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Aligned Energy

ADAPTIVE DIGITAL TRANSFORMATION

Andrew Schaap on the importance of remaining adaptable, scalable and sustainable

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TOP 10 TALLEST BUILDINGS IN THE US

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USA Edition

04

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Welcome to the February edition of Business Chief USA.

This month we sit down with Andrew Schaap, CEO of Aligned Energy to explore the importance of remaining adaptable, scalable and sustainable in an evolving industry.

We talk with Schaap about the ways in which Aligned Energy's intelligent infrastructure allows the company to deliver data centers as a utility. By reducing the energy, water and space needed to operate, Aligned Energy's data center solutions offer businesses a competitive advantage by improving reliability and their bottom-line.

Business Chief also talks with Adrian Ezra, CEO of Jamie AI, a company combining cutting-edge AI with deep human knowledge of the recruitment space to revolutionize an industry in need of disruption.

We also find out how AI is driving digital disruption in the adult online education space. Harry Menear speaks with Dr. Karen Srba, a Vice President at American Public University System, about her use of interactive learning tools and an adaptive digital learning platform to offer a pioneering e-learning experience. Don't forget to check out our other reports on LSC Communications, Creation Technologies, Nationwide, La Vie en Rose and more.

This month's city focus takes a look at Washington, DC, which is emerging as the United States' most diverse and inclusive startup environment, as well as the top 10 tallest buildings in the country.

Enjoy the magazine, and join in the conversation on Twitter: @Business_Chief

Harry Menear
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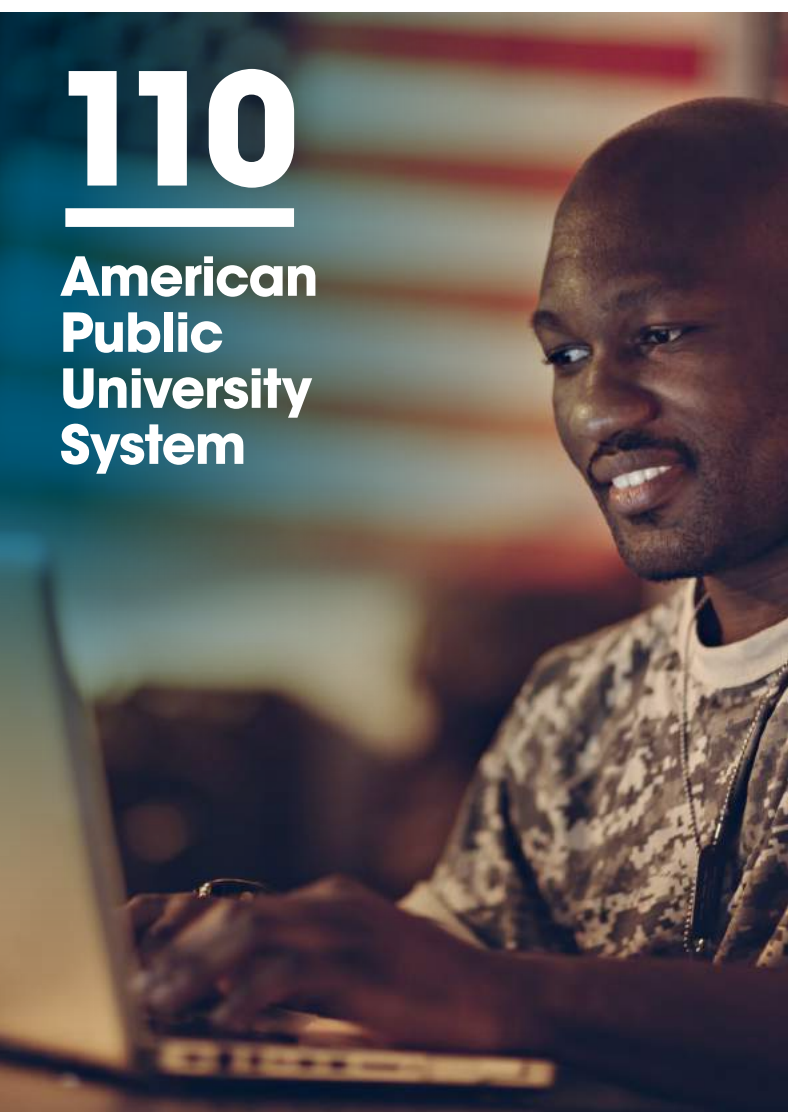
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The rise of the adaptive data center

WRITTEN BY
SEAN GALEA-PACE
PRODUCED BY
TOM VENTURO

Chief Executive Officer of Aligned Energy, Andrew Schaap, discusses the importance of remaining adaptable, scalable and sustainable in the industry amid technological change

With companies worldwide understanding the importance of embracing technology in order to stay ahead of their competitors, it has become increasingly significant for firms to undergo a digital transformation in order to achieve and sustain success. For leading data center provider, Aligned Energy, the mission of innovation and the launch of new facilities has become vital to the company's progression.

ESTABLISHING CORE PRINCIPLES

After 20 years of complex transactional experience and multi-disciplinary senior leadership, Chief Executive Officer of Aligned Energy, Andrew Schaap, understands how key it was to form and maintain core principles when he first joined the company in 2017. "One of the first things I did when I came on board was to try and focus the organization on what our core mission and vision actually were. I felt there had been some great

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Aligned Salt Lake City

innovation before I arrived, providing a solid foundation for growth and further performance improvements," explains Schaap. "As a rule of thumb, I believe that if you have more than three tasks per day, then you usually fail at them. The human brain works just like a computer because you're always switching to different tasks. I made sure that when I joined that I really focused the entire organization on a key vision, mission, and focus that we were going to pursue moving forward. As a result of this, we've enjoyed some significant success in the last 18 months, growing the company by more than 1000%."

Such success has been achieved with the company paying close attention to how it conducts its business on the infrastructure side, as well as choosing to operate in an alternative way to its competitors in a bid to stay ahead. "We

EXECUTIVE PROFILE

Andrew Schaap

A data center, IT, private equity and real estate executive with over 20 years of complex transactional experience and multi-disciplinary senior leadership, Chief Executive Officer Andrew Schaap, is dedicated to accelerating the development of Aligned Energy's business objectives as demand for its adaptive data center approach continues to exceed expectations. Andrew is responsible for business growth and promoting the availability of Aligned Energy's data center and build-to-scale solutions to cloud, telecom, enterprise and managed service providers. With a thorough understanding of the evolving data center market, Andrew is responsible for cultivating an ecosystem of innovation that advances Aligned Energy's commitment to reducing the social, economic and environmental impact of the digital era.

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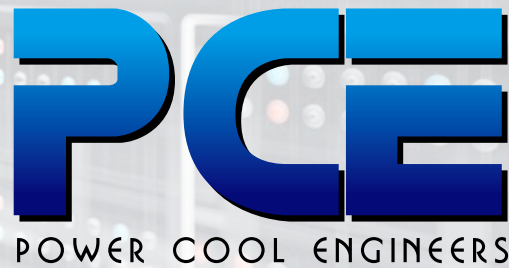
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really looked at what we were doing on the infrastructure side, and fine-tuned our supply chain to enable us to work with our partners," says Schaap. "We've adapted some of the best practices that some of the giants use, such as GE, to ensure that our partners can help us to stay nimble and ahead of the curve. We're doing something in our supply chain that's completely different. We've spent a lot of time and energy choosing the right partners and honing our logistics model. Timely and fiscally responsible inventory management is very important to us in delivering against the exacting expectations of our clients."

LAUNCHING NEW FACILITIES

Through the unveiling of a new 180-megawatt data center campus in Ashburn, Virginia in September 2018, Aligned Energy has demonstrated a determination to expand its data campuses in order to address the needs of cloud providers and hyperscalers that demand a highly dynamic, scalable and future-proof data center solution. The 26-acre master-planned data center campus offers

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approximately 880,000 square feet of expandable space, drawing power from two on-site substations, as well as access to over 50 carriers in the immediate area. Schaap believes the new facility has allowed his company to be different. "We have the ability to connect with multiple carriers and diverse routes, as well as a power silo connecting to multiple hub stations upstream of us into Dominion Energy," says Schaap. "What makes us different is our innovative cooling technology, which allows us to sense when we should use water or when we should switch to lower or zero water utilization based on what's actually happening with the weather in real time. I believe we're the only ones that have that unique technology."

With Aligned Energy's clients firmly in mind, Schaap's the decision to choose Virginia was primarily based on its location central to the biggest networks. "We decided on our particular location in Virginia because it's in proximity to one of the highest networked pathways in the nation. We're in the middle of all the biggest networks," says Schaap. "It's been fantastic for us because our

"On the innovation side, our focus is on removing any potential concerns that our customers may have in five or 10 years from now. No one else can really do that apart from Aligned"

—

Andrew Schaap,
Chief Executive Officer, Aligned Energy

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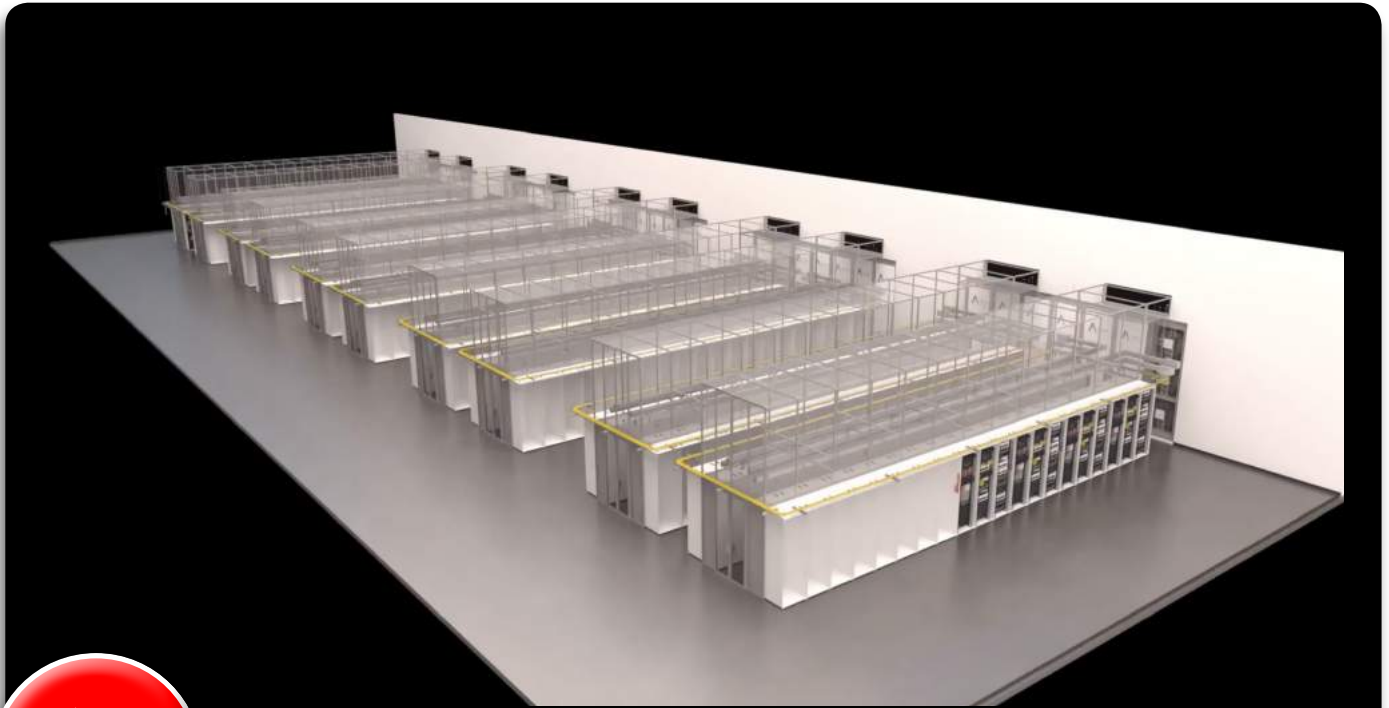
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existing clients can't wait for us to get there and we're already active with lots of discussions that are quite advanced on our first chunk of capacity. We expect the site to be live, with active customers late in summer 2019."

SUSTAINABILITY IN THE DATA CENTER SPACE

With the importance of remaining sustainable a key priority for Aligned Energy, the company's data center platform and dynamic infrastructure have been designed with the future in mind in order to address the unpre-dictable usage and growth models that are becoming table stakes in today's deployments.

Technologies such as cloud, IoT, AI/ML, blockchain, and more are generating exponentially more heat in the same cubic area. This is why access to green energy and the ability to accommodate exponential platform growth are becoming increasingly important. Schaap believes that implementing technology that is adaptable, efficient and dynamic allows the company to give its clients peace of mind about the future ahead.

Aligned Dallas Entrance

"If you're in a climate like Virginia, water shouldn't really be a problem. However, these assets are long-term, and no one has any idea if in 10 years' time Virginia may go into a drought season. We actually have the ability to turn off our water usage and still run a dry solution. There are no other companies that we know of that have anything like that," he affirms. "I believe it's very innovative and clients love it because they don't ever want to move out of a data center. They can literally come in today and not have to worry about what lies around the corner in two years, five years, 10 years, even 15 years from now. Clients want stability, predictability and a partner that provides them with a path to the future as well as peace of mind. Our continued growth and solid capital foundation have enabled us to be that stable partner for our customers. On the innovation side, our focus is on removing any potential concerns that our customers may have in five or 10 years from now. No one else can really do that apart from Aligned."

FUTURE PLANS

With the future in mind, Schaap affirms Aligned Energy remains on the lookout for potential expansion opportunities outside of its existing U.S. locations in Dallas, TX, Phoenix, AZ, and Salt Lake City, UT, as well as abroad. "We're actively looking for the next opportunity all the time and we're really interested in what our clients are doing so we ensure we spend a lot of time talking to them directly," says Schaap. "We will also use our great capital and infrastructure to go a little bit further and be more responsive to our core elements. I believe you'll see us continue to grow and continue to land into new markets. As we move forward, expanding internationally is absolutely on our radar and we're ensuring that we pay close attention to the latest trends worldwide."

Schaap believes that the company's success is largely due to the great teamwork and drive within Aligned Energy, which have enabled customers' needs to be met. "The team here is so important. We're attracting and retaining great talent and the culture is focused on innovation, inclusion and customer-centric support. Everybody wants to go to sleep at night knowing

"The team here is so important. We're attracting and retaining great talent and the culture is focused on innovation, inclusion and customer-centric support"

— **Andrew Schaap**,
Chief Executive Officer, Aligned Energy

that they did right by the clients," explains Schaap. "We empower teams to execute and perform on behalf of the clients. You don't have to ask for permission or forgiveness as long as you're taking care of the customer. Through our empowerment program, we've emboldened a lot of our operations and site teams to make sure that they're serving the clients' needs immediately." ■

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JamieAi
Recruiting
AI
to disrupt
an industry
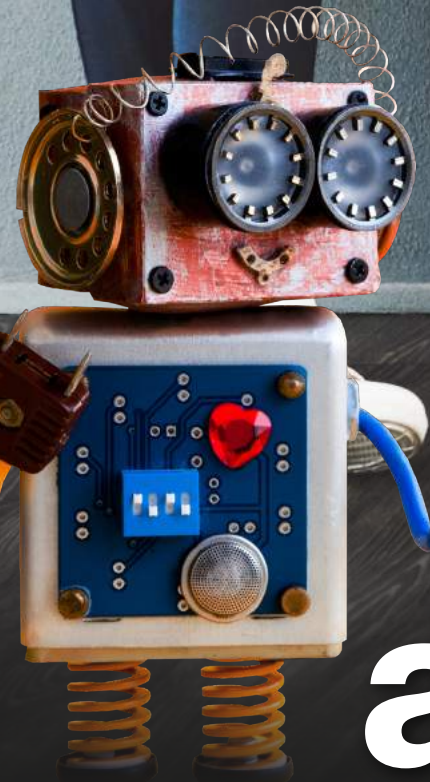
Business Chief sits down with Adrian Ezra, CEO and founder of JamieAi, to find out how his recruitment startup is using a marriage between human expertise and breakthrough technology to disrupt the recruitment space

WRITTEN BY **HARRY MENEAR**

Adrian Ezra, the founder and CEO of JamieAi is out to change the face of an industry that, in his mind, is in dire need of a new approach. Halfway through the interview he stops to say: "Actually I love this story. Let me… It'll take 30 seconds… A hiring manager at a very large investment bank is approached with a stack of 100 CVs to evaluate. He takes half of the CVs and throws them in the bin. The HR business partner turns to him and says: 'Why did you do that?' And he says 'we don't hire unlucky people.' That virtual bin does exist. CVs that get sent in don't get read."

