

Industry vertical solutions - what are they?

Simply put, industry vertical solutions have greater potential to create value for customers. Established organisations are always having to find ways to differentiate themselves to remain competitive, especially from the smaller native digital disruptors that are backed by what can seem endless new investment monies courtesy of VCs and private equity. Meanwhile, the public sector is always looking for efficiency savings from policy delivery.

> Build once and use many: this was a concept truly ahead of its time

Consequently, such organisations carry significantly high levels of technical debt and often experience poor performance from their legacy on-premise systems, where it is quite common that the siloed front of house systems do not integrate through to the back office. Rewriting such systems takes time and monies that are often not available, and 'lift and shift' might reduce the total cost of ownership in the short term but this does not address the challenge of ageing technology that is less relevant to the business operation as an industry evolves.

Industry vertical solutions (or clouds) have the potential to accelerate and take the risk out of cloud migrations and deliver both economies at scale and cost as well as enabling an organisation with disruptive technology that is specifically relevant to their market. Healthcare providers are an example of this, with significant importance placed on improving the patient experience and requiring high levels of data protection, often going beyond the GDPR provisions.

What does this mean in practice?

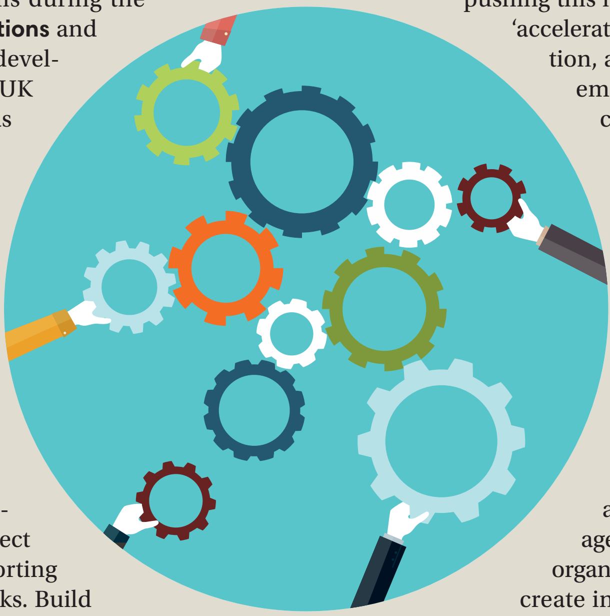
In the first instance it means that the user experience of the system needs to reflect the industry and the ways of working in the organisation, whilst also remaining able to leverage standardised business processes that underpin all organisations. Over time this will evolve into an individual personalised experience reflecting how an individual works and interacts with the digital landscape without resorting to customisation. This is real digital transformation in action and is a theme that is only going to accelerate.

In the ERP on-premise era of the mid-late 90s and 00s, the technology and its capabilities were just not available. This was a period that promised a lot but delivered very little in the way of innovation when compared with what is available today.

Roll forward a couple of decades and we are awash with artificial intelligence-powered digital workflows and analytics capabilities that allow us to drive innovation.

However, the real innovation only really occurs when these technologies are assembled to deliver relevant industry vertical solutions and positively disrupt the status quo of doing business.

I can personally vouch for this during the pioneering years of **Certus Solutions** and the **Oracle** SaaS cloud era. We developed a reusable blueprint for UK central government as far back as 2015-2016, and it is this framework that today underpins the **Office for National Statistics**, **HM Treasury**, and elements at the **Medicines and Healthcare products Regulatory Agency**. This blueprint is also at the core of the **Home Office** Metis programme with its final implementation found at the **Crown Prosecution Service**.



To put it simply, Oracle SaaS applications were configured to reflect the common processes and reporting of how the **UK Civil Service** works. Build once and use many: this was a concept truly ahead of its time both in thinking and in its overriding objective to derive maximum value for the public sector through process convergence and reusability.

An alternative case study is **Inoapps**, another well-known Oracle partner that has its origins in the oil and gas industry and which now has available an Energy for Cloud solution.

The importance of industry knowledge

Any experienced business development professional will tell you the sales process is just a series of conversations. However, for these conversations to be valuable to the buyer, they must be relevant and dialled into the pain points of a given industry and organisation. Consequently, having deep industry knowledge of a given vertical is a must if you want to be successful.

Clive Swan, former SVP Oracle Applications and now investor and non-executive director, says: "Cloud and SaaS technologies simply allow innovation at scale and through creating industry vertical solutions the opportunity to rethink and re-engineer whole industries and ecosystems is available. That's why this technology is so exciting as the possibilities are endless."

Sasha Wight, director of employee experience at **wrkflow**, says: "Organisations looking to deliver the very best employee experience in the hybrid workplace are embracing the concept of hyper-personalisation. The first step towards this is ensuring employee journeys reflect the nuance of the industry your employees operate in."

Evolution at pace

SaaS solutions are leaving behind solely being associated with the back-office enterprise with greater focus on the front of house. **Microsoft** has been the most vocal in pushing this narrative and in their own words 'accelerate time to value, speed up innovation, and drive benefits for customers, employees and organisations.' The company is now offering cloud solutions for retail, healthcare, manufacturing, financial services and non-profit organisations, whilst also providing cross-cutting industry solutions for sustainability.

Not to be outdone, **ServiceNow** has also been extremely vocal in encouraging its ISV partner ecosystem to create industry vertical solutions. The organisation itself announced last year its OT Management Solution for manufacturing organisations, alongside its intention to create industry vertical solutions for the banking, healthcare and life sciences.

So where is the value?

The value is no longer in just having a systems integrator or management consultancy that can lay down references in any given domain space and which can quote how many implementations they have done and how quickly they have done them. No-one gets a gold medal just because you can put a SaaS system in at record time and at the cheapest price, so be warned, the race to the bottom of the rate card never does you any favours in the long run, and SaaS is a long-term investment.

Instead, the organisations that can bring to the table the blueprint for your given industry, backed by a relevant knowledge basis and an ongoing commitment to stay relevant as the business evolves either through legislation, industry practice or innovation, will be the winners for the future. Both the platform vendor and systems integrator landscapes are changing.

I, for one, know where my money is going to be. ■

Mark Sweeny, founder, de Novo Solutions

The best startups and stalwarts for enterprise software in a post-pandemic world.

BY HOLGER MUELLER

The state of the key HCM vendors for 2022 and beyond

For a very long time, enterprise software selection was determined by long feature request lists, mostly fuelled by requirements to support the status quo of an enterprise. This best practice served enterprises well when markets were healthy. But, naturally, no global pandemics were ever taken into consideration, and as such, there was no option of a strategic restart and repositioning after the COVID-19 crisis. Therefore, here are three key criteria for how to make better software selection decisions this decade when it comes to human capital management (HCM):

Where are you going? Easily the hardest of the three questions, CxOs need to determine what the strategy and modus operandi of their enterprise will be in a post-pandemic world. It's clear it is not going to be what it used to be, but how differently and how boldly will your enterprise operate? This is the crucial and all-determining question to answer here.

Where is the vendor going? Next up, CxOs need to explore what direction their vendors are headed. Do they plan to automate an enterprise that is compatible with their own enterprise plans and strategy - or are they not interested? There are currently many operating models to choose from, and enterprise software vendors are not going to support them all.

Is your vendor going fast enough? Once CxOs have determined strategy congruency, it is key to determine the velocity of the vendor in question to get there. Realising there is no such specific endpoint, it all comes back to the capacity and motivation of a vendor to stay on top of the competition and aim at automating the same enterprise operating models.

WHAT THE KEY PLAYERS ARE UP TO

Let us look at vendors in three categories: the large ERP suites which support HCM; HCM suite services; and a number of startups worth tracking in the field. As usual in my articles, vendors are presented alphabetically. Let us start with the ERP suites:

Infor emphasises people solutions

Infor has pointed its strategy towards empowering people with a focus on the evolution of work; reflecting how the nature of work, the workforce and the workplace itself are all changing in these tumultuous times.

Infor enables HCM processes ('global HR' as Infor calls core HR, payroll, benefits, and case management), talent processes (talent science, learning and development and talent optimisation) plus workforce management (time and attendance, workforce scheduling, labour planning). All these capabilities are powered by arguably the most mature and function-rich cloud platform on the market, Infor OS, which brings along key capabilities like its collaboration solution Ming.le (Infor Mingle).

To evaluate Infor for HCM, CxOs need to look at the value of the overall Infor suite, which has a focus on micro-vertical capabilities. If those verticals are a good fit, Infor's HCM offering makes good sense as part of the overall deal.

KEY HCM VENDORS

Oracle pushes the employee experience Oracle has the most mature HCM suite amongst all players, having been working on its Fusion HCM offering since 2014, as operating on a single platform, a single schema, a single toolset, and also a single UX.

Despite its maturity, Oracle is not reducing its research and development on HCM capabilities, but is doubling down with a brand new employee experience management offering, Oracle ME, short for 'my experience', which offers Journeys, a CRM-like customer journey, but for the employee, and Touchpoints, a survey tool.

Oracle ME also offers HCM Communicate (internal communications, using CRM marketing strategies for internal communication), Connections (a peer and mentoring offering), a HR help desk and a digital assistant. The richness of Oracle's HCM offering, combined with the new Oracle ME offering, makes the overall Oracle product a key one to evaluate, and the only offering across the vendors here where HCM is a differentiator during selection. This compensates for a potential weakness of other areas in Oracle's overall offering.

SAP wants the 'whole' employee SAP SuccessFactors was the first ERP HCM vendor to focus on experience, going even so far as to rename its HCM suite to HXM (human experience management) and positioning it as the next generation of HCM software.

The SAP SuccessFactors HXM Suite enables employee experience management, core HR and payroll and talent management, as well as HR analytics and workforce planning. More recently SAP has acknowledged the diversity and differences of each employee as an individual. Aligning the right roles of the employee with their entire or (to use SAP parlance) 'whole' identity, is the holy grail in this regard.

To achieve this, SAP had to rebuild HXM from the platform up, enabling new holistic processes and more powerful UX. This meant a focus on BTP and UX, which has become clear to see in SAP's products. To evaluate SAP SuccessFactors, CxOs need to look at the overall value of the suite, gauging if other areas are a fit. In this regard, SAP HXM is a powerful augmentation for any enterprise.

Workday focusses on enterprise management At its recent analyst innovation summit, Workday shared a new positioning with the Workday Enterprise Management Cloud. This is a clear departure from the brand's previous 'Power of One' positioning, made necessary by the increasingly acquisitive nature Workday has shown these last few years.

The HCM suite contains core HR, talent management, employee experience, workforce management and payroll. Workday started out in HCM and as such for the longest time it was - and arguably still is - the strongest offering available, but the company has worked hard on other areas such as spend and financial management. The ironic result is that CxOs evaluating Workday will look at the maturity and fit of these newer automation areas, and then assume that the HCM solution will be a great fit.

HCM SUITES TO SUIT YOU

Let's move onto the HCM suites. CxOs evaluating the following need to understand that they will have to integrate these offerings with the wider automation portfolio, with all its risks and challenges. But if the ERP suites do not provide an adequate fit for your enterprise, then these are the key players to take note of:

> "Workday is arguably the strongest offering, but the company has worked hard on other areas such as spend and financial management."

ADP is more than software; the D matters increasingly ADP, the vendor that has been in the HCM business longer than many of the other vendors combined, has gone through a complete portfolio investment, building all products on new modern platforms. The one that stands out is the ADP Data Cloud, the base for all benchmarking and ADP's popular salary recommendations.

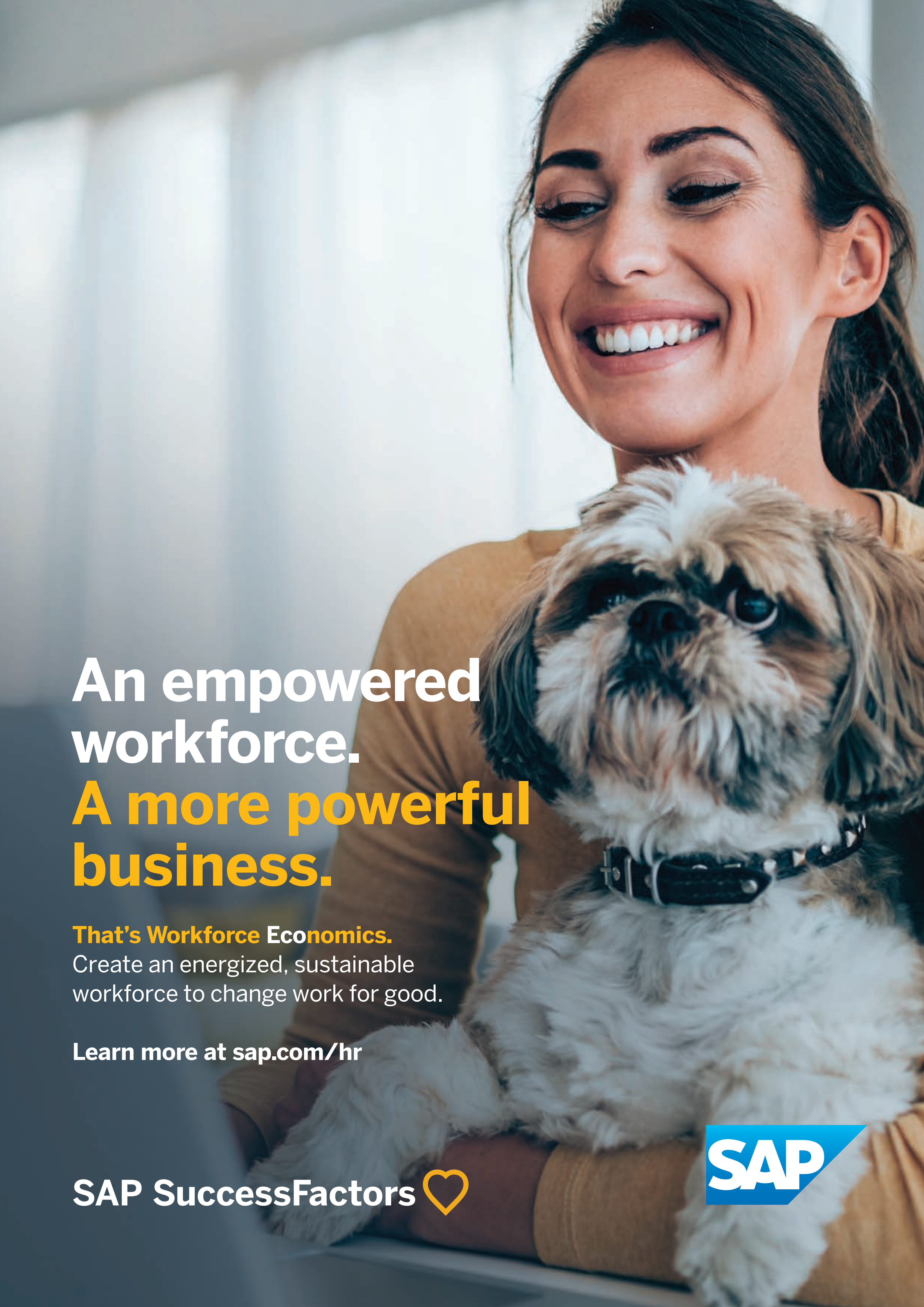
As a vendor with thousands of customers of all sizes, ADP offers suite-level offerings to any size of enterprise. Its payroll expertise makes it the perfect partner for all ERP suite offerings. When evaluating ADP, the key aspects to examine are how important payroll and compliance are for your enterprise.

Ceridian offers tight integration on what matters Ceridian's DNA in payroll got an upgrade when it acquired Dayforce over 10 years ago. Since then the vendor has built out one of the most compatible and dynamic combinations of workforce management and payroll around, allowing early innovations on pay such as 'always on' payroll, salary advances and more.

That should not detract from the fact that Ceridian has built out talent management and benefits, along with recently showing a focus on international expansion, both in go-to-market and product. Evaluating Ceridian, it is clear the strength of the vendor lies in a tightly integrated suite that excels in the more difficult elements of HCM, payroll and workforce management.

UKG has the most modern offering in HCM when scheduling matters The merger of Kronos and Ultimate Software has created UKG, a large HCM player that offers three suites which focus on different customer sizes.

Across all HCM suite vendors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discussed here, UKG has the most modern offering with its Workforce Dimension products. It is the first offering that was natively built for the public, Google cloud and excels with its data and AI capabilities. If workforce management with all its complexities matters to an enterprise, then UKG Workforce Dimension excels on the evaluation front.

> "It's more about a software vendor's speed to deliver than the suite level-integration as a whole."

NEW KIDS ON THE BLOCK

Sometimes suites do not cover elements as enterprises need them, and other times enterprises want a fresh start with a new vendor in the HCM space, one which excels at a certain capability. There are hundreds of HCM startups; the ones in the list below stand out and are well worth noting for any enterprise on the vendor hunt.

beqom offers sophisticated compensation management Money makes the world go round, and for those in people leadership, that matters, especially when it comes to how to compensate people to motivate and retain them.

beqom has specialised in this for over a decade, and a recent $300m funding round has given the vendor the capacity to expand product and presence. If compensation is a key factor for their enterprise, then CxOs should definitely investigate beqom.

Hibob reinvents the HR core market Who would have thought that a group of founders from a non-HR background could reinvent core HR processes in a modern, easy, and fun-to-use way? Well, Hibob did exactly that.

As any modern platform should, Hibob offers great connectivity to other necessary systems, such as payroll, with best practices perfectly suiting small and medium enterprises. If tired of the traditional vendors in the space and ready for a new offering, then Hibob is a must-evaluate offering.

Oyster makes international HR easy Managing employees on a global basis is difficult, and Oyster reduces complexity for that endeavour by offering global management for employees and contractors, payroll, compliance and benefits in over 180 countries.

Oyster makes for a remarkably interesting option when looking beyond the traditional vendors for global HR automation with its modern and fast-growing offering.

Personio delivers a HCM suite Just when you thought nobody would build a new HCM suite, Personio surprised everyone, starting as it did in the backyard of SAP.

Personio offers a complete suite of HCM automation. Focussing on small and medium enterprises, customers and investors have already seen the benefits, valuing the startup at over $6bn. Any SME CxO in one of its supported countries would do well in looking at Personio.

PeopleStrong powers HCM across APAC
The world ticks differently in different regions, and PeopleStrong echoes that with a complete HCM suite across APAC.

Less than seven years old, the vendor pays over two million people across the region and is a competent option for partners covering the dynamic and fast-growing APAC region.

SmartRecruiters makes hiring easy
For over a decade SmartRecruiters has been innovating in talent acquisition. More recently, the vendor has accelerated its capabilities, expanding its global coverage and deepening its functionality. If hiring matters to your enterprise, SmartRecruiters is one startup which cannot be overlooked.

THE TAKEAWAYS

The future of work is changing faster than ever, and people are the biggest asset of any enterprise. With a global talent shortage, the Great Resignation and a pandemic affecting enterprises, HCM software matters more than ever. Best practices are changing rapidly, and CxOs are just getting their heads around what national, if not global, talent pools mean for enterprises, given the new remote work possibilities now available.

What remains unchanged in all of this is the need for enterprises to practice 'enterprise acceleration,' i.e. move faster and become more agile while you're at it.

Enterprise suites have been the answer for ensuring less integration headaches as integration failures are notorious for slowing enterprises down. The strategy for the next decade is not so clear-cut. With best practices being redefined and reinvented, it is more about a software vendor's speed to deliver these than the suite level-integration as a whole.

Operating on modern best practices will be more critical than working on a suite from those of a pre-pandemic past. This makes the CxO's decision less simple than it was in the past, and warrants a look into the startup landscape, a realm which has often shown that it can deliver partners for enterprises both large and small.

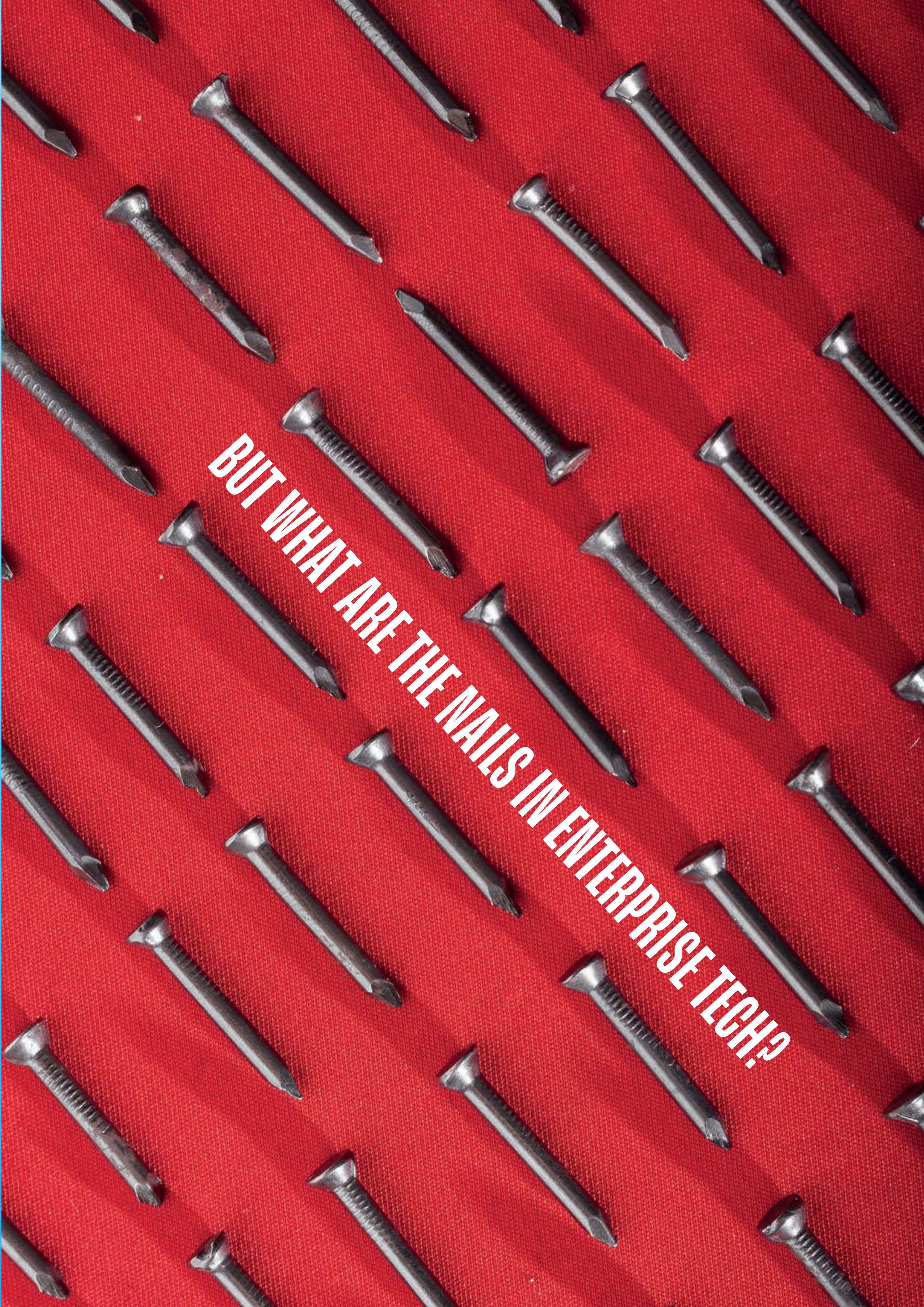
Exciting times are ahead for enterprises, and even more CxOs are making system selections. The ramification of these decisions meanwhile has become more strategic for the success of their enterprise than ever before.

I hope this article has helped you in your decision process. Good luck out there! ■

THE METAVERSE IS A SHINY NEW HAMMER

Deloitte, ServiceNow, Zoom and more reveal exactly what they're thinking about a business metaverse.

BY GIACOMO LEE


BUT WHAT ARE THE NAILS IN ENTERPRISE TECH?

METAVERSE

It seems like everybody and anybody has something to say about the metaverse right now. Recent months have seen the likes of Accenture, Deloitte, Sage and PWC all nail their colours to the metaverse mast, publishing lengthy reads and research projecting their visions of what virtual worlds will mean exactly for enterprise businesses.

While certainly ambitious and forward-thinking, there is often a muddying of the waters in such meta-missives, as more than one of these companies conflate the metaverse with the flashy tech things that Elon Musk tweets about on any given day: cryptocurrencies, blockchains, web3 and such like.

Going into the nitty-gritty can help clarify current discourse around the metaverse. Unfortunately, ERP Today was told multiple times that such an approach wasn't possible in preparation for this article, with some of the companies refusing to provide comment. Apparently, despite all their research, several were unable to find spokespeople to answer basic questions.

But outside of future gazing, have any businesses put their money where their metaverse mouth is? Recent Sage research has nearly 30 percent of UK SMBs saying their company has already entered the metaverse, while over half (58 percent) plan to increase their presence in the realm.

"Enabled by organisations leveraging the network architecture inherent in the metaverse to support shared ledgers and smart contracts, this evolution will undoubtedly disrupt the way we buy and sell products," predicts Aaron Harris, CTO at Sage.

"The result will combine the intimacy and richness of bricks and mortar with the convenience of web storefronts - and in turn, removing friction and delivering insights to SMBs."

Harris and Sage are clearly banking on a blockchain-based metaverse. But once again, we're moving away from the core essence of what the metaverse stands to be. If some companies are viewing it as a conduit for web3 technology, then fine. But what are the majority thinking? And where is the real business value - the nails for the proverbial hammer, as it were - going to come from?

Risk-free innovation

For **ServiceNow**, it's all about digital twins. Representing a new frontier in business information modelling, digital twins are real-time representations of physical assets, systems or processes that can be built using mixed reality and the internet of things (IoT).

"The metaverse where digital twins take over is the most common one we can imagine," says Jessica Constantinidis, evangelist in ServiceNow's chief innovation office. "But today there are companies that merge the concept of the metaverse with the real world, which sees real sensors and IoT responding to virtual actions. The next phase to this would be exploring the means to build digitally, support digitally, but roll out capabilities physically. This would take us into a true hybrid world of potential.

"In addition, using low-code and no-code on digital twins or the metaverse could become common in the near future. This would enable concepts to be built faster and with real predictions."

According to Constantinidis, ServiceNow believes it can be part of the metaverse by using its "workflows and 'digital brain' of the enterprise to leverage and predict better routes to work."

"The metaverse could provide organisations with the opportunity to try out new ways of doing business

"BRICKS AND MORTAR WILL COMBINE WITH THE CONVENIENCE OF WEB STOREFRONTS, REMOVING FRICTION."

AARON HARRIS / SAGE

without any risk to their actual profit and loss, allowing them to determine in advance whether any modifications are truly for the better," the evangelist elaborates.

"My personal belief is that the enterprise metaverse will give us an acceleration into innovation without the risks or large investments needed to prove the business value of change."

"THE METAVERSE WHERE DIGITAL TWINS TAKE OVER IS THE MOST COMMON ONE WE CAN IMAGINE."

JESSICA CONSTANTINIDIS/ SERVICENOW

Collaboration is key

In Constantinidis' view, it will take around another decade before the metaverse is commonly accepted on the business side. This is as many organisations are "still struggling with the IT infrastructure and funding required to accelerate their innovation."

While this may deflate a lot of balloons at the metaverse party, it's a view echoed among all the insiders interviewed by ERP Today.

"It's a myth that a booming metaverse is 'just around the corner,'" believes Magnus Falk, CIO advisor for Zoom. "The technology may be improving, and lots of experiments are underway, but the world has just been through the 'flexibility revolution' triggered by the pandemic, and most businesses and employees are still digesting this.

"It's unlikely that people are going to be ready to switch towards working in a metaverse environment tomorrow."

Ironically, Zoom is one of the few brands out there actually involved in the metaverse's current rudimentary form. As Zoom's head of EMEA North Phil Perry says, this year will see Zoom Whiteboard and Zoom Meetings integrated with Horizon Workrooms, allowing colleagues to meet as avatars in a virtual space on the Meta-owned VR platform. "Consumers will be able to 'draw' on their physical desk or 'write' on a physical wall, which will be transcribed to their Zoom Whiteboard. This kind of technology aligns with the concept of the metaverse, delivering better experience than in-person meetings."

It's inspiring stuff, but perhaps too ambitious when one considers most companies are still grappling with the future of hybrid and remote work. While Mark Zuckerberg may be out here talking about 3D avatars, for many bosses, '3D' simply means a mandate of 'three days in the office'.

"Over the decade, one of the big emerging questions will be: what does it mean to come to the office?" agrees Mike Bechtel, MD and chief futurist at **Deloitte Consulting LLP**.

"Currently, my clients are wrestling - thoughtfully, but wrestling nonetheless - with their approach to hybrid work. The latest challenge: the frustration of commuting two hours a day to sit in a half-empty conference room on a video call.

"Five years ago, it used to be that the remote crowd felt like they were at a real collaborative disadvantage to those in the boardroom on account of their being dialled in as faceless, 'static-y' voices, half-hearing and half-heard.

"Post-pandemic, remote office participants often enjoy the superior kit: boom mics, 4K cameras, and studio-grade speakers. The emergent irony is that those in the office can sometimes feel like they're the ones at the kids' table when it comes to collaborative fidelity. It's plausible that the enterprise metaverse can stand to level the collaborative playing field."

For Bechtel, if collaborative spaces gradually begin to denote virtual spaces, then all participants, regardless of physical workspace, stand to find themselves on a more even collaborative footing.

"Economically, the pandemic showed organisations the value that comes from virtually engaging 'the best person anywhere' as opposed to 'the best person physically nearby.' Organisations that put primacy on physical co-location risk tacitly acknowledging that they prize the best of who's around as opposed to the best, period.

"This can feel like a sound culture-building play within the four walls of the organisation, but an emerging generation of high performers may choose to affiliate with organisations based on principles as opposed to real estate."

"IT'S UNLIKELY THAT PEOPLE ARE GOING TO SWITCH TOWARDS WORKING IN A METAVERSE TOMORROW."

MAGNUS FALK / ZOOM

All just a little bit of history repeating

The cultural sea change prompted by COVID-19 which led to the rise of Zoom has also opened minds up to the concept of a metaverse. While the tech may seem like the denizen

METAVERSE

of gameplay, a place where users can escape reality, for business-minds the metaverse increasingly holds potential as a place where collaboration can flourish.

"One of the myths about the metaverse is that it will replace the real world," says Catherine Calarco, vice president of innovation evangelism at **Automation Anywhere.** "However, my hope is that the metaverse can make it easier to enable collaboration between human workers and their digital co-workers."

What will slow down metaverse evolution though is, as Bechtel points out, the expenditure needed to gear up everyone in an organisation with VR headsets and AR eyewear.

The Deloitte futurist also reminds ERP Today that the very foundations of the metaverse are still not set in stone. As such, discussing wearables at the moment means businesses are at serious risk of jumping the gun.

"THE METAVERSE CAN MAKE COLLABORATION EASIER BETWEEN HUMAN WORKERS AND DIGITAL CO-WORKERS."

CATHERINE CALARCO / AUTOMATION ANYWHERE

"Another great debate afoot is the degree to which the metaverse will be an integrated, interoperable landscape rooted in open standards (think WWW, HTTP, SMTP) or a collection of 'walled gardens' brought to you by existing (and emerging) organisations," he says. "These two decision points will help determine the inflection points and speed of adoption in this space."

"CONSUMERS WILL BE ABLE TO 'DRAW' ON THEIR PHYSICAL DESK OR 'WRITE' ON A PHYSICAL WALL."

PHIL PERRY /ZOOM

Bechtel is seeing history repeat in today's discourse on the metaverse, harking back to the days of the dot-com boom. In his view, the metaverse is at heart the internet all over again - "that is, the next evolution of human-computer (and in turn, human-human) interaction."

"As a futurist, I'm secretly an historian, which is why I can't help but see shades of 1997 in much of this. 25 years ago, the World Wide Web had everyone understandably agog as to its business potential. We saw everyone and their uncle scrambling to buy dot-com domains and hang their digital shingle.

"(But) I'd caution anyone feeling FOMO (fear of missing out) that unlike the dot-com boom, there's no clear dot-com domain equivalent that's definitionally scarce. We're seeing a proliferation of myriad corporate walled gardens and emergent web3 open constructs. Land grabs might not be a terribly strategic move when new digital lands are forming every day.

"Business and technology leaders would be wise to invest their energy getting conversant and developing situational awareness. Perhaps a nod to the pre-WWW bulletin boards is in order here: it's usually time well spent lurking for a bit before posting."

For Bechtel, some businesses may find they're very well-suited to delivering their existing value propositions in this new-look arena.

"And, like in 1997, there will be others hard pressed to find it much more than a new place to advertise. Which is why I don't believe it's our job at Deloitte, as our clients' trusted advisors, to steer anyone into the metaverse so much as it's our job to continue to work with them to identify unmet needs to help them advance a tech-forward future.

"If 25 years up to my eyeballs in emerging technology has taught me anything, it's that the technologies themselves, however shiny, are always simply tools. No matter how new and improved the hammer, it's not worth a lick unless you're using it to hit the right nails.

"To the extent that some of those nails lend themselves to next-level collaboration and immersive experiences, I'm thrilled to announce that we have one heck of an emerging new hammer in form of the metaverse. But hammers looking for nails? Trouble." ■

"THE METAVERSE IS ONE HECK OF AN EMERGING NEW HAMMER. BUT HAMMERS LOOKING FOR NAILS? TROUBLE."

MIKE BECHTEL /DELOITTE

WE ARE GROWING OUR AUDIENCE BY 787%

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FEBRUARY 20K

MARCH 75K

APRIL 106.5K

STATS

OUR AVERAGE VISIT TIME IS **112%** HIGHER THAN ENTERPRISE TIMES AND **108%** HIGHER THAN COMPUTING AND DIGINOMICA **– MEANING USERS ENGAGE WITH OUR CONTENT FOR LONGER AND DON'T SKIM READ.**

OUR BOUNCE RATE IS **20%** LOWER THAN DIGINOMICA AND ENTERPRISE TIMES AND **10%** LOWER THAN COMPUTING **– MEANING USERS ENGAGE WITH MORE CONTENT ON ERP.TODAY.**

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THE BREAKDOWN

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IN APRIL 2022

106.5K PEOPLE

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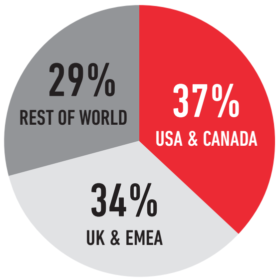

GOOGLE ANALYTICS APRIL 2022

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50-99	621	10.0
100-249	1198	19.3
250-499	931	15.0
500-999	857	13.8
1000+	2107	34.0

BY TURNOVER		
£0.1M-£50M	1353	21.7
£50M - £100M	1126	18.0
£100M-£200M	924	14.8
£200M+	2837	45.5

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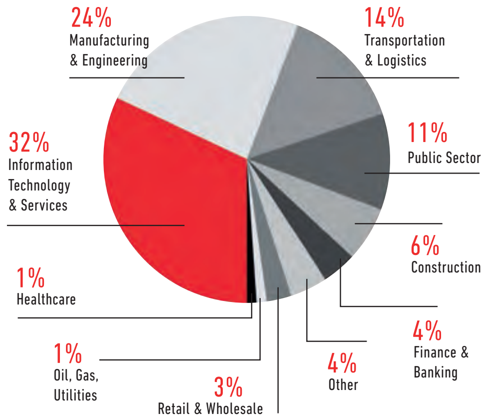

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An effective metaverse strategy requires **A web3 mindset**

Businesses might face risks by underpinning their metaverse strategies with a web2 way of thinking.

BY WAYNE LLOYD

Metaverse as a term was originally conceived in Neal Stephenson's 1992 novel Snow Crash, a phrase used to describe a virtual world where characters could escape their mundane realities. Since then this concept has become increasingly mainstream via books and movies such as The Matrix and Ready Player One.

It could be said that the storylines and special effects of these movies may have clouded our judgement as to the likelihood of virtual worlds becoming intertwined with our own reality. As such, the metaverse remains largely a science fiction to businesses and individuals alike, but the blurring of the lines between physical and virtual reality is already happening.

On an almost daily basis, we can find mesmerising real-life examples of how the metaverse is being developed to transform the way we live, learn, work, and socialise. Simultaneously, the hardware and software supporting our transition to these virtual worlds is becoming more powerful, cheaper to access and easier to wear. In this article we will define what the metaverse is and isn't, the role Big Tech is playing in its development, and some of the risks businesses might face by underpinning their metaverse strategies with a web2 mindset.

World-renowned futurist Bernard Marr defines the metaverse as a 'virtual world that allows users to interact with each other and engage with apps and services in a far more immersive way,' whilst Matthew Ball, CEO of **Epyllion Industries**, describes it as 'a persistent and interconnected network of 3D virtual worlds that will eventually serve as the gateway to most online experiences.'

Such definitions support why some believe the metaverse points towards the creation of a better version of the internet. However, the metaverse is not an interchangeable term to describe web3, or web 3.0, the official term for the next iteration of the world wide web. The distinction is important, given the latter term has a defined objective of subverting the oppressive 'web2' model of our current internet, one which causes our data to be extracted and sold, often at the expense of our privacy. Web3 overcomes this by building on blockchains which enable users to own their data, cut out middlemen and retain the value of the contributions they commit to a network.

By comparison, the metaverse has less of a defined purpose, particularly when we consider the metaverse worlds being developed by Big Tech platforms such as **Meta** and **Microsoft**, for example. With an absence of evidence to suggest their metaverse worlds are being built on blockchains, it could be considered by some that they are effectively building immersive web2 experiences which do nothing to overcome the oppressive model of the internet that society already distrusts. It must be noted, however, that metaverse worlds can be built in line with the principles of web3, with immersive, blockchain-based platforms like **Decentraland** and **Cryptovoxels** leading the way in this regard.

Irrespective of how centralised or decentralised any virtual world might be, it is important that the metaverse does not become an ideological battleground between centralisation and decentralisation during the early stages of its evolution. Whilst there are obvious concerns of Big Tech trying to take control of the metaverse in the same way it controls the internet, there is a cautionary argument to be made that participation from the household names has done more good than harm so far.

Since Meta was announced at the end of October 2021 for example, the metaverse has exploded into the public consciousness like never before. **Ipsos** found 38 percent of Americans now report familiarity with the metaverse, whilst **Vanson Bourne** found 70 percent of organisations were now planning (39 percent) or already implementing (31 percent) metaverse organisation integration plans. Its announcement also correlated to an exponential increase of investment capital flowing in decentralised metaverse projects, with $187m of virtual plots of land being sold in **The Sandbox**, **Decentraland**, Cryptovoxels and **Somnium Space** platforms in November 2021 alone (up from $19.5m the month before).

Whilst such things are all positive, it is Big Tech's focus on solving the 'the immersion problem' by improving hardware, 3D user consumption and the input interface which is its key contribution to date. Overlooked by many, Big Tech investments in solving the immersion problem will eventually serve to enhance all our virtual experiences, regardless of how centralised or decentralised the metaverse worlds which we become part of are in nature. With **Gartner** predicting that 25 percent of people will spend at least one hour a day in the metaverse for work, shopping, education, social media and/or entertainment by 2026, it's clear Big Tech investments must be appreciated from all ideological standpoints at this early stage.

Evidence of the important role this technology might play is easy to find. In 2021, for example, Microsoft unveiled Mesh to enhance its Teams platform. Mesh uses immersive virtual spaces to transform online working and team meetings by unlocking the 'hallway moments and kitchen catch-ups' that existing collaboration tools cannot, whilst also surfacing 'the body language from across the conference room table that says things that cannot be said.'

These moments can define and develop working cultures, which affect how an organisation communicates and conducts business. As the scholar Matthew Hendrith states, 'non-verbal and verbal cues must be learned for good communication to occur'. Therefore, if the metaverse is able to unlock these cues in the way Big Tech envisages, it will become a key tool for all businesses regardless of their size. The metaverse has the potential to transform how projects are delivered, how businesses operate, how workforce training is provided and how businesses interact with their customers, employees, suppliers and partners alike. Also, when we consider the volume of use cases, it goes a long way to justifying why **Citi** predicts the metaverse economy could be worth $13tn by 2030.

Businesses must be aware, however, that whilst we are in the early stages of its development, we are already approaching a crossroads moment in the metaverse's evolution. Whilst solving the immersion problem is good, the next generation VR hardware being developed will be able to monitor our physiological responses and biometric data including our facial expressions, vocal inflections, and vital signs in real time.

Access to this treasure trove of personal data would allow advertisers to market to us in an exceptionally targeted way, which is a concern given how much society already distrusts the manner in which their personal data is being shared and used. Such context forms the basis of why I believe Big Tech doing good for the metaverse remains a cautionary argument at this stage and this is something business leaders must consider.

> **"Big Tech doing good for the metaverse remains a cautionary argument at this stage and this is something business leaders must consider.**

According to **Edelman**, society trusts business (61 percent) over government institutions (52 percent) and the media (50 percent). Therefore, business leaders must 'lead in breaking the cycle of distrust' and ensure that this leadership and commitment to trust extends into any metaverse strategy they adopt. This responsibility is exacerbated when we consider a study from Gartner which found that whilst 58 percent of respondents have heard of the metaverse, they also do not know what the metaverse is. Consumers, therefore, will need protection.

Mindful of this, businesses must recognise their ethical duty towards tackling the existing problems of data governance and privacy ahead of developing the immersive experiences that bring their customers and their untapped personal data to the metaverse at scale. Indeed, for businesses that might look to recuse themselves from such responsibility in the future by citing a lack of regulation today, there must be a reminder of the option to launch products from metaverse worlds that are underpinned by the decentralised principles of web3.

As British philosopher James Allen states, 'society rests on the strong basis of truth and if the trust system were withdrawn from commerce, society would fall to pieces.' This principle applies to the metaverse as much as our physical world and whilst it is still too early for businesses to expect a return on investment from the metaverse or to know which investments or use cases will unlock the most value, no business leader should expect to succeed if the principle of trust is not at the heart of any metaverse strategy they adopt. ■

Wayne Lloyd, CEO, Smarter Contracts

SANJIT BISWAS

PHYSICAL OPERATIONS

THE FIRST FRONTIER FOR DIGITAL TRANSFORMATION

WORDS BY PAUL ESHERWOOD

PHOTOS BY JOEL CHANT

SANJIT BISWAS

There are some very compelling examples of established markets being transformed by a single innovator. Think about what **Amazon** did for shopping, what **Netflix** did for movies and, in the b2b space, what **ServiceNow** is doing for back office workflows. The IoT industry is more than 40 years old, but until recently most companies that strapped a device to a physical asset got little more than some binary data with almost zero value. **Samsara**, a new entrant to the enterprise tech space, is poised to change that.

Although most enterprise applications can trace their roots back to materials planning software and the need to support manufacturing operations, the overwhelming majority of investment and development in enterprise tech has been geared towards white-collar workers in back office environments.

Billions of dollars have been pumped into transforming finance operations, improving HR efficiencies; in an invoicing procedure or in a global transport network that has hundreds of moving parts spread across countless geographies?

Add to this the current macroeconomics of supply chain disruption, soaring energy costs and a concerted effort to drive sustainability and it becomes clear that for organisations in all but a few industries, it is the physical component of the enterprise where there is the most potential for technology to have an impact.

One tech vendor that has seized the budding opportunity for this underserved market is Samsara - a relatively new company that floated on the NYSE in December 2021, just six years after its inception. It raised more than $800m in the IPO and was valued well above its high estimate at nearly $12bn. Trading under the appropriate ticker of 'IOT', Samsara uses a mix of hardware and software to track, monitor and analyse physi-

IT IS THE PHYSICAL COMPONENT OF THE ENTERPRISE WHERE THERE IS THE MOST POTENTIAL FOR TECHNOLOGY TO HAVE AN IMPACT.

functions and revamping sales channels with virtually every effort to 'digitally transform' focussed on workflows in the office rather than on the frontline.

'Business process redesign' are the bywords for SaaS vendors who promise to revolutionise an enterprise's fortunes by using an ERP to close-down accounts a few days quicker or by connecting customer data in a CRM. While these 'behind the scenes' technologies are an important component of the overall transformation journey, it has always surprised me that so few customers start with the part of their business where there is the straightest line to ROI - their physical operations.

Sure, if you make a finance process more performant you will get greater visibility into the data and that will help to make better decisions. But where is the greatest opportunity to drive

cal operations with IoT and GPS sensors, AI-infused cameras, motion detectors, a connected operations cloud and an app.

Samsara already has 15,000 core customers with more than 800 spending $100k per year and is generating in excess of $550m ARR by servicing an industry that it estimates has a TAM of more than $50bn. To find out why Samsara is different to the many other IoT companies already in the market, I spent the day with Sanjit Biswas, CEO, at their new London office.

"We have the capability to make physical operations more efficient, safer and sustainable," said Biswas as we kicked off the interview.

"These three challenges are not distinct from each other because they all are data orientated. If you combine the right technology and the data you can make a meaningful impact on all three issues."

Background

Sanjit Biswas is an academic and an engineer by trade. He founded his first business straight out of MIT and later sold it for more than a billion dollars to **Cisco**. That company, **Meraki**, designed and built the original concept of WiFi (before it was called WiFi) and popularised a 'Free the Net' movement in San Francisco which delivered access to the internet for citizens and businesses. Today, Cisco Meraki is used globally by the world's biggest organisations for resilient and secure cloud-enabled networks.

After selling up and taking a short hiatus from work it wasn't long before Biswas went back to the drawing board and started to look for inspiration and a new opportunity - he found it in the unlikely arena of videogaming.

My business partner and I had already started thinking about another venture. We were really interested in industrial workflows and how the world of physical operations was connected but it wasn't until I caught up on 10 years of missed videogaming that I started to appreciate the possibilities. Meraki had taken a decade of my life and the last time I had seen a video game the graphics were really bad. The next time I looked I couldn't believe how advanced they were and in a strange way that gave me a new lens to look at what was possible. Because of my computer science and AI background at MIT I started to think about how these advanced technologies could be used on cellular networks and what other applications the technology could have. I'm an engineer at my core and I love the idea of solving problems and using whatever knowledge and expertise I gained along the way to basically try to have some impact - that's what motivates me."

The topic of motivation is always one that I am keen to explore whenever I meet an exceptionally wealthy individual who decides that beach life isn't for them. What inspires a billionaire to go back to the drawing board and start over? What lessons can be carried forward from previous experiences? And what pillars do you build a new company around when you have a blank canvass to start from?

Samsara has grown rapidly from a start-up to a public company with a huge valuation in a very short space of time. There are some sharp lessons in the market for any new entrant to consider and designing the blueprint for an enduring brand is very different today than it would have been 20 or even ten years ago. Founders who wish to build a company that can grow like a unicorn and prevail over the long-term have several pitfalls to avoid and certain characteristics to galvanise. One of the biggest challenges for any hypergrowth organisation is to embed guiding principles from the start so that when everyone is running at 100 miles per hour there are some anchors to hold it all together and to focus teams and individuals on the mission.

"WE HAVE THE CAPABILITY TO MAKE PHYSICAL OPERATIONS MORE EFFICIENT, SAFER AND SUSTAINABLE."

"One of our core values is that we build for the long-term. Being public means we have this X-ray of our progress every 90 days, but our strategy is much more focussed on longer term objectives - like embedding customer success in everything that we do, around building our culture and creating an environment for teamwork and collaboration. It takes time to build the right kind of company - look at the likes of Oracle and SAP - they are 40 or 50 years old and see the impact they have on the world today. We invest and plan for a longer term future so we can have the same kind of impact in years to come. These are all things we took away from our previous journey. And now we have thousands of people focussed on a single mission built around these fundamentals."

I've heard the same story several times before but not often with the same level of quiet conviction. Biswas is an understated man, untypical of a tech CEO and that makes a refreshing change. I often think that it's very easy to be undone by your own success when building a fast growing business - there have been plenty of examples over the years - but that's not a concern with Biswas and Samsara. His considered nature and thoughtful responses leave me feeling that the story is authentic and the future is bright.

IoT market and customers

Before we get into the Samsara playbook it's important to make a distinction between the application of its solutions and the chequered history of the IoT industry. First off, some of this isn't new stuff - ever since Coca-Cola put a sensor on a vending machine in 1982, we have found more and more homes for smart sensors to collect data. The principle of putting IoT devices on physical assets is a mature concept and estimates range from 10 billion to as many as 35 billion such gadgets are currently in use. That figure is projected to rise to as many as 75 billion by 2025 but the plain fact is that no one really knows exactly how many are in circulation - and that is inherently the problem.

By far the biggest criticism of the IoT industry by the early adopters of connected technology was they simply collected too much unusable information. Millions of tiny gizmos were strapped to lorries, elevators, cranes, and diggers - even coffee machines - and they all collected binary data that was largely geared towards identifying breakdowns. Whilst knowing if or when an asset was likely to fail did deliver some benefit, the reality was that most machines are pretty robust and the quantity of data collected just to prevent the odd breakdown simply didn't justify the tsunami of superfluous information. Worse still, all that inordinate data sat in a silo which was disconnected from the broader enterprise. As a result, millions of IoT devices have been switched off or lie redundant - not because they couldn't collect data, but because the organisations collecting it didn't have the tools or resources to interpret and act on it.

"I'M AN ENGINEER AT MY CORE AND I LOVE THE IDEA OF SOLVING PROBLEMS AND USING WHATEVER KNOWLEDGE AND EXPERTISE I GAINED ALONG THE WAY..."

"You can think about IoT from ten years ago like a huge bucket of Lego bricks with no instructions. They had the potential to be built into something special but you had to be a sophisticated engineer to piece it together. Customers who first used IoT devices didn't have the time or resources to assemble everything into a useable form. That's where Samsara is able to step in and provide these applications on a platform where customers can just plugin and get the visibility they need."

Whilst some of the hardware is the same, it is the way that it is connected through the Samsara Connected Operations Cloud that changes the game completely. Encompassing video-based safety features powered by AI, vehicle telematics, equipment monitoring, site visibility, infrastructure workflows and an app that has a developer community - the Samsara Connected Operations Cloud delivers a holistic platform that can conceivably connect, monitor and optimise virtually any physical asset or process. Samsara has taken a collection of existing technologies and packaged them into a compelling cloud-enabled solution. But it wasn't always that way, Biswas told me candidly.

"ONE OF OUR CORE VALUES IS THAT WE BUILD FOR THE LONG TERM... LIKE EMBEDDING CUSTOMER SUCCESS IN EVERYTHING THAT WE DO, AROUND BUILDING OUR CULTURE AND CREATING AN ENVIRONMENT FOR TEAMWORK AND COLLABORATION."

"We deployed our first beta product for a cheese making company in the hope that we could help prevent their fridges from breaking down. But it turned out our hypothesis was wrong - the fridges never broke down. Then we worked with that customer to understand what the weakest point in their supply chain was and discovered there was a far better way for us to use our technology."

That customer now deploys Samsara technology across its fleet of chilled distribution trailers, it uses wireless sensors to give real-time data when cargo doors are opened, it utilises vehicle and asset IoT gateways to provide to-the-minute GPS data and benefits from smart tools to predict when failures may occur and then uses the same intelligent technology to automatically backfill routes that have been disrupted.

Another company that has seen huge benefit from Samsara technology is Dohrn, a US warehouse and logistics company that epitomises the sweet spot for this solution. Remember my earlier comment about a straight line to ROI? Dohrn saved $500,000 in year one by optimising fuel efficiency and a further $200,000 on cellular data charges by adopting Samsara's built in WiFi. That's the kind of immediate return that is very rare when investing in enterprise tech.

Conclusion

The IoT industry has promised much and delivered very little for several decades. There

has been a real sense of a solution for a problem that didn't really exist - or at least it was only part of a solution for a problem that hadn't been fully realised. Whilst the concept of connecting assets in physical operations has always had merit, it wasn't until these disjointed touch points could be harmonised in a single ready-to-go platform that any value could be realised from the data.

Samsara's proposition follows a path that many other very successful enterprises have adopted. It's not usually the inventors that change the world, it's the people who know how to put the invention to use that leave a lasting impression. If you think about the most successful global brands - they didn't invent their markets, they took an established concept and made it better. In a similar fashion, Samsara has collected up some incoherent tech that has been kicked around for decades, augmented it with their own cloud platform and harmonised it into a solution that is fit for modern commerce. Instead of selling the hardware, the platform and the applications as separate commodities, Samsara is able to bring an end to end solution to the market that has some really interesting use cases and delivers the holy grail for enterprise tech vendors - visible ROI.

SAMSARA IS ABLE TO BRING AN END TO END SOLUTION TO THE MARKET THAT HAS SOME REALLY INTERESTING USE CASES AND DELIVERS THE HOLY GRAIL FOR ENTERPRISE TECH VENDORS – VISIBLE ROI.

Biswas' timing is brilliant - if not also a little fortuitous - as global economics are demanding that organisations change how they operate, especially in low margin, energy sapping industries. The emphasis is on how we move things around the world in an efficient, safe and sustainable way and Samsara has a solution that makes investment into optimising these processes very compelling.

It's no surprise to see several ex-ServiceNow people in the Samsara fold. While the two propositions are very different there are similarities in the respective missions. ServiceNow has tackled the way that work flows across a back office, connecting disparate systems and providing a canvass to coalesce previously disjointed data points. If Samsara can emulate half the success that ServiceNow has enjoyed with a mission to do the same for physical operations, there will be a bright future ahead for this unique company. ■

FSM solutions have been an important element in large enterprises' operations. A raft of new technologies offers them the ability to streamline and improve service delivery.

Field service management solutions

prepare for digital transformation

BY PAUL KORZENIOWSKI

GIACOMO LEE (ADDITIONAL REPORTING)

Enterprises purchase a lot of equipment in order to produce their goods and deliver their services. Naturally, they want to maximise the return on these assets. Field service management (FSM) solutions were built to help them reach that goal. These systems' features have been quickly and dramatically morphing as a raft of new technologies matured and gained market traction. As a result, the market stands at a precipice, moving from its legacy heritage of yesterday to new capabilities looming on the horizon.

The FSM arena has long been a niche market. Through the years, many companies created internal groups or hired third-party field service providers that typically dispatch technicians to remote locations and install, repair, and maintain equipment. These technicians manage, maintain and monitor a wide range of assets: factory systems, company car fleets, trucks and heavy equipment, along with aeroplanes, oil refineries and industrial devices like turbines and transformers.

FSM software has achieved mainstream recognition among field service managers and CIOs. With it, a job is assigned to one technician or a team, and the system collects information outlining when the service was delivered, what was done, how long it took to complete the work, and how any outstanding issues were resolved.

Through the years, the tools have become more functional. Enterprises now manage their service teams and perform administrative tasks through intuitive portals. Increasingly, these systems provide real-time access to work order information and items, like parts availability, streamlining the service process.

A growing need for connectivity

However, one problem with the traditional approach has been that other groups within the organisation have sometimes needed access to service information but typically lacked that ability. In addition, suppliers have been extending their FSM solutions so they connect to other enterprise applications: company websites, supply chain solutions, third-party analytics, customer relationship management, enterprise resource planning, enterprise asset management, internet of things (IoT), workforce management, and augmented reality/virtual reality (AR/VR). The new features enable them to gauge performance more accurately and streamline business processes.

The enhancements spurred investments in these solutions. The global field service management market was valued at $2.85bn in 2019 and is expected to reach $7.1bn in 2026, registering a compound annual growth rate of 15.4 percent.

How companies view service is also changing. Traditionally, maintenance has been seen as an ongoing expense, and the corporate goal was to minimise its cost as much as possible. Slowly, companies have begun to rethink their approach and view service as a strategic differentiator, one that helps generate revenue.

"Increasingly, corporations focus less on product features and more on business outcomes," explains Mark Brewer, vice president service industries at **IFS**.

FSM embraces new technologies

Furthermore, a raft of technologies is coalescing and providing vendors with the ability to deliver service in new and more efficient ways. The move to cloud has been well underway, for ex-

DIGITAL TRANSFORMATION

ample. FSM cloud subscriptions, software licences and maintenance - not including services - reached $3.01bn in December 2020, up approximately 16 percent from 2019 revenue.

The rise of mobile devices is another change. Rather than weigh workers down with oodles of paper documents or force them to carry laptops on their service calls, this option enables them to input data to complete their work on smartphones, as easily fitting in their pockets.

“In the last ten years, there has been a big uptick in using mobile for back office functions,” Brewer tells ERP Today. “Many companies have had their field engineer fill out forms on their phones, and increasingly, they receive verbal instructions - for instance remove a battery - via a hands-free device.”

MARK BREWER
IFS

“MANY COMPANIES HAVE HAD THEIR FIELD ENGINEER FILL OUT FORMS ON THEIR PHONES, AND INCREASINGLY, THEY RECEIVE VERBAL INSTRUCTIONS VIA A HANDS-FREE DEVICE”

Geographic information system (GIS) capabilities have been woven into these applications. With GIS, managers know where workers go and how much time they spend in each place on their service calls. This feature has been helpful for gas or electrical transmission utilities, according to **Gartner**. GIS data enables technicians to visualise and find hidden infrastructure, such as transmission pipelines beneath a street, and determine locations of assets that do not have an address, such as cell towers and telephone poles.

In addition, IoT is gaining traction. Here, suppliers funnel intelligence into small form factors, such as sensors. They are then able to collect real-time information about equipment performance as well as wear and tear.

“With IoT, field service businesses can rely on real-time data to make better decisions without burdening technicians with manual data collection,” says Rohan Hemrajani, senior product marketing manager for **Samsara**. “In addition, customer expectations are high and they are looking for ‘**Uber**-like’ experiences from service providers, and real-time data from IoT devices allows business to do just that in the form of live ETA and moving maps.

“Finally, in asset-intensive industries, IoT devices on equipment can also enable a vision for dynamic dispatch, where, based on equipment health, service businesses can respond to client needs more proactively.”

As Philip van der Wilt, Samsara’s VP EMEA explains, the San Francisco brand provides a holistic, real-time view of an operation out in the field to customers. All the data from across an entire operation - from GPS tracking and vehicle diagnostics to driver behaviour and fuel consumption - can be collected and sent back to a single dashboard that can be viewed from anywhere.

“This end-to-end visibility helps shape informed decision-making across a business, from the daily work schedule of an individual field operative to a board-level proposal about the future direction of the business,” van der Wilt says.

AI’s footprint grows

Once organisations collect all of the data, they need to consolidate and correlate it. As such, FSM vendors have been building and training artificial intelligence (AI) and machine learning models that streamline business processes. Scheduling and workforce management technology maximises technicians’ productivity by creating the most efficient travel routes and linking service appointments to parts availability. In 2021, 23 percent of companies were scheduling some work automatically, up from less than one percent in 2017.

Maintenance is a second area of interest. Historically, companies waited for a device to break down and then fixed it. Given the corporate reliance on their equipment to operate the business, companies tried to be more proactive and many organisations have preventive maintenance programmes in place. Here, technicians are deployed at set times, say every three months, or an equipment trigger point - for instance, a conveyor belt whirling for 1,000 cycles. The idea is to tune the device before, rather than after, it fails.

Predictive maintenance takes advantage of AI technology to gauge an asset’s viability in real time. It examines items, like vibration analysis, oil analysis, and thermal imaging, and algorithms identify when an asset needs to be repaired or retired. The process lengthens machinery lifetimes and lowers downtime.

With so many new technology options, organisations have the potential to dramatically streamline existing business processes. Enterprises want to digitally transform their blue-collar operations in the same way they changed white-collar workflows, replacing cumbersome, time-consuming, manually intensive legacy business processes with digital options. Automated notifications, conversational chatbots and digital assistants, and the AI tech of computer vision are three emerging use cases.

“Monotonous, repetitive, and tedious tasks can now be done by the technology, which means staff are free to do more rewarding work,” says van der Wilt, leaning into Samsara's aspirations for revolutionising the blue-collar field. "Instead of being task-driven, employees become data-driven decision-makers, and in turn the nature of work becomes more rewarding and fulfilling."

PHILIP VAN DER WILT
SAMSARA

"MONOTONOUS AND TEDIOUS TASKS CAN NOW BE DONE BY THE TECHNOLOGY, WHICH MEANS STAFF ARE FREE TO DO MORE REWARDING WORK. EMPLOYEES BECOME DATA-DRIVEN DECISION-MAKERS"

AR/VR is an emerging feature

Industrial equipment is often quite complex. In some cases, technicians need help determining what steps need to be taken. Here, AR/VR offer another area of keen interest. In this case, they receive virtual instructions as they complete their work. This technology has tremendous potential to improve remote field service by walking technicians through installation, maintenance, or trouble shooting.

"We are in the early innings in providing case studies that show AR/VR benefits," explains Sumair Dutta, industry analyst and senior director, GCT at **ServiceMax**.

But progress is coming fast: by 2025, 50 percent of field service management deployments will include mobile AR collaboration and knowledge sharing tools - up from less than ten percent in 2019.

COVID-19 spurs digital adoption

Traditionally, large businesses were leery of investing in new technology solutions, but that thinking changed in the wake of COVID-19.

"The pandemic sparked an increase in customer interest in FSM solutions," states Dutta. "Any company that had paper-based processes needed to upgrade their systems."

Firms retooled their service processes because the pandemic's social distancing restrictions limited in-person interactions and forced technicians to work remotely. The industry implemented a wave of collaboration and self-service scenarios where technicians and customers worked together to install, troubleshoot and update equipment.

A ripple effect is that the healthcare crisis exacerbated a growing shortage of field service employees. Technicians have been ageing out of the workforce without being replaced by millennials.

In addition, field service work is one of many areas that has become less attractive to employees. The global health crises forced many individuals (88 percent) to re-evaluate their life priorities. They took a closer look at how they spent their time and reexamined the rewards and hassles that their workplace brought; many did not like what they saw and quit their jobs.

In November 2021, 4.5 million people left their companies in an event termed the Great Resignation. Ideally, new automation capabilities enable enterprises to do more with less and ameliorate the personnel shortage.

"THE PANDEMIC SPARKED AN INCREASE IN CUSTOMER INTEREST IN FSM SOLUTIONS. ANY COMPANY THAT HAD PAPER-BASED PROCESSES NEEDED TO UPGRADE THEIR SYSTEMS"

SUMAIR DUTTA
SERVICEMAX

New challenges emerge

While the new technology discussed offers field service businesses many ways to improve their operations, it also creates new challenges. The capabilities are complex, so the work needed to deploy them is time consuming and often expensive. Businesses deployed software in an ad hoc fashion, so making those connections is a custom development task for each business, one typically requiring a lot of time and personnel.

Compounding the problem, most organisations have limited to no experience with the new functions. The new capabilities may also intimidate existing employees.

"Users and team members will find workarounds or just not adopt a new system at all, leading to no productivity gains or improvements," according to **International Data Corp**.

Enterprises may need to turn to third-party partners to help them make the transition. The amount of money invested in the systems integration and consulting can quickly add up, so businesses need to find ways to finance such projects.

FSM solutions have been an important element in large enterprises' operations. A raft of new technologies offers them the ability to streamline and improve service delivery. However, they need to put building blocks in place to maximise these systems' potential, and many companies struggle with that process. ■

FRONTLINE WORKERS

FROM HARD HAT

THE EVOLVING ROLE OF FRONTLINE WORKERS

TO HIGH TECH

Digital technologies are changing the role of the frontline workforce. We talk to Marne Martin, president of IFS Service Management, about how the benefits of a digitalised frontline are being felt by individuals and enterprises alike. BY STEPHANIE BALL

When businesses invest in operation management technology, historically it has often been the white-collar workers in the back offices on the receiving end of these handy digital tools. As a result, businesses' frontline physical operations have a track record of being drastically underserved by digital technologies. But Marne Martin is looking to change all that.

Martin, president of IFS Service Management, has extensive experience in enabling customers to achieve value from their technology investments and develop their internal talent. Her expertise in digitising enterprises spans cloud/SaaS migrations and operations, artificial intelligence (AI), big data, internet of things, mobile solutions, wireless, workflow transformation, business intelligence, payfac and more.

As Martin explains, such vast experience is not solely limited to white-collar workstations, just like the technology itself goes beyond the back-office realm.

"In the past, people digitised businesses based on enabling, monitoring and speeding up useful back-office functions," she explains to ERP Today. "The focus was on ensuring first-generation mobile tools could get people in the office what they needed to know from the field.

"Now, there is a significant and growing percentage of the population that are either frontline workers 100 percent of the time or are starting to occupy a hybrid status."

The frontline worker demand

Today, not only are frontline employees occupying a higher percentage of the global workforce, they are also in high demand. Across industries, businesses are seeing huge skills shortages for their frontline operations, with ageing workforces, negative job perceptions, the pandemic fallout, as well as increased demand for workers to cope with a large backlog of physical operations.

Many organisations are rethinking their approach to frontline investments, not only to welcome more candidates to the frontlines and retain their current employees, but to also create new opportunities and benefits for their frontline operations.

"Businesses are needing to offer that same enablement for frontline workers as they historically have for the back office," as Martin says. "There's a huge opportunity now in making mobile tools for frontline workers and operations almost more sophisticated than the back office.

"People in the field need ready access to information that needs to be delivered on-demand and in an intelligent way."

FRONTLINE WORKERS

Bucking outdated 'blue-collar' perceptions

As a result of demand for more frontline workforce, and the pushback for an equally served piece of the technology offering, a seismic shift is taking place in the perception of frontline workers.

"There isn't any difference between, for example, someone that's interested in computers becoming a digital specialist, and someone else becoming a car mechanic," explains Martin. "The mechanic will need to understand the electronics of the car because that's the bulk of what they're working on.

"We need to stop thinking about our frontlines as 'blue-collar workers'. To me that phrase, frankly, should die a death. Most of our assets are beginning to be more sophisticated, with computerised or electronic elements. In most lines of work, we now have to embrace digital outcomes for frontline workers and that, I think, will over time change the perception and the reality of these roles."

"For many of the best-in-class organisations, frontline workers are already digital workers. If you have people that are used to smartphones and their capabilities, then it's just a question of how in a B2B world we provide them with things that they're familiar with as a consumer."

STOP THINKING ABOUT OUR FRONTLINES AS 'BLUE-COLLAR WORKERS'. TO ME THAT PHRASE SHOULD DIE A DEATH.

For the new frontline worker, organisations need to make sure they are connected and enabled in sophisticated ways to make use of more opportunities in the field. Finding relevant information should not be more time-consuming and clunky than a swift **Google** search.

Inviting in the high standard of user interface and delivering ready access to on-demand information that workers are accustomed to outside of work will drive this continuous learning and enablement to the employee. Thus, by gaining self-learning and skill enablement opportunities, whilst also knowing the asset and the customer, frontline workers can not only perform their best but highlight any operation holdups and areas of improvement.

"There's an immediate and direct impact from the mobile technician whose handheld devices can scan a QR code and immediately see what the service reps are saying, to turning video and photos into structured data.

"We're now starting to be able to drive AI and machine learning in more useful ways for frontline workers. I think that's where more adoption is coming," believes Martin.

The benefits of the digitalised worker

For Martin and the team at IFS, the digitalised evolution of the frontline workforce is inherently linked to aiming for the best 'moment of service', using tools aimed at creating positive total experiences for both the employee and the customer to drive favourable outcomes on both sides.

"Extending the connectivity to help frontline workers with access to information is not only useful for their jobs, but improves employee and customer experience and consequently retention rates," she explains.

"By making the frontline worker tools more interactive, it promotes productivity, but it also makes working more of a human experience, so they don't feel alone on the job and, also, so they feel safe and connected to what they need on the go."

With this approach, the right digital tools could aid frontline workers and allow businesses to support a wider array of applicants in frontline roles, offering more opportunities to enter well-paid and highly skilled jobs that may have previously seemed bad fits.

"We want to embed the end customer experience into everything that frontline workers do," Martin adds. "When frontline workers feel that they're doing a good job and delivering a good experience, their job satisfaction is higher and they're less likely to leave the job.

"And, of course, you have a happy customer too. So, driving customer experience with digital tools has a very total experience outcome."

Achieving a return on investment

Notable, too, is the apparent straight line to return on investment that digitalisation for frontline workers and physical operations creates.

"When you think about technologies for the frontline workers, service management, and supply chain, these are so much easier to show business value on a return on investment, whether it ends up more than you expect or less than you expect. I've never known a project in this area that did not have a positive return on investment."

"It's interesting when we're talking to customers about our planning, scheduling optimisation, which has AI and machine learning in it," Martin continues. "What I tell them is that you will get ROI. The question for you (related to adoption, change management, all of this) is do you get five to ten percent, ten to 20, or 20 to 50 percent? How are you willing to utilise the technology?"

Likewise, it's suggested that business' digitalisation of the frontlines will help sustainability efforts by creating much greater efficiency.

"This isn't a 'cost,'" Martin says. "Yes, you can get the benefit from a better ESG rating and things like that, but this actually is good business for you, as well as for the climate, your people, and your customers."

The best process to implement frontline digital tech

No matter the potential benefits of welcoming digitisation to your frontlines, ensuring buy-in from your frontline workers is essential for good returns on any investment. Bringing the frontline worker experience in the field to the boardroom in a way that decision-makers can relate to, find interesting, and know how impactful solving pain points can be, is key for successful implementations. For Martin, many organisations are missing the trick when digitising frontline operations for employees, especially when investment decision-makers are often office-based.

"When we talk about business value realisation from a frontline digital transformation perspective, I want to encourage enterprises to think about business value realisation from their data. We need to have more operations and I'd say more practical people thinking about what is the most useful data.

I HAVE NEVER KNOWN A PROJECT IN THIS AREA THAT DID NOT HAVE A POSITIVE RETURN ON INVESTMENT

"When there is enough data to be meaningful and statistically significant, you can map that to asset longevity and uptime in ways less binary or obvious. Plus, as a next frontier, having that raw data will also enable us to do better and make better training models for AI and machine learning, and, hopefully soon, create predictive models that aren't trained from historical data."

Taking away focus from task solving, Martin recommends focussing on improving the frontline total experience.

"Business processes aren't the sole outcome we're looking for anymore. We're no longer thinking about digitalised frontline workers as a means to an end of tracking hours, billing the customer, or providing status updates.

"Yes, you want these functions, but we need to start thinking about customer experience and employee experience as the main goal that we're driving in the outcomes. That's really where we will start galvanising what we can do with these digital tools, utilising also the power of devices that we have today and finding the crux of pain points in operations." ■

Aligning ESG and digital strategies

In the quest to build sustainable, purpose-driven companies, technology cannot be an afterthought.

BY J R VANORDER AND SAMEER SHAH

ESG - environmental, social and governance - has become a top priority for every business.

Stakeholders, whether customers, employees, regulators, shareholders or investors, demand ever more evidence that organisations have a purpose beyond profit, and are contributing to society, treating workers fairly, and caring for the planet.

Leaders are taking ESG very seriously. According to EY's 2022 CEO Outlook, 97 percent of CEOs say their company has a sustainability strategy. And a further 28 percent believe that, by becoming leaders in sustainability, they will gain valuable competitive advantage.

But in a recent EY global survey of CIOs, more than two-thirds (68 percent) admit they're not using data and technology to help improve their organisation's sustainability.

And another study, by market research firm **Verdantix**, finds that just one-fifth of companies give their CIO a central role in the sustainability strategy.

Key sustainability strategy decision-makers

We are at an early stage where it often feels as if corporate ESG strategy is an afterthought in the digital transformation agenda and vice versa. In order to fully integrate these two imperatives, the CIO and CDO should increasingly be in step with the CSO, CFO and CEO - collectively driving ESG and technology through the enterprise.

> **Given the wide range of ESG data sourced from every business process, companies will probably need to combine 'ESG-specific' and 'ESG-enabling' technology.**

The technology backbone of the new, purpose-driven enterprise

The time and effort needed to produce an annual sustainability report has grown exponentially - and this document is only the most basic requirement. As internal and external demands for ESG data continue to rise, it is clear that the days of simply pulling together a spreadsheet once a year are over.

Many companies are still evaluating the data they need to track their ESG performance, how and where to source it (from within and outside the organisation), local and global compliance requirements, and how to establish systems to support existing, amended and new processes which will withstand auditor scrutiny.

With ESG impacting every part of the business, including supply chain, operations, finance, procurement and HR, and with reporting standards evolving quickly, companies are discovering significant gaps in their IT architectures hindering data collection and analysis.

Progress to date has been piecemeal, with pockets of technology-supported processes collecting ESG related data. Examples typically include environment, health & safety (EHS), supply chain, HR, and employee travel data. This might cover data related to carbon footprint, workforce diversity, equal pay and employee accidents, not just for the company but also suppliers and customers.

Much of the information is generated by or managed in disparate solutions. Consequently, it takes considerable manual effort to combine the data into a consistent format suitable for consolidated regulatory and financial reporting - and even this is neither reliable nor auditable. Robust enterprise grade solutions will be required.

At the same time, CIOs are implementing new technology solutions with huge potential to capture and process ESG relevant data, but without considering ESG needs. Examples include EHS systems, sensors and instrumentation, ERP systems, data lakes, and AI/blockchain solutions. In future, organisations should seek unified, multi-purpose architecture that is fully aligned with ESG.

Developing an ESG technology strategy

Before CIOs, CFOs and boards consider technology investment, they should be fully aware of the growing role of ESG in reporting and in boosting corporate performance. As corporate strategy rapidly incorporates ESG, digital strategies must align accordingly.

For example, a manufacturing company may commit to improvements in water usage in production processes, carbon emissions, proportion of its products that are recyclable, and wages and working conditions of employees and contractors. Without a technology strategy that supports the collection of high-quality data along the entire value chain, companies will not be able to report data or demonstrate progress against these commitments.

Given the wide range of ESG data sourced from virtually every business process, companies will probably need to combine 'ESG-specific' and 'ESG-enabling' technology, creating a network of connected applications and platforms. There is a huge difference in effort and return between building proof of concept/prototype applications and delivering fully operationalised solutions that satisfy independent auditors. It is especially important not to just go for the latest 'big thing' without determining whether it fits into a longer-term technology strategy.

This is a difficult path to navigate: demonstrating progress and complying with new regulations, while also avoiding solutions that may be incomplete or incompatible with existing technology. Some 'quick wins' may actually make the organisation less able to adapt to evolving ESG requirements and business goals. For example, while the current focus for many organisations is on regulatory reporting, long-term value is derived from performance management, as ESG data becomes integrated with company-wide decision-making.

Decision-maker	Leading or significant contributor
CEO	80%
VP sustainability	92%
CFO	75%
COO	52%
Chief risk officer	23%
Director of investor relations	22%
Chief information officer	20%
VP corporate communications	20%

Source: Verdantix Global ESG and Sustainability Governance, Strategies and Priorities Survey 2021

A nimble investment approach for a fast changing market

Organisations face the challenge of rapidly developing hybrid architectures: a mix of business applications, platforms, and data that is aligned to their ESG strategy.

As demands for data change and companies optimise their ESG data processes, these solutions must be flexible enough to adapt to changing reporting standards - sometimes across different regulatory regimes - and remain auditable. Over the next few years, ESG solutions may never be 100 percent complete, so companies should be prepared to continually enhance or replace existing systems, or develop new ones, to support their ESG programmes.

Indeed, we are already seeing a wave of new technology data solutions that help internal and external reporting, business intelligence and performance management. These come from a broad range of providers, including startups, established software players, content providers, financial services companies, small and large consultancies, software and platform vendors, and managed service providers.

As business leaders contemplate a sustainable future, where their company's value is determined by both financial and non-financial outcomes, a technology-enabled ESG strategy will be central to business performance.

Key takeaways

- Ensure your company leadership is aware of the importance of technology in delivering ESG goals
- Appreciate that ESG impacts almost every business process in your organisation, from finance to supply chain, HR to operations
- Stay abreast of the ESG technology market but don't expect to find a single platform solution
- Aim for a hybrid architecture leveraging a combination of applications and platforms
- Start today by introducing modular solutions that improve ESG data collection, reporting and auditability, while providing flexibility to upgrade as both technology and ESG drivers evolve.

In our next article, we will explore some of the common types of technologies that comprise a hybrid solution. ■

J R VanOrder is EY Sustainability Services' global digital leader. Sameer Shah is an EY technology partner.

NEXT ISSUE

SPECIAL REPORT

A COMPLETE GUIDE TO SUSTAINABLE BUSINESS TRANSFORMATION

In the September issue of ERP Today, we will publish the definitive guide to Sustainable Business Transformation. The time is NOW for all businesses to reconsider their business models and the impact their operations have on the environment.

Sustainability is no longer an aspiration. It's an imperative. But, with the correct insights and technology, every organisation can take significant steps towards a greener and more prosperous future.

The ERP Today 'Complete Guide to Sustainable Business Transformation' will take enterprise leaders through a step by step journey with case studies, analysis and guidance. This report will not only showcase the formula for ESG it will also demonstrate that environmental and social considerations can lead to long term commercial success.

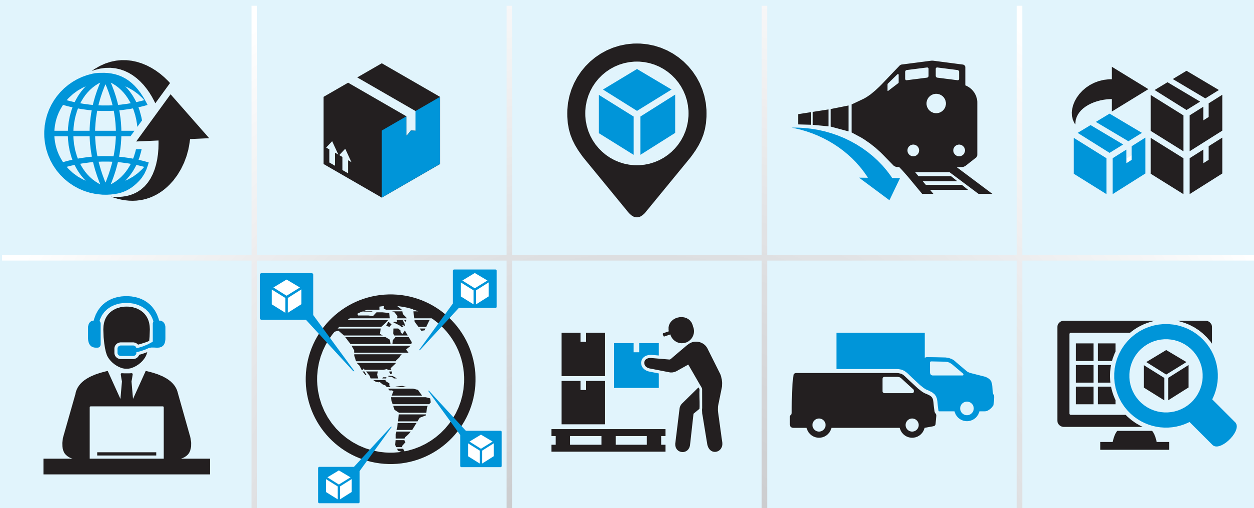
ERP TODAY

Let's turn aspirations into action.

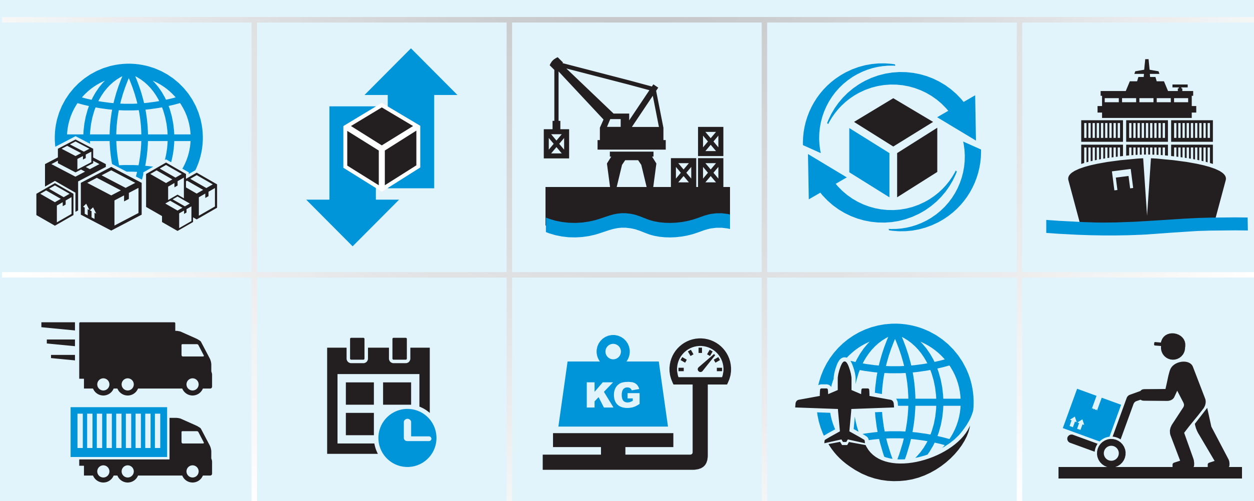
To contribute to this report please contact editorial@erp.today

SPECIAL REPORT

ERP TODAY



SUPPLY CHAINS



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Welcome to the New World

How Capgemini is solving supply chain challenges

BY DARREN WHILE, Capgemini senior SAP transformation programme advisor

Before the global pandemic, public awareness of supply chains and the dependency on these to move goods around the world was taken for granted. Customers simply expected products to be available on the shelf to purchase, or ready for delivery via their online shopping basket. Any minor disruptions were managed in the background with minimal fuss for the customer.

Supply chains often span across continents with the sole intention of moving goods to the right place at the right time, in the most cost-efficient manner. This by and large has worked for many years, enabling a wide selection of products.

That was the Old World. Over the last few years, the status quo has changed significantly with events such as the global pandemic, Brexit, environmental disasters, social unrest and, more recently, the situation in Ukraine. These events have had a significant impact on how we live our lives and will continue to do so for many years.

The disruption has resulted in increasing nationalism and protectionism, which has made it more difficult to move goods across borders, resulting in delays in goods arriving or being shipped. A key reason why supply chains remained robust for so long was the relative stability of trade and the movement of products across borders with little friction. This increased global trade and deepened dependencies between countries.

Additionally, as economies have opened again, post-pandemic lockdowns have accelerated the demand for goods. This has resulted in product shortages, which in turn have pushed up prices and led to inflationary pressures. Changing buying habits has made things even more difficult. Customer expectations have become increasingly demanding with the expectation of accessing products through various channels of convenience, whether via mobile applications, local collection points or same day deliveries. These trends are set to continue in the future.

Labour and skill shortages have been evident too, making the movement of goods even more challenging. That is without the increased pressure and expectation on organisations to meet carbon emission reduction aims and shift towards a circular economy.

We are clearly living in an era of significant change and unpredictability. So, the question is how does an organisation bring predictability and stability to its supply chain in an uncertain world?

> **We are living in an era of significant change and unpredictability. So how does an organisation bring predictability and stability to its supply chain?**

The reality is that there is no single answer, nor a one-size-fits-all solution. However, we at Capgemini are working with our clients, bringing our industry experience and know-how to help build resilient processes and systems to not only face the challenges of today but also those of tomorrow.

In many cases, the challenges our clients are facing are twofold: not only the external pressures described above but, also, trying to manage the supply chain using legacy processes and systems built for more stable times. Today, many system architecture and processes are simply not flexible enough to support New World requirements.

For businesses now, there must be the ability to continually adapt and predict supply chain movements to ensure disruption is avoided and opportunities can be seized.

We do this with our clients by building architectures, processes and integrated solutions that support agile 'composable' architecture, which will adapt and evolve as business needs change. These are solutions fit for both now and the future.

Having the right architecture and applications enables organisations to adopt technologies such as artificial intelligence. These support processes like what-if scenario planning, risk reduction by evaluating how inventory should be held, as well as sharing of information across the supply chain in an accurate and timely manner, managing risk through inventory track and trace capabilities and use of blockchain technology.

Applications such as **SAP** Integrated Business Planning (IBP) linked to SAP Analytics Cloud (SAC) provide the capability to perform what-if exploration from both a material and financial perspective. Moreover, connecting with partners using the Ariba Network via Ariba Supply Chain Collaboration (Ariba SCC) provides functionality to share production demand schedules and for the supplier to commit to the supply plan.

Logistics Business Network, meanwhile, enables track and trace data to be shared with external logistics service providers alongside products such as SAP Transportation Management to enable effective freight management.

If you feel that Capgemini can support your organisation in building a resilient supply chain that is fit for today and tomorrow then please reach out. We'd be happy to help you bravely traverse today's new world, shedding the shackles of yesterday.

How can technology provide the tools

to meet the future demands of sustainable supply chains?

What is Big Tech doing to ensure its customers are equipped with the tools and technologies to ensure that supply chains are optimised and sustainable?

BY CHRISTINE HORTON

In a world of increasing government regulation, changing customer sentiment, and growing stakeholder demands, the need to ensure today's supply chains combine agility and efficiency with sustainability has never been greater.

Recent research by **IBM** reveals that two thirds (66%) of chief supply chain officers (CSCOs) believe sustainability is a core element of overall business value. However, changing consumer preferences and rising costs can bring new challenges. While consumers are increasingly likely to demand sustainable products and services, they can be expensive to fulfil and the challenges posed by COVID-19 have increased pressures on supply chains to be more agile, reliable and stable.

Technology invariably has a key role to play in this harmonisation – but what are the big technology companies doing to ensure their clients have the right tools and techniques to overcome these challenges?

MACHINE LEARNING, PROCESS MINING AND BLOCKCHAIN

Capgemini has worked with a leading fast-moving consumer goods company to implement a machine learning demand forecasting solution to predict changes and fluctuations more accurately in consumer demand. This tool helped drive down waste and realise both cost savings and sustainability benefits.

Elsewhere, the company has been using process mining at a global discount grocery retailer to further optimise the efficiency of its operations.

"We integrated **Celonis** into their SAP landscape to allow them to drill down into the detail of their process flows and identify opportunities to reduce wastage in each process step," explains Chris Long, director, supply chain transformation, Capgemini. "We were able to identify where the retailer was raising multiple separate purchase orders with the same supplier, which could then be grouped by the user into one consolidated order to reduce the number of supplier delivery trips."

The company also identifies blockchain as having the potential to improve supply chain traceability and visibility.

"Adopting blockchain technology can help drive supply chain visibility by allowing the monitoring of all stock positions in the supply chain at any point in time and traceability through E2E mapping of product lifecycle from source material to sale and return (including recycling)," says Long.

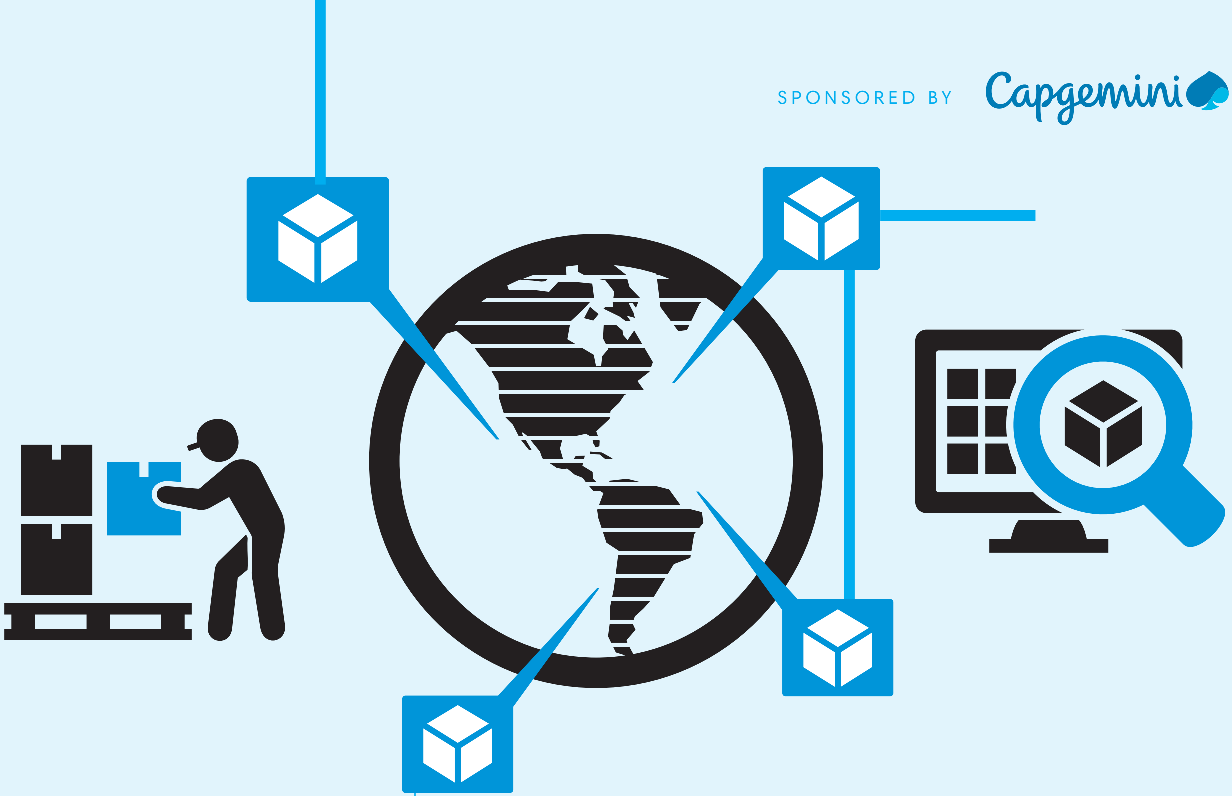
Blockchain tech can help drive supply chain visibility by allowing the monitoring of all stock positions

CHRIS LONG / CAPGEMINI

A HOLISTIC VIEW OF THE SUPPLY CHAIN

Despite using technology to ensure greater sustainability in the supply chain, it appears there is still some way to go among UK organisations. Recent academic research from **Microsoft** reveals that just 37 percent of UK leaders monitor their supply chain to ensure it is environmentally sustainable, and the same low number apply environmental standards outside their own business. Meanwhile, only 36 percent are using new technologies to green their supply chain.

"Gaining a holistic view of the supply chain can be a challenge but is essential in achieving a sustainable one," says Rob Smithson, Dynamics 365 business group lead, Microsoft UK. "Organisations need to be continuously looking for ways to streamline and integrate their processes, not only by investing in advanced carbon measurement technologies and management tools throughout the supply chain, but also understanding the need for greater connectivity with other



areas of the business to mitigate risk."

Smithson says organisations can achieve a holistic view of their supply chain by adopting tools such as predictive technologies, AI, RPA, and smart sensors. These solutions can help build programmes and initiatives to help enterprises achieve their sustainability goals.

Louisa Loran, director, supply chain and logistics industry solutions at **Google Cloud** EMEA, agrees that the biggest inhibitor of making sustainable decisions for the supply chain is lack of visibility. Organisations need technology to help them surface data which gives the oversight of their own operations, across their community – customers, partners, suppliers – and relevant public contextual information.

"This way of building a digital twin of the end-to-end supply chain can enable both greater collaboration across functional silos and even more across the value chain. Furthermore, it provides access to tier 2 and tier 3 information which formerly seemed invisible," she says.

"By creating an open digital platform with energy company **Eni**, we are helping customers gain awareness of their strengths and areas for improvement across industrial supply chains. Enabling data-driven sustainability sourcing is another way the power of cloud computing, in particular, is impacting the value chain in an environmentally positive way.

"Combining operations research with AI and ML is also an effective way of combining ambitious environmental goals with financial delivery, for example last-mile fleet routing enables customers to optimise for reduced fuel consumption."

A digital twin of the end-to-end supply chain can enable greater collaboration across functional silos

LOUISA LORAN / GOOGLE

SORTING OUT SCOPE 3 EMISSIONS

Tackling Scope 3 emissions, which include all indirect emissions that occur in a company's value chain, can be one of the biggest challenges for any organisation. Anita Varshney, global VP, strategy SAP S/4HANA sustainability, says customers increasingly want to collaborate on bringing greater transparency to Scope 3 greenhouse gas (GHG) emissions.

Our Carbon Data Networks strategy aims to harmonise emissions requirements across a range of bodies and groups

ANITA VARSHNEY / SAP

"Our goal is to support our customers' climate ambitions by looking at data availability and quality, allowing them to share and exchange this data in a trusted way with their ecosystem, across their value chains.

"We are progressively shaping our Carbon Data Networks strategy, bringing together programmes which aim to harmonise emissions requirements across a range of bodies and groups, including the automotive alliance **Catena-X**, **WBCSD**, **GBA**, the **CEO Alliance** and more, to align strategic directions, collaborate on industry best practice, and provide guidance to drive a joint approach to define and share data."

TRUST IN DATA

Underpinning all the tools and technologies – and key to ensuring an optimised and sustainable supply chain – remains clean and reliable data. This means deploying an end-to-end ERP system is crucial.

Additionally, an ERP system can reduce the data footprint of a supply chain, driving sustainability benefits from both a risk and energy consumption perspective due to reduced carbon emissions from running servers.

But perhaps the most crucial factor in optimising supply chains is to foster a culture that places trust in data, both for use internally and for sharing upstream and downstream, says Capgemini's Long.

"Without the adoption of a data-driven culture," he notes, "organisations will never be able to fully realise the operational efficiencies and benefits of the advanced technologies that are available to them."

Navigating global supply chain disruption

It has never been more important to ensure supply chains are both resilient and sustainable. So how can organisations develop both short and long-term strategies to cope with global disruption?

BY CHRISTINE HORTON

Organisations today face a multitude of supply chain problems: the situation in Ukraine, political manoeuvring, recruitment challenges and chip shortages, as well as general market disruption in the wake of the COVID-19 pandemic.

This perfect storm of challenges has, in many cases, left organisations with insufficient goods to continue business in a usual manner, ultimately hitting both their bottom-line earnings and reputation. Indeed, research from **Blue Yonder** found that only three percent of organisations escaped supply chain disruption in the last 12 months.

It has therefore never been more important to ensure supply chains are both resilient and sustainable. So how can organisations develop both short and long-term strategies to cope with global disruption?

The first thing to recognise is that the technologies and applications organisations have relied upon for the last decade – in what was previously a relatively stable period – are no longer fit for purpose. The relatively rigid processes and lack of agility of these legacy tools are limiting organisations' ability to respond to 'black swan' events in a timely manner, says Darren While, senior **SAP** transformation programme advisor, **Capgemini**.

"There are many stories about organisations that have historically been successful but have failed to adapt and evolve at pace to stay relevant. Therefore, a combination of having access to relevant intelligence, understanding the marketplace and change drivers, along with applications that can leverage often large volumes of complex data, is key to both survival and growth prospects," he explains.

Heineken utilised Blue Yonder scenario planning to make trade-offs on costs, margins and capacity

WAYNE SNYDER / BLUE YONDER

MYRIAD OF TOOLS

The good news is that there's no shortage of new and innovative technology for supply chains today, and organisations have a myriad of tools at their disposal – including AI, predictive analytics, IoT sensors and crowdsourcing platforms.

For example, there is a growing number of organisations putting their faith in AI solutions to help predict optimum inventory decisions – primarily for the avoidance of excess waste or running out of stock, says Wayne Snyder, VP retail industry strategy, EMEA at Blue Yonder.

"Data science has become a staple in many businesses' operations and future-planning strategies, helping to increase visibility and efficiency," he says.

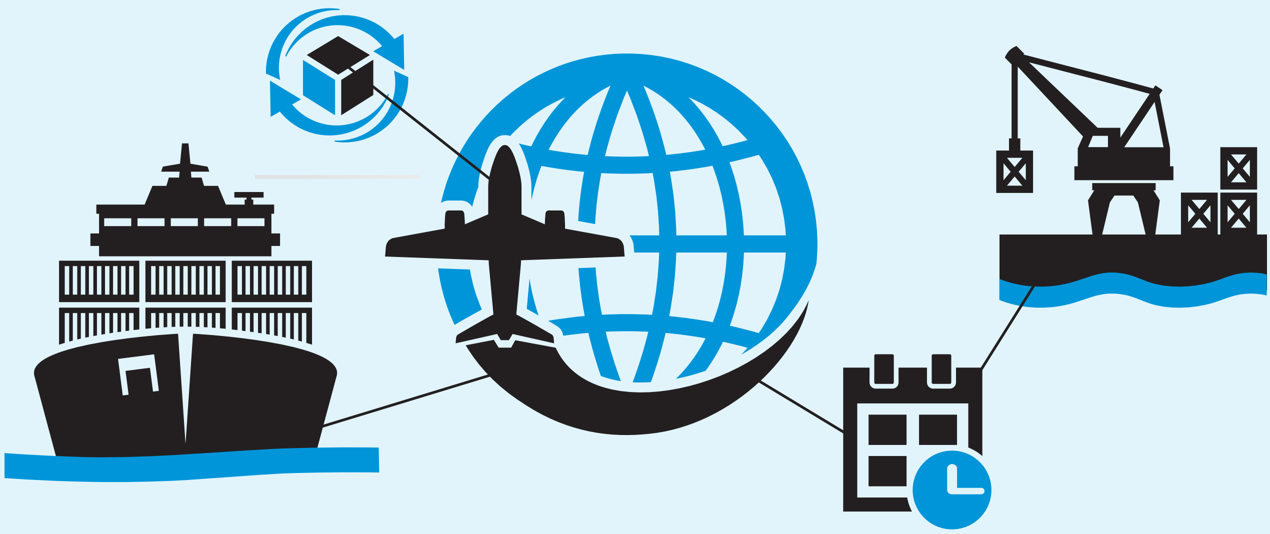
"**Morrisons**, for example, was able to increase the shelf availability of 29,000 stock keeping units (SKUs) across 130 categories at its almost 500 stores by leveraging an AI-infused planning system. This enabled accurate forecasts to be created and optimised the inventory aligning it to customer demand.

"Additionally, **Heineken** utilised new Blue Yonder scenario planning capabilities which allowed them to make trade-offs on costs, margins and capacity. Since deploying this strategy across Europe, Heineken has seen an increase in forecast accuracy, reduction in stockouts and improved inventory turns and productivity."

GAINING A TRUE PICTURE OF RISK EXPOSURE

However, while many companies are deploying tools like AI and analytics to help them better plan and forecast demand, optimise production, source more sustainably, and track performance of suppliers, they're not using them at the same rate for risk management, says Alla Valente, senior analyst at **Forrester.** Doing so could help them identify, evaluate, and ideally to mitigate supply chain risk.

"The supply chain crisis we're seeing now is in part due to how and where



they're using these tools," she explains.

"In the short term, this requires supply chain mapping beyond just the tier 1 suppliers. In fact, to get a true picture of risk exposure and potential disruptive events, organisations will need to map tier 2 and tier 3 as well. This will help them understand their global sites and subcontractors, as well as which parts pass through those sites. Longer-term strategies should include risk evaluation from multiple angles.

To get a true picture of risk exposure and disruptive events, organisations will need to also map tier 2 and tier 3

ALLA VALENTE / FORRESTER

"For example, it's not enough to assess suppliers for financial and operational risk. You'll need to understand their cybersecurity risks as supply chains have become a prime target for ransomware attacks, and their sensitivity to other systemic risks such as climate risk, concentration risk, and geopolitical fluctuations."

LONG-TERM PLANNING

Organisations can get ahead of the competition and react first to changes in circumstances by ensuring they have contingency plans readily available for their business-critical processes, says Chris Long, director, supply chain transformation at Capgemini.

He adds that key to resisting supply chain disruption is long-term preparation. "Improving supply chain transparency through the use of control towers, along with having first-class forecasting and replenishment processes that are able to react to fluctuations in demand, are cornerstones of any successful mitigation strategy against supply chain disruption.

"Supplier and procurement strategy is another key facet of supply chain risk mitigation. Upstream mapping of suppliers gives the ability to mitigate and plan for risks. Equally, having a multi-supplier strategy gives not only the security of a reduced chance of losing business through product unavailability, but also gives the ability to flex up or down on suppliers and create competition.

"In addition to technology-based strategies for supply chain risk mitigation, operating model is a major consideration when trying to build supply chain resilience. Shortening supply chains reduces their risk through lowering their potential exposure to disruptive events and introducing strategic buffer stocks can allow organisations to better cope with stock shortages. Finally, improving back-office processes and minimising admin can also support large-scale investment decisions."

COMBINING TECH WITH PROCESS AND PEOPLE

Ultimately, to be effective, technology needs to be complemented with appropriate processes and people, which includes partners across the supply chain.

"Not only should there be common data exchange formats and APIs, but also a level of cooperation and motivation between companies to achieve the shared goal," says Ishu Verma, emerging technologies evangelist, **Red Hat**. "Open source is crucial to the development of common, industry-wide standards that enable companies to future-proof their solution.

Open source is crucial for common, industry-wide standards that enable companies to future-proof solutions

ISHU VERMA / RED HAT

"A solution built with these shared principles will enable a multiplier effect benefiting the entire supply chain ecosystem comprising raw material providers, manufacturers, shipping and logistics, ports, local governments and retailers. By adding resilience and redundancy, companies can become better equipped to navigate future supply chain issues."

Almost regardless of the technological solutions available, organisations that don't plan for uncertainty, or don't balance supply chain efficiency with resilience, will simply be unable to pivot quickly when the black swan event looms into view. And in today's disruptive landscape, that isn't an option.

Teksid drives ERP success in Brazil, helping their business engine tick with Capgemini and SAP S/4HANA

Optimising a world leader in automotive parts manufacturing and ironworks

Founded by the **Fiat Group** in 1978, Italian industrial manufacturer **Teksid** has accelerated to a world leader status in the ironworks industry. Specialising in the production of iron casting and aluminium parts for the automotive and industrial vehicles sector, the business creates assets for engines, suspensions, and more. Now, Teksid has seven plants worldwide. It also forms part of the seventh-largest automotive manufacturing group in the world: the **Fiat Chrysler Automobiles**.
Teksid's long-standing sector experience has gained a reputation for technological advancement and raising quality standards. In 2019, next en route for Teksid was to optimise its global manufacturing plants and systems. Looking to Brazil, the business set its sights on bringing its expanding operations up to speed, simplicity, and standardisation targets.

Keeping up with business growth demands in Brazil

Teksid's aluminium foundry in Betim, Brazil had launched a new aluminium product line, increasing production complexity and expanding its customers in the local region.
A new ERP solution was needed to maintain Teksid's high compliance standards, keeping asset production and general operations ticking cohesively. For its Brazilian footprint, Teksid wished to clean up plant data while simplifying and standardising processes for better industry compliance all round.

The right system to keep Teksid's growth on track – SAP S/4HANA and Capgemini

Teksid chose the **SAP** S/4HANA ERP platform with Capgemini as their ideal solution. With ambitious timelines and objectives to launch, the technical and industry expertise offered by partnering with the Capgemini team offered Teksid a much more feasible way to achieve their project goals. With far-reaching implications, the SAP S/4HANA system go-live needed to be as smooth as possible, setting the standard for Teksid's soon-to-be-simplified processes.

Showing their 'metal' – business benefits for Teksid as the parts came together

Simplifying the useability of Teksid's software landscape and renewing their custom and legacy applications, the business is now equipped to operate with industry standardisation and best practice across the board. By eliminating redundant data duplications and structures, Teksid has gained a clear and fast view of the everyday information required at the plant.
The more efficient processes have reduced error rates and improved product quality. Meanwhile, the clearer view of accurate data has enabled key decision makers to enact informed decisions faster, leading to reduced time-to-market goods.
The roadmap developed with their Capgemini partnership for SAP S/4HANA, has given Teksid an easily replicated approach. As a result of this project's success, Teksid and Capgemini are continuing their collaboration to roll out new SAP S/4HANA applications across the global business.

Leading Japanese life sciences company goes global with Capgemini and SAP S/4HANA

Japanese life sciences business decentralises for a global audience

A leading Japanese manufacturer had begun its global expansion in the healthcare and life sciences sector. To support this success, the company was looking to decentralise its Japan-centric business model to enable easier adoption by medical institutes and patients on a global scale.

Determining the right tools for best practice worldwide

The manufacturer wished to create a standardised and sustainable business platform, capable of growing with their ongoing globalisation pursuits. However, with many opposing data sets to consider, the company's regional leaders initially held conflicting expectations for the project. Determining the right guiding principles to connect their disparate processes, manage master data records, and detail a standardised organisational structure was difficult to collectively diagnose.

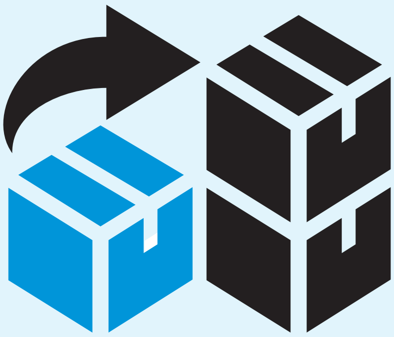
Company managers could analyse non-standard processes in different regions and easily decide what should be a part of the future global standard process

Diagnosing the best solution with Capgemini ASE and SAP S/4HANA

For some businesses, it can be better to put technology transformations on hold, rather than push forward with unclear goals or an ill-fitting solution. However, for this manufacturer, partnering with Capgemini enabled them to cut through the confusion, preventing project delays. To figure out the best ways to leverage ERP technology, they began to utilise a proprietary Capgemini tool called ASE (Accelerated Solutions Environment). Clarifying the way forward, the business leaders could agree on a common understanding for their global pursuits.
Capgemini then redesigned the manufacturer's global business platform to the new specifications, based on the SAP S/4HANA solution. The software focus was on standardising business processes, IT architecture, and master data management. SAP CPI Cloud Platform Integration was used to connect with their IT assets, including SAP, non-SAP, cloud, and on-premise software. As of 2021, the company and Capgemini shifted to a global rollout of this solution.

Business benefits: just what the manufacturer ordered

With Capgemini ASE, this life sciences company gained a toolkit that contains simple determining rules and allows them to quickly share and align the business' strategic goals and challenges with all key members involved in the project. As a result, the company's managers could analyse non-standard processes in different regions and easily decide what should be a part of the future global standard process to best align with its common strategy.
With the global standard processes defined and then designed into the SAP S/4HANA solution by the Capgemini partnership, a common set of KPIs can be rapidly measured and reported, improving the speed of a standardised product and service delivery across every region of operation ongoing.
Offering greater agility, the business can balance global demand and more effectively manufacture, qualify, and deliver goods to medical institutes and patients on a worldwide scale.



Supply chain skills

A battle for talent or a race to automation?

BY MARC AMBASNA-JONES

It wasn't so long ago that terms such as 'supply chain' and 'product shortages' were never really mentioned in daily news bulletins. Since the pandemic though, it's almost become a daily occurrence, the latest problem being disruption to food supplies thanks to Russia's attack on Ukraine. Global supply chains have never been so fragile.

The situation is so dire, in fact, that it recently led Verity Davidge, director of policy at **Make UK**, to suggest the era of globalisation is "passing its peak," adding that disruption and volatility for global trade is fast becoming normal. "For many companies this will mean leaving 'just in time' behind and embracing 'just in case'," she says, referring to the manufacturing mantra of the past three decades.

However, with the rules of supply chains being redrawn, what does the current situation actually mean for the workforce? Are supply chain functions also changing, and are there enough skilled workers to go around? Or should organisations be looking more towards data-driven automation, to not just deal with skills shortages but also optimise existing supply chain operations?

Businesses need to prepare for a fundamental transformation

DAN BIELER

We are clearly in a transition, but the pandemic has illustrated the need for urgency. Resiliency is now the watchword amongst business, but the problem is that no matter where you look, there seems to be a severe shortage of skills. This is both undermining any attempts at transformation and the ability of supply chains to deal with disruptions. The big problem is that we are in a perfect storm of change with the so-called 'grey resignation', whereby baby boomers are reaching retirement age at a point when global supply chain issues are starting to bite.

"There are 72,000 fewer HGV drivers in 2021, compared to 2019," says Philip van der Wilt, VP EMEA at IoT and fleet management company **Samsara**. "Warehousing operatives, back-office staff and other critical roles within the supply chain are also in decline.

"Making matters worse is companies relying on employees to put in overtime to make up for it, leading to increased stress and burnout. In fact, company demands for extra time are one of the biggest factors that contribute to employees quitting."

It's a situation ripe for change. According to Emile Naus, partner at independent management consulting firm **BearingPoint**, the current business and sociopolitical conditions are forcing a rapid shift in recruitment. Supply chain teams will need to evolve quickly and embrace a diverse blend of skills and people.

"Employees need to have a mixture of supply chain, industry, data and analytics hard skills, combined with the soft skills to be able to implement the changes across functional areas," says Naus. "The future workforce will need to be able to consider different ways of solving problems, taking a balanced view across costs, service, risk and environmental impacts. It will be more important than ever to build diverse teams that can consider all these elements and balance them appropriately."

The problem for supply chain management is that this pretty much reflects the recruitment descriptions for so many other departments and industries. In theory the potential pool of talent is widened, but that also means increased competition. Nevertheless, Naus suggests it's imperative that organisations spread their recruitment nets wider, adding that they need to be looking at top tech universities for graduates, balanced against experienced supply chain operators, and financial knowledge skills measured against environmental engineering skills.

It's the kind of scenario painted by Dan Bieler, principal analyst at **Forrester** in a recent blog, one relevant to many industries. In it, Bieler writes that "European governments, businesses, and societies need to prepare for a fundamental transformation of their skills base to survive and thrive.

"To drive sustainable growth and innovation and to prepare for the future of work, European businesses depend on a blend of digital and technology-related skills as well as critical thinking, problem solving, resilience, active learning, interpersonal, leadership, and communication skills."

What this means for supply chain management is that to compete for the skills required to get over current disruption humps whilst also building a robust structure for future resiliency, companies will need to up their game. Attracting talent will become one of the biggest challenges of the next 18 months but, as Bieler adds, other factors, such as geography, can also have a significant influence.

As supply chain teams look towards digital transformation and a corresponding increase in the number of data and digital literate employees, where organisations are physically based has a bearing on matters. Across Europe, tech skills clusters have been evolving, mainly around university towns. The worrying sign for UK-based organisations is that, according to Forrester's report Navigating The Leading Skill Clusters Across Europe, Brexit is having an impact. UK cities are consistently falling down the list of leading tech skill clusters for recruitment.

To a certain extent, remote working can help with this. As Henrik Smedberg, head of intelligent spend management UKI, **SAP** says, the future of the supply chain workforce could be more liquid and flexible than ever.

"We are hearing and seeing trends of hiring in multiple geographies and with more remote work than ever before," says Smedberg. "This is great from a flexibility perspective for both employees and employers. It allows skills to be accessed from various places, faster, and in variable quantities.

Keeping a talent pool engaged is a challenge many of our customers face

HENRIK SMEDBERG

"Getting visibility to the talent and keeping a talent pool engaged is a challenge many of our customers face, but this is where technology is crucial. Building teams and culture remotely is the hardest part, and strategies to maintain and grow culture need to be carefully evaluated with more hybrid workspaces."

THE ROBOTS ARE COMING

Smedberg makes a good point. The mindset of work and location is undoubtedly changing. To some degree, remote work could counter the geographical problem, but again that puts any supply chain department or logistics business into the skills bun fight with other industries, and, in theory, other countries.

How organisations attract skills will be key. It's a seller's market, as far as skills are concerned, so supply chain organisations will have to re-evaluate their employment packages. Are they attractive enough to compete?

The type and breadth of work is also evolving. One of the building blocks for supply chain resiliency is planning. Increasingly data-driven and analytics based, supply chain planning requires digital literacy but it also demands experience in understanding supply chain challenges. It's a mix of the old and the new, and this is where employment challenges become even more interesting.

The future workforce needs to consider different ways of solving problems

EMILE NAUS

"Organisations need insight into shipping, supply chains and connected enterprises, so that decisions can be made, or changed based on this visibility," says Smedberg. "Networks can drive this visibility. If you see it early and notice the cracks, then they can be patched. If not seen then, well – that is when you have issues."

Unsurprisingly perhaps, this is where AI and robotic process automation (RPA) solutions are leaning. As a recent **Gartner** report says, emerging and maturing supply chain technologies are a major source of competitive advantage. If supply chain businesses can get the mix right, of technology, supply chain experience and young digitally-driven skills, then they could be onto a good thing.

"We're seeing many industrial organisations turn to AI to improve the employee experience and overall operations," says van der Wilt at Samsara. "For example, security cameras can use AI to detect and alert managers to possible security risks, including motion in restricted areas.

"**O'Neal Steel** is a good example of a company that has positively impacted its workforce by leveraging AI. With a handful of smaller sites that often go unstaffed during the late hours of the night, supervisors used to spend hours every morning passively searching through security camera footage.

"By using AI-powered motion detection alerts, they saw a 92 percent reduction in time spent reviewing footage, saving 100 hours each week. AI helped save a lot of time and frustration and improved their employees' day-to-day experience overall."

Interestingly, Gartner makes a number of supply chain technology predictions, one of which is that "by 2026, 75 percent of large enterprises will have adopted some form of intralogistics smart robots in their warehouse operations." In addition to predictive analytics and IoT, robotics is seen as a key enabler.

As Dwight Klappich, VP analyst at Gartner says, "there are certain developments that drive further investments into technology, most notably labour constraints and the need for more agility.

"Given today's volatile and disruptive environment, supply chain organisations must become more flexible, and the solution is digitalisation."

Of course, this doesn't mean that robots are going to take over all the jobs. Far from it. What it does mean though is that a forward-planning, more resilient supply chain operation will demand a different set of skills. We are already seeing this, as Gartner's Supply Chain Top 25 list showcases.

Access to real-time data to inform decision making is critical

PHILIP VAN DER WILT

This features a number of businesses, such as **Cisco** and **Colgate-Palmolive** that have transformed through the pandemic, recognising the value of digitisation and the role of a digital-savvy workforce. Interestingly, Cisco also topped Fortune Magazine's Top 100 best places to work in 2021.

So, what is the strategy? Surely supply chains need to plan better, using data to inform real time decision making. How does this affect recruitment and training plans?

"Access to real-time data to inform decision making is critical to overcoming the supply chain skills shortage," says van der Wilt. "For example, drivers being provided with real-time information, customised routes and digitised documents makes the life of an industrial worker simply better.

"The delays, frustration and bottom-line costs caused by pen and paper, manual unconnected processes and workflows are mind boggling."

Is this a battle for talent or a race to automation? Ultimately it is both. As van der Wilt concludes, "it's time for the industrial, blue-collar workers, and their management counterparts to benefit from the same digitised workflows and processes industries such as telecommunications, financial services and retail have experienced for years."

Augmenting the butterfly's wing

New frontiers in supply chain technology

Tech can't prevent every freak incident, but, as HS2, Accenture and Boomi reveal, innovative software can help industries protect their supply chains during times of chaos.

BY GIACOMO LEE

"Something as small as the flutter of a butterfly's wing can ultimately cause a typhoon halfway around the world." This poetic phrase describing the butterfly effect is one we all know, perfectly describing a tenet of chaos theory on how one small change can have very large impacts further down the line.

A fluttering butterfly may have been behind the high winds and dust storm which saw one of the world's largest container ships obstruct the Suez Canal last year. Carrying over 18,000 containers, the Ever Given was en route from Malaysia to Rotterdam when it ran aground for six days, blocking over two hundred vessels on the key supply chain route.

While much larger than a butterfly, the saga of the Ever Given served as a reminder of the many chains spanning our world, interconnecting assets between commerce and clients. After COVID, it also intensified the need for technology to augment the butterfly's wings, as it were, in order to avoid further supply chain failings.

"Macro geopolitical events such as Ukraine and the Suez Canal crisis have led to supply chain shortfalls across the world," says Dave Food, head of supply chain at **Board International**. "Consumers and businesses alike have been left frustrated by low inventories, delayed orders, and poor planning in asset heavy industries.

"These widespread problems have revealed outdated supply chain planning practices and tools that must be replaced immediately."

As we discover, replacing those tools can mean alternatives from the new frontier of technology, mainly in the form of digital twins, artificial intelligence (AI) and the internet of things (IoT).

POWERING UP PORTS

While it's unlikely enterprise tech could prevent another freak incident on the scale of the Ever Given mishap, there are already examples in ports around the world of software and hardware working to prevent supply chain shortfalls.

Safety solutions from Silcon Valley's **Quanenergy** can be found in ports within China, South Korea and beyond. The company, which went public this February, is a provider of AI-powered sensors in light detection and ranging (LiDAR). 2D and 3D imaging created by LiDAR point clouds can provide accurate measurements to ensure safer, more efficient operations in the machinery, people and vessel-heavy environment of ports.

Case studies for ports in Shanghai and Shandong, China and Korea show how LiDAR can galvanise port automation, along with protecting the supply chain. Quanergy points out LiDAR sensors have a longer range than cameras or radar, and unlike cameras, can work under any weather condition.

"LiDAR (also) provides much better accuracy over computer vision in many applications," says Gerald Becker, Quanergy's VP market development and alliances. "We have seen flow management applications in which LiDAR alone provided significantly higher accuracy compared to camera and computer vision alone. The latter is challenged in different environments with varying weather or lighting conditions."

What that means is actionable intelligence from LiDAR sensors in real-time flow management software. The result is port management and operators can react instantly to imminent safety risks as containers are moved between ships, storage, and truck beds. Such data also allows ports to better understand traffic patterns in order to create the most efficient and safe flows for assets.

Ports can also benefit from digital transformation in the back office. Mike Kiersey, director of global technology EMEA at integration platform **Boomi**, points to recent work with world-leading port agency **Inchcape Shipping Services**.

"(With Boomi) Inchcape was able to connect and integrate a multitude of different technology products to improve port logistics and better track its entire supply chain around the world," says Kiersey.

This was made possible by a single view for the agency of its data, simplifying the entire supply chain. More agile compliance also became possible, particularly from being able to view vessel sanctions before any ship arrives at the Hong Kong port.

"By automating and orchestrating

the discovery, cataloguing, preparation and integration of data from different sources, these enterprise technologies enable businesses to create a 'common' data language that better supports long-term data governance and provides a full understanding of employees, customers, and products," says the Boomi director.

"By going even further and extending the reach of this connectivity and integration to partners and suppliers as well, organisations can truly optimise and simplify their supply chains, achieving greater operational efficiency."

TO THE POWER OF TWO

Data is clearly a vital weapon in managing supply chains in real-time with agile responsiveness. But what about predicting problems coming down the line, or ensuring long-term replenishment of assets?

This is where digital twins come in; real-time representations of physical assets, systems or processes that can be built using mixed reality and IoT. Representing a new frontier in business information modelling, digital twins can be found in industries ranging across construction, energy, transport and more.

There exists a growing digital twin of High Speed 2 (HS2), a high-speed railway line under construction in the UK aiming to connect London, Birmingham, the East Midlands and North West England like never before.

Currently coming at a £98bn price tag, the endeavour is one of Europe's biggest infrastructure projects. While full operation is expected as far off as 2040, HS2 staff will very soon be using virtual reality (VR) headsets to explore an identical 3D replica of the track in order to help fix issues before they become a detriment to the project and its supply chain.

As detailed as its physical counterpart, this digital twin of the HS2 - HSSquared, perhaps? - will be fed continual data from the many sensors being built into the physical railway track, along with bridges and overhead power lines.

The biggest thing is multiple stakeholders accessing the same models, all learning together from the same data

HEATHER DONALD / HS2

As **HS2 Ltd** innovation manager Heather Donald tells ERP Today, there will also exist digital twins of stations on the line, beginning with the pivotal Old Oak Common superhub which is tentatively scheduled to open in 2026.

Also accessible by VR headsets, the Old Oak Common twin is currently being tested by select members of the public for its passenger flow management, as using a world-first combination of VR, eye-tracking and emotion-sensing technology.

"We're also exploring future uses," Donald reveals. "Now we've got the model, we're looking at how you could use it to test for safety along with different HS2 teams to test it out. We're also exploring how we could use it for other HS2 stations."

An interesting caveat of High Speed 2's twin innovation is that HS2 Ltd offers double contracts to clients: one contract for a digital twin and another for the real-world asset. This not only points to the growing business importance of the tech, but also a smart way to avoid tangled management by siloed stakeholders. Having a digital twin available at the foundational stages of a project can only help avoid supply chain problems from forming and compounding.

"I think it's most efficient to create one model that you're constantly adding to with more capabilities," Donald adds. "The biggest thing is having multiple stakeholders accessing the same models, and that's how you and your partners are learning together from the same data."

In the view of Stephane Crosnier, UK supply chain and operations lead for **Accenture**, digital twins give enterprises greater structural visibility when it comes to supply chains.

"Technology enables two types of visibility: structural and dynamic. Structural visibility is like an X-ray which gives you a snapshot of your operations to help uncover vulnerabilities.

Supply chain visibility provided by technology can have a major impact on operating and financial performance

STEPHANE CROSNIER / ACCENTURE

"With a digital twin of its supply chain, a company can use advanced analytics to simulate its supply chain's performance and stress test for risks and vulnerabilities."

Accenture recently worked with one major European automotive supplier to manufacture enough product to meet demand. The company's supply chain was struggling due to the current microchip shortage, another ongoing blight in today's post-COVID world.

Working with the supplier, Accenture developed a digital twin to provide visibility into interdependencies and to identify the revenue streams and clients that relied on specific subcomponents.

Currently, the automotive supplier's supply chain teams are working with Accenture on deploying a digital twin-enabled supply chain stress test. This test will look across the chain to further identify vulnerabilities and risk areas, plus also calculate time parameters for specific threats or disruptions.

From the results, Accenture argues, a groundwork can be laid by the enterprise for subsequent actions it should take to prevent weak links in its supply chain.

"Ultimately, the supply chain visibility provided by technology can have a major impact on a company's overall operating and financial performance," says Crosnier.

"It's an inescapable reality that the future of an organisation's supply chain operations depends on more advanced big data and analytics capabilities - and those that don't prioritise this risk falling behind their competitors."

Technology can't prevent every freak occurrence from happening, but it's clear innovative software and hardware can help industries protect their supply chains in these chaotic times.

The tipping point scenario for consumer product supply chains is now

BY MIKE PETEVINOS head of consumer products and retail for Capgemini UK

Consumer product (CP) companies are sitting in hot water, right in the middle of a value chain that is transforming across almost every conceivable dimension. And it's not a stretch too far to say that most are hot under the collar, and many have reached a tipping point.

There are two opposing forces at play that are wreaking havoc on CP supply chains: the need for more supply chain complexity, but also the demand for that complexity to be delivered more cheaply. For many CP organisations, these two forces simply can't coexist in their supply chain without some serious changes. Furthermore, using a technology estate that is often fragmented with significant customisation, is proving a huge challenge for organisations operating on a global scale. They need to make a step-change in their capabilities, strategically and structurally, if they are going to be able to overcome the heat.

SUPPLY CHAIN COMPLEXITY FOR CONSUMER PRODUCTS

The complexity pressures for CP supply chains are coming in from multiple angles.

Consumer demands

The trend of consumers wanting to buy through different channels has been accelerated during and following the pandemic, whether your customers are buying online, direct-to-consumer or through varied marketplaces.

Meanwhile, consumer demand for a more sustainable and responsible world is rightly driving leading organisations to rethink their purpose and long-term impact, too. Health and beauty CP businesses are seeing this demand particularly, with huge drives to provide ecommerce platforms and channel variation, as well as sustainability and innovation for products, production and supply.

Logistical holdups

Behind consumer front lines, we're seeing input pressures like issues of supply, including port bottlenecks and raw material and labour shortages. These are all factors pushing the need for CP organisations to adapt quickly, funnelling support to the commercial side of the business to drive growth and, in some ways, protect the top line.

Many companies are paying higher air shipping fees to move goods and avoid the bottlenecks at ports. Safety stocks have also increased due to challenges

Market innovations

Increasingly fierce global and local competition, new channels, and new providers are all pushing CP organisations to produce better innovation agility and margin performance. They are needing to respond faster to market trends and deliver to a wider array of channel types and customer types with greater product innovation.

The result is just massive amounts of complexity for supply chains. It creates a very specific pressure for CP organisations around needing to deliver, and their supply chains needing to fulfil demand in very different ways. For some CP organisations, they are even shifting from manufacturing and marketing businesses to becoming retailers and/or service companies in order to cope.

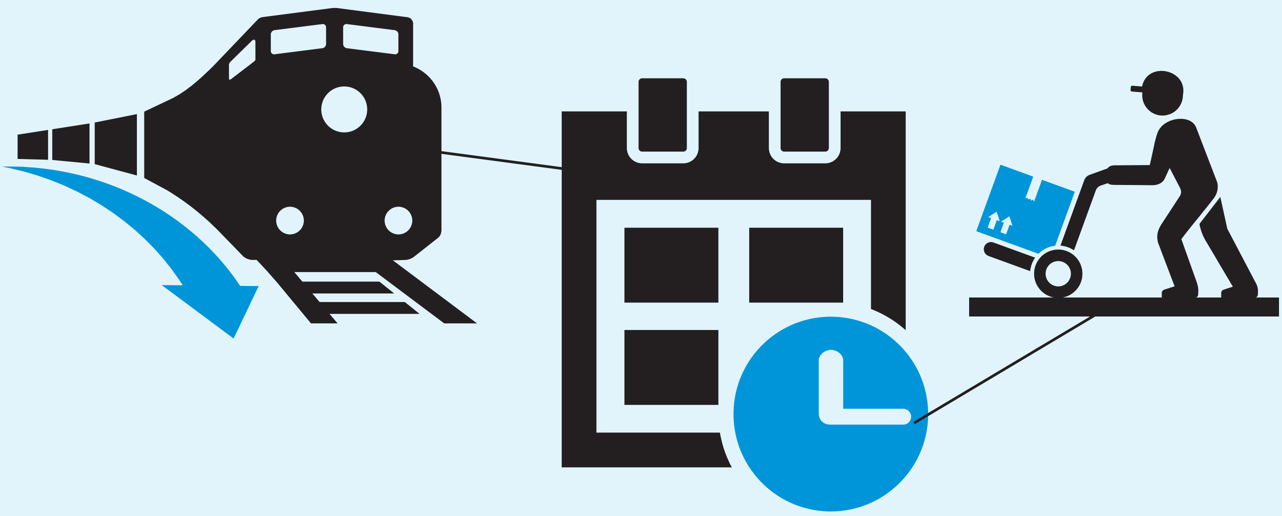
MARGINS CUT FURTHER FOR HIGH-VOLUME, LOW-VALUE CONSUMER GOODS

It's ever the case that supply chains are under pressure from a margin perspective to support the business - in fact, it's the biggest part of the cost base for CP organisations.

Unprecedented rising costs

The current climate, as well as the ongoing fallout from the pandemic, is causing costs at every stage of the supply chain to rise, tightening profit margins. A backlog of shortages for products and raw materials is pushing costs higher to obtain these ordinarily high-volume, low-value goods. We've seen many companies even having to pay higher air shipping fees to move goods and avoid the bottlenecks at ports. Safety stocks have also increased due to the challenges in the continuity of supply, bringing up the cost of storage and warehousing, too.

Meanwhile, if you're the likes of a



food manufacturer, for instance, and input price rises are coming from the situation in Ukraine, as well as challenges around Brexit, then those pressures have become incredibly acute.

HOW ARE CONSUMER PRODUCT ORGANISATIONS RESPONDING?

The only way to manage this tipping point is through technology and driving optimisation. If CP organisations need to create value for the front end of the organisation, they've got to try optimisation in the back.

The investments in best-in-class capabilities are enabling just that, across product/service innovation, marketing, ecommerce, net revenue management, and demand sensing. The effect can also be seen across end-to-end planning, strategic sourcing, transportation management and order orchestration.

Again, the challenge comes from a significant amount of investment, structural change, and alignment around the globe. That's the space most consumer goods companies are now in – looking at those investments and thinking about how they can drive that maturity in the supply chain.

Maturing technology is providing a solution

However, the behemoth programmes of the past, that spiralled in terms of time and cost, and rarely delivered on the promise, would be enough to make any chief experience officer think twice.

While an automotive organisation might have ten major factories, a consumer products company might have the complexity of 100 factories around the world. So, up until now, most CP organisations have rightly focussed on individual business capability projects.

Under this new tipping point of pressures, we are now seeing that same technology investment trickling down through to increasing numbers of fast-moving CP organisations. The business case is starting to work for their high-volume, low-value supply chains. As we start to see the maturity of the technology, the price points are starting to come down, the advantages of modern ERP platforms are growing, and technology is also enabling organisations to scale it to global operations.

ENSURING THE BEST TECHNOLOGY RESULTS FOR CP SUPPLY CHAINS

The opportunity lies in how businesses might make their supply chains smarter. Organisations will need to create an interconnected set of transformation programmes, coordinated in parallel. Business capability projects, an ERP modernisation programme, a transformation to cloud, a data and insights programme, and an operating model transformation should all work in tandem to deliver new value from shared service and above market models.

While an automotive organisation might have ten major factories, a consumer products company might have the complexity of 100 factories around the world

Ensure data is at the forefront, and not the poor cousin

Data should sit alongside technology investments as the critical enabler. Every part of structural change for CP organisations demands a need for rich analytics and AI capabilities with a strong data foundation, thereby providing the ability to have the data, the ability to derive insight from it at scale, and finally your ability to then execute.

Bringing internal data from across the organisation alongside ever growing sources of external data and insights should enable improved demand sensing. Therefore, a demand planning offering can really understand what the demand profile is going to look like against this very complex customer and consumer landscape.

Achieving this full visibility from sourcing and manufacturing to logistics allows CP organisations to be as effective as possible in sending the right signal out into their supply chain.

With good foundations, you can (and should) drive pace through industrialised roll-outs

By implementing the template design phase deep enough to achieve confidence across trade archetypes and business stakeholders, you can bring to life key aspects of the solution that the business needs to be able to touch and feel. After this, the pilot can be viewed as the proving ground for a fast and industrialised deployment approach and benefit delivery.

In the raging pressure cooker of challenges surrounding consumer product supply chains, the organisations that are choosing to make the investments and execute them effectively can ride the tipping point wave with ease and finesse.

OPINION

From IT delivery to business success

Shifting the mid-market project mindset

In a cloud world, ensure the business objectives of your project are clear

BY ANDY BIRD

Ever since I first started building a business in the enterprise software space, the larger vendors and their implementation partners have wrestled with how to best approach mid-market company deployment. One of the major challenges in my view has been the fundamental concept of the 'mid-market' itself. What a software vendor might consider to be mid-market (a business that is not a multi-billion dollar, multinational enterprise) will, especially to those within the business, feel like a significantly sized organisation with its own complexity.

Historically the approach to this was to try to simplify complex on-prem deployment options, and to push system integrators to develop and deliver a templated, pre-configured approach. Effectively this was about trying to enable the large ERP vendors to compete both financially and in terms of solution fit with niche vendor offerings.

Whilst this approach was successful in terms of operationalising mainstream ERP outside of very large enterprises, customers were generally left supporting complex solutions, or, by selecting one of the big vendors, left with common challenges around areas like ease of use, reporting flexibility and the ability to quickly customise for small but important requirements.

Enter software as a service

Over the last few years, with the increasing presence of SaaS-based offerings, this playing field has been levelled somewhat, with much wider options ranging from specialist micro-vertical ERPs and smaller ERPs that are able to scale more than before, to the industry leaders (such as **Oracle**) delivering their solutions in more affordable bite-size subscriptions.

The SaaS world has provided customers with more options than ever in the choice of software that a customer could deploy - and a well-defined selection process run in partnership with a shortlist of vendors will provide customers with significant value.

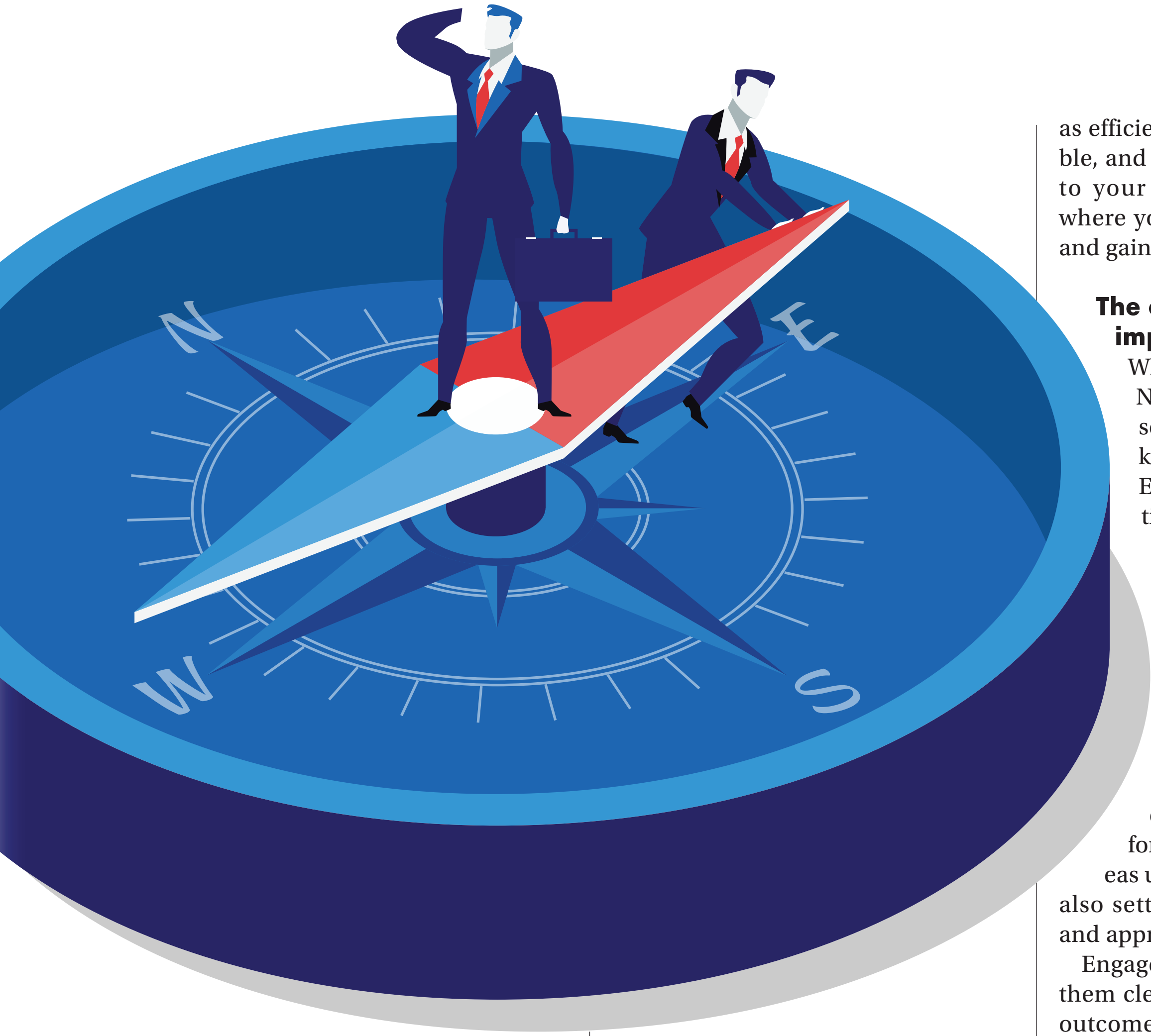
What hasn't changed as much however is the process of how ERP projects are implemented. Of course IT complexity has declined somewhat with the rise of cloud, but generally projects are still focussed on requirements gathering, configuration, testing and of course data migration and cutover. Too much focus is still placed on the mechanics of an implementation, and not on the outcome that the business wants to achieve with it. The same goes for the enabling of SaaS to deliver ongoing continuous business innovation.

Outcomes over deadlines

For mid-market customers, being able to change the focus from the mechanics of the ERP project itself to the outcomes of the ERP project as a whole allows you to continually make choices which deliver business success, not just IT project success.

At the start of a project it can often be clear what some of the goals are, such as a reduction in financial reporting time, the enablement of all users for self-service functionality and reporting, and increased accuracy in billing. Other aims include an associated reduction in days sales outstanding, or being able to ready your business for acquisition or a significant expansion. Too often though these get drowned out in the life of an ERP project, with a myopic fixation on a go-live date.

What does this mean in reality? Everything in the project needs to be evaluated against one or more of the business outcomes desired. When someone asks to add in new scope, ask whether that delivers on the outcome desired. Want to modify a delivered process? Well, would that change genuinely help deliver the



business outcome required? Want to build some new reports? You guessed it - instead honestly ask whether they would add anything extra to deliver on an agreed goal.

Looking at every facet of a project through this lens enables you to focus on what really counts and will make a real difference. Of course, some requirements will likely surface, where moving from the 'vanilla' solution will deliver more value and a stronger outcome, allowing you to focus your energy on the things that really matter, and not those in a less critical process area, or those based on the whims or wish lists of individuals.

Having a clearly defined end-state, both from a solution perspective as well as from a business operating model perspective, can help mitigate this common challenge. With increasing degrees of business process enablement being pre-defined in SaaS solutions, choosing an implementer with a focus on being a value creator, and one which has developed a clearly defined end-state for your business, is becoming increasingly important.

"Ensure that the focus is on getting initial core processes implemented successfully as a solid foundation for extending areas unique to your business."

This means not just gathering requirements and solving problems, but guiding you to best-in-class processes, and supporting your team as you undertake the change journey to get there. In a cloud ERP world, value comes from two primary areas - the things 'common to all' that you can do as efficiently and effectively as possible, and those things that are unique to your organisation or industry, where you can differentiate yourself and gain a real competitive edge.

The continuous improvement journey

What does this mean in reality? None of the advice here is rocket science, and much of it is well known, but worth repeating. Ensure the business objectives of your project are clear. Acknowledge that in a cloud world, the day of your go-live is just the beginning of your continuous improvement journey.

Recognising this, ensure that the focus is on getting initial core processes implemented successfully as a solid foundation for extending and delivering areas unique to your business - and also setting expectations both early and appropriately.

Engage with your people and help them clearly understand the desired outcomes, and ensure that the communication, training and testing approaches are clearly defined and well executed. With cloud ERPs and the technology platforms that underpin them, the possibilities to extend things with cutting-edge analytics, predictive capabilities and extensibility are endless. But, ensuring that the solid foundations of proven and core business processes are in place, and that people have embraced and adopted them, is as critical as ever, and will allow you to continuously innovate and improve.

So, if you are looking to embark on an ERP journey, then start focussing on the business outcomes you want, talk with your partners on how they help get you there - and keep improving once you are there - and don't just focus on functional and technical capability. ■

Andy Bird, CEO, Inoapps

A fair and inclusive future of work *needs some planning*

Data and the Great Resignation

BY DR ZARA NANU

For a closer look at how much the Great Resignation is impacting the IT sector and its workforce plans for the future, just look at the data. According to one **Gartner** survey, 31 percent of workers in the industry actively sought out new employment opportunities between July and September last year. In response, companies have been developing new and creative ways to attract talent, ranging from paying big money for people to attend interviews and offering more perks for workers to stay.

Many of these interventions are short-sighted and short-term. They are reactive workforce planning strategies that will have a fleeting impact if they are not embedded in a long-term view of sustainably attracting and retaining top talent. So how can organisations plan for a workplace where people feel valued and talent thrives?

A holistic approach to workforce planning should be at the heart of a successful strategy to retain and attract talent. It needs to be based on three key data sources: reasons behind the Great Resignation, organisational talent needs, and predictions on how these needs and skills are going to change in the future of work.

Pay is one of the reasons people are leaving, but it's not a primary reason. Gartner's Global Labour Market Survey discovered that out of the people who said they would look for a new job in the next 12 months, 61 percent would leave if an opportunity to be part of an organisation with a higher level of social responsibility became available. Fairness is key, even if pay stays the same.

Tech employees value social responsibility most. But such responsibility is not just about the mission and vision of a company, nor the way it is embedded in products and services. It should also be reflected in the practices and values the company embodies, spanning across work-life balance, flexibility, and diversity and inclusion.

In addition to considering these changes, any kind of workforce planning needs to be about business plans and objectives. Over the past few years, I have seen very few businesses align their workforce planning efforts to their business growth objectives in a meaningful way. Even fewer align workforce planning to company values. These strategies would be significantly enhanced by data about the changing landscape of skills, roles, and economic opportunities.

The easiest way to take stock of all these key issues is by looking at data on examples such as attrition rates, promotion and mobility rates, pay equity and benchmarking, and employee engagement surveys.

Data about attrition rates will provide a strong understanding of age groups, job roles and levels, gender, occupations, and even length of service of those leaving. This will help pinpoint areas of focus. These areas of focus can then be further explored in the context of trends, helping prioritise areas with growing attrition rates over the past few years.

Promotion and mobility rates within the company will help discover mobility opportunities within the organisation and can provide insights on which areas don't allow internal talent to progress into new roles and bring their expertise and skills with them. If they don't have opportunities to grow, these employees will seek them out elsewhere. This can happen within functions, but also across them. These data points often highlight slower and fewer mobility trends for talented women within the organisation and create opportunities for addressing these gaps.

Internal and external pay equity benchmarking is also a crucial area highlighted by Gartner's research. At 54 percent, pay is the second largest reason for tech employees leaving. An internal benchmarking exercise can help companies understand where there are gaps in pay for various employees, and how they can be eliminated. An external pay benchmarking exercise can help to understand how pay compares to the wider sector.

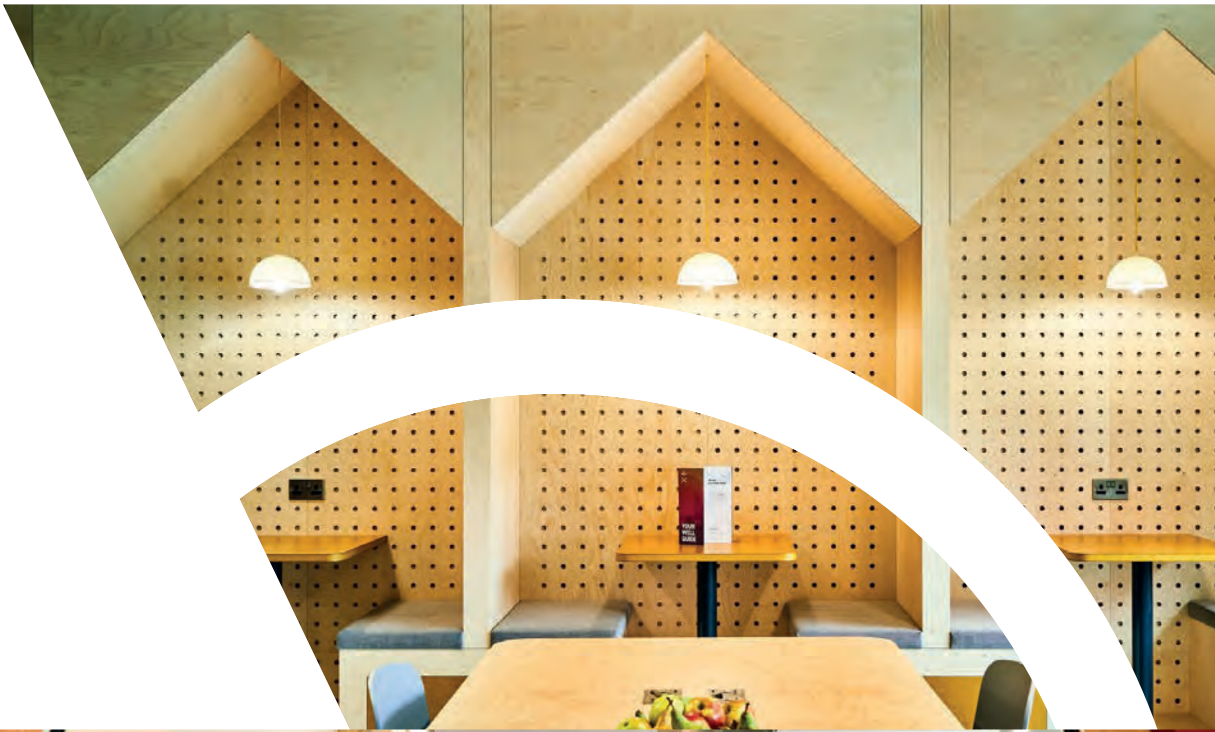
Employee engagement surveys are a wealth of information on how motivated and engaged your employees are and will be a predictive indicator of retention. These surveys are a great barometer on their own, but even more powerful in combination with benchmarking and pay equity data.

"A holistic approach to workforce planning should be at the heart of a successful strategy to retain and attract talent.

Such data points will help to understand areas of opportunity for higher retention rates and talent attraction, helping companies plan for an engaged workforce. But utilising these to shape workforce plans would be incomplete without predictions of various skill developments and changes in job-related tasks over the coming years. Predictive models on how jobs are likely to change, and what skills will be most needed in a business in one, three or five years' time, is imperative to make meaningful workforce plans.

As these data points show, workforce planning can significantly help organisations understand key issues behind the Great Resignation and create sustainable approaches to growth, plans to upskill and reskill employees, and ensure social responsibility. Data can be instrumental in helping to get insights about the best action plans within an organisational setting, whilst also taking external factors into account. ■

Dr Zara Nanu is CEO of Gapsquare.






BRITE

Young professionals are keeping office space alive

Despite all the hype about remote work, Big Tech is still clearly invested in big bricks – and so are its younger workers.

BY GIACOMO LEE

PLUS X BRIGHTON. COPYRIGHT JIM STEPHENSON 2020; PLUS X

OFFICE SPACE

Facebook may be joining the metaverse, but that hasn't stopped its parent company Meta from opening swanky new offices in the real world. Meta's new UK headquarters opened last month in King's Cross, London, where on its doorstep Google is building its own British HQ for the regal sum of $1bn. Despite all the hype about remote work, Big Tech is still clearly invested in big bricks.

That said, the future of work is likely to see five days a week in the office become a quaint relic for the next generation of workers. For white-collar staff in major cosmopolitan cities like London, COVID-19 may have already brought forward a mass redundancy of physical workplaces.

The desire for a post-office status quo is hard for enterprise tech to ignore. A 2021 **Gartner** survey of knowledge workers revealed only four percent of those currently working remotely or in hybrid preferred to return fully on-site. A 2020 survey from **Citrix** meanwhile found 60 percent of employees aged 18-40 would want a hybrid work arrangement going forward.

Case closed? For younger professionals, not quite. According to a 2021 survey from **Generation Lab**, 40 percent of recent graduates and students prefer to go to a physical office over remote work. Another survey from **Sharp** Europe revealed over half of staff aged 21-30 stressed the importance of being able to meet and work with colleagues in person again. As reported by **Bloomberg**, the same survey saw nearly 60 percent say working in a modern, friendly office environment had become more important to them during the pandemic.

Young professionals therefore present a business case for new builds. But as various new offices in the tech space are demonstrating, that doesn't mean any old workspace will do, whether for greenhorns or a more seasoned workforce.

Take **SAP** and its new London offices unveiled last autumn. Located in the Scalpel skyscraper in the City of London, SAP's new UK presence places workstations in an open environment kitted out with sofas, meeting areas and walls adapted for marker pens and brainstorming.

A lot of the space encourages hot-desking, with long desks by windows looking out onto the Gherkin, or booths in which one usually finds themselves served with a coffee (or a burger with actual gherkins).

"You will always find the Scalpel office busy with colleagues now restrictions have eased," says Avalon Ridler, presales specialist at SAP and a council member of the ERP Today Young Professionals Network. "It's the perfect place to meet and work together on projects or just catch up with colleagues. Personally, I really like the relaxed, open layout, combined with little private spaces for calls and meetings too."

"We designed a flexible layout which was able to support varying ways of working," confirms Michael Roper, vice president of global real estate and facilities at SAP EMEA. "The layout focusses on the four Cs - collaboration, community, communication and concentration. We have surveyed our employees (and) they are seeking much higher emphasis on meetings, brainstorming, design-thinking and socialising, and the new office space supports these activities."

Roper tells ERP Today that the office reflects SAP's attempts to offer "the great flexibility and experience desired" by current and next genera-

40

percent of recent graduates and students prefer to go to a physical office over remote work, according to a 2021 survey from Generation Lab

"We designed a flexible layout which was able to support varying ways of working. The layout focusses on the four Cs - collaboration, community, communication and concentration" Michael Roper, SAP

86

percent of respondents ranked 'collaborating with team colleagues' and 'interacting with others' within their top three ways they envisaged using the office.

tions of talent such as Ridler.

Flexibility has also driven similar 'future of work' offices from **Deloitte**, as unveiled in Newcastle last month. The professional service giant's Trinity Gardens footprint came after a Deloitte employee survey showed almost all staff wanted to have the freedom to choose how flexibly they will work.

In addition, 86 percent of respondents ranked 'collaborating with team colleagues' and 'interacting with others' within their top three ways they envisaged using the office.

These factors, all important ones for young professionals keen to network and learn the ropes, formed the main design principles of the Deloitte office. Out, therefore, went traditional desks, to be replaced with flexible touch-down working areas and 360-degree cameras for all-inclusive meeting experiences.

Having employees guide workplace design is becoming fashionable as companies try to stem the tide of the Great Resignation. Dutch architecture studio **UNStudio** for example holds pre-planning consultations of what employees want from a new or redesigned workplace. This information is then used to create various design scenarios merging the user experience, the spatial organisation and the management of the building, including energy use, health-related solutions and the social component of work and collaboration.

"This has influenced the design of these spaces in multiple ways, as more than ever before, the design of the workplace now has to have its basis in the user experience," UNStudio reveals. "Basically, workplace design today is increasingly based on bottom-up input."

Instead of dispensing with offices entirely, it's likely enterprise tech brands will pivot in the same direction as SAP and Deloitte. Creating flexible workspaces via consultation with their workforces will become the norm.

Either way, having an office remains a status symbol for any big company; it is also an essential item to have on the books, as it were, especially if investment or bank agreements require some kind of physical presence.

But, as other projects demonstrate, real estate is working just as hard as big brands in keeping technology - and young tech workers - chained to the desk in a post-pandemic world.

The future of co-work

Co-working: it's not as hip as it used to be. Never mind all the talk of remote work becoming the norm; there's also the little issue of co-working poster child **WeWork** and its spectacular fall from grace. Those bad vibes were brought back to public consciousness by a recent show dramatising the decline of WeWork on **Apple TV.** Its title? WeCrashed.

But co-working spaces are far from crashing; in fact, some have boldly sprung up during the height of the pandemic and beyond.

Take Brighton co-working venture **Plus X**. As launched in summer 2020, the swanky looking new build offers not just offices but also technology facilities and innovation labs.

With specialist regeneration developer **U+I**, Plus X is looking to roll out more of its innovation hubs across the UK, with a second space launching next year. For the brand, the pandemic may

OFFICE SPACE

have actually been more of a plus to its USP as opposed to a business minus.

"The pandemic brought the importance of collaboration and innovation sharply into focus," says Olga Hopton, Plus X's expansion director. "We need shared spaces where different businesses and sectors can come together to benefit one another.

"Global tech corporations have undergone large-scale changes to their working policies, leaving an excessive amount of prime office space which is being underutilised. We want to partner with tech corporations to create innovation spaces and collaborate with SMEs, universities and local communities."

Plus X Powerhouse, as Plus X's second build is known, will be found

PLUS X

at quite a distance from central London: in the zone 5 district of Hayes, to be exact. Presumably the company is banking on the nearby **Crossrail** station should London's ambitious Elizabeth line be fully up and running in 2023. The much delayed rail service could bring commuters from the nearby town of Reading into Hayes and back again in half an hour or less.

Whatever happens, Plus X doesn't seem to be banking on big tenants looking for a London postcode. Talking to ERP Today, Hopton is more enthused discussing young innovators currently using Plus X's premises such as Lucy Hughes, who has won awards for a prototype alternative to single use plastic known as MarinaTex.

"At our innovation hubs we provide technology facilities and innovation labs that include state-of-the-art prototyping, product development and batch production facilities, which create innovative product design that tackles some of the major societal challenges we face.

"We also offer business support programmes to help businesses to grow and scale in a sustainable way, ultimately driving economic prosperity."

Growth of the green-collar office

Far beyond aggressive expansion, Plus X's expansion director stresses the importance of a circular and green approach to the offices of the future. For example, its Brighton outpost is on track to become the first building in England's South East to be accredited Platinum standard by the **WELL Building Institute**.

> **"Plus X Brighton is focussed on the health and wellness of its occupants,"**
> **Olga Hopton, Plus X**

"Plus X Brighton is focussed on the health and wellness of its occupants," Hopton explains. "We use solely green electricity, solar panels and have a zero to landfill policy, making the building carbon neutral. The air quality is monitored for CO2, dust and humidity and adjusted to meet WELL standards."

SAP's Scalpel office also wears its green colours with pride. In fact, as SAP's Roper explains, the Scalpel is one of the greenest buildings in the UK, with LEED Platinum certification, the most widely used green building rating system in the world.

Choosing the Lime Street building came not just from the benefits of being in London's business and skyscraper hotspot, but from SAP's target of becoming carbon neutral by 2025.

"To help reach this target, SAP has implemented a number of initiatives: for instance, 75 percent of its worldwide sites are certified to ISO 14001 standards under the company's environmental management system plan," says Roper.

"We complemented the base building with the SAP fit-out and operations where sustainability and social enterprise procurement were key considerations."

Where Roper talks, younger SAP workers like Ridler may be listening; take a 2021 Deloitte survey of those born between January 1995 and December 2003, otherwise known as Generation Z (Gen Z).

Out of over 8,000 Gen Z respondents, 26 percent said climate change was their greatest concern, coming out on top over worries such as unemployment and healthcare.

What this all means is that it's not just enough to offer a space to workers for one or two days a week. If enterprise tech wants its employees to hang around, it needs to listen to what they want. In other words, it's not just flexibility which should be on the menu to get workers to stay, but good design and a sense of corporate responsibility.

As UNStudio says, "A widespread war on talent has also meant that many knowledge workers can now pick and choose where they work. In turn this means that companies have to be able to offer pleasant, comfortable, sustainable and healthy workplaces to their employees; workplaces that communicate the values of the company and their approach to the wellbeing of their workforce." ■

JED

A daring build in Switzerland

When looking outside of the UK for the future of office work, it's worth taking a look at a business and co-working hub unveiled in the Schlieren area of Zürich, Switzerland this year. Its name? JED, short for 'join, explore, dare.'

Developed by **Swiss Prime Site** from an abandoned printing centre, and designed by acclaimed architect Dietmar Eberle, JED is targeting the ever youthful market of tech startups to fill up its five storeys and 36,000 square metres. In that space can be found not just offices but labs, workshops, eateries, plus event and exhibition halls.

JED therefore may remain profitable if the pandemic keeps startups talking on **Zoom** in the near future: arguably people will still need its prime real estate for eating out and holding conferences.

But, as ERP Today learns, the space is already safe thanks to its main tenant, leading Swiss IT service management brand **Zühlke**.

"The JED project was started long before the pandemic. Even then, we designed the areas generously at the request of the anchor tenant Zühlke," says Mladen Tomic, head of group communications for Swiss Prime Site AG. "We therefore did not have to make any adjustments to the planning due to the pandemic."

Big Tech keeps office space alive once more then, it seems. Business sense is also a factor: like **Meta** and **Google**'s London offices, JED is a pre-pandemic project that had come too far along for anyone to cut their losses.

But as Tomic points out, there is another factor that may suggest the future of work may be less global, and more geography dependent. For the Swiss, the journey into work isn't as arduous as the war march it can be in Britain.

"The current increase in the proportion of home offices has so far had no impact on the space rented by customers in the entire Swiss Prime Site portfolio. This is also underlined by a tenant survey conducted by us in summer 2021.

"Furthermore, the proportion of home offices in Switzerland is likely to decline again. This has to do with Switzerland's geography and public transport connections. People in Switzerland commute on average about 30 minutes. In London or Paris, it is often two hours per day. These are completely different conditions."

Like with **Plus X** and **SAP**'s London HQ, a green-friendly dimension can also be found to the build, as revealed by Gianfranco Basso, head of acquisitions at Swiss Prime Site AG.

"The new JED building is CO_2 neutral as far as possible," he claims. "During the development of JED, several levels of sustainability were pursued: sustainability in the context of CO_2 neutrality and resource conservation, as well as sustainability in the sense of JED's longevity."

This was achieved by Swiss Prime reusing existing building materials wherever possible or extending their service life. Furthermore, JED maintains a photovoltaic system, and upholds a constant temperature range without any heating or air conditioning tech.

"There are various planted green areas, which enhance the quality of stay, as well as drinking fountains in the public outdoor spaces, which were developed in cooperation with the city of Schlieren.

"Concerning the outdoor area, we stand for the fact that JED improves the microclimate," adds Basso.

It may not be quite on par with the Swiss Alps, but it seems the worlds of the natural and the urban have found harmony in JED's daring grounds.

UKRAINE

AND THE STATE OF PLAY IN ENTERRISE SECURITY

WHEN IT COMES TO CYBERSECURITY, ENTERPRISE TECH CAN NO LONGER AFFORD TO IGNORE THE THREAT OF HOSTILE NATION STATES

BY GIACOMO LEE

UKRAINE 2022

CYBER INSECURITY WAS THE BIG STORY OF 2021.

Headline-grabbing incidents included the Colonial Pipeline attack on US oil infrastructure, and the **Kaseya** ransomware breach by Russia-affiliated REvil which affected up to 1,500 organisations using the desktop management software.

In the world of enterprise tech there was one hack which may have flown under the radar as last year drew to a close. In November, at least nine global organisations and 11,000 servers were hit in a breach of the cloud software company **Zoho**.

Blamed for the attack was Emissary Panda, also known as APT27, a group thought by many to be supported by the Chinese government. Amongst its likely victims was **The International Committee of the Red Cross** (ICRC), with servers hosting personal data belonging to more than 515,000 people worldwide compromised in the attack.

According to a post on the ICRC website, people affected included missing people and their families, detainees and other people receiving its services 'as a result of armed conflict, natural disasters or migration.'

It remains to be seen whether the humanitarian mainstay was attacked for political reasons, or if it was simply a large sitting duck out of many atop of a security vulnerability in Zoho software. But the question remains worth asking as enterprise tech can no longer afford to not think about hostile nation states when looking at the state of their cybersecurity, especially in light of the ongoing Ukraine conflict.

"In the current environment, attackers are more likely to be politically motivated, with active groups potentially sponsored by nation states, and better funded groups carrying out more organised and sophisticated attacks," warns Tom Venables, practice director of application and cyber security at security specialists **Turnkey Consulting**.

"The situation in Ukraine shows that bad actors can be linked to political trends as well as to more straightforward criminal activity," agrees Keegan Keplinger, head of research at **eSentire**'s Threat Research Unit "These groups can be linked to nation states and, as long as they don't target companies or organisations in their home countries, are tolerated or even encouraged in their actions."

For Venables, Ukraine demonstrates that global situations can "escalate rapidly" and further reinforces the need for making robust security a matter of good business practice in ERP.

"Incorporating proper security measures and procedures in the ERP landscape is crucial in allowing effective threat detection, incident response and recovery across business operations and supply chains," he says. "These measures strengthen a company's resilience and business continuity management when it comes to unpredictable cyber threats, both external and internal."

_MASSIVE ATTACK INCOMING

The outlook for this year suggests that if 2021 was bad, then things can only get worse in 2022. As the Ukraine invasion rumbles on, enterprises should likely expect an opening of the floodgates in global cyber insecurity.

"There has been, and continues to be, anticipation that the cyber element of this confrontation will spill over borders with Russian state actors targeting organisations in the West in retaliation for the economic sanctions imposed on them," says Oliver Tavakoli, CTO of **Vectra**, a startup where artificial intelligence (AI) meets cybersecurity.

"Additionally, unlike traditional wars with some semblance of a central command on each side, a number of freelance actors on both sides of the conflict have entered the fray and in such circumstances the selection of targets for attack is quite a bit less predictable than normal."

"The Ukraine invasion has seen an increase in attacks by state-sponsored cyber criminals and hacktivists targeting government agents and critical infrastructure operators in Russia, Ukraine and beyond," agrees Venables. "Third parties in the supply chains of either of these types of enterprise are also a target, so while an organisation may not directly experience a cyberattack, there is always a risk of collateral damage to its supply chain and operations."


TOM VENABLES

THE UKRAINE INVASION HAS SEEN INCREASED ATTACKS BY STATE-SPONSORED CYBER CRIMINALS AND HACKTIVISTS TARGETING GOVERNMENT AGENTS

The threat to enterprise is real, therefore. But so are the solutions. According to Venables, a key step is to ensure that all ERP security software and solutions are up to date. As attacks like the Zoho breach showed, cyber criminals often use reverse-engineering patches to "reveal vulnerabilities and take advantage of organisations that have not updated quickly enough".

The security expert also advocates companies begin to get clued up on the REvils and Emissary Pandas of this world instead of vice versa.

"Defending against a sophisticated threat group takes knowledge of the adversary and a risk-based approach in order to prioritise spending in the areas that are most likely to be exploited; a cyber threat intelligence (CTI) assessment exercise provides the information required to do this.

"CTI assessments need to look externally to understand which groups are likely to target the organisation and the attack methods they use. They also need to take an internal view to identify the controls that the organisation currently operates. From there a gap analysis can be completed to expose vulnerabilities in the organisation's defence; with this insight, investment in defensive measures can be prioritised."

For eSentire's research head, preparing effective security strategies should also involve implementing strong security measures.

"This covers prevention, but also how to respond when a potential attack takes place to effectively counter further impact of an incident," Keplinger tells ERP Today. "If attacks on company systems do take place and succeed in getting a foothold in the network, then fast responses are required to eject attackers before they can maximise their impact."


KEEGAN KEPLINGER

THE SITUATION IN UKRAINE SHOWS THAT BAD ACTORS CAN BE LINKED TO POLITICAL TRENDS AS WELL AS MORE STRAIGHTFORWARD CRIMINAL ACTIVITY

_SIGNAL TO NOISE RATIO

AI can also accelerate company defences in the current climate. While the tech may seem far-flung, overhyped or a mixture of both, AI is already becoming commonplace in cybersecurity solutions, to the extent where many clients expect it to be a key component in a service.

Tavakoli points to the tools offered for free by Vectra in response to the Ukraine assault. As donated to any hybrid or multi-cloud enterprises that may be targeted as a result of the conflict, the vendor's offerings include AI-driven detection of **Microsoft** Azure AD, AWS and M365 environments for signs of attack activities.

"We are simply offering the tools free of charge to organisations which might be impacted by the war and who may either not be able to afford the tools or whose security practices are less mature and where the need to rapidly get 'shields up' is understood.

"The purpose of the free tools is to help organisations who believe they may be targeted to better prepare for an attack. Some of the tools identify weak spots in an organisation's defences which should be shored up before an attack begins. Others help identify elements of attacks that are in progress and enable an organisation to respond to the attack before it does real harm."

Any complimentary protection is likely to be appreciated in Ukraine, as long as it works. For enterprises, functionality is the object of the cyber game, but that shouldn't mean overlooking the exact contents of a solution, for example the AI in Vectra's wares.

"One of the key problems in today's complex IT environments is that they are ever changing and relatively noisy," says Tavakoli. "AI and machine learning (ML) are techniques that when correctly applied can help sort the signal out from the noise. In this context, it is important not to just find what is different - many AI approaches do this - as change in enterprise networks is constant. Instead, our approach is to look for the methods underlying the various attacker methods."

Venables also appreciates AI for how it can be used to allow automated governance and monitoring across all business operations and elements, including access and identity management, remote function call (RFC) connections, and threat intelligence to monitor log anomalies.

"AI can bring numerous benefits to organisations. As our networked environments expand and become more complex, it can be leveraged to predict, prevent, detect and respond to cybersecurity threats through real-time data analysis from a wide variety of sources. The behaviour analysis used by AI allows organisations to enhance their threat detection and prevention process and reduce the likelihood of zero-day attacks occurring."

ERP Today though is warned by the expert that AI is only beneficial if used and configured correctly.

"It is not a panacea. There is also a perception that AI systems are extremely difficult to reverse-engineer and are therefore inherently secure. However, this is a false narrative.

"The sheer volume of sensitive and personal data analysed by AI systems is vulnerable to privacy and protection threats and we now see attackers reverse-engineer AI systems and access the data it has collected or been trained on," Venables adds.

_KNOW YOUR ENEMY

It's also worth remembering that cyber criminals - and hostile states - will also weaponise AI to enhance their attacks on networks and systems. As ever it's worth knowing your enemy, and to do so sooner rather than later.

"The capability of the Russian state in the SolarWinds hack and many others over the years, and Russian proxies in the form of many criminal ransomware gangs, was clearly a consideration as it proves the capabilities of the adversary," explains Tavakoli on Vectra's position in the wake of Ukraine.

"The last couple of years have certainly been a wake-up call that every organisation needs to take cybersecurity more seriously and increase its resilience to attacks. From SolarWinds to rampant ransomware perpetrated by well organised gangs, to impactful vulnerabilities like Log4j, the situation remains incredibly fluid. Now add to this the recent war in Ukraine.

"While most organisations have improved their defensive capabilities over the past two years, many are also coming to the conclusion that the improvements are not occurring fast enough, and are redoubling their efforts to become more resilient to attacks by advanced adversaries." ■

Why It's Time for a User Group Upgrade

User groups are struggling. So what's next?

BY PAUL KURCHINA

The importance of human engagement can never be underestimated, especially when challenging times are ahead and exciting innovations are being built. Shared lessons learned, experiences, and conversations can together spark curiosity, inspire new ideas, invent solutions and validate practicality.

Connection and relevance - these instinctive needs are the driving force behind every community.

For decades, this desire to be relevant has created thousands of user groups. Real-life technology practitioners, process experts and business leaders would gather at annual meetings, monthly chapter meetings and intermittent happy hours to talk shop and network.

While user groups have served their members well for more than 30 years, we must remember that the concept was created for a time when technological innovation happened over the course of years. Upgrades were completed once a year, significant overhauls were a once-in-a-decade event for most businesses, and even a complete rip-and-replace implementation project was unheard of.

Those days are long gone. Technology changes much too quickly and the pace of the traditional model for user groups cannot keep up as a result. As soon as one meeting ends, digital investments, needs and mindsets can be completely different when members move onto the next. And in most cases, it can feel like three years of transformation have passed by until the next monthly chapter meeting takes place.

Disconnect inspires an opportunity for revival

Let's face it - user groups are struggling. There's a deep divide between the pressures of real-world business transformation and the availability of user group interaction. And members are responding in kind with dissatisfaction, disengagement and ultimately, disconnection.

People want and expect - nay deserve - more. A community with real impact embodies nine key characteristics which I think we can all agree on: content, curation, curriculum, coaching, connection, conversation, collaboration, crowdsourcing and caring.

This next-generation mindset matches the current energy in today's social circles. Every chance to collaborate and develop ourselves and each other through mentorship, volunteerism, education, networking and engagement is viewed as an opportunity to increase the efforts, influence and success of our professional and personal lives.

Instead of running periodic touchpoints, next-generation communities allow people to work together consistently with active participation and tangible action. Members then expand their network and create innovations that can transform their businesses, bring value to customers and even make the world a better place.

Nothing beats the feeling of a place where people bond around shared ideals, feel valued and have a voice in decisions that affect them and beyond. So why not do the same in today's technology user groups?

The community is the ecosystem

While user groups have afforded a wide variety of opportunities over the years, they cannot neglect the urgent need to rethink, renovate and renew how people engage with each other and innovate. A community that genuinely cares for each other and thrives together can make a difference not just for businesses, but also for the humans touched by those businesses.

Unquestionably, the technology ecosystem is entering another exciting era, making next-generation communities more necessary than ever. The ecosystem must serve the needs of the community first, not the other way around. And when those connections are embraced, no matter how unexpected, the ecosystem can navigate the changes that few people are brave enough to consider and thrive in a world that is only becoming more complex. ■

Paul Kurchina is an SAP community builder, evangelist, advisor and global brand ambassador at ERP Today

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