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Editor's comment

Welcome to the first edition of smartCIO, our new quarterly magazine for the busy technology leader in EMEA.

Our mission is to share the latest technology and leadership insights and create a community of current CIOs and those aspiring to become one.

In this inaugural edition we are taking a look at a number of topics, from digital acceleration, through the role of the CIO in a post-COVID-19 world, Al and machine learning, and the importance of adaptable architectures. As always, there are so many interesting areas of discussion.

As we move tentatively into 2021, in future editions we'll focus on the topics that are impacting technology leaders in a changing world.

One of the key focus areas for smartCIO will be peer insight. Hearing from CIOs and CTOs as they tackle the issues facing business today will be at the centre of the magazine. In this issue we hear from the CIO of ThyssenKrupp Steel and the CTO of the PGA European Tour. Golf and Steel. Miles apart you might think, but the technology leaders at both these organisations face similar challenges when it comes to implementing new systems, methodologies and practices to cope and succeed in what has been dubbed 'the new normal'.

Leadership is another perennial discussion in the world of the CIO. Martin Veitch, Editorial Director of IDG Connect, provides some great new insight here, in the article 'Crisis may be a catalyst for CIOs to elevate status'.

And of course, we could not have a publication for the CIO without some discussion around AI and machine learning. Accenture's Medb Corcoran tackles the topic in 'Why AI's fairness hinges on those who develop it'. We also speak with the renowned author of 'Prediction Machines', Ajay Argawal, in the article 'A smarter, more ethical future with machine learning'.

Our aim for smartCIO is that it provides you with insight, opinion and discussion around the key leadership, business and technology topics that are relevant to you, and your role in modern business.

We look forward to you joining the conversation. Please give us feedback, suggest new ideas, offer your own expertise and insight. We can't wait to hear from you.

Grant Currie

Editor-in-Chief

Join the conversation in 3 ways!

SUBMIT story ideas, **CONTRIBUTE** your own articles for publication, or SUBSCRIBE to be a part of the Smart CIO community and receive the quarterly digital issue and info on local events.

One address does it all!

Email us directly at smartcioemea@workday.com

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Driving change and creating a better future for all



By Carolyn Horne, EMEA President, Workday

It's fair to say that 2020 hasn't quite kicked off the new decade in the way anyone would have liked. But, in spite of all the uncertainty and disruption, I believe this climate of continuous change will be the catalyst for business leaders to finally transform the way they operate to thrive in the digital world.

Born out of necessity, business leaders the world over now face a harsher reality about the urgency with which digital transformation must take place. They've been forced to take a harder look at what they're doing right, and what needs improving inside their own organisations.

In my mind, changes in the way we work, where our employees choose to work, how we engage with technology, and the way we think about our customers are all underpinned by one key factor – organisational agility.

Agile companies reaping the rewards

If the COVID-19 pandemic has brought one thing into sharper focus, it's that businesses must be more agile. They must be able to pivot in order to react to persistent change. Whereas agility had become something of a buzzword for doing things better, it is now a business imperative.

And there's evidence to suggest that agile companies reap the rewards in terms of performance. A McKinsey study, 'The Need for Speed in the Post-COVID-19 Era – and How to Achieve it', found that "fast organisations outperform others by a wide margin on a range of outcomes, including profitability, operational resilience, organisational health, and growth."

Similarly, we have a forthcoming global study, 'Organisational Agility: Roadmap to Digital Acceleration,' echoed those sentiments. The research found that agile organisations – those 'with the capabilities to react quickly and effectively to opportunities' – have never been as strongly placed to benefit from the ability to operate at speed.

IDC noted that 30% of European businesses view the COVID-19 crisis as a driver to move key systems to the cloud now, not later.

Disruption as the catalyst for transformation

During tough times, I think it's common, even prudent, to show caution when looking at new investments. Innovation is often the first lever for finance to pull when purse strings tighten. Yet for many global businesses, the march towards digital transformation has not been halted by the current situation. Indeed, it may even have been accelerated as companies realise the systems they have in place simply cannot cope with the current pace of change. In fact, IDC noted that 30% of European businesses view the COVID-19 crisis as a driver to move key systems to the cloud now, not later.

Transformation is not risk free, but embracing agility can counter this by providing businesses with the resilience needed to meet continuous change with confidence.

Ask yourself, are your processes agile enough? Could your core business systems react to major operational changes at speed?

Defining agility and making it real

While the COVID-19 pandemic highlights the business need for agility and speed, it's important we understand it is not simply about doing everything at break-neck speed. Organisational agility is about looking for innovative ways to build business resilience, future-proof revenue streams, improve operations, and ensure employees are well-managed and supported. I think it's compelling that both McKinsey and our own studies showed that the organisations that responded fastest to the pandemic are more likely than others to have embedded agile capabilities, such as data accessibility and cross-functional collaboration.

Access to data and the ability to collaborate across functions are key components of agility. As Lesley Ballantyne, Director of People Operations for the John Lewis Partnership, said in a recent interview on our blog: "We've already seen this during the crisis, where we repeatedly had to respond quickly to a change to our payroll or a change to time entry for all of those people with different working patterns – that agility from Workday allowed us to do that."

We've all had to find innovative ways of doing traditional tasks and processes during the lockdown, and much of that is about how agile your business is. Mike Neller, Senior Vice President, Global Controller and Chief Accounting Officer at Aon plc, recently explained how his team closed the financial period remotely for the first time. "In the end, our close went without a hitch - it was fantastic. It was quick and efficient. When you think about being in over 120 countries, that's a lot of people working to close a lot of sets of books," he explained. "Everybody was able to manage it without any kind of delay and without any kind of inefficiencies. The team did an amazing job of staying connected to deliver on time, and we never had to use the contingency plan."

It's been a tough start to the new decade, and while on the surface it may be hard to find the positives, what has impressed me is the resilience of businesses to get the job done. Business leaders have smashed down the barriers that inhibit change, and embraced organisational agility to truly transform the way their companies operate. We don't know how 2021 will pan out, but the businesses that are built to respond quickly to persistent change will thrive in an era that promises to be anything but normal.

Transformation is not risk free, but embracing agility can counter this by providing businesses with the resilience needed to meet continuous change with confidence.



Crisis may be catalyst for CIOs to elevate status

By Martin Veitch, Editorial Director, IDG Connect

Can you spot a hint of cognitive dissonance in the following?

- a. Some of the most widely quoted phrases of business and technology leaders in recent years have included 'software is eating the world' and 'we are all digital companies now'.
- b. The people who know most about IT, and have led technology change projects all their professional lives, are rarely asked to sit on boards or hold positions of executive power, and almost never become CEOs.

You'd struggle to ignore the implicit leap in logic here and, for decades now, watchers have pointed to this yawning chasm.

Optimistic conference streams focus on the route 'from CIO to CEO', but even as technology is universally recognised as a rare source of competitive differentiation, the CIO role has not markedly advanced.

The rewards for the CIO remain thin gruel: A reporting line to the CFO and an annual instruction to 'do more with less'. Why is this the case? Inertia perhaps. A generational gap between CEOs and the digital native? Maybe, although that's on its way out. A sense that finance and operations experts trump tech nous? Certainly. But, whisper it for now, could we finally (finally!) be approaching a crossroads?

Clearly, the pandemic has sparked a dynamic whereby companies have depended on IT to provide the tools and processes to keep staff productive and operations slick. Today,

it could be that the CIO, the whipping boys and girls of corporate life who are often only noticed when systems fail, is en route to become the next generation of corporate senior leaders. There's a long way to go before that becomes reality but it may be that, amid the pit of snakes of the CIO career, the pandemic may be proffering put-upon IT chiefs a rare ladder to climb.

CIOs are the superheroes of the pandemic. The people who orchestrated the big march out of workplaces and helped to get staff up and running in double-quick time. Tools have helped, of course: Cloud, mobile, social media and wireless networks are a good fit for a time when we don't physically congregate much. If things are bad today, then imagine how they would have been if a pandemic had stuck 25 years ago when desktop PCs, LANs and diskbased software ruled.

So, CIOs have already elevated their platform but the characteristics of leading CIOs have helped too. Think of some of them:

- Unflappable. CIOs need to deal with crises on a fairly regular basis: Outages, scary software audits, ransomware, DDoS attacks, website defacements, attempts at identity theft and so on. It's rare to meet a CIO who is not even-tempered and proportionate in response to challenges.
- Analytical. Most CIOs have roots in computer science and they have an ability to weigh pros and cons.
- Decisive. IT is an operational necessity and CIOs make the hard calls on what's working and what's need to change. These are binary decisions that need to be made at certain times in specific environments with fall back plans in place.

These qualities are even more valuable today where existential choices are being made.
CIOs needed all of them to lead from the front on lockdown and in the various phases

since. The war stories I have heard since are remarkable:

- One CIO charged with making workers productive from home was alarmed to find that a contact centre in India used only desktop PCs. A same-day delivery online order for 400 laptops meant that support operations didn't skip a beat.
- It's often said that 'nobody could have predicted' the pandemic, but in fact an enlightened few prepared for just such an eventuality. One CIO and CMO had worked together previously, and both were fans of Bill Gates who had famously said that a pandemic was one of the greatest risks that humanity faces. When they suggested that the company needed to prepare for COVID-19, there were few takers. But they persisted and that meant that their company was prepared for the pandemic at least a month ahead of rivals.
- The CIO of a retailer realised, several weeks before lockdown, that the company's sole chance of survival was to move operations to a pure online model and close down stores rapidly before penalties on property took effect. She did this successfully and then went on to hold marathon days and nights of negotiating with key IT suppliers for deals that relieved significant financial pressure. She followed up by moving as much productivity software as possible to cloud environments, including a new HR system.

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CIOs are the superheroes of the pandemic. The people who orchestrated the big march out of workplaces and helped to get staff up and running in double-quick time. It may be that after 30 years of chatter on this old chestnut of a topic that the CIO is ready for lift-off. Perhaps we'll look back on this time and wonder why it took so long.

Thinking about Richard Sykes

It's hard for me to believe that it's now over a year since the death of Richard Sykes, perhaps the most influential CIO the UK has ever seen.

In a way, Richard created the role of CIO as we understand it today. Drafted in from outside the IT remit at chemicals giant ICI, he found the nascent PC era absurd in many ways: Uncontrolled costs, paying to test software, jargon aplenty, mutual incomprehension between business and datacentre staff, and so on.

Richard was a master communicator who knew how to talk in ways that persuaded and relaxed purse strings. When he wanted to oversee a major transformation project, he didn't simply provide an ROI case full of numbers and KPIs the board didn't understand, but mocked up pages of an imaginary future Financial Times front page splash. One lamented a catastrophic decision not to modernise at ICI as it went bust; the other celebrated a successful digitised version of the giant that made it soar.

He was a bon viveur, a man of the arts, a conversationalist and he positively affected the careers of many who followed in his footsteps, whether they knew it or not. Young (and old) CIOs would do well to mark his wise words about the need to simplify, explain and paint pictures. And as he once told me, even if you never sit on the board, the importance of having the sort of relationship where knocking on the CEO's door and suggesting a coffee, a glass of wine (better) or lunch (best) is a smart way to get things done.

For CIOs bent on breaking the glass ceiling, Richard offered a fine example of how to behave and how to think: He was a man ahead of his time. By always thinking about the business and enabling the organisation through creative use of technology, Richard is the template to follow. CIOs who do that will have a great platform to go further. To paraphrase Shakespeare's Cassius, there is a tide in the affairs of men which, taken at the flood, leads on to fortune. Well, the tide is high and CIOs may finally be able to seize the day and go further as a puzzlingly persistent career cul-de-sac is finally demolished. That is long overdue.

It may be that after 30 years of chatter on this old chestnut of a topic that the CIO is ready for lift-off. Perhaps we'll look back on this time and wonder why it took so long.

CIO view | Pushing the button on digital acceleration, with Thyssenkrupp Steel



By Steve Dunne, EMEA staff writer

In the last decade, and particularly during 2020, businesses have had to find new ways to win in the face of extraordinary challenges. What has become clear is that organisations that embrace digital head-on have had greater success and shown greater resilience in the face of such adversity.



A recent study from IDC showed that 'digitalfirst organisations are twice as profitable and deliver eight times the revenue of their nondigital peers in the industry'. Additionally, IDC states that 80% of CEOs now feel they must deliver some form of digital transformation and it's at the very top of their agenda.

Resilience, agility and the journey to a digital revolution

Our global survey, 'Organisational Agility At Scale: The Key to Driving Digital Growth,' found that over one-third of firms now expect 75% or more of their revenue to come from digital efforts in three years' time. Consider that this percentage has tripled since 2019, when just one in 10 firms had the same projection.

While expectations for digital revenue growth continue to rise, how do businesses accelerate their digital efforts? The answer lies in the need for agility, as organisations look for innovative ways to future-proof revenue streams, operations and people. Our research also found that organisations that responded fastest to the pandemic are more likely than all others to have embraced agility by embedding things such as data accessibility and cross-functional collaboration.

At our Conversations for a Changing World digital event, Carolyn Horne, President, EMEA, Workday, spoke to Dr. Michael Kranz, CIO, Thyssenkrupp Steel, on how the business has placed digital at the core of its operations – helping it pivot, respond and recover faster during periods of uncertainty and persistent change.

Describing the decision to accelerate digital at his organisation, Dr Kranz explained, "We invested early in digital and it's a key part of our strategy, including business, culture and technology. Technology transformation was about moving from legacy systems to more integrated platforms. On the culture side, we

established a digital pioneers programme combined with a digital lab. But, first of all we needed to establish new digital services and optimise customer relationships. We're striving to create a digital mindset for all of our 27,000 employees."

Agility and resilience during a storm

While COVID-19 has impacted many industries in different ways, one commonality is that it has accelerated digital transformation and exposed a clear divide between companies that were already investing in digital operating models from those who haven't. Our research asked more than 1,000 firms whether they were equipped to respond to the COVID-19 pandemic at speed and scale. The answers to this one question identified two groups and their ability to react: the 'fast responders' (73%) and the 'slow responders' (27%).

At Thyssenkrupp Steel, the organisation faced a number of challenges throughout the pandemic, including both the health and economic portions of the crisis. The role of digital in driving agility and resilience during this time were absolutely key. "We were forced to move more than 3,000 people to remote working overnight. But our production facilities require an onsite workforce, so we had to establish hygiene concepts and also remote access to local systems at the same speed. This has been a huge task, but our systems and processes have allowed us to meet the demands of the health crisis," said Dr Kranz.

"At the same time there were economic factors at play. We needed to work on cost savings and explore how we could scale back our project portfolio. This had to happen quickly," Dr Kranz explained. "There were some organisational changes, which required us to change our internal processes and move away from working in organisational silos. By 1 May, we had managed to re-organise the company, our leaders had to meet their peers virtually and navigate their new organisation digitally."

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Dr. Michael Kranz Chief Information Officer Thyssenkrupp Steel



Collaboration in the changing world of work

The shift to a more agile way of working is pivotal if businesses are to thrive in the changing world of work. Re-emphasising the importance of breaking down management and employee silos, Dr Kranz focused on the need for better collaboration and engagement if key functions, such as business and IT are to thrive.

"We come from an organisation that has traditionally put daily business execution on one side and programme/project management on the other. That creates a lot of noise and means the business must often refocus and reprioritise resources to be truly effective," Dr Kranz said. "Our goal is to bring business and IT together to collaborate in a more agile way. We've put in place cross-functional teams that work together for one month with focus on achieving a specific goal. If you allocate all your resources in that way, the results are fixed tasks for only four weeks, then you review and plan for the next four weeks and reshuffle your resources as needed."

While COVID-19 and its impact have been felt by businesses across the globe, for many organisations, including Thyssenkrupp Steel, it has forced companies to build new levels of resilience. Dr Kranz believes this has accelerated the rise of digital and more efficient ways of working, but this still demands bravery from business leaders.

"The global crisis changed the dynamic of the C-suite. And maybe the letter C also stands for 'Courage'. The crisis has forced us to focus even more on our strategy execution. We now have much more of an understanding of what we are and what we want to be. Collaboration has developed strongly, even if we are still fighting the impacts of the economic downturn."

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CTO view | PGA European Tour: Getting golf back on course



By Ghadeer Redler, Staff Writer

Due to the pandemic, the PGA European Tour has had to adapt to multiple regulations and protocols to bring the sport back. Michael Cole, CTO, shares the role technology played in the return to golf – and what's likely to change in the future.

Professional golf is one of the most popular sports worldwide. When the global pandemic first hit, millions of people were disappointed with the halt of the sport, even if they understood why that had to happen. Michael Cole, Chief Technology Officer of the PGA European Tour, was determined to find a way to bring back golf safely and as quickly as possible. I talked to him about how he made this return possible, as well as what's next for the professional sport. You can read excerpts from our conversation below.

When the pandemic hit, professional sports were suspended, including golf. What challenges were you facing due to the suspension, and how were you thinking about solving them?

One of our big challenges is that we have no real down season; our closed season is three days in November. So we go from one season to the next immediately, which, from a technological perspective, means we don't get the time to do a lot of development work. COVID-19 forced us to have some downtime, which created this opportunity to focus on development and training.

We had two major developments taking place: Our membership and entry system, as well as our on-venue scoring system. Both of these new systems have been two-to-three years in development, and they coincided with the pandemic lockdown period, which meant we were able to really focus on the final acceleration of their development and do critical onboarding for our operations team. This year has been an interesting period in technology because it's enabled us to focus on those long-standing developments that are helping us to transform the technological landscape at the European Tour.

In addition, we also had the challenge of COVID-19 to contend with. It forced us to look at how technology was going to play a key role in returning the sport back for the fans, the players, our commercial partners, and our broadcasters. We had to ensure the health and safety of all of our players and operational staff to enable the return of our tournaments, and technology has played a critical role in that. It's what I call a 'COVID defense ecosystem' because it incorporates a number of key components. This includes anything from the scheduling of tests for everyone onsite, to the daily assessment of symptom checking and mandatory training of new protocol and processes.

We also had to create a completely contactless environment. Traditionally, players show up at our office before a tournament

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and they have a lot of physical interaction. For example, they sign a form to say they're present at the tournament and take a lot of literature from that office: Yardage information, pin positions, course maps, tee times, and so on. So, we had to create a connectionless environment and put all of the new protocol and processes online very quickly to safeguard social distancing. Now, players can register their presence at tournaments online and obtain all of the information that typically would be in hard-copy format. This is not revolutionary, but it has changed the way we now interact and engage with players.

Workday also plays a big part in helping us create a contactless environment. During this time, Workday has enabled us to simplify our back-end processes and create more automation in our business. By doing that and becoming more accessible wherever our

efficiency out of the offices. That directly underpins our COVID-19 health strategy by minimising human-to-human interactions.

How are you leveraging technology to adapt to golf's 'new normal' and engage with fans?

There is only one fan right now and that's the armchair fan, which puts even more focus on TV. This means we have to look at new ways we can engage with that fan in a more compelling manner. COVID-19 has enabled us to refocus on the TV product and drive connection to the armchair fan in the same way as a spectator on-course. And we're also starting to think about scaling up and planning for a day when guests and fans will be permitted back on the golf course.

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As human beings, we talk a lot about more. Naturally, more just sounds better. But, when we look at moving forward in this new normality, less is more critical. Now, we're talking about creating ticketless, contactless, and cashless environments.

As I mentioned before, Workday has a key role to play, both in the contactless environment through driving more self-management and automation, but also in this cashless environment. We want fans to come back to our world and not be given hard-copy tickets anymore; instead they're going to have the

ticket embedded within their mobile phone. And that mobile phone is also going to be the source of their currency as well.

When you enter into a cashless environment, you've got to have the back-end systems to enable that to happen because you're bringing your back-office system into the front. From a spectator perspective, we need to integrate our front-end concessions – the person that is purchasing the merchandise, the hot dog or the pint of beer – to transact on the course in a cashless way, and that transaction will eventually be fully integrated into our back-end systems.



Here's another scenario. If a contractor is onsite and wants to purchase WiFi services, or environmental services like a Portakabin, or temporary power, then historically, that's been a very manually-orchestrated process to take that order onsite and deliver those services. Where we want to get to in the future is fully automating that rate-card concept. Workday will give us a mechanism to do that so we can take the order online and fulfill that order on the course in a completely automated way. That's why I'm so excited about bringing on board cloud-based services that will allow us to get into that full automation of financial processing across our operational delivery. This efficiency and automation is creating less need for contact, and that builds a healthy and safer environment in which all of our employees, players and fans can coexist, operate and enjoy the sport.

Any lessons to share on how IT leaders can be more agile and quickly adjust to new projects and initiatives?

I'm a bit of a newbie to the golf industry – I joined the organisation less than three years ago, so I came in with the benefit of not being a golfer and not being heavily involved in the golf industry. That brings forward the opportunity for fresh insight to look beyond the immediacy of the sport and find other ideas and pathways that we can bring into our world. But, I don't think that you have to create the invention. You don't need to build from scratch; you can co-create with your commercial partners or take ideas from the broader industry.

One of the things that I noticed early on is that golf is a fairly fragmented industry. From a technological perspective, there wasn't

a standard blueprint that held all of our industry's technologies together. I created the Technology in Golf Forum, and we have representation from PGA Tour, PGA of America, the R&A, the LPGA, and the Ladies' European Tour. It's great because we're all sharing key learnings, insights and ideas with one another.

The technology industry has become quite populated with the next must-have innovation, so this forum allows us to jump into a shortlist and really double down on the best solution to give us the maximum value in the quickest time possible. That's been valuable to me, but I've also extended that by running a similar forum across the broader sports industry, which includes representation from the All England Club, the IOC, Formula 1 and the English Cricket Board.

The key learning point is you don't have to create something new. Look across the industry and figure out where those great ideas can be adapted and adopted into your specific environment. That's the greatest and most efficient way to gain successful outcomes.

COVID-19 wasn't welcomed by any of us and may still be with us for some considerable time. However, the pandemic has brought on a period of technological change that has accelerated innovation, evolved our product and advanced efficiency in our business, putting the European Tour at the forefront of technology in sports.

Original article: https://blog.workday.com/enus/2020/pga-european-tour-getting-golf-backon-course.html

The pandemic has brought on a period of technological change that has accelerated innovation, evolved our product and advanced efficiency in our business, putting the European Tour at the forefront of technology in sports.

Building an IT organisation that prepares for change

By Sheri Rhodes, CIO, Workday



What does an IT organisation need to keep innovating in the years ahead? Workday CIO Sheri Rhodes explains the four qualities that all tech leaders should instill in their teams.

Since coming on board as Workday CIO I've been thinking a lot about how our IT organisation can keep innovating in the decade ahead. One big question I ask myself: What skills do we need, in the near future and beyond?

Despite living in an age of specialisation, the skills required of individuals in an IT organisation need to become even broader. IT in today's world can have many layers, including infrastructure as code, security by design, and the use of AI, machine learning and personalisation – just to name a few examples. Systems of engagement are becoming intertwined with systems of record. Everything we do becomes increasingly digital and oftentimes interdependent.

All of these shifts alter the ideal mix of skills and knowledge needed in a successful IT organisation. Let's take them one by one.

The 'how' matters. Building a strong culture and emphasising the importance of positive collaboration is as important as hard and soft skills for how we get our work done.

Hiring and retaining people with strong skills around communication and collaboration, both analogue (face-to-face) and digital, are especially important as digitally native Gen Zers enter the workforce. It's vital that all generations be able to communicate with each other in a way that's comfortable for all involved.

While each employee brings key skills and innate behaviors, we need to be sure to constantly invest in our number one asset: People. Ongoing training – not just what we do, but how to do it in a constructive, positive way – won't go out of style anytime soon.

Digital dexterity. As IT leaders we must keep striving to build teams with a mix of skills that reflect a deep understanding of the ever expanding technology landscape.

Despite living in an age of specialisation, the skills required of individuals in an IT organisation need to become even broader.

IT leadership shouldn't think of things like security or AI as bolt-ons. They should be interwoven through the enterprise architecture (and here at Workday, security and Al/machine learning are foundational building blocks of our solutions). Your employees, customer and partners who interact with your systems want the same simple approach they get with consumer technologies. Because of this, it becomes more important than ever that our team members have a good understanding of how to evaluate architecture within respective solutions, and engineering knowledge to design in technologies like AI and security in from the start.

Data in context. Understanding where data sits within an enterprise - how it's used, who is using it, when it's used, and the list goes on – has become a first-level need. The IT team must be able to continuously do a fundamental mapping, tracking and safekeeping of every data element that provides context to a user, an interaction or a series of events. How companies will access this data and how they'll be permitted to use it to create value-added experiences for customers adds additional layers of

complexity – complexity the IT team must be able to understand and manage. This is why IT must understand how to build context into the transaction whenever it helps, but avoid when it further confuses.

Bias for action. Technology is evolving in nanoseconds, so it's important that while we don't become reactionary to every new trend, we're always on the lookout for trends and technologies that can give the business a competitive advantage. As IT teams, we always want to be demonstrating progress, whether that means refining something we already have or implementing something new. Quick action helps us gain credibility with our internal stakeholders, because it shows we understand that as a company, we're navigating constantlychanging customer demands as well.

None of this is the final word or the complete truth - I'm sure I'll continue to learn from other IT leaders and from all my colleagues. In the meantime, I'm looking forward to spending my time here building an IT organisation that keeps innovating for the business, so that the business can deliver best-in-class solutions and technologies for our customers.

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Why Al's fairness hinges on who develops it

By Medb Corcoran, Managing Director at Accenture Labs, The Dock

Using algorithms for decision-making offers huge benefits. From reducing drug discovery times, to speeding up and increasing the accuracy of medical diagnoses, to helping to feed the world by boosting agricultural productivity, algorithms contribute to progress in many different spaces.

And using an algorithm to make a decision takes emotion out of the equation, giving a more fair, unbiased decision – right? Well, maybe not. In practice, we've seen this isn't always the case.

Résumé-scanning algorithms have overlooked female candidates for technical positions.

Medical imaging diagnostic systems have failed for dark-skinned patients. Criminal sentencing algorithms have discriminated against black defendants. The list goes on.

There are many reasons algorithms can make biased decisions. Even a perfectly 'fair' algorithm can lead to biased decisions if it's used incorrectly in a real-world environment. In that case, it's a lack of transparency around the way the system is used that often causes problems. But I want to focus on here on bias that's encoded during development – for example, if the data used to train an algorithm in the first place is biased.

Without concerted effort in the model development process, bias can be encoded into all of the decisions that the resulting algorithm makes. Humans make biased decisions all of the time, of course. But automated algorithmic decision-making can be scaled to impact huge populations at the click of a button. That makes the risk of encoding bias into an algorithm much worse. And with algorithms being used to make more decisions in more aspects of our daily

lives, we need to identify, quantify and address potential bias at all stages of the model life ycle.

I've been leading a key Accenture Labs effort in this space in collaboration with our global Responsible AI practice and The Dock, our global innovation centre. We've developed tools that let data scientists quantitatively assess for fairness across the end-to-end model lifecycle. This includes state-of-the-art black-box AI models. Many of the algorithms developed before it became the norm to check for bias fall into this category. Those models are already in use and making critical decisions today.

Accenture's Responsible AI practice conducted a week-long hackathon with the Alan Turing Institute in 2018, aimed at translating existing qualitative definitions of fairness into quantitative measures. Building on those efforts, we developed a proof of concept for an algorithmic fairness tool – one that presents its results in a way that is understandable to both data scientists and business users. We tested and refined the tool in a pilot with industry experts at a financial services company.

The algorithmic fairness tool works on real-world problems, taking this academic thinking from a proof of concept into everyday life. Although we initially applied it to financial services, we are now applying it to a number of industry use cases including health, public service and HR.

To make the tool relevant for real-world problems, we had to reexamine a number of assumptions. Many assumptions make sense when using small, clean datasets and straightforward scenarios, but don't work for complex data in real-life settings.

Using an algorithm to make a decision takes emotion out of the equation, giving a more fair, unbiased decision – right? Well, maybe not. In practice, we've seen this isn't always the case.

Technical solutions can address many of these, alongside governance and standards to guide the data scientists and business users. Interpreting the outcomes of fairness metrics isn't always straightforward – we almost always need a deep dive to determine the root cause of potential bias.

Working on the technical side and having the right tools, governance and processes to assess and address fairness is both important and fascinating to me. But just as important to address bias is tackling the lack of diversity in the Al field.

Women and ethnic minorities remain underrepresented in computer science both in university and in the workforce. This lack of diversity leads to one of the most difficult-to-combat types of bias: unconscious bias. Diversity among experts helps ensure that the potential impacts (and in this case, biases) of a technology are considered from multiple perspectives from the start. Without that diversity, the chance for bias increases sharply.

And this kind of bias can lead to life or death situations. For example, we've seen instances of facial recognition systems not recognising black women as humans due to training data being mainly from white males. This would have serious implications in a self-driving car looking to determine if there is anyone in its path. Unfortunately this isn't a new problem in tech: 20 years ago, due to crash test dummies being based on mainly on the adult male body, women (and children) were much more likely to die in car crashes.

This long-standing problem is much harder to address than the technical one. It takes concerted effort over time from a wide range of stakeholders across society, including industry, government, and educators. But we can and must address it, and we need efforts on multiple fronts.

Last year I co-sponsored the Accenture's six week Women in Data Sci Accelerator in Dublin, which is now an annual event being scaled across other countries. The goal of the Accelerator is to empower women already in careers working with data with the skills required to be a data scientist.

There is also a longer-term effort of working with the younger generation. Only about a quarter of

computer science undergraduates are female. Unless we address this imbalance, it will be very difficult to address the continued imbalance in the workforce. So, I focus most of my attention in getting more girls and young women interested in the options out there for a career in STEM.

I work with third level institutions to shape new data science and AI courses. I also help them think about how to make these courses, and the way they are advertised, more attractive to females – sometimes by tackling the already ingrained unconscious bias that often already exists at this stage.

I've developed efforts for second level students as well. Initiatives that I've rolled out here include a girls-only work experience week to learn about STEM, and also sponsoring Junior Math Achievement weekend classes for about 100 11-15 year-olds, aimed at giving children who are good at mathematics a place to excel and have fun at the subject. The sponsorship is contingent on ensuring good representation across both males and females and also across disadvantaged and privileged schools.

And finally, because all the research shows "You can't be what you can't see," I make myself get out there and speak on these topics (getting myself out of my comfort zone!) to give younger women a role model.

Fairness in algorithmic decision making is of growing importance. But making sure that it becomes the norm depends on both technical and societal solutions. The technical piece has to be addressed by the people already in place with expertise, but the second part – ensuring diversity in those groups of experts going forward – is something we all have an obligation, and an opportunity to make happen.

The efforts I've been part of to date do make a difference, but we can and must do more. By making sure that younger generations of all backgrounds, ethnicities and gender get the opportunities and feel empowered to pursue careers in STEM and specifically AI, we can help apply this technology to its full potential for everyone.

To learn more about our efforts in algorithmic fairness or get involved with our efforts to increase diversity in STEM and AI research, contact Medb Corcoran.



In today's uncertain economic landscape, businesses must meet change head-on if they're to thrive. And this requires new levels of organisational agility, and changes to internal and external processes that are often underpinned by technology innovation and cultural transformation.

Managing such change requires strong leadership from the C-suite – bringing the role of the CIO into sharper focus as one of the key drivers of digital transformation.

Transformation raises many questions for organisations. How can the business scale digital initiatives but ensure continuity? And who should be leading this change – should it be IT, digital innovation teams or lines of business?

A recent IDC whitepaper, 'Adaptable Architecture: The Backbone for Digital Business Models', explores these key questions. And we've highlighted some of the findings.

Uncertain times require organisational agility

While nobody can be entirely certain what it will look like, the new normal is all about managing in times of uncertainty and volatility. Legacy technologies don't provide the level of agility that businesses need to react quickly to continuous change. Organisations must make agility a core component of their operating models, and that means weaving agility into their technology and processes. With this in mind,



By Christina Johnson, EMEA staff writer



deliver eight times the revenue of their non-digital peers. As businesses focus on making digital transformation real, the priority will shift increasingly towards delivering financial outcomes. Business leaders are under pressure to meet expectations on digital transformation, and that pressure will intensify on the C-suite.

Digital innovation at scale requires an intelligent core

One common thread across the entire digital transformation story is the need to tie frontoffice innovation with an agile backbone to deliver real value to the business. IDC describes this as the development of an 'intelligent core'. This is the ability of businesses to scale digital transformation across the organisation, from customer to employees to financials, enabling the business to react to changes in the market on a dynamic basis.

Getting architecture right will be critical

Top of the list for the CIO is developing a futureproof, next-generation architecture capable of driving the business forward. IDC believes this is a 'must-do' task for the IT function. But the size of the task shouldn't be underestimated, and the CIO will need to negotiate with stakeholders, particularly when it comes to balancing the need for standardisation and flexibility.

If you'd like to learn more about the steps the CIO and the IT team can take to build an agile backbone for digital business, you can read the full whitepaper here.

Published blog for reference: https://blog. workday.com/en-us/2020/the-cios-role-increating-an-adaptable-architecture-anddigital-first-business.html

Transformation raises many questions for organisations. How can the business scale digital initiatives but ensure continuity? And who should be leading this change should it be IT, digital innovation teams or lines of business?

A smarter, more ethical future with machine learning

This article was originally produced before the global pandemic. While the world looks a lot different today, we believe this content remains valuable for helping organisations move forward and emerge stronger.

Many questions arise when AI and machine learning (ML) enter not just the workforce, but society as well. Concerns over privacy, bias and job security dominate the conversation. Yet, when used ethically, AI can empower more fairness, transparency, and human expertise. We just need to train our technology correctly.



By Josh Krist, Staff Writer

In this article, we examine the role AI and ML play in economics and the intricate relationship between human, machine and society at large. Ajay Agarwal, co-author of 'Prediction Machines: The Simple Economics of Artificial Intelligence,' along with Sayan Chakraborty, Executive Vice President of Technology at Workday, discuss the Al landscape today and how it has changed since the book's publication.



Chakraborty: I have a question to lead us off. It's been 18 months since the publication of 'Prediction Machines.' I bought it the day it came out – which is a really short time in some industries but a really long time in the area of AI and ML. Looking back on the last 18 months, what do you wish you would have elaborated on more, or had delved into more deeply, in the book?

Agarwal: We've since learned a number of things. Even though 18 months is a short time to some, it feels like a very long time in this field.

If I was to pick one, the most salient is that we underestimated the impact on power. 'Prediction Machines' is largely about what happens as the cost of prediction falls. The part we underestimated was when the cost of prediction falls, it can affect not just the way we do particular tasks, but it can affect the distribution of power. We are starting to see some organisations and countries beginning to get ahead of others in a way that may be hard for others to subsequently catch up. Because prediction, in some cases, confers power. And because of the way Al works, they learn. An organisation's ability to deliver better predictions will attract more users, more users generate more data, more data generates better predictions. Once that flywheel starts to turn – we had underestimated in 'Prediction Machines' the impact that prediction has on power.

Chakraborty: So the rich get richer, and we end up in a situation that feels like 'the haves and have-nots,' potentially.

Agarwal: It can go both ways. If we take an example like AI that runs search, we used to have power distributed evenly from coast to coast in terms of information curation. We called those centres of power 'libraries.' When we wanted information, we would go to our library and there were people skilled in library

science and there were librarians, and every town had a library – or several.

Now, everyone's information is curated by one of two companies. The majority is one, in Mountain View, California. So on one hand, there's been an incredible concentration of power; all that power once distributed across all these libraries is now sitting in one organisation. On the other hand, the access to information has been democratised in a way that is much more evenly distributed than before.

In lower-income countries, in lower-income neighborhoods that had less access to wellfunded libraries, now that access is much more broadly distributed. The power is much more concentrated, in terms of the control, but access is very distributed.

Krist: And I know you said there were three things that you were wanting to update or wanting to speak to. What were those others?

Agarwal: Another one is the relationship between prediction and judgment. In the book, we spent a fair amount of time on the basic idea that prediction is what AI does, and judgment is what humans do. We have started to recognise different categories of Al initiatives. What I call short-term, mediumterm and long-term. Short-term initiatives simply take prediction problems that we're using predictive analytics for and we apply AI to get a performance lift. Things like at a bank, anti-money laundering sanction screening, fraud detection and 'know your customer.'

The second category are initiatives that we didn't use predictive analytics for - we used humans. These are what we are converting into prediction problems - things like translation, driving, determining credit scores, replying to emails.

Then there's a third category. Rather than thinking about automating tasks, it's about

An organisation's ability to deliver better predictions will attract more users, more users generate more data, more data generates better predictions.

redesigning the whole way things are done, such as completely autonomous transportation systems.

The first case generally has a pretty short time to show some results and generate an ROI for the companies that deploy them – the ones that just replace predictive analytics. The second phase initiatives are longer-term. They take, in general, two to five years. The third type of initiatives are much longer-term.

Chakraborty: I think we've seen that an essential part of adoption is rethinking the user experience. In the enterprise user experience, some software is not well suited for the augmentation that comes from Al and ML.

Agarwal: There are various areas of concern - things like privacy, bias and what the impact will be on jobs. Those are the three big areas. With respect to privacy, it seems that on average, there is a trade. Obviously, Al is run on data, so at the individual level, people need to decide what they're willing to give up from their data. The more they give up, the more work AI can do for them in terms of personalisation.

For companies, they need to make decisions on where they draw the line, on the data they will use and the data they won't. That often gets confused with the data they will share with third parties. I think the former issue is the one that really defines the relationship between the customer and the company they're exchanging data with.

The second issue – what that company will then share with third parties – should be, in my view, one that's very explicit. It is somewhat separate from the company's mission – but should be fully transparent to the user. At national levels - for example, a region like Europe that has a very distinct privacy regime - this has benefited that region in some domains. People are more willing to share information because they know it's going to

be treated in a more careful way, but at the same time, it makes it much harder for their companies to compete. Privacy is a topic where once only legal privacy wonks thought it was interesting, but everyone else thought it was dull.

Chakraborty: Those 'I Agrees' and 'Your Terms and Conditions' that we all agree to automatically and scroll through, right?

Agarwal: Right, whereas privacy now is moving to centre stage as a strategy issue and an innovation policy issue at a national level.

Chakraborty: We've taken a very directed approach to that at Workday. We built our ML system honestly, as an opt-in/opt-out system, which is technically hard. So customers opt in, and it's very explicit which benefits they can expect to get by opting in which data. So, there's highly granular decision-making around what data to share. And then the option to opt out, and for us to expunge the data. And then of course, in our case, being very explicit that we don't share the data with third parties. That has been central to who we are for some time, but it's gratifying to see the future come to us as people now say, "This is no longer a rubber stamp. This is something that we are actively worried about."

Agarwal: That approach you just described – I suspect that even three years ago most customers wouldn't have really appreciated the difference between that approach and some of the approaches others were taking. I think that increasingly, that will become the dominant approach as people start to recognise how important that opting in/opting out is, and how critically important it is in regards to sharing with third parties.

With regards to bias, I think what we are recognising is that AI systems can be designed to either amplify undesirable human bias or they can be designed in a way to significantly reduce human bias. For example, there's a great study done by a professor at University

I think we've seen that an essential part of adoption is rethinking the user experience. In the enterprise user experience, some software is not well suited for the augmentation that comes from Al and ML.

of Chicago and a couple of colleagues where they trained an AI, then they built two AIs. The first one was trained regarding the bail decision – for judges deciding whether or not someone is granted bail. It happens about 10 million times a year in the U.S. They trained the AI, and the first AI they trained on judges' past decisions. When they ran this AI on data it had never seen, it performed in a way that was indistinguishable from a human judge.

The second AI they trained – instead of training it on what the judges decided, they trained it on actual outcomes of whether people that were granted bail fled or showed up for their hearing. The decision of bail is a prediction problem, and all you're predicting is whether or not a person is a flight risk, which is totally orthogonal to whether they are guilty.

What was interesting about the second Al that was trained on actual outcomes rather than on judges' decisions, is that it became superhuman. It became much better than judges, and when they ran it on data it had never seen, it was effectively able to – holding the crime rate constant – reduce the number of people that were incarcerated by 40 percent. And furthermore, it disproportionately reduced that for some ethnic minorities. In other words, it was a useful exercise in demonstrating that depending on how the Al is trained, it can either adopt human bias or improve upon it.

The third issue, on jobs – this one is tricky. Everybody takes one of two extreme views: First, that AI is coming to take everyone's jobs, so there is great fear; and second, that AI is going to enhance people and make them superhuman, and we will all be better off. I suspect that the answer will ultimately be both. It will be more of the first in the short-term because as AI moves into jobs, it will be very hard to retrain people, particularly after a certain age. So there will be some potential hardship. In economics, they use

the euphemistic term dislocation. I think that can be quite a significant problem.

But, longer-term, there is this substantive upside benefit. The key is going to be distribution. How do we make sure that it's good for everybody and not just for the beneficiaries of enhanced technology?

Krist: Sayan, you said you bought 'Prediction Machines' on the very first day. What was your big takeaway?

Chakraborty: At the time the book came out, there were either a lot of highly technical books for practitioners, and then a lot of almost breathless hype books. Either what I call 'AI eschatology' – the destruction of the world by AI – or the future perfect world generated by AI. There wasn't any information about the practical implications for individuals or for companies, and then this book landed.

It was a breath of fresh air because the book developed a framework for us to think, 'Okay. What does this mean? As predictions get cheap, what happens next?' That allowed me to drive particular focus on what we were doing at Workday – rather than spreading ourselves everywhere – how we could provide benefit for our customers and for their employees.

With regards to bias, I think what we are recognising is that Al systems can be designed to either amplify undesirable human bias or they can be designed in a way to significantly reduce human bias.

Driving change and creating a better future for all

Aneel Bhusri and Carin Taylor from Workday joined Michael C. Bush, CEO at Great Place to Work, to discuss equality, social justice, closing the opportunity gap, and the work leaders must do to ensure employees feel a sense of value, inclusion and belonging.



By Ellen Murphy, Staff Writer

The year 2020 has brought about tremendous change. COVID-19 has impacted our daily lives dramatically, and the systemic inequalities that directly affect our society, both in our professional and personal lives, have brought into the spotlight a critical conversation. In the past few months, we along with many other organisations shaping the future of work have recognised our unique roles in making a positive impact in the movement in creating equal opportunity, driving real change, and creating a better future for all.

In a recent fireside chat, 'Coming Together on the Path to Equality – Part 2,' Aneel Bhusri, Co-Founder and CEO at Workday, connected with Carin Taylor, Chief Diversity Officer at Workday, and Michael C. Bush, CEO at Great Place to Work and a Workday board member. The three discussed equality, social justice, closing the opportunity gap, and the work company leaders must do to help ensure all employees feel a sense of value, inclusion and belonging.

Evolving the role of the Chief Diversity Officer

Early on in the conversation, Taylor discussed a shift that's happening not only in communities around the country, but also for leaders in diversity and inclusion roles. According to Taylor, "The recent activities

around racism and injustice have awakened people. They care about what's happening now, but they're also facing the idea that they may have turned a blind eye to issues that have happened in the past."

Now more than ever, said Taylor, there is "pressure on Chief Diversity Officers to help companies think about addressing the issues at hand, including racism, inequities and the emotional impact to our employees on top of COVID-19."

But Chief Diversity Officers can't do this work alone. The change needs to happen across the company, with buy-in from the top of the organisation. "We need to engage leaders, our employee belonging groups and middle managers who play a critical role in the experiences that employees are having," she explained.

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All employees must play a part in owning the accountability for how they shift our culture to make sure that this is a place of inclusion and belonging for all people.

Carin Taylor Chief Diversity Officer Workday To live the vision of valuing inclusion, belonging, and equity (VIBE™) spearheaded by Taylor: "All employees must play a part in owning the accountability for how they shift our culture to make sure that this is a place of inclusion and belonging for all people," she said.

Sharing data about the employee experience

Recent data from a global Great Place to Work study of four million employees highlights differences in demographic groups within organisations, explained Bush, and shows that there's still a lot of work to do before companies can reach that place of universal inclusion and belonging that Taylor talked about.

Findings show white men, for example, already feel a sense of belonging at organisations because they cite wanting things like more work-life balance and more stock. These concerns reveal that this group has its basic needs met and mainly wants to make a good situation better.

Data reveals black men, on the other hand, are concerned with a lack of diversity and lack of promotional opportunities. Bush explained these results indicate that black men are "trying to get some of the basics in place, so they feel they belong."

Bush also shared this data point: "The highest scores, in terms of pride, come from black employees. They are proud to be at the company and they care about the company; they're just wondering if the company cares about them."

Bridging employee belonging councils with the power of data

Great places to work have employee belonging groups, which allow employees to connect with each other on issues they personally care about. Companies that support the formation of these groups, which go by different names, directly support improving their employees' sense of belonging. Bush said, "Employee belonging groups are important because they're a place

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Aneel Bhusri Co-Founder and CEO Workday

for people to come together who are having a common experience." And, Taylor added, they "help us understand how we can do better in the workplace and what's happening within that employee population."

In a diversity and inclusion strategy session, Taylor asked leaders of Workday employee belonging councils for ideas on how the company could improve, and the group suggested creating specific measurements for VIBE. To gather these metrics, Taylor said, "We ask questions around fairness and equity in the workplace, and how employees are feeling in terms of belonging." Psychological safety is also a critical piece; it indicates if employees feel they can bring their authentic selves to work.

Our senior leadership sees the data gathered from these questions and uses it to deploy changes, so these employees "can now have a direct influence on decision making at the highest level in our company," said Taylor. Furthermore, business success naturally follows when employees feel emotionally and psychologically safe - key contributors for inclusion, belonging and equity.

Bhusri emphasised the importance of data as well. "We have a unique vantage point as a cloud finance and HR provider where we have visibility into that data. All companies can do better, and it comes back to measurement," he said.

Next steps on valuing inclusion, belonging and equity

At Workday, Taylor and team are starting a 12-month initiative with dedicated resources focused on belonging and diversity, and creating systemic change. Four guiding principles will be the driving force behind this work: Hiring and developing diverse talent, cultivating a culture of belonging, strengthening our communities, and building inclusive products and technology for our customers.

On the issue of diverse talent, Taylor said, "As a society, we've created barriers that make it difficult for underrepresented groups to gain thriving wage jobs. We need to remove barriers, so we can enable these communities to have stronger workforce and economic empowerment."

Bush insisted that we must "open ourselves up to find a way that we can talk to everyone about these issues, get rid of old notions, and find a way to go forward." Creating a great place to work for all is everybody's responsibility, he said. It requires bold leadership that encourages all employees to value inclusion, belonging and equity.

"As I think about what we're doing at Workday and as I talk with other CEOs, I think it's a time for companies to step up and show that leaders of companies have a soul and want to do the right thing. I am optimistic that we are going to see real change," Bhusri said.

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Psychological safety is also a critical piece; it indicates if employees feel they can bring their authentic selves to work.