With almost 20 years as CEO of headhunting company Execuzen, Ezra understands better than most the advantages, disadvantages and inefficiencies of the recruitment space. "You look at what you get, and you look at what it costs, and you figure that there's a disconnect. Something is wrong, something has to give." Business Chief sat down with Ezra to find out how his new passion project, London-based recruitment tech startup JamieAi, is disrupting the recruitment space using a mixture of human expertise and AI-driven automation.

"I've always thought that recruitment as an industry,

"I believe that my best recruiter is always the most focused recruiter"

—
Adrian Ezra,
Founder and CEO, JamieAi
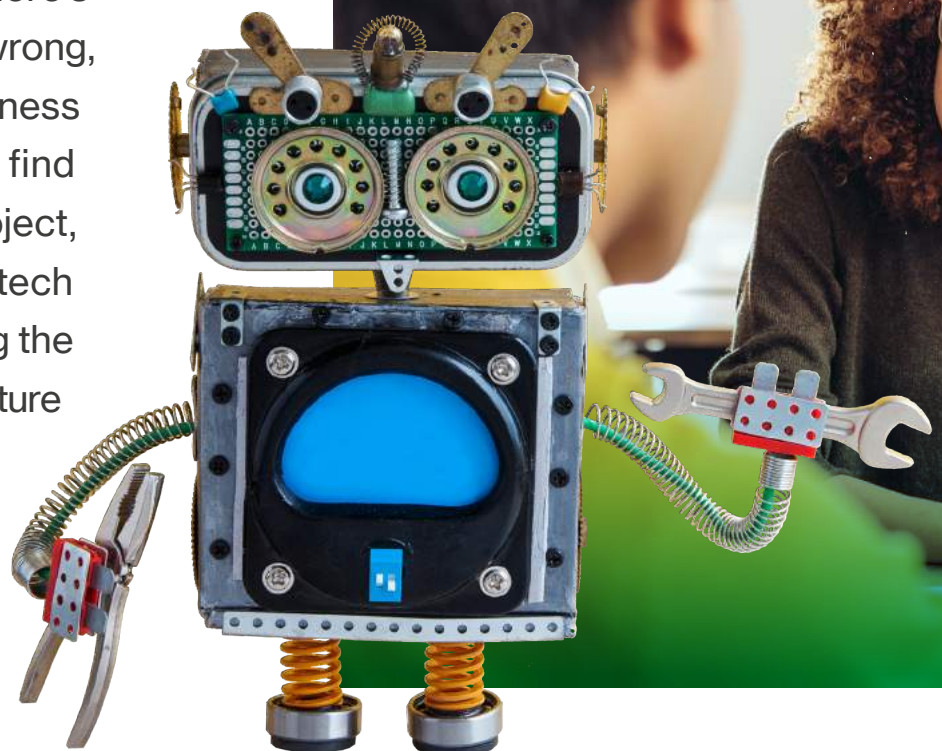
or human capital as an industry, was ripe for some sort of disruption," says Ezra. In its current state, the bulk of spending in the recruitment industry goes towards contingency recruitment: companies use multiple recruitment agencies, job boards, job-hunting sites like LinkedIn and Indeed, and internal recruiters to source new employees. "Because recruiters are competing against a whole other range of people, their interest is not finding the right fit for a role, the interest is getting the CV in first," Ezra explains. "As a result, recruiters don't really engage with a candidate unless they've known them for a very long time. They don't have that

much knowledge of the individual. You're just sending their CV in because, if you don't, somebody else will. As a result, the industry gets a bad name."

Examining the recruitment process as it exists, Ezra explains: "If you actually look through the recruitment process, what does a recruiter do? When you get a job from a company, a recruiter goes out, sources the role, sources the candidates, filters the candidates, presents the candidates, engages and organizes the interview process, and closes the successful candidate into the job." The nature of the recruitment industry until now means this process can be made inefficient by its competitive nature, as individuals receive offers from recruiters whose matches aren't accurate, which leads to distrust and further inefficiencies.

"You wouldn't want to open a cab company today when you're looking to compete with the likes of Lyft and Uber, but you would still open a recruitment company," says Ezra. His goal, he explains, for the recruitment sector in five years' time, is to disrupt and reshape the industry to the same degree that startups like Uber and Lyft have changed

the face of ride-sharing. "If I do my job right, and other people like me do their job right, opening a recruitment company would be the equivalent of opening a cab company, and you wouldn't want to do that."

This is the space into which JamieAi is injecting AI analytics solutions and focused human expertise. "I believe almost all of that process, if done correctly, can be automated," says Ezra. "I think there are certain parts of recruitment that automation, or
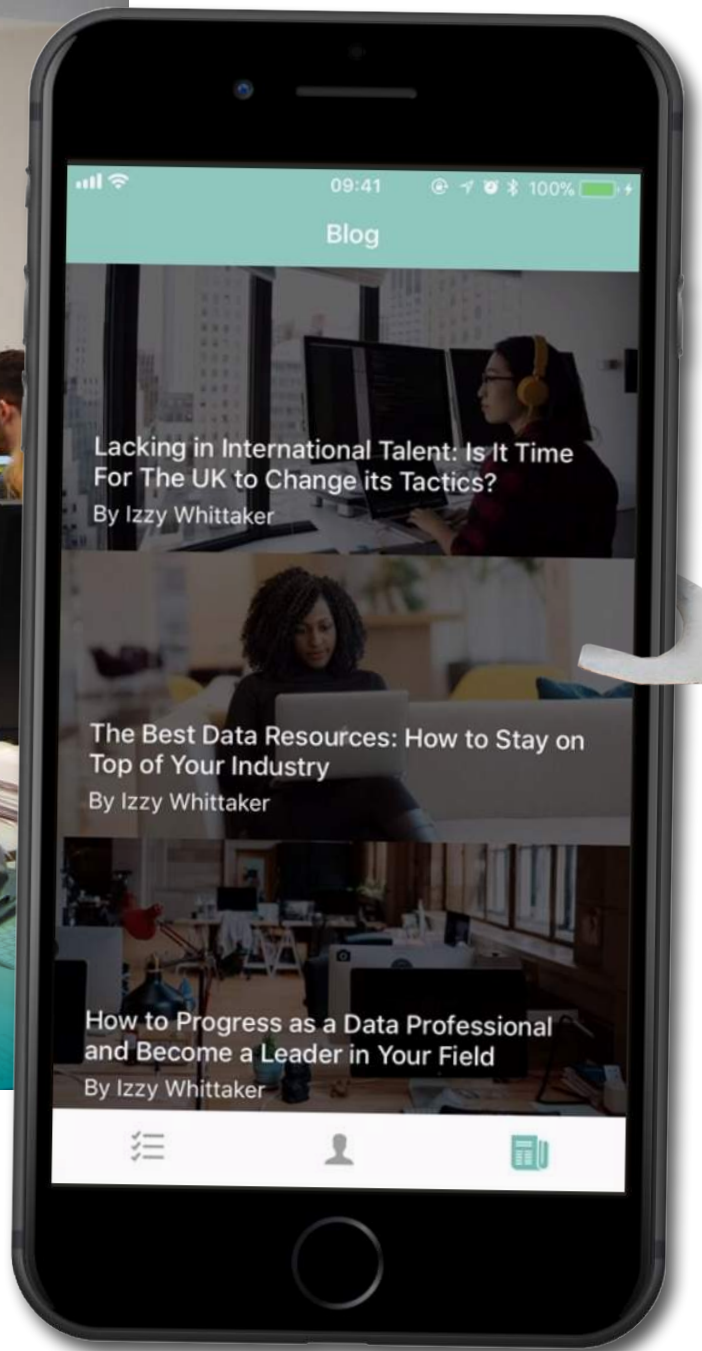
artificial intelligence, can definitely take over. There are certain parts of it from which you just can't remove the human element; there are parts of the recruitment process where relationships will continue to be a very important piece of the attraction process. I don't think you replace that. But I think you can replace a very large chunk of what is left, which is the majority of the recruitment process."

JamieAi's mission centers around using artificial intelligence to automate the processes of an effective, focused

recruiter with extensive and deep knowledge of the applicant's industry. The behaviour of the platform will be informed by the startup's current staff of experienced data science recruiters. "Part of JamieAi's goal is to be the most accurate job matching platform. So, it's all about that filter. How do I find that

"We've been tested by the big companies, we've been tested by the small companies. We don't shy away from the grind, and we're very happy to mix it up with everybody else. And I believe that what we do will eventually shine"

—

Adrian Ezra,
Founder and CEO, JamieAi

accuracy for you? If I'm able to be accurate with what I am doing, if instead of working on bulk and instead of working on ease of process, I'm actually going to be able to identify a really good fit consistently."

Ezra confirms that JamieAi will build its AI platform entirely in-house and the process is still very much under way. "I don't want to give you the impression that we are all singing and dancing AI. AI is not making our decisions today, but the AI is being built alongside the human process," he says. Although pre-build AI software is cheaper, and would be available faster, Ezra is committed to creating a platform specifically tailored to his company's needs to ensure maximum accuracy. "You can buy an off-the-shelf stack, but I don't get the point. You kind of defeat the purpose because then you're trying to get the data to fit the line as it were."

The service, Ezra says, will create efficiencies for employers and job seekers in terms of both time and money. "We believe that what we're building will save significant amounts of time. And it's the time, in addition to the
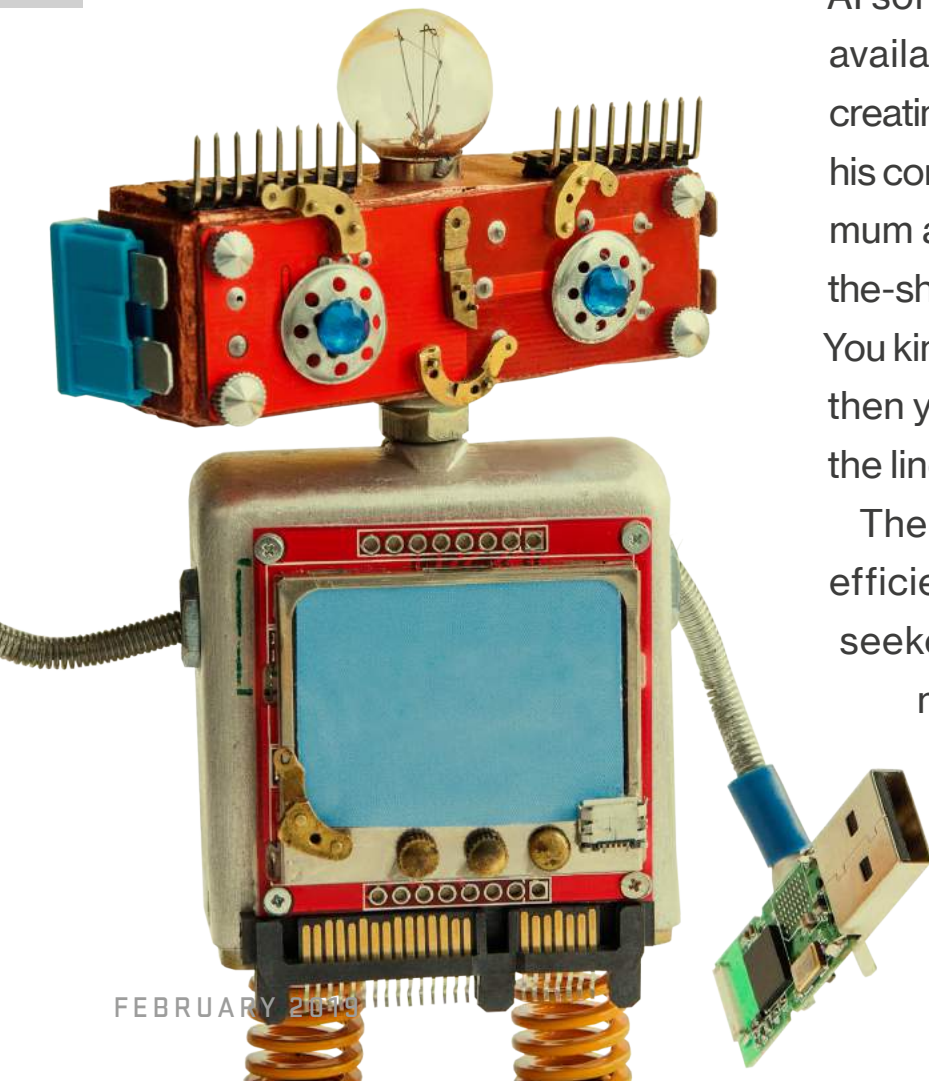
lower fee, that is the real seller for me." While most traditional recruitment services charge a percentage of a new hire's annual salary, (recruitment solutions company Top Echelon reported that, in 2016, the average annual salary for a data processing professional was $93,319, which lead to average recruitment fees of over $19,000) JamieAi charges around $1,280 for a single job posting, a significant economy when Ezra takes into account the fact that "if I put up a job on Indeed, and I reach out to 100 people, my open rate is between 10% and 12%. On my platform, our open rate is 90%." Of the potential hires matched with open jobs by JamieAi, 80% are selected for interviews.

From the perspective of job-seekers, JamieAi handles applicant data and CVs differently than a traditional recruiter. "We looked at the feedback that we got from our years in recruitment and what people don't like about recruiters, and we said let's turn it around a little bit. As opposed to showing all these CVs to the employers, and in keeping with GDPR, our model works like this," Ezra explains.

"We get a job description, we filter, we take those filtered, and then we send them a message on the app." Prospective employees then either answer 'yes' or 'no'. JamieAi guarantees that uninterested individuals' information will not be passed on to the employer, or to other companies. "We do not allow companies to go into our database," says Ezra. "We try to base the business on a level of trust and transparency with the employee and, as a result, what we have done with almost no marketing at all is attract people to our platform."

Currently, JamieAi caters to the data professionals' sector, working with global corporations like Monzo, Barclays, Oracle, CitiBank and Booking.com. "I believe that my best recruiter is always the most focused recruiter. So, if I'm building my AI for accuracy, it has to be accurate in a space, it cannot be too wide," Ezra maintains. "Once we develop something that we're comfortable in, we will expand." Once JamieAi's technology and due process reaches a stage that satisfies Ezra, he says the company has plans to expand rapidly into new careers and regions, starting with other technology professions and expansion into the United States, Germany and India over the course of 2019, picking up a large New York-based

The JamieAi team

> "We try to base the business on a level of trust and transparency with the employee and, as a result, what we have done with almost no marketing at all is attract people to our platform"
>
> —
>
> **Adrian Ezra**,
> Founder and CEO, JamieAi

multinational client in January. Currently, 8% of JamieAi's client base is located in the United States, with that number expected to skyrocket over the coming year. "We have a lot of warm relationships with large companies that we believe will support us when we get to the US," says Ezra. "If we're not in the US by early 2020, we're not doing a great job."

When asked about the future of JamieAi, an animated Ezra answers that "we're a very young company. We want people to test us; we want people to give us the hard stuff, which is what they do. If they haven't heard of us and they don't know us, they give us the hardest recruitment tasks. They give us the stuff that other people can't do. We've been tested by the big companies, we've been tested by the small companies. We don't shy away from the grind, and we're very happy to mix it up with everybody else. And I believe that what we do will eventually shine." ■

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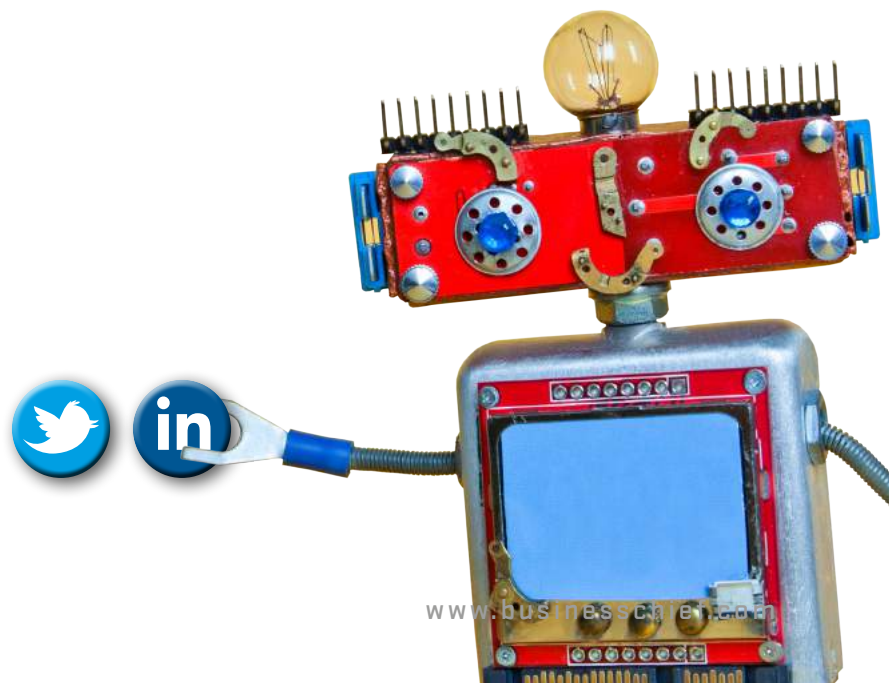
Nuggets:
merging security and convenience through blockchain

Blockchain founder Alastair Johnson explains why the future of secure cashless payments lies with the disruptive technology...

WRITTEN BY **OLIVIA MINNOCK**

Having bank details lost or stolen is something many of us have experienced, but as technology continues to disrupt the finance industry the lengthy process of resolving the problem seems increasingly archaic. This was certainly the case for Alastair Johnson, founder and CEO of blockchain startup Nuggets, upon losing his own card details. When he eventually received his replacement card, he had to re-enter new information on dozens of websites and was struck by the lack of both convenience and security at a time when data breaches were making the headlines. "You wouldn't write down your mother's maiden name, email address and national insurance (NI) number on a post-it note and leave it in every cash till on the high street – but in a digital sense we do that all over the place," he comments.

The experience prompted Johnson to found Nuggets, which promises to help customers "take back control" of their data in 2016. The ecommerce payment and ID platform allows users to store their payment details on blockchain technology to achieve a single sign-on method which means personal data doesn't need to be shared with multiple organizations. "You can transact securely and verify your identity without somebody having access to that data and being able to take over

"You can't compete
against WeChat Pay
and AliPay but
you can add value
to them"

—

Alastair Johnson,
Founder and CEO, Nuggets

CLICK TO WATCH: 'NUGGETS – TAKE BACK CONTROL OF YOUR DATA'
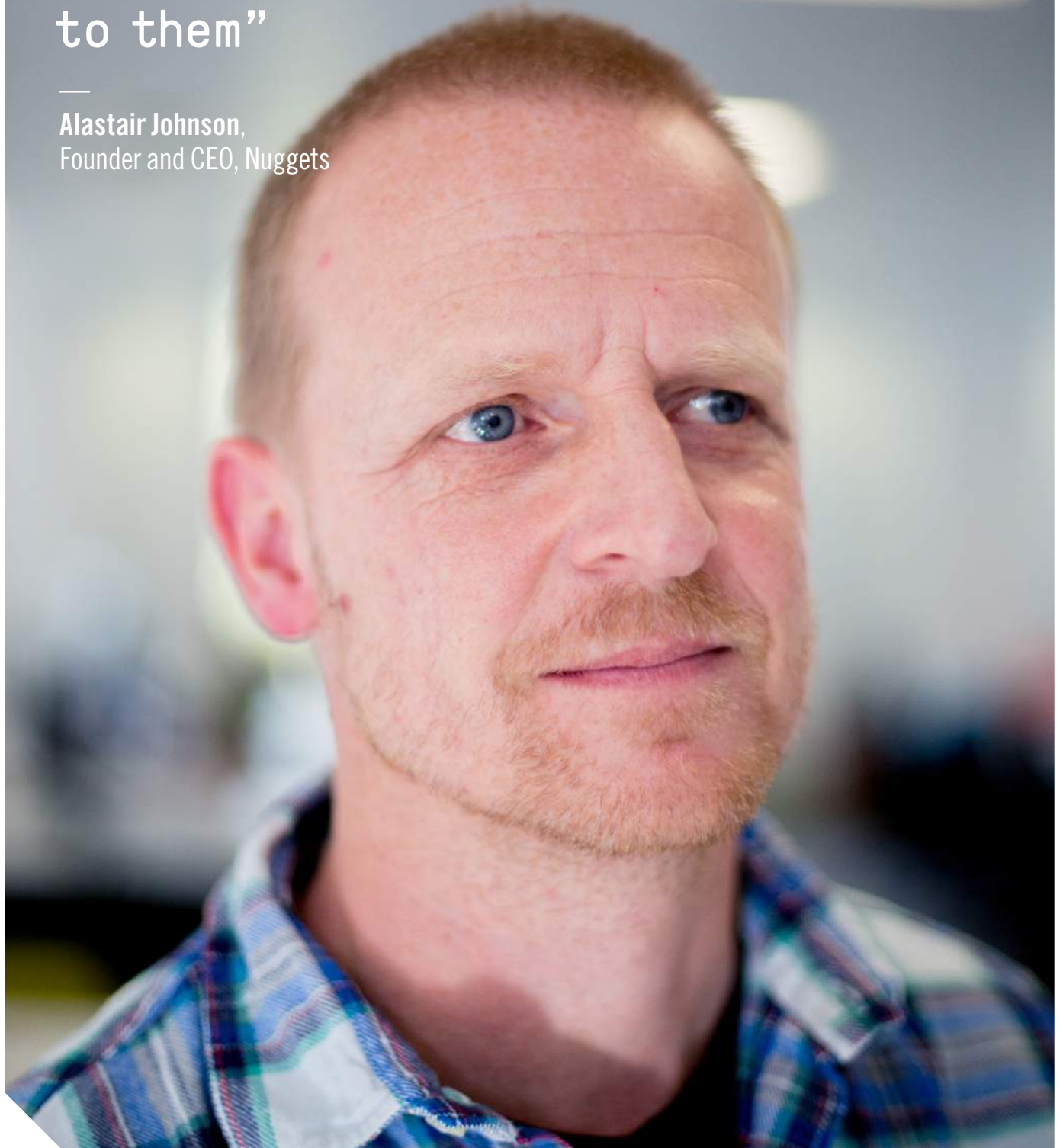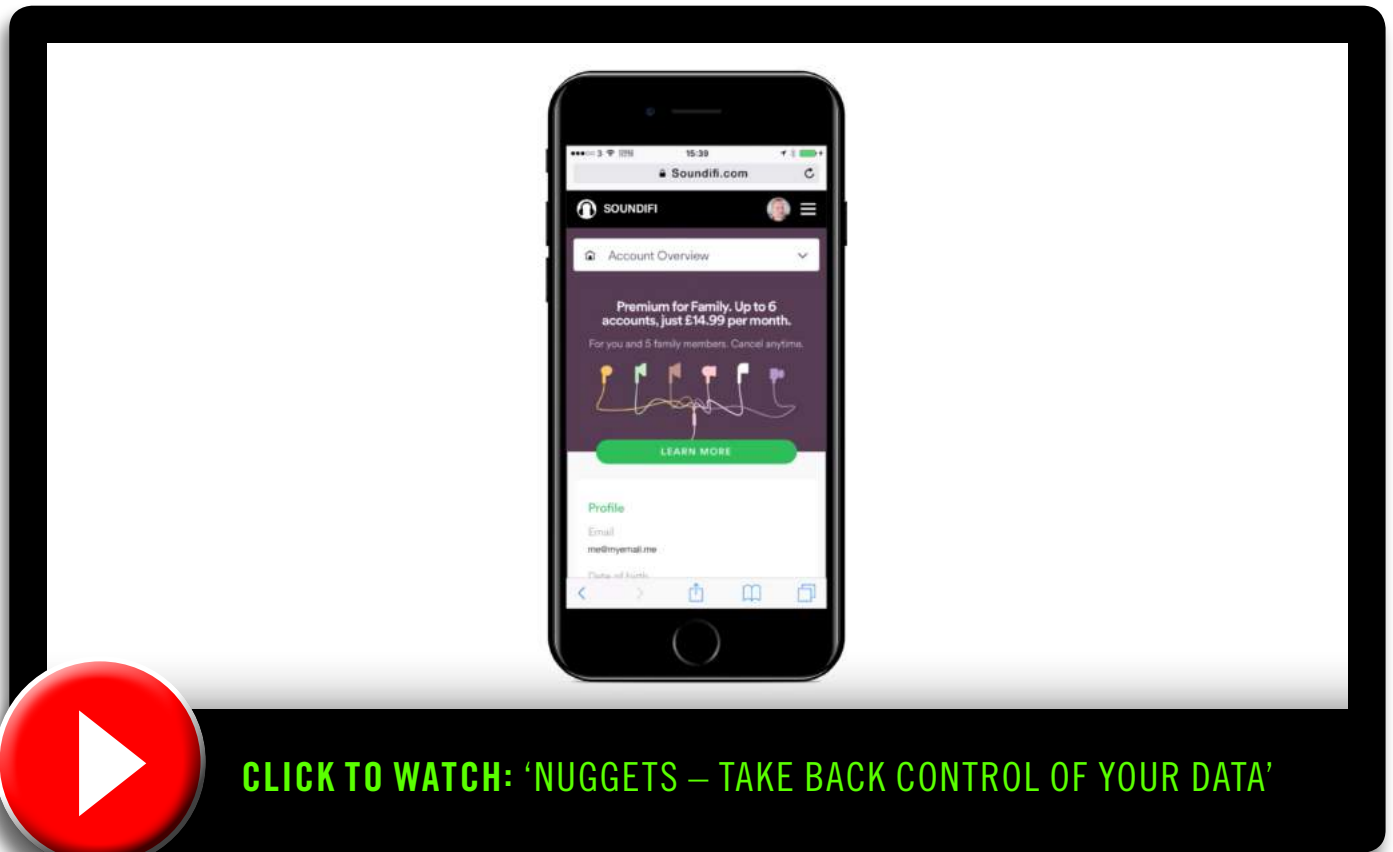
your information. If a business doesn't log the personal data in their centralized silos in the first place, it can't be breached," Johnson explains.

With breaches at large tech companies cited as a 'tipping point', a recent study by Gartner has found for the first time that privacy is becoming more of a priority over convenience for consumers – in 2009, it was reported that consumers remained unwilling to sacrifice convenience to keep their data secure. As organizations battle to develop their cybersecurity offerings,

Johnson cites two reasons for the failings we see in the headlines. "There are people who don't understand tech and are being victimized for that and there's the other side where people do understand it and they're trying to do best practices but those options where you have to log in with a username and password still exist."

A key challenge for any tech company then, no matter which platform is being provided, is to ensure convenience while also assuring customers that keeping their data secure is top priority – but for

Johnson's single sign-on vision this presents more of an opportunity. "It actually gets more convenient with all the security, because you're not passing around usernames and passwords: you're verifying ID across a network. So, it's a lot more secure and convenient – you get the best of both worlds."

STAYING SECURE IN A CASHLESS SOCIETY

In an increasingly cashless landscape, Johnson explains how a single sign-on system using blockchain will enable various societies to complete the transition away from cash and even card. "Now we have the technology to leapfrog plastic with a funded digital identity which can then be associated with a digital watch or fitness band. It's crazy that we're still relying on this bit of plastic with a chip to come through in the post a week after it's been cloned," Johnson argues, adding that cashless has yet to go far enough. "Even though you have Apple Pay and Android Pay, we're still adding a plastic card of information to make that work as a secure payment source. At Nuggets, were saying 'why don't I add my digital

> ## "If a business doesn't log the personal data in their central-ized silos in the first place, it can't be breached"
>
> —
> **Alastair Johnson**,
> Founder and CEO, Nuggets

ID to that payment app, so it allows access to my payment but I don't need a plastic card that the numbers can be copied off?'"

Tying in with the development of open banking which will involve closer collaboration and data sharing, Johnson feels that the future of ID technology should be agnostic. "In the past, you've seen a lot of wallet apps from different schemes, but wouldn't it make sense that they all tied back to the same APIs and services? When

mobile phones first came out, you could only ring other people on the same network – this only lasted about six months. In the early days, everyone comes out with their version but at the end of the day, the agnostic approach is going to be a winner."

In China, fast becoming the home of cashless payments, Nuggets has entered into a partnership with mobile payment technology, service and solution provider QFPay, which is used by epayment giants Alipay and WeChat

Pay, serving over one million merchants across Asia. This partnership will mean Alipay and WeChat Pay users can use a digital ID to make payments as opposed to attaching these to a bank card. "You can't compete against WeChat Pay and AliPay but you can add value to them," says Johnson. "Currently you're going back to plastic to enable them – you're basically rerouting to the old system. The potential is that you have your login and maybe your profile data within your own realm

but it can be used for those products and services." In Asia and further afield, Johnson is keen to highlight the potential of ID technology for business, particularly for SMEs. "It enables small businesses, people at food festivals or taxi drivers to transact without that chunky terminal. The potential for the smaller is immediately accessible... and this can also benefit larger businesses as well."

A BLOCKCHAIN BASED FUTURE

For Johnson, blockchain technology was a clear choice in implementing a more secure and convenient platform. "We spent time looking at other solutions to get to the same point – the key one being zero knowledge storage. Existing systems that do zero knowledge storage are quite clunky, and often they've got root level access to providers and such like. With blockchain, only the user has the key to their information," he explains. "We have zero knowledge, we have the decentralized network, and we have encryption to an extremely high level – so blockchain ticked many boxes." In addition, blockchain allows a kind of credit history to be set up due

"It's a lot more secure and convenient – you get the best of both worlds"

—

Alastair Johnson,
Founder and CEO, Nuggets

Alastair Johnson discusses personal data storage @Retail Risk 2018

Seema Khinda Johnson,
Co-Founder and COO, Nuggets

to the log it takes of every activity. "If you go and do 100 different payments to different places it demonstrates proof that you are a good actor on the network to the next person – you don't have to be risk assessed."

For any blockchain founder – and Johnson isn't just 'any' founder, having been shortlisted for 'Blockchain Founder of the Year' at the 2018 BMW i UK Tech Founder Awards – it is often necessary to play the part of evangelist for this fairly new technology which is often mistrusted or misunderstood, but even in the past six months Johnson says the potential is finally being recognized. "It's not just an intriguing tech conversation now – we're starting to see real use cases coming out for blockchain and being applied. 2018 has brought the understanding of how consumers can react closely with the blockchain. In years to come, people won't know or care if they're on the blockchain; it'll be fixed into life," he anticipates. ■

TRANSFORMING THE BOARDROOM: INSPIRING WOMEN IN STEM

Business Chief takes a look at what some leaders are doing to promote gender diversity in traditionally male-dominated industries, and the rewards they are already reaping...

WRITTEN BY
OLIVIA MINNOCK

Throughout the past year, Business Chief has spoken to various business leaders about the importance of gender diversity, especially in the traditionally male-dominated field of technology. Several organizations are taking big steps to improve their gender balance and promote female role models, while many argue women must still work hard and motivate themselves and one another to prove themselves in male-dominated sectors.

Speaking to our new FinTech Magazine, Finastra's APAC Marketing Leader Smita Gupta discusses the cultural issues in creating a diverse workforce. "People from each country have behaviors and attitudes driven by where they come from, but it's never too late to change," she comments, adding

that Finastra sees itself as a regional sponsor of inclusion and diversity. "Something very close to my heart is creating a more diverse workplace – how do we get rid of unconscious bias?"

MENTORS AND ROLE MODELS

Aside from efforts made by large corporations, Gupta says it's important for women and men alike to be proactive and keen to learn. "While it's important to have role models, don't wait for the organizations to give you those models. Go out and seek a coach who will listen to you, is someone you trust, and is willing to commit time and be part of your career journey."

Vicki Batka, Vice President of Cisco's AAPJ Partner Organization, echoes the importance of mentoring, and she herself acts as a mentor. She has noticed

"If organisations want to fuel innovation, diversity and inclusion are key"

—

Smita Gupta,
Finastra

3%

of females say tech is their first career choice

27%

of females would consider a career in tech

16%

of females have had tech suggested to them as a career

that for some, a conversation with an experienced leader is all it takes. "Especially when I talk to females, usually they know what they need to do, they just need someone to listen and help reassure them," Batka comments. As a mentor, she sees self-image as a key challenge faced by women especially in STEM fields. "A female will look at a job spec with 10 attributes and say 'I've only got five so I won't be successful', whereas a male might say 'I've got two; I'll go for it'. Sometimes, you've just got to go for it. I spend a lot of time talking to people about how to use their network."

Gupta adds that those already in leadership positions should strive to open up opportunities. "My call out to women leaders, and male leaders who have been successful, is to throw out the ladder to the one behind them, whether male or female, and create opportunities for others."

"I think we see a lack of embracing opportunities in females. Sometimes, you've just got to go for it"

—

Vicki Batka,
CISCO

"Role models are very important," emphasizes Andy Pearson, Managing Director at Santander UK Technology. "We are participating in the Thirty Per Cent Coalition where we have role models, both men and women, to mentor women in our organization, and women at Santander are being mentored by those from other organizations." Santander is committed to having a mix of men and women across its tech-led workforce. "Gender diversity is very important to us," Pearson adds, commenting that Santander was a founding signatory of the HMRC Women in Finance Charter.

HARD WORK AND MOTIVATION

Acknowledging that "women in the world are coming into the room at a disadvantage", Amy Jadesimi, Managing

> "If you want to be successful as a woman, you have to be able to work hard and be extremely brave and strategic"
>
> —
>
> **Amy Jadesimi,**
> LADOL

Director of Nigerian oil and gas fabrication and logistics base LADOL, says it's still up to women to put in that extra bit of work in order to be recognized among their male peers. "You do have to prove yourself – you have to be 'better than' in order to be considered 'equal to'… if you want to be successful you need to be prepared to work hard. If you want to be successful as a woman, you have to be able to work hard and be extremely brave and strategic. Be brave enough to make tough choices. The tough choice in this case is the choice society doesn't expect."

Jadesimi adds that organizations can however facilitate this, coming back to the importance of having someone to look up to. "I like to think that we can help by publicizing what myself and other women have been able to achieve, as well as publicizing how important it is to governments and corporations to have women succeed."

FOSTERING DIVERSITY

What else can an organization do to foster a diverse workforce, both between genders and more broadly? "It's about how you create a more equitable workforce. As managers, sometimes we are too blinded by the job spec. When I'm interviewing someone, even if they don't have the immediate skillset I need for the job role, but I know they have the passion and fire in their belly, I am willing to invest in them and give them the opportunity to thrive. We should look at identifying those hidden talents and creating opportunities for those around us," says Gupta.

Batka agrees that especially in technology which changes so quickly, softer skills like adaptability are important and a diverse range of people should be con-

sidered to fit the bill. "At Cisco, we're hiring people from very diverse backgrounds, not just technology." For Cisco, diversity takes many forms. "Some people just think 'women', but for our region it's also about ethnicity. We're quite fortunate in Asia: a lot of women work and lead businesses in the Southeast Asia region in particular. But you have other countries where they don't. All we can do is lead by example. A lot of companies talk about diversity, but Cisco truly believes and demonstrates it."

REAPING THE REWARDS

Gupta, among others, is keen to outline the very real impact fostering a diverse workforce can have. It's no longer seen as a positive CSR step, but in fact benefits an organization's bottom line and is becoming a key strategic advantage. "Enough research has been done to show it impacts the bottom line and the profitability of the organization," she explains. "If organizations want to fuel innovation, diversity and inclusion are key. With more diverse leadership teams, companies can earn more from innovation with higher EBITDA margins as well."

> "As organizations expand and want to target various markets, when you have a diverse team they can be your eyes and ears in giving you those insights"
>
> —
> **Vicki Batka,**
> CISCO

Diversity of course extends to a variety of cultures, abilities and skillsets as well as genders. "If you draw on a variety of cultures, this insight allows you to serve customers better," says Gupta. "As organizations expand and want to target various markets, when you have a diverse team they can be your eyes and ears in giving you those insights. You can look at clients' needs from a completely different perspective."

On a national and global level, vari-

ous studies have shown that supporting women in the workplace adds significantly to GDP. "There is no country in the world right now that can afford not to invest in and take advantage of that," comments Jadesimi. "Corporations could increase their bottom line by 40% just by supporting women. I think it's really important to show the economic rationale for those women who don't have a voice, an education or other opportunities, so we can help them and encourage people who aren't giving access to think differently about what women can contribute."

Batka, too, is pleased with the tangible results Cisco has seen in APAC and beyond thanks to its commitments to diversity, and looks forward to more progress in the future. "In the old days, the IT industry was a boys' club," she concludes. "Not anymore. We're here, and we're different." ■

AT&T Sustainability on a massive scale

We speak to Shannon Thomas Carroll, Director of Global Environmental Sustainability at AT&T, to see how the telco giant is harnessing sustainability across its massive operations...

WRITTEN BY **ANDREW WOODS**

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Aligning the notion and practice of sustainability within the biggest companies on the planet is no small undertaking and AT&T – founded by Alexander Graham Bell – is no exception. The world's largest telecommunications company and ranked number nine on the Fortune 500, this giant multinational conglomerate has just under over 270,000 employees and posted a 2017 revenue of $190.5bn. This is a holding company whose operations spread out over numerous sectors and territories and to seek a sustainable road map at such a business is as complex as it is integral.

Shannon Thomas Carroll is Director of Global Environmental Sustainability at AT&T and possesses a rich knowledge of both the company's operations and its sustainable practices as he works to reduce the environmental impact of the telco's operations. His key accomplishments include "being the internal driver for large scale renewable energy, zero-waste, and supply chain human rights audits".

Carroll has been with the company for almost 20 years, having served in several different capacities across the 133-year-old conglomerate. "I've worked on a consumer side, the business side of the house and on the network side," he explains. "So I've had lots of different

"AT&T has an energy intensity goal, relative to its network, to be 60% more efficient"

—

Shannon Thomas Carroll,
Director of Global Environmental
Sustainability at AT&T

roles. I spent a lot of time in project management, as well as with a couple different business units. I did project management and compliance for our supply chain; that's one of the things that transitioned me into my current role. On the compliance side, you have things like environmental health and safety and that was one of the transitional topics that really got me interested in this work. Then I just started asking for more work around environ-mental sustainability while I was still in supply chain and was lucky enough to transition that into a full-time role over on the corporate side. I took that supply chain focus and expanded it to a corporate view. Now my responsibilities are specific to environmental sustainability within our operations. So, anything that has an environmental impact within our four walls is, generally speaking, something I would look at."

AT&T has had a long history of corporate social responsibility, even if it wasn't always labelled as CSR. "We have an extensive history of strong energy management and corporate real estate management," Carrol explains. "We looked at things like waste water, and obviously there are natural financial incentives to use those resources, but you also want to look at being a good corporate citizen. What are the positive environmental impacts of doing that? I see my role, first and foremost, as looking into what's going to be best for the company, while also seeing how we can have the most sustainable business practices possible."

One of the first things Carroll explored when he stepped into his current role was AT&T's greenhouse gas footprint. Carroll monitored all the different aspects of scope 1, scope 2 and scope 3 through an inventory to gather the required information. "Once we had that information, we had it verified by an independent third party," he explains. "That was a great introduction to the job because I got to touch all parts of the business when undertaking a corporate greenhouse gas footprint. From

there you then start looking at some of the larger responsibilities, such as waste and how you dematerialise. What projects have been done? What was successful? What wasn't successful? What maybe didn't happen in terms of timing and can you pick up the ball again and start trying to work with what hasn't been done? You have to be strategic in your thinking. You've got to read the tea leaves and see how the wind's blowing externally as well. There's obviously an importance to the business and what our stakeholders are asking of us is important. You're looking internally, but you're also looking externally. You're trying to think strategically while you still have the practical responsibilities to get the job done."

As the scale of operations at AT&T is so vast, Carroll liaises with Chief Sustainability Officer, Charlene Lake. They operate at what Carroll describes as the 'ink level' or the corporate side of operations. "The advantage that gives us is we can go into all parts of the business, essentially representing the company. What's really important

though is that we don't just walk into the different business units and say, 'This is what you're gonna do!' We have to be good business partners, whether it's internal or external. We're very lucky that sustainability really is at the core of a lot of our work. So, as we go in to talk to our network folks or our corporate real-estate folks, or our supply chain folks, they're already doing a lot of this work. What we try to do is help frame that work and see what we can amplify; see what we can do better. We just try to partner with them."

With support from AT&T's corporate level, Carroll and his team launched 10X Goals. A 2025 goal, the program is aiming to enable 10 times the carbon savings for AT&T's customers as well as for its our own footprint. "We have somebody who works full-time on that making sure the methodology is sound," says Carroll. "We have somebody who's working on the numerator part of that, making sure that our products and services can deliver that. You have me, I'm on more the denominator side. I'm trying to shrink our own

operational footprint so it makes it easier to achieve it. We're very lucky. We are a large company, but we have the right amount of resources addressing sustainability here."

One of the challenges Carrol cites as specific to large-scale renewable energy is that first time you put the practice into action. Thus, off-site research is essential in getting these methods right. "We've obviously been looking at renewable energy options for years and years and years. We did have some onsite solar and we just knew, because of our scale, that if we're going to have a significant impact we needed to look offsite at the large-scale renewable energies. We look at what others are doing and then try to figure out if that's something that could potentially work for us. You do a lot of research and then bring that research and those findings home. We would then start stakeholdering those. I'd say the biggest challenge is because you've never done it before, you have to educate a lot of folks on what it is and how it works and how the mechanics of it work. What does it mean for AT&T to go from a relatively small ren-

ewable energy concern to one of the largest corporate buyers in the United States? A lot of education has to be done, in getting people familiar with new terminology. I'd say that's the biggest challenge; the newness of it all."

In reference to large scale renewable energy, AT&T is one of the top five corporate renewable energy buyers

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in the US. "The fact that we were able to scale up so quickly is a credit to the professionalism we have on our energy management team. I would say the thing I'm most proud of is just the scale 'cause what you're really looking for is impact. We're proud of the 820 megawatts we've done so far. We're the evangelists. We're going around talking about all the benefits. The interesting thing is when you go into the different business units, my experience is that even if people don't know it by name,

they're doing the work. These are folks who do sustainability for a living. We already have folks who are trying to save as much water as they can. They're already trying to remove as many kilowatts as they can from the business. They're already trying to be as efficient as they can."

AT&T has an energy intensity goal, relative to its network, to be 60% more efficient. Carroll wants to push more data through the network using the same, or less energy. "We have a public goal
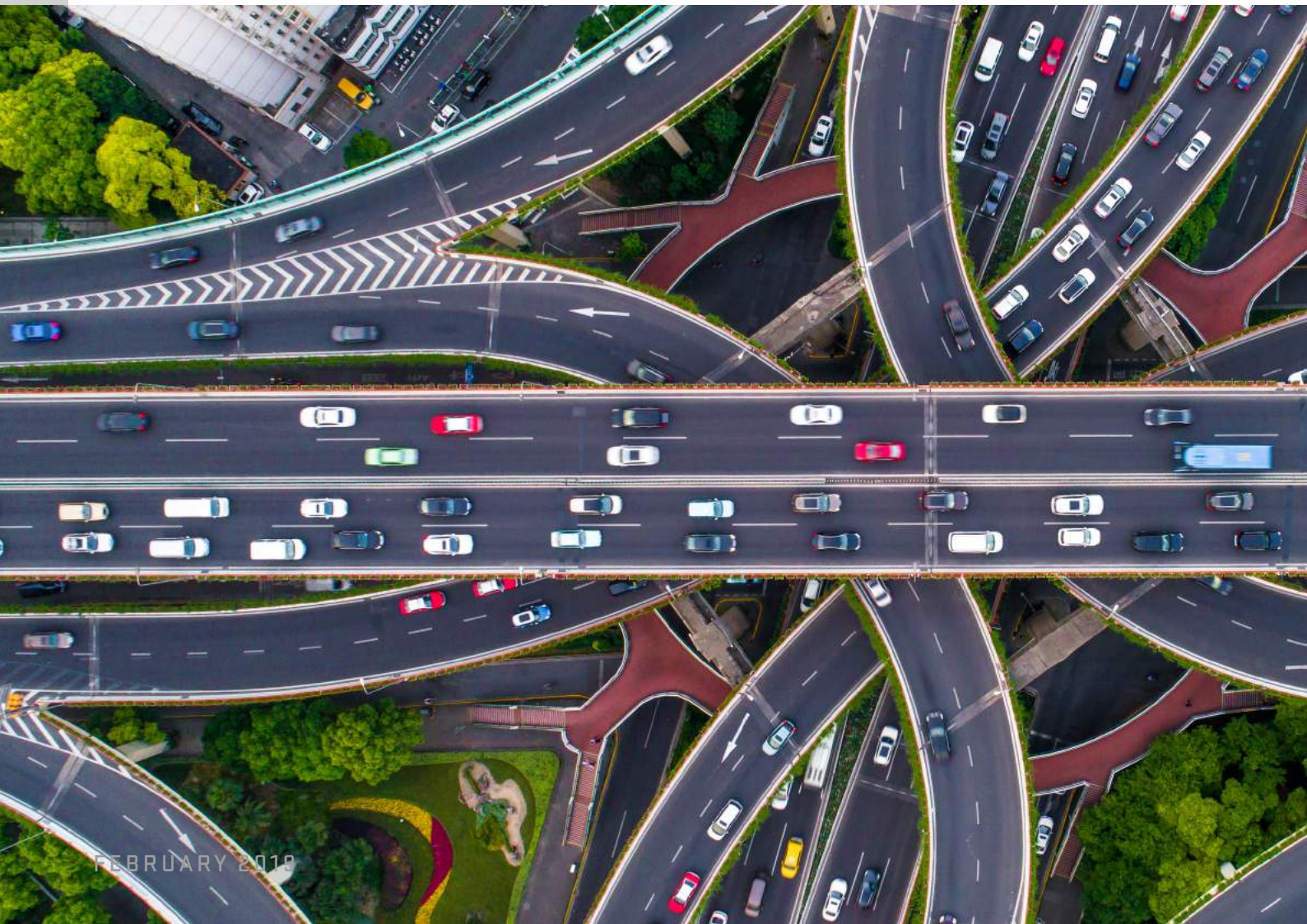
> # "A few years ago, we worked with EDF on our water footprint. We're always looking at every aspect of our operations"
>
> —
>
> **Shannon Thomas Carroll**,
> Director of Global Environmental
> Sustainability at AT&T

around that. We have a public goal to reduce our fleet emissions by 30%. We have lots of public goals that are already tagged at this work and within the business units. They just have their heads down and are doing the really hard work to achieve this. When we come into departments and explain it's really about the work that they're already doing, the light bulbs go off and they become really good business partners. We're constantly looking at the landscape in terms of the environment. A few years ago, we worked with EDF on our water footprint for example. We're always looking at every aspect of our operations."

Technology is driving sustainability and AT&T is largely a technology company thus possessing a read edge when it comes to finding solutions. "I would say just about everything we do has a technology component," Carroll explains. "For example, we've got a project called Icon. It's basically our internal IoT solution, where we've put sensors on all types of internal equipment, including network equipment, HVACS, water towers, everything you

"**We're proud of the 820 megawatts we've done so far. We're the evangelists. We're going around talking about all the benefits**"

—

Shannon Thomas Carroll,
Director of Global Environmental
Sustainability at AT&T

can think of. We then actively monitor that through our Icon dashboard and are able to look at predictive and preventative maintenance. Are things running as efficiently as they should? If they aren't, how can we maximise their efficiency? There's a lot of data out there, so the key is not just having accessibility to data, but being able to do something smart and good with it. We need to make good, smart decisions around that data."

"I think it's important when you're a company our size that you're comprehensive. You need to have a short-term plan, a mid-term plan and a long-term plan. You have to think strategically, you have to look far down the line. You just can't say you're going to do this and that. You have to be transparent in the way that you do it. And you have actually have to do it." ■

AT&T

City Focus
WASHING

The heart of US government has slowly become the American capital of women in tech, who have gravitated to Washington, DC in pursuit of equal wages, a supportive tech community, and an escape from the 'boys' club' culture of the West Coast

WRITTEN BY **HARRY MENEAR**

GTON, DC

Bordered by the states of Maryland and Virginia, Washington, DC is the home of the US federal government and some of the country's most iconic architecture. For a place so emblematic of the United States' history, traditions and political institutions - its landscape is dominated by white marble monuments in the neoclassical style - the past few years have seen 'the American Rome' become what Time magazine describes as "a female-friendly counterpoint to the bro culture of Silicon Valley."

According to Fortune, in 2017, all-female startups received a mere 2.2% of the total venture capital funding in the United States. By contrast, all-male teams received 79% of the pot.

However, in the same year, Forbes Magazine found that women in the Washington, DC tech scene made 94.8% of what their male counterparts were paid, compared to the national average of 84.8%. Women were also found to hold 41% of the tech jobs in the city - far ahead of the national average of 26%. SmartAsset ranked Washington, DC as the top city for women in tech for the fourth year running last year.

This trend is also set to continue, as the 2018 midterm elections resulted in the highest proportion of female congressional

representatives in history, with 42 women winning their first seat in in the November midterm elections. According to the New York Times, "the congressional freshman class of 2019 is perhaps best described in superlatives. It is the most racially diverse and most female group of representatives ever elected to the House, whose history spans more than 200 years." The 2019 Congress will include "at least 105 Democratic women and 19 Republican women."

As such, Washington, DC appears to be one of the best cities in the nation for powerful, enterprising women. In November, serial entrepreneur and veteran of seven startups in the Washington, DC area, Tiffany Norwood, said in an interview with the Free Times, "to be around where you have ... women or people of color popping up and saying, 'We are in support of the startup economy, we want to be entrepreneurs, too. We want to collaborate and be supportive,' that is so exciting to me."

Amelia Friedman, co-founder of Hatch, a startup that allows people and businesses to create their own b2b or b2c applications without coding, told Time Magazine in February 2018 that "I think what we've done, it's only possible in DC. Here, women-run companies can grow big."

SOU SOU — FONTA GILLIAM

One women-led DC startup disrupting the fintech sector is Sou Sou. Taking its name from a Caribbean and West African financing tradition called a sousou - where people regularly pay into a fund, withdrawing money when needed - the Washington-based startup was founded in 2015 by ex-US State Department program manager, Fonta Gilliam. Her startup leverages community to build a funding source, according to a report by the Washington Business Journal.

Gillian says that traditional banking services "overlook the thousands of prospective loan applicants because they do not fit into traditional credit risk profiles. This has created a deep divide between banks, women, minorities and low-income communities."

Fonta Gilliam

This is where Sou Sou comes in. It's a "crowd-banking platform built to give people struggling financially or with no credit (think recent college grad) an option other than a bank, investor or predatory lender", Gilliam explains. "A user visits the Sou Sou website and selects a fund based on personal financial goals. The site charges members a monthly membership fee automatically deducted from their accounts. Those fees are used to capitalize the community loan fund, and an algorithm determines when it's a user's turn to request a low-interest loan from that fund, so long as they're up to date with their contributions."

investsousou.com

Women were found to hold 41% of the tech jobs in the city – far ahead of the national average of 26%

ENTRADA ESL — ERIN JANKLOW

After becoming fluent in Italian while studying abroad, Entrada ELS founder and CEO Erin Janklow "learned firsthand that taking up a second language as an adult is challenging, but it's not impossible", Inc reported earlier in 2018.

Her startup, which was featured in July 2018 by startup capital investor Rent the Runway, helps immigrant employees in the hospitality sector become proficient English speakers while at work. The method uses a device and Talkback method of teaching, according to Technically DC. With 30-minutes lessons per day, Entrada ESL claims it can deliver confident English speakers "in just 100 days".

www.entradaesl.com

80

Washington, DC tech scene made 94.8% of what their male counterparts were paid, compared to the national average of 84.8%

VEDA DATA SOLUTIONS — MEGHAN GAFFNEY BUCK

Veda Data Solutions, led by ex-Washington fundraising specialist Meghan Gaffney Buck, is disrupting the way that healthcare consumers connect with their medical specialists. According to a report by Technically DC, Veda's service works to ensure the accuracy of medical provider directories. "If you went online right now and were looking for a new primary

care provider, and did a search, about half of the data points that search provided back to you would be inaccurate," Buck said in September 2017.

Since "Medicare decided that it was such a big barrier to care that they would fine insurers for inaccuracies," Buck's team is hoping to help insurers avoid fines by introducing machine learning tools designed to correct faults in databases.

Last year, Veda secured a win at the Vinetta Project Venture Challenge - a startup competition that highlights entrepreneurial women - and a $1mn seed round, Technically DC writes that "the company looks poised for growth." www.vedadata.com

82

Top 10 tallest buildings in the United States

Business Chief ranks the tallest buildings in the United States, according to World Atlas. In 2018, Chicago and New York dominate the top ten, with four skyscrapers apiece. The other two spots are filled by entrants from traditionally low-rise metropoles Los Angeles and Philadelphia. Let's see which buildings made the top ten.

WRITTEN BY **HARRY MENEAR**

10

Wilshire Grand Center
1,099ft

Towering above downtown Los Angeles, the Wilshire Grand Center is, in addition to being the tallest building in California, the tallest West of the Mississippi. Completed in June 2017, the Wilshire Grand has a total of 900 rooms, divided between office space, retail installations, an observation deck and over 800 hotel rooms belonging to the InterContinental Los Angeles Downtown hotel.

www.wilshiregrandcenter.com

09

Comcast Technology Center
1,121ft

According to a report by the Inquirer, "when developers went to Edmund Bacon asking whether any law prohibited building higher than William Penn's hat atop City Hall, the legendary Philadelphia city planner would tell them, "No, it's a gentlemen's agreement." Then he would add, "The question is, are you a gentleman?" Now, with the 1,121ft Comcast Technology Center (CTC) reaching completion this year, William Penn's hat is well and truly in the shade. The CTC has a total of 60 floors and will be used for office space, hotel rooms, retail locations and TV studios, according to World Atlas.

corporate.comcast.com

08

875 North Michigan Avenue
1,127ft

Built between 1964 and 1969, the John Hancock Center in Chicago was rebranded as 875 North Michigan Avenue in February 2018. The super-tall skyscraper sits on the Magnificent Mile in the heart of the city, boasting 100 floors, which host over 700 condominiums, office space, and award-winning restaurant The Signature Room on 95th.

875northmichiganavenue.com

07

Aon Center
1,136ft

A joint project by The Perkins and Will Partnership and Edward Durell Stone firms, Chicago's Aon Center was completed in 1973 under the name 'Standard Oil Building.' Upon completion, it was the world's tallest marble-clad building, covered in 43,000 pieces of Italian marble. In 1992, the building was re-covered in white granite, at an estimated cost of over $80mn. The Aon Center has 83 floors, making it the third-tallest building in the city.

aoncenterobservatory.com

06

Bank of America Tower
1,200ft

Completed in 2009, the Bank of America Tower is located in Midtown Manhattan and has a total of 154 floors. The project was undertaken by COOKFOX Architects, with the aim of becoming the world's most ecologically-friendly and efficient building, according to World Atlas. The building was constructed exclusively from recycled materials and, in 2010, received the Council on Tall Buildings and Urban Habitat award for '2010 Best Tall Building Americas.'

www.bankofamerica.com

05

Empire State Building

1,250ft

The second-oldest skyscraper in the world, the Empire State Building was completed in 1931 and remained the world's tallest building until 1972. The building is situated in Midtown Manhattan and has 102 floors. It is owned by the Empire State Realty Trust and, according to World Atlas, "recently completed an extensive renovation totaling $500mn, with around $120mn being spent on transforming the building into a more environmentally-friendly and energy efficient structure."

www.esbnyc.com

04

Trump International Hotel and Tower
1,389ft

Located in downtown Chicago, the Trump-branded condominium hotel, referred to as "Trump Tower" has 92 floors. The building was originally supposed to be taller, but was redesigned in the wake of September 11, 2001.

www.trumphotels.com

03

432 Park Avenue

1,396ft

Located in the desirable heart of Manhattan, 432 Park Avenue is the tallest residential building in the Western Hemisphere. Completed in 2015, 432 Park has 96 floors and is comprised of 104 half-floor condominiums and full-floor penthouses. The most expensive penthouse was priced prior to opening at $95mn by Forbes magazine.

www.432parkavenue.com

92

93

02

Willis Tower
1,451ft

Formerly known as the Sears Tower in Chicago, the Willis Tower was completed in 1973 and was the world's tallest building for almost 25 years, according to World Atlas. The tower was designed by architecture firm Skidmore, Owings & Merrill, has 110 floors and contains 4.5mn gross square feet of space. The building, which is the tallest in Chicago, receives an estimated one million visitors to its observation deck each year.

www.willistower.com

94

95

01

One World Trade Center
1,776ft

The tallest building in the United States is also the tallest in the Western Hemisphere and the sixth-tallest building worldwide. Completed in 2014, New York's largest structure was designed by David Childs, who owns the firm Skidmore, Owings & Merrill, which is also responsible for designing the Willis Tower and the Burj Khalifa. The building is 1,776ft tall, commemorating the year of the signing of the US Declaration of Independence.

www.onewtc.com

DIGITAL DISRUPTION

WITH THE CUSTOMER AT HEART

WRITTEN BY
DALE BENTON

PRODUCED BY
CRAIG DANIELS

GREG CHAVARRIA, ASSISTANT CITY
MANAGER AND CIO AT THE CITY
OF HALLANDALE BEACH, EXPLORES
HOW THE ORGANIZATION CONTINUES
TO EXCEED CUSTOMER DEMANDS
THROUGH DIGITAL DISRUPTION

As the modern world continues to be engulfed by technology and innovation, industry sectors are transforming more and more. Businesses and organizations are redefining their operations in order to continue to succeed and lead the way, and avoid playing catch up to competitors. For Greg Chavarria, Assistant City Manager and Chief Information officer (CIO) at the City of Hallandale Beach, regardless of how much technology continues to change, what is and will forever remain the most important part of working in IT is understanding the customer. "When you're in IT, it's important to not be rigid, be flexible and have a good ear for the customer," he says. "You need to understand your customer and their needs, and this challenges you as an IT professional to bring solutions that may not be evident right away. Perhaps it requires more research, or partnering with top-of the-line experts in order to better understand and realize these technologies."

Chavarria points to the Florida-based organization's recent partnership with Fujitsu in order to improve the city's Storage Area Network (SAN). Residents require access to their data and the City of Hallandale was still relying on antiquated technology that no longer met growing demands. With a limited

budget, technology that failed to meet the required standard and a growing desperate need to serve its customers and people, Chavarria knew that something had to be done. "We had old technology that was failing on a month-to-month basis. The customer was putting large amounts of volume into the SAN and we just needed a more reliable and faster way of getting the data out," he says. "We had an open mind, we researched and we partnered with Fujitsu. In having an open mind about the challenge, we were able to bring that project in on time and under budget."

Chavarria recognizes that there was an element of risk involved, with Fujitsu not having a major market in North America, but there were also risks surrounding the major transformation in order to continue to meet customer demands. "You have to be flexible and be willing to take the risk in order to satisfy the customer needs and then ensure you're paying attention to the customers. We reached a point where, through our SAN, that was no longer

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EXECUTIVE PROFILE

Greg Chavarria is a proven digital transformation leader with strong focus on smart cities technology, customer centric agility and sustainability strategies across the public sector space. As an innovator with deep grasp of technology, change management and project management abilities, Greg has brought forth smart city and sustainability solutions that have improved public safety, process management and improved accountability. He currently serves dual role of Assistant City Manager and Chief Information Officer for the City of Hallandale Beach. Some of the notable smart city projects Greg has led include the implementation of smart surveillance detection systems, smart lighting systems within public facilities, mobile apps to increase public engagement and smart metering for water utilities.

"WITH THE CONSUMERISATION OF TECHNOLOGY, CUSTOMERS EXPECT THAT FROM US. THEY EXPECT THE AMAZON-LIKE EXPERIENCE AND THEY EXPECT PROMPT TURNAROUND"

—

Greg Chavarria
Assistant City Manager and CIO
at the City of Hallandale Beach

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true, so we benchmark and survey and keep our fingers on the pulse with our customers."

As the City of Hallandale Beach centers its technology investments around the satisfaction of its customer base, it is important to understand that as technology continues to change, so too does the customer. But what does the modern-day customer demand of an organization like the City of Hallan-

dale Beach? "The customers of today are smarter – and by smarter I mean they understand smart technology," says Chavarria. "With the consumeriza-tion of technology, customers expect the Amazon-like experience and they expect prompt turnaround."

That changing customer brings challenge but it also presents Chavarria and the City of Hallandale Beach with an opportunity to better understand

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not only the customer demands, but how to implement technology in order to continue to succeed. "The drive of the 'smart' customer sets the path and the pace as to how technology must be delivered and that is in an agile and nimble manner," he says. "It can't be so clunky, it can't take so long. It has to be short spurts of progress that together, progressively deliver transformation throughout time."

To this end, the City of Hallandale Beach has embraced a worldwide shift in the IT space that has seen businesses centralize their IT and technology functions to become key drivers. Chavarria describes the move as "allowing technologists to come to the front of the line". He points to his own role as a key example of this shift: working as both Assistant City Manager and CIO of the organiza-

tion, he can help join the two worlds together in order to embrace a more technology enabled future. "My joint role allows greater governance, if you will, across the department so that it can ensure stronger collaboration, so that we don't work in separate silos, so that processes use or consume technology better and at greater lengths," he says. "It even allows better return of investment because it opens us up to greater executive sponsorship. They see the need to be quicker, to integrate faster and to respond to the customer and drive results. So as CIO, I need to understand challenges dynamically, because if I don't, then we fall behind and in this modern world it's incredibly hard to catch up."

Technology is at the very core of what Chavarria does, and so it is hugely important as he navigates that dual role that he is able to communicate across the departments effectively. Chavarria describes the role of IT as the Innovation Technology Department and with that comes the constant need and desire to improve. As a depart-

CLICK TO WATCH: 'HALLANDALE HAPPENINGS'

ment, Chavarria and his team regularly meet with various departments throughout the organization and look at how they can be better supported through technology. "Our philosophical focus is 'how can we get better?' We look at the Help Desk tickets and examine how we can avoid getting those Help Desk tickets," he says. "It's a constant push, it's constant research. It's constant training, and just finding ways to reinvent ourselves throughout the organization."

Key challenges with technology include understanding trends and

"IF YOU THINK DIFFERENT, YOU'LL SEE DIFFERENT. THAT'S GOING TO BE VERY IMPORTANT TO BRING IN CHANGE"

—

Greg Chavarria
Assistant City Manager and CIO
at the City of Hallandale Beach

recognizing use cases, and Chavarria seeks to avoid adopting technology as a means of keeping up with others, rather than adding true value. In the public sector, the technology conversation often centers around cybersecurity and the City of Hallandale Beach utilizes cloud solutions to better store

its data. This in turn allows Chavarria to explore business intelligence and understanding how to 'do more' with the data. "Business intelligence is ripe for more and we can certainly use it to predict better and understand the panorama of opportunities that may exist," he says. "My goal is to give that Amazon-like experience for our constituents and we can achieve this through business intelligence. We can predict, adapt, and develop a better variety of city services for our constituents."

The success of the technology lies at the hands of the customer and the constituent. In order to be able to say

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that the City of Hallandale Beach is succeeding with its technology implementation, Chavarria points back the one key component in all of the organization's operations. In 2018, the City of Hallandale Beach's communications department became part of its technology department and this has only strengthened the relationship the organization has with its constituents. "We are far more engaged with our community," says Chavarria. "Through phone, social media and our mobile app, we are constantly communicating with our customers."

Through surveys, social media liaisons and almost 24/7 communication, the City of Hallandale Beach has a greater understanding of customer needs, their concerns and how it can continue to add value to their experiences.

Technology will continue to redefine the modern world, the modern customer and the modern business. Chavarria will continue to push the City of Hallandale Beach to be more innovative agile and flexible and to provide that coveted 'Amazon-like' experience. Ultimately for him, the key to this is simple. "If you think different,

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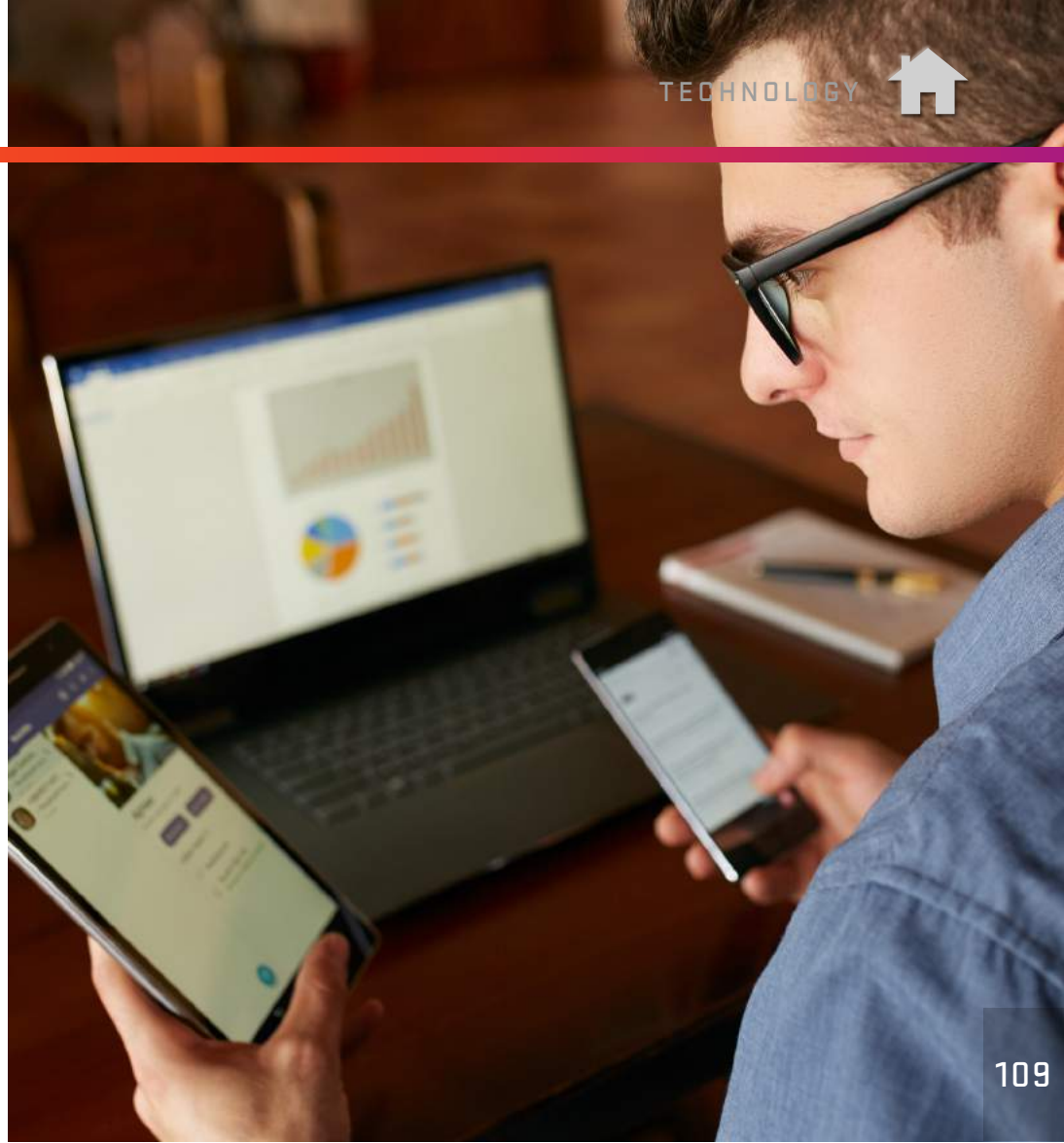
you'll see different," he says. "That's going to be very important to bring in change. We have to stop every day and ask, what can be different about what we are doing that can add value to the organization? That's what I'm trying to do here and that philosophy will drive us forward." ∎

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An adaptive and immersive technology transformation

WRITTEN BY
HARRY MENEAR

PRODUCED BY
CRAIG DANIELS

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We sit down with Dr. Karen Vendouern-Srba, Vice President of Academic and Instructional Technology at American Public University System to find out how its adaptive e-learning platform AI capability is transforming adult online education

Dr. Karen Srba has served as vice president of academic & instructional technology at American Public University System (APUS) since 2013. During her tenure, she has been at the heart of the institution's digital transformation in learning modalities. We sat down with her to find out how APUS is using interactive learning tools and an adaptive digital learning platform with AI capability, in conjunction with the deep expertise of its diverse faculty scholar-practitioners to offer a pioneering e-learning experience.

Founded in 1991 by retired United States Marine Corps officer James P.

Etter as American Military University (AMU) to cater to the unique needs of military learners, APUS has since grown into one of the largest providers of online higher education worldwide. The addition of American Public University to APUS in 2002 extended programs with the same academic quality, affordability and flexibility to civilian learners primarily in public service. APUS, a wholly-owned subsidiary of American Public Education, Inc, is headquartered in Charles Town, West Virginia.

Srba collaborates and engages with all departments of the university, including Student Affairs, IT, Finance, Financial Aid, Scheduling, Registrar and the deans of six schools to digitally transform APUS's approach to instructional design and delivery. "I've been

working on it for over four years," she says. "I assumed leadership of Academic and Instructional Technology in August 2013 and that's when we started asking ourselves: what are the main important problems?" Srba worked to radically disrupt the ways in which APUS delivers its e-learning programs, first develop- ing a strategy to leverage APUS's deep data insights to fully understand and prioritize the initiative.

"We've taken a different approach over the past four years. We've been looking at technology that can aid online students in terms of retention and success," explains Srba. "Students, especially as they're becoming younger and younger and taking online courses, require a digital experience." Under her team's direction, APUS has turned to interactive adaptive technology with

machine learning to create a student centered experience that is both rigorous and engaging. "We have gone with an adaptive engine that allows us to scaffold the student and their education," she says. APUS's system applies machine learning to a student's performance to evaluate their strengths and weak- nesses. As a result, it "is able to serve up that information to you just in time. Just at that moment that you need it. Nothing more. Nothing less. It gives [them] a chance to be successful and

"Students, especially as they're becoming younger and younger and taking online courses, require a digital experience"

—

Dr Karen Srba,
VP Academic & Instructional Technology, APUS

remember or learn a particular skill needed to complete the lesson".

The scaffolding is personalized. To help accomplish its objectives, her development team partnered with adaptive e-learning platform designer Realizeit to design its framework. "The biggest thing is that, because we're such a large organization, we have a lot of different programs," Srba says. "We have over 1,600 courses that we have to manage and to which we have to apply these different frameworks.

RealizeIt came in as the adaptive engine, but they also help us scale our e-learning. They were actually able to ingest our Microsoft Word documents with our macros and our cascading style sheets for HTML5. They adjusted it so that we could make this a very simple process and our instructional designers could simply design, ingest it, and then our multimedia team could just go in there and tweak some of the HTML5 to get a final product."

Srba notes that Realizeit's ingestion

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engine accelerated the process of launching a course dramatically. "Normally it would take us about three months per course. Since we started using Realizeit's ingestion engine in the adaptive format, it now takes us probably six weeks at the most," she says. Thanks to the collaboration between Srba's team and Realizeit, "every student that goes through this system might have a different pathway." She notes that "this way, the student is able to succeed no matter what." The application of this

personalized experience has seen student success increase dramatically. "The data shows that there's been a significant increase in the number of As, Bs and Cs, and significantly fewer Ds, Fs and people withdrawing from courses," says Srba.

Reducing the number of student withdrawals is a key element of Srba's mission at the institution. She acknowledges that a hurdle for some students is the absence of discipline inherent to a physical classroom. "In an online

EXECUTIVE PROFILE

Dr. Karen Vendouern-Srba is the Vice President of Academic & Instructional Technology for American Public University System (APUS). With over 28 years of experience in systems integration, information security, project management and education. She heads a team of eLearning professionals who design digital, interactive learning content and 3D immersive applications for education. Srba is an accomplished speaker and researcher and has created several scholarly papers and presentations on adaptive learning, pedagogy, immersive technology (3D and VR/AR), and experiential learning for online adult students. Dr. Srba has created several learning technology frameworks that will transform the way higher education delivers adult student programs, degrees, courses, micro-credentials and certificates.

class there's no faculty member saying 'Hey, you didn't turn in your homework.' To overcome that, one of the things that we're doing is trying to make the courses more active and engaging." Using Unity and HTML5, APUS has increased the interactivity of its classes with the creation of 'experience-of-learning activities' in a format similar to a digital magazine. Students can "click on a picture or photo or infographic and it might have hotspots on it," Srba explains. "It might have things that I can see and read, and captions to explain the material." The courses are organized with, on average, a 50/50 balance between traditional reading material and APUS' new interactive media offerings. "You still might have course material that you have to read, but this interactive e-learning lesson digests a lot of that for you," says Srba.

"According to the student feedback, this e-learning, which is more interactive, has actually increased their satisfaction," she says. "It's definitely kept the students more engaged and we find that the more engaged the students are with these interactive pieces, the greater their chances of success."

In addition to the increase in immersive and personalized adaptive offerings, Srba and APUS have been working to reshape the

**'READY WHEN YOU ARE —
AMERICAN PUBLIC UNIVERSITY (APU)'**

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role of the faculty within its e-learning format, in order to further personalize the student experience and increase success and retention. Securing faculty adoption of the new platform was, Srba admits, one of the most challenging aspects of APUS' digital transformation. She stresses: "If you don't have buy- in from the faculty member teaching that course, it can be a disaster." Srba's change management strategy centered around the most innovative members of her faculty. "We converted their courses first," she explains. "We have a Center for Teaching and Learning, where we worked to help them understand how to use the adaptive software and the new formats and

frameworks to their advantage." Reflecting on the process, she notes that while "training was very big for the faculty, finding those champions was essential to change management process. Going for the more innovative, more open-minded faculty who were willing to make a change and saw the value of that scaffolding - they said 'Wow, this makes my job easier, not harder.'"

Srba's team has presided over a dramatic transformation of the ways in which APUS's primarily adult learners experience online education. Looking to the future, she professes

33
Average age of APUS students

2,000
Approximate Global Faculty

125
Undergraduate Degree & Certificate Programs Offered
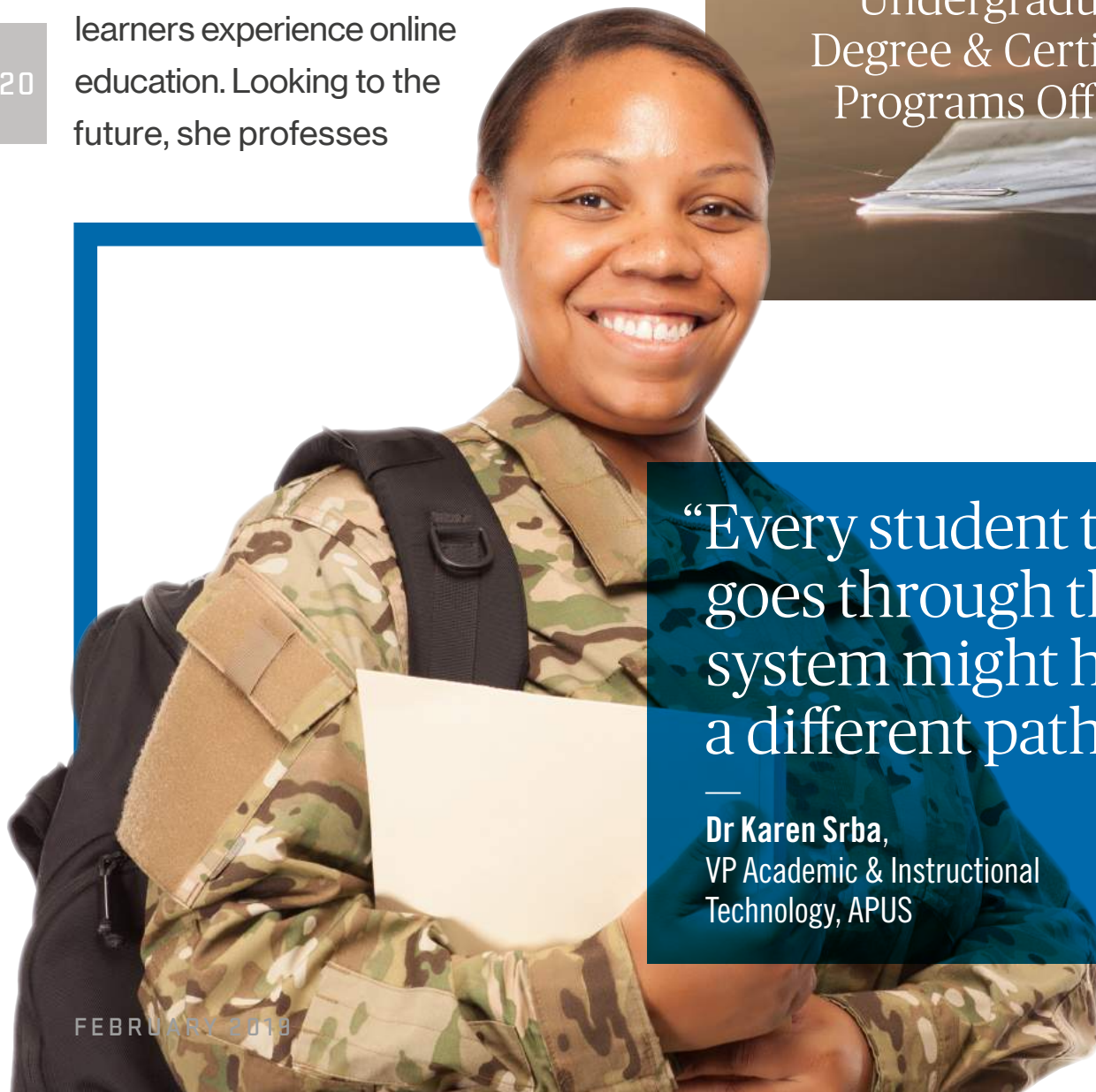
"Every student that goes through this system might have a different pathway"

—

Dr Karen Srba,
VP Academic & Instructional Technology, APUS

that their work is far from over. "APUS is already planning for 2020 and beyond," she says. "The idea is to use the adaptive engine and take it one step further into a lifelong learning framework, which I just developed. This would allow a student not only that personalization within the course, but personalization for any course, degree or micro-credentials they want to take." Students in the future will be able to combine complementary skills and courses within a customized program of study. "There still aren't a lot of universities doing this," Srba emphasizes. "APUS is truly one of the pioneers." ■

Embracing technology in the education sector amid a digital transformation

WRITTEN BY
SEAN GALEA-PACE
PRODUCED BY
CRAIG DANIELS

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Jean Hower Taber Student Union

JOHN CORBY, CHIEF INFORMATION OFFICER OF THE UNIVERSITY OF AKRON, DISCUSSES HOW TECHNOLOGY HAS HELPED THE UNIVERSITY TO COMPLETELY RESTRUCTURE ITS NETWORK SYSTEM AMID THE ORGANIZATION'S DIGITAL TRANSFORMATION

With organizations worldwide embracing technology to make day-to-day operations easier, it has become vital to adapt to the latest digital trends in order to stay current. In the midst of a significant digital transformation in the United States (US), The University of Akron has put a substantial emphasis on technology as the organization looks to restructure its entire network system.

Overseeing the upgrade of the digital enhancements at The University of Akron is John Corby, Chief Information Officer (CIO), who has worked in a variety of different roles such as Project Management Officer and Senior Director of Enterprise Applications and Business Intelligence, since arriving in 2005. Now CIO, Corby believes the university has evolved considerably in comparison to when he first joined due to the

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1870
Year founded

218
Acres of campus

20,500
Approximate number
of students

ever-increasing influence technology has had on operations. "When I first came here, technology had a very limited role and was primarily transactional in nature and was benignly accepted by those who used it. Today, it's completely embedded into everything students, faculty or staff do and is now an expectation. No one comes to the campus without being touched by technology. It does mean that change management, training and communications are critical as we continue to introduce technology and change," explains Corby. "The management of technology has shifted

from large-scale initiatives to a continuously reoccurring process. The process to provide new client-based equipment for faculty and staff and the replacement of our network and server technology has all shifted from large-scale and costly implementations to a cost of doing business. Technology isn't going away and we need to do a better and more cost-effective job in supporting, replacing and expanding the technology we offer."

EMBRACING TECHNOLOGY

As one of the first universities in the US to go wireless, The University of Akron is currently halfway through a complete upgrade to replace its network technology at the university. The organization is also undergoing a major security upgrade, both physically and digitally, to expand the security-related infrastructure at the university.

"Digitally we have moved forward with the implementation of advanced security features with our Office 365 products. We're also moving forward with multifactor authentication and eventually with a new identity management system. It has been a challenge to balance the need to protect our systems without making it too onerous or complicated for our students, faculty and staff to get access to the systems and technology they need," says Corby. "With physical safety being a key consideration for our campus, we are in the midst of an upgrade and expansion of the infrastructure that supports this. We're in the early stages of an upgrade and expansion of our video surveillance infrastructure and recently

"IT WAS A COMPLETE TECHNOLOGY SWITCH FOR US MIGRATING FROM A WELL-ESTABLISHED SOLUTION TO ONE THAT WAS COMPLETELY NEW TO THE UNIVERSITY AND THE NETWORK STAFF WHO IMPLEMENTED AND MAINTAINED IT"

—
John Corby
Chief Information Officer (CIO),
The University of Akron

Cybersecurity class

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converted our radio technology. The jump from analog to digital technology has been a great improvement in the sophistication and efficiency of our support for these operations."

With the university halfway through upgrading the entire network system, Corby believes the process has been more seamless than expected. "The process has gone along much smoother than I anticipated. It was a complete technology switch for us migrating from a well-established solution to one that was completely new to the university and the network staff who implemented and maintained it," he says. "We're almost done with our wired network upgrade which presented challenges in supporting the old network infrastructure while implementing the new infrastructure alongside it without impacting the network access provided to our campus.

EXECUTIVE PROFILE

John Corby

John's role provides oversight, leadership and vision to enable the use of technology supporting the institution's goals and mission. He is responsible for providing and supporting a cost-effective, strategic and innovative technology environment to the university.

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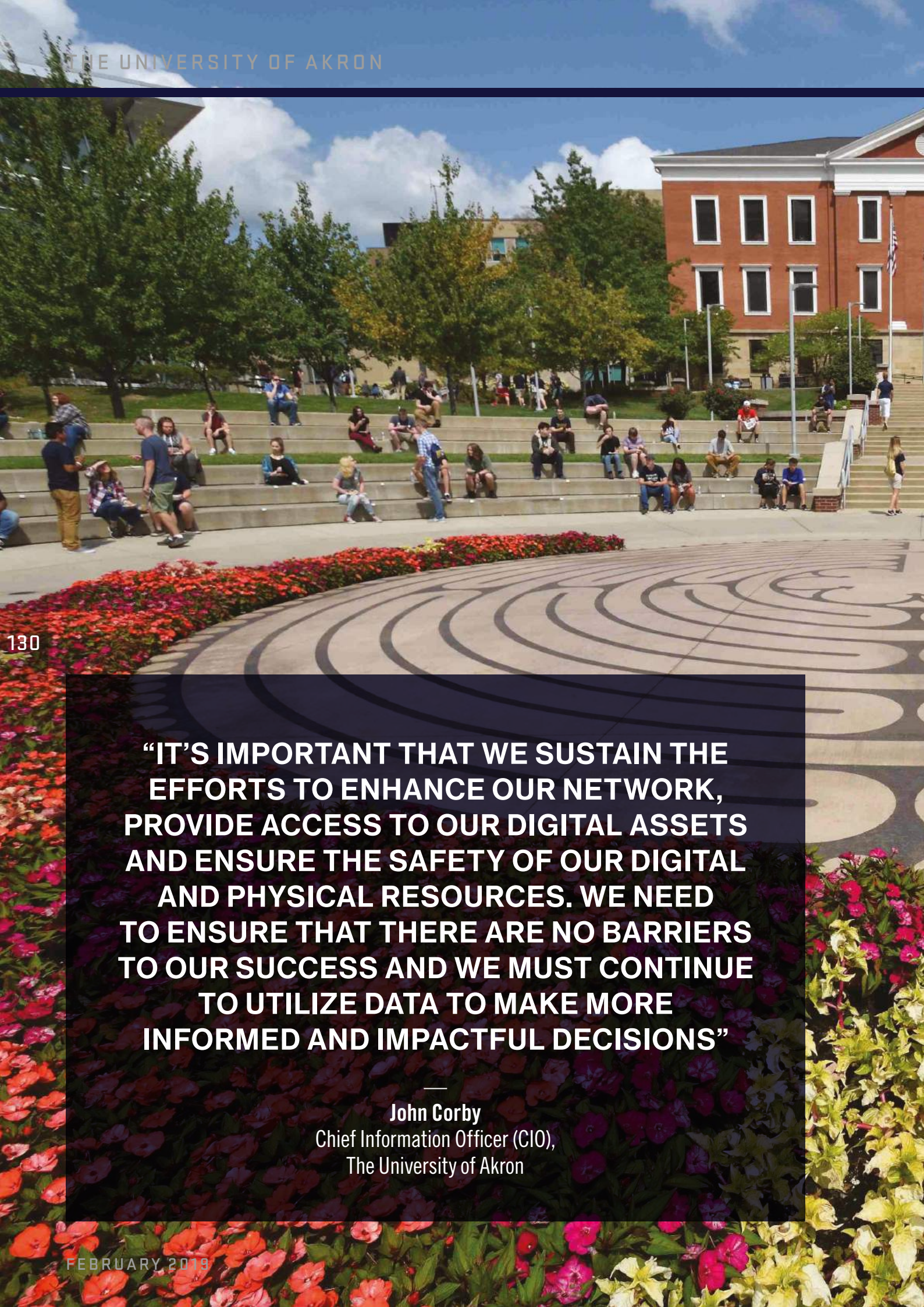
"IT'S IMPORTANT THAT WE SUSTAIN THE EFFORTS TO ENHANCE OUR NETWORK, PROVIDE ACCESS TO OUR DIGITAL ASSETS AND ENSURE THE SAFETY OF OUR DIGITAL AND PHYSICAL RESOURCES. WE NEED TO ENSURE THAT THERE ARE NO BARRIERS TO OUR SUCCESS AND WE MUST CONTINUE TO UTILIZE DATA TO MAKE MORE INFORMED AND IMPACTFUL DECISIONS"

—

John Corby
Chief Information Officer (CIO),
The University of Akron

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Amphitheater looking at Buchtel Hall

Interestingly, we used some student employees who were taking some network-related classes to help with the implementation of the wireless technology. This provided some real-life "labwork" for the students and helped us rapidly deploy our new technology."

FORMING KEY RELATIONSHIPS

In order to help achieve its success, The University of Akron has formed a key technology partnership with Oracle to push the organization's digital output. The university utilizes Oracle technologies for its ERP, data warehouse, enterprise databases, storage and has recently started using Analytics Cloud (OAC) services to move forward with the organization's business intelligence and analytics initiatives. With the help of Oracle, the university has migrated to Oracle Database Appliances (ODA) along with RAC and Active Dataguard for sustainability allowing access to systems and servers 24/7. "The ODA has provided the resiliency and business continuity that we did not have before these were put in place. They have been invaluable in regards to providing a reliable and uninterrupted user experience for our students, faculty and staff," explains Corby. "This technology has really helped to reduce the amount of time and effort to maintain our enterprise

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WHERE YOUR STORY BEGINS'

databases which has been critical given the reduction in staff that has occurred. For example, clones of our databases are completed in just a few hours where it had previously taken days to complete."

The university has also established technology partnerships with Dell and Blue Chip Consulting and Corby believes these key relationships have been pivotal to the expansion of the technology that the organization has implemented. "Dell has been another key technology partner for the University and helps to supply much of our infrastructure needs including servers, storage and our wired network," he says.

"WHEN I FIRST CAME HERE, TECHNOLOGY HAD A VERY LIMITED ROLE AND WAS PRIMARILY TRANSACTIONAL IN NATURE. TODAY, IT'S COMPLETELY EMBEDDED INTO EVERYTHING STUDENTS, FACULTY OR STAFF DO AND IS NOW AN EXPECTATION"

—

John Corby
Chief Information Officer (CIO),
The University of Akron

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William Honors College

"We recently leveraged a state agreement to use Dell as our reseller for Microsoft products. In addition, Blue Chip Consulting is a local firm but one who has really helped us expand the use of technologies we weren't able to leverage before. We've used them recently to help us with the implementation of advanced security functionality provided with our Office 365 product."

Looking to the future, Corby affirms it remains of high importance that the university continues to sustain its success by continuing to make progress digitally. "It's important that we sustain the efforts to enhance our network, provide reliable access to our digital assets and ensure the safety of our digital and physical resources. We need to ensure that there are no barriers to our success and we must continue to utilize data to make more informed and impactful decisions." ■

The University of Akron

AGILE, LEAN AND DEVOPS:
Learning from Nationwide's digital disruption

WRITTEN BY
LAURA MULLAN
PRODUCED BY
ANDY TURNER

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By tapping into trailblazing new practices and methodologies, Nationwide has put its weight behind a mammoth transformation. We spoke to Guru Vasudeva, Senior Vice President and Chief Information Officer (CIO) of Program and Application Services, to find out more

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In the American insurance and financial services markets, Nationwide ranks amongst the best. Today, the Fortune 100 company stands as the number one company for total small business insurance, the number one underwriter of farms and ranches, as well as the nation's leading pet insurer. But its list of accomplishments doesn't stop there: it's also the 8th largest provider of defined contribution plans, number 1 in 457 plans, the 8th largest life insurer and much more. Spanning personal lines, commercial lines and financial services, this diversity has allowed Nationwide to carve a unique path as a one-stop shop for insurance. Though, as Guru Vasudeva, Senior Vice President and Chief Information Officer (CIO) of Program and Application Services, points out, the insurer's competitive edge undoubtedly lies in its customer-centric ethos. "Nationwide is a mutual company, which means our customers own us," Vasudeva explains. "As the organization evolves, we are really focused on doing what is good for our customers, our employees and

Agile

Lean

DevOps

139

Continuous learning

the communities where we operate."

Digitization is shaking up industries across the globe, and it seems the insurance and financial services sectors are no exception. Recognizing that its business is information-centric and reliant on IT, Nationwide has embarked on a root-and-branch digital transformation to ensure it can continue to deliver a world-class customer experience for years to come. "The products that we create are all information-based; they're not products that you can touch and feel," observes Vasudeva. "IT is the manufac-

turing arm of any financial services and insurance company. Our Board and our senior leadership recognized this a long time ago and, ever since, we have been on a journey to build a globally competitive IT capability inside Nationwide."

TATA
CONSULTANCY
SERVICES

Lean and Agile Partnership Journey with Nationwide

"

TCS' Business 4.0 thought leadership framework, centered on agile methodologies, has helped clients like Nationwide Insurance to retain their leading position in their respective industries.

Accelerated adoption of agile at Nationwide under the able leadership of Guru Vasudeva has been a great journey and we are proud of our role in delivering best-in-class thought leadership to Nationwide.

Anupam Singhal
Senior Vice President and Business Head, BFSI, TCS

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The key value t
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As Nationwide Insurance Co
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Nationwide to scale up agile
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program delivery.

TCS is proud to have partnered with Nationwide in t
work with the right partner. With its focus on the Bu
the globe have chosen to partner with TCS to transf

TCS has set an enthusiastic vision of achieving Enterprise Agile by 2020 – a first-of-a-kind in terms of sheer scale and size. TCS' Agile vision is founded on four pillars: workforce, workplace, service delivery partnership, and internal processes. In line with this vision, TCS has mobilized several small Agile teams for large transformations and delivered valuable outcomes at lightning speed besides helping over 2,000 clients to transition from project-only Agile to portfolio Agile and beyond. In addition, TCS has built the largest agile workforce in the world and created a world class agile coaching program to help bring about a mindset change across organizations. By codifying its experience of working with blue-chip clients such as Nationwide Insurance Company, TCS has created a repository of compelling point of view articles on enterprise agile, location-independent agile, and agile contracting models. TCS' success in helping organizations in their Agile transformation has been enabled by some key elements:

- 100% agile workforce
- TCSLivingAgile for mindset change
- Visual radiators to replicate client agile environment
- Collaboration tools to work in virtual co-located environments
- Strong network of over 600 agile coaches
- Empowered distributed teams – matching the right talent with the right role

that TCS brings to the agile journey of clients involves customizing agile practices and processes to f-the-art location independent agile delivery. This involves establishing a common delivery platform centralized team models, streamlined demand management, lean team structures and fact-based merger of agile practices enhances the certainty quotient needed to deliver time-to-market objectives sformation programs. With the increasing success of the distributed Agile delivery approach, TCS is global clients to transition from traditional time and material model to mature delivery models built buted Agile methodology. This has helped transform the way clients do business by delivering ciencies of scale and accelerating timelines to enable quicker time-to-market.

mpany's strategic partner providing IT services for the past eight years, TCS has partnered with enterprise agile journey under the leadership of Guru Vasudeva. As part of this journey, TCS helped e delivery by adapting to distributed agile delivery model, leveraging efficient delivery practices, best-ngagement models. In this agile transformation journey, The 'One Team' mindset, which was at the core ram, played a key role in making 16*5 business and IT delivery a reality thus leading to accelerated

this inspiring journey. TCS firmly believes that organizations can be successful in this journey if they usiness 4.0 framework with agile, automation, cloud and artificial intelligence at its core, clients across orm into 'future ready' organizations.

"A lot of people have just done Lean or Agile, but I think by bringing these four strategies together we've done something unique"

—

Guru Vasudeva,
Senior Vice President and Chief
Information Officer (CIO) of Program
and Application Services, Nationwide

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Nationwide has put its weight behind this digital disruption since 2009. The company spends more than US$1.3bn on IT every year, of which around $500mn is allocated to technology-enabled transformation programs. It has also invested a huge amount of software development, with around 5,000 to 6,000 full-time employees and contractors writing complex code on a daily basis. To improve this mammoth process, Nationwide set

itself an ambitious goal to transform the way in which it develops software by blending four trailblazing strategies: Agile, Lean, DevOps and continuous learning. This is no easy feat, and the journey is far from over. But Guru is certain that it will be a recipe for success. "A lot of people have just done Lean or Agile, but I think by bringing these four strategies together, we've done something unique," he notes. By releasing software faster and at a higher quality

EXECUTIVE PROFILE

Guru Vasudeva is Senior Vice President and Chief Information Officer (CIO) of Program & Application Services at Nationwide, a $27 bn revenue financial services and insurance company. In this role, Vasudeva manages a shared services organization that provides program and project management, application development, and requirements and testing for the enterprise. He is also responsible for the delivery of large and complex programs, and Lean and Agile transformation of application development and maintenance functions across Nationwide.

for a lower cost, he says this plan hopes to not only help Nationwide achieve its business goals, but it will also reimagine the customer journey.

AN AGILE POWERHOUSE

Keeping its finger on the pulse of the latest business strategies, Nationwide began its software development transformation a decade ago. In 2009, the firm centralized its IT function, sharing areas such as its data centers, infrastructure, security platforms and more. In fact, it also realized it could centralize and optimize the methodology and practices used in software development – the same year, Nationwide made its first foray into Agile methodology. Whilst Agile wasn't new, it was now broadly adopted across all its enterprises for the first time. For Guru, the next step was to see if Agile could work for large transformation programs. "Our experimentation with Agile goes back a long time ago when we had small teams experimenting with this methodology," Vasudeva recalls. "But we wanted to see if we could scale Agile at an enterprise level. In other words, could we start using it for almost all software development?"

"We brought these Agile teams together and asked them if they could harmonize the methodology. That's because we believed
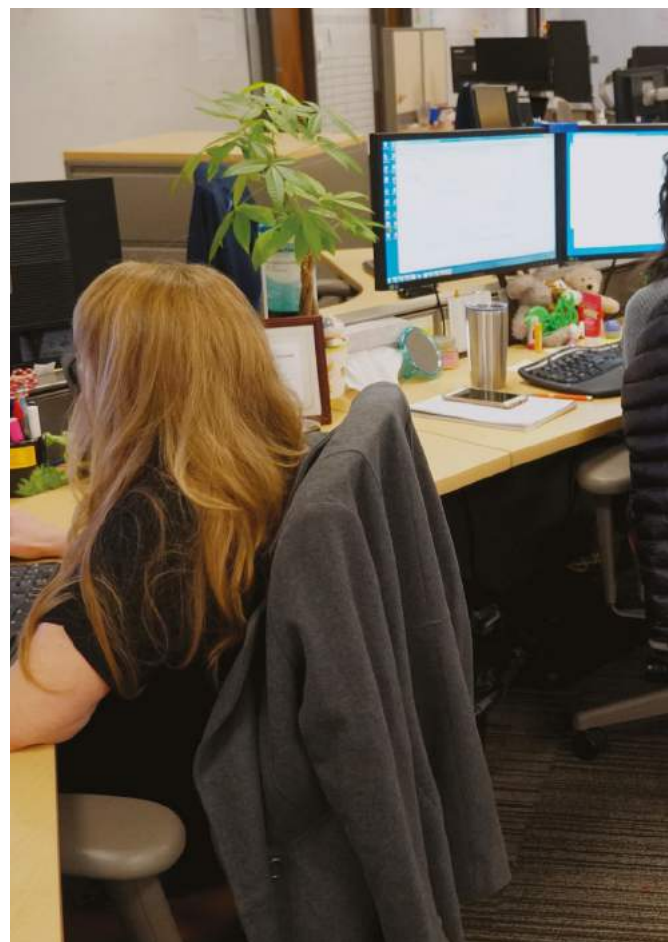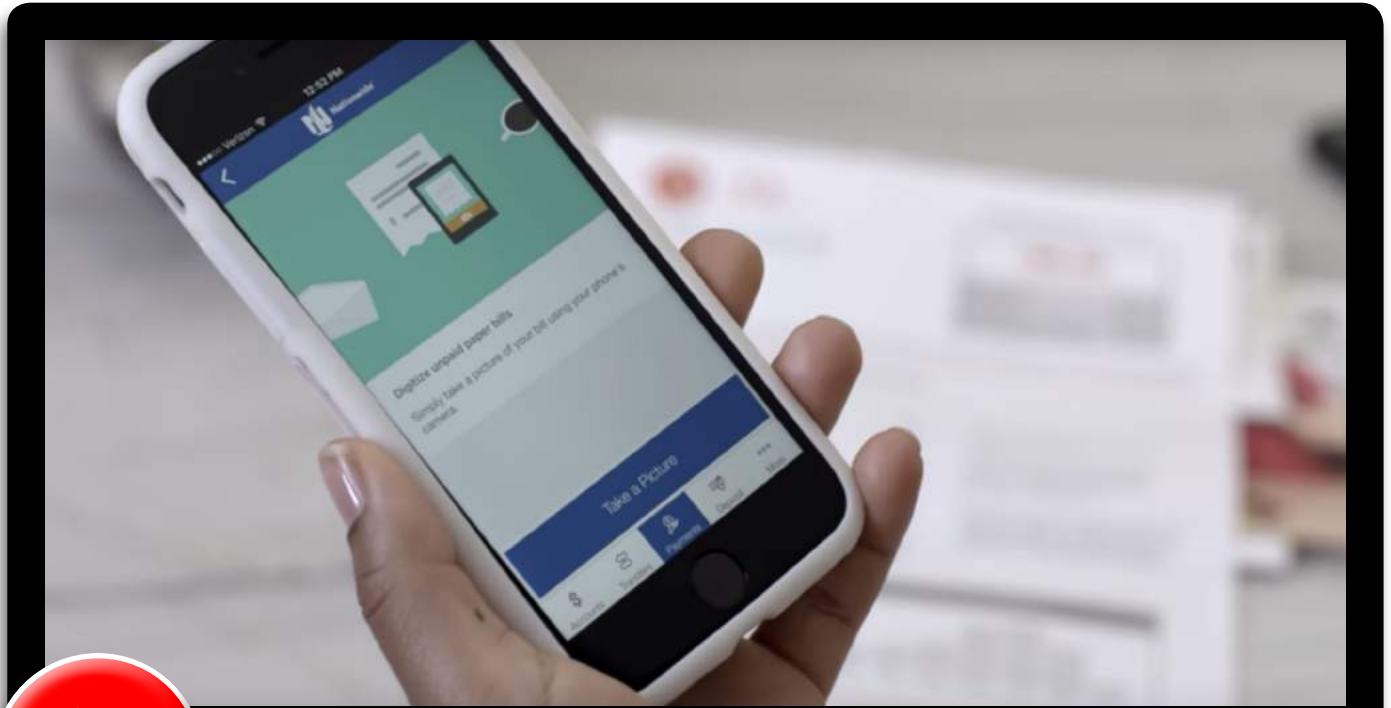
CLICK TO WATCH: 'PAYING BILLS ONLINE'

that if you had a fine-tuned process then we could create a shared capability in which you could reuse the repeatable processes, methods and tools. It was really hard because people in these fields are very focused on their own version of Agile. But, in the end, it was very successful, and we began to slowly build our Agile development center."

LEAN PROWESS

But Agile was just the first building block in Nationwide's transformation. Wanting to take this a step further, the insurer and financial services provider decided to scale

its use of Agile substantially in 2011, so it employed Lean techniques to achieve this. Harking back to the early days of industrialization, Nationwide adopted the idea of a so-called "software development factory" complete with development teams that would finish one step needed to create code. Establishing clearly defined key roles for each development team (such as scrum master, tech lead, requirements lead and test lead) enabled the replication of best practices across the enterprise, as if it were a factory. The insurer also implemented a visual management system, allowing developers to gain information on the shop floor quickly, as well as Gemba Walks – a fundamental Lean management philosophy. "Gemba Walks enables leaders to visit the shop floor and to see first-hand the issues teams are facing," notes Vasudeva. "It allows information to flow from frontline teams to senior management in real time. Leaders also become more enmeshed within the workings of the factory instead of managing it in a spreadsheet or a dashboard." Wanting to scale this even further, Nationwide also showed that these cutting-edge methodologies

$28bn
in operating revenue

1926
Year founded

32,000
Approximate number of employees

could be used not only for computer programming languages like Java but could also be applied to Cobol, Packages and ETL code.

This mammoth investment, Vasudeva says, was starting to pay off. By 2014, Nationwide's Agile development teams had proven better quality and better productivity using industry benchmarks, and it had also created up to 50 development teams. However, Agile methodol-

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ogy wasn't entirely widespread, it only covered less than 30% of software development at Nationwide. "We conducted a Gartner benchmark that showed that our Agile development line was better than the industry standard in terms of productivity, however Nationwide as a whole was still 7.8% worse in unit cost compared to the industry. We estimated that we could get close to 12% savings by adopting these practices across all our software development – that's around US$60mn annually." With this in mind, Nationwide's decision to scale these methods enterprise-wide was an easy one to make. Today, the firm has around 200 software development teams, almost all of which have adopted this blend of Agile and Lean. Zeroing in on quality, productivity and time to market, Nationwide has also stream-

lined its benchmark metrics, and today it can trace around US$60mn of savings on an annual basis. In its most recent benchmark in 2017, for instance, Nationwide reported 7.8% better unit costs – that's a 15.6% increase compared to its benchmark from three years earlier.

DEVOPS MASTERY

Not wanting to rest on its laurels, Nationwide decided to push its transformation further by tapping into DevOps. Emphasizing a shift in mindset, better collaboration and tighter integration between software development and IT

"Our customers have also benefited from this transformation by receiving better quality software faster and for a lower cost"

—
Guru Vasudeva,
Senior Vice President and Chief Information Officer (CIO) of Program and Application Services, Nationwide
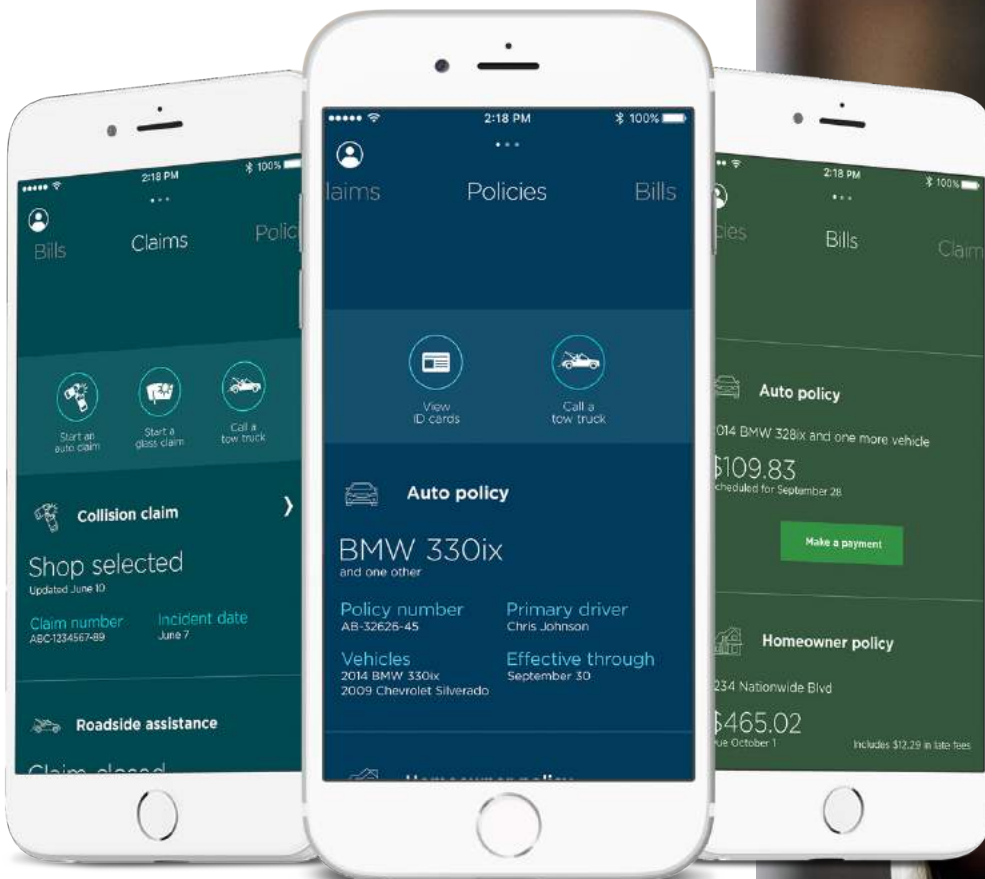
operations, DevOps hopes to help build, test and release software faster and more reliably. "It builds on top of Lean and Agile, but it combines a significant amount of automation and brings development and infrastructure teams together," says Vasudeva. "It requires a completely new way of thinking. We conducted a book study on Gene Kim's DevOps Handbook so that we can really understand this methodology." Today, the Fortune 100 company is on track to get top quartile productivity across all 200 development lines. By automating and enhancing the software development pipeline, Vasudeva adds that this proves that DevOps is "raising Nationwide's game to a whole new level".

Yet, this journey is far from over. Keen to impart a culture of continuous learning, Nationwide founded "Teaching Thursdays" whereby the firm sets aside two hours twice per month to allow employees to teach topics in classrooms to their peers. "It's teaching by peers for peers," Vasudeva explains. "It's a grassroots project: We encourage people to attend and encourage people to teach. Some of the topics include how to do test automation,

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how to use the newest version of Angular J or sometimes it might include a topic like yoga or meditation. We have found this to be an incredible approach." It seems the workforce agrees. On a cumulative basis more than 10,000 people participated in Teaching Thursdays last year. It's also helped to promote best practices and allowed natural leaders to shine through. "It's been an incredible low-cost approach, critical

in making all of this journey possible," Vasudeva adds. In conjunction with this, Nationwide has developed TechCon, its very own conference and a series of code camps. "Around 2,000 of our associates attend TechCon, during which more than 200 classes are taught. It's our own technology conference for our own technology people," he says. "We also have code camps, whereby we pick topics that we want to excel in

> **"IT is the manufacturing arm of any financial services and insurance company"**
>
> —
>
> **Guru Vasudeva**,
> Senior Vice President and Chief
> Information Officer (CIO) of Program
> and Application Services, Nationwide

like machine learning, for instance, and invite a couple of people to study that topic and to teach other members of the team. It's helped us create a clearly defined roadmap of how our employees can go from a novice to an expert in a topic. It's helping to create a path to craftsmanship."

CRUCIAL COLLABORATION

Nationwide has earned its stripes as a leading employer – it has gained recognition as one of the Best Companies to Work For by Fortune 100. Vasudeva is keen to point out that the talents of his team have been crucial in making this software development strategy a reality. "It could not have been possible without the partnership of my peers in IT leadership," he says. So far, Nationwide's software-development strategy has been a roaring

success. "We can prove that we are delivering faster software at a higher quality for reduced costs," highlights Vasudeva. "This has allowed us to transform our IT function. We've also replaced legacy systems with modern packages, and we can provide better mobile capabilities for our consumers and agents. It has really allowed us to enable our business goals. Our customers have also benefited from this transformation by receiving better quality

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software faster and for a lower cost."

Nationwide has made significant strides to enhance its software development process, but the transformation is far from over. "We still have a long way to go," notes Vasudeva. "We aren't finished with DevOps just yet as we plan to extend DevOps practices across all 200 Nationwide software development teams. We are also experimenting with taking and applying Agile into the wider business. Then, last but not least, we're focusing on Test Engineering and Automation (TEA). We are really making a big push to significantly automate the way we test our software." Software engineering is undoubtedly in the throes of its own digital transformation. For businesses today, the stakes of getting this right are high, but it seems Nationwide has concocted the perfect recipe for software development transformation. ∎

Nationwide®
is on your side

THE FLOW OF INFORMATION: LSC'S SUPPLY CHAIN TRANSFORMATION

WRITTEN BY
JOHN O'HANLON

PRODUCED BY
GLEN WHITE

LSC COMMUNICATIONS IS A VITAL PARTNER TO PUBLISHERS, PRODUCING THEIR PRINTED MATERIALS AND ALSO MANAGING AND DISTRIBUTING THEM THROUGH INNOVATIVE SUPPLY CHAIN SOLUTIONS AND EXCEPTIONAL SERVICE

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In its present incarnation, LSC Communications is just over two years old having been created out of the book, magazine, catalogue and office products printing businesses of RR Donnelley. That business was founded in 1864 and became recognized as the founder of the American high quality, high volume book printing industry. Its sought-after Lakeside Classics imprint is now maintained by LSC and is a benchmark for the impeccable attention to product excellence and design that epitomizes the company.

Not so long ago, printing was thought to be a dying industry as electronic means of delivering content, whether educational or general, made inroads. Certainly, some impact was felt, however in the last year or two book sales have rallied and LSC's President of Book Division, Dave McCree, is insistent that the fundamentals of the print market are healthy – a sound basis on which to build the many added value services the company is now able to offer. "Someone suggested to me the other day that we are a 155-year-old startup – I love that! We are a smaller, leaner and more agile organization focused on specific markets."

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INT THAT PROTECTS
UR BRAND
k from HP

as come to combat counterfeiting and product diversion—and Link, an affordable
, is up to the task. Link from HP embeds products with an overt or covert digital fingerprint
anage your products across their lifecycle. Protect your brand, track and trace products,
e consumers with one digitally-printed mark.

OWING THREAT IS REAL

ounterfeiting
ach US$2.3
by 2022.[1]

1 in 4 US consumers have
purchased counterfeit
items online.[2]

Product diversion is eroding the
profit and brands of the Direct
Sales (MLM) $182B industry.[3]

Fake wine is prevalent
and valued at
roughly $3B annually.[4]

INK ADVANTAGE

otect and track ur products	>	Detect fraudulent activity with secure marks that validate authenticity.	>	Covertly detect product diversion via watermarking[5] and serialization.	>	Track products by identifying distribution patterns and anomalies.
tegrate seamlessly d affordably	>	Assign metadata to products for visibility and compliance.	>	Associate unique IDs with sales orders in your ERP system.	>	Scan marks with industrial scanners or mobile apps.
gage customers th the same mark	>	Gain new customers in-store with promotions on Link-connected packaging.	>	Keep customers with personalized content, targeted loyalty programs, and gamification.	>	Gain insight from customers' scanning interaction with your products.

Learn How Link Works ▶

s and International Chamber of Commerce (ICC): "The Economic Impacts of Counterfeiting and Piracy," June 2017.
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imarc.

hp

"WE ARE BUILDING THE SERVICES SIDE OF OUR BUSINESS TO COMPLEMENT THE MANUFACTURING SIDE"

—

Dave McCree,
President, Book and Directory Division,
LSC Comminications

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AN EVOLVING MARKETPLACE

Traditionally, most publishers have tended to outsource the printing of their books or educational materials but have kept marketing, distribution, warehousing, order fulfillment and customer relations in-house. Some, especially academic presses, even printed their own books. This mindset has been slow to change, but increasingly the household names in publishing are coming to appreciate the advantage of outsourcing more of their non-core work – and LSC is keen to seize this opportunity. "We have moved from an old-style print manufacturer to what you might call 'Print Plus'. We are to complement the manufacturing side."

The traditional core business model of printers like LSC was to work with publishers to help them find ways to reduce costs. Printing was regarded as a production cost, to be pared down wherever possible on the principle of lean manufacturing. In those days, LSC won business through competitive pricing, dependable quality and above all service – now, McCree insists that the same attention to the client is being extended right through to the supply chain. Responsibility no longer ends with the finished product but goes right through marketing and sales, distribution and cash collection. "We help publishers sell more books as well as driving the

EXECUTIVE PROFILE

Dave McCree is the President of the Book & Directory Group at LSC Communications and is responsible for Sales Leadership and strategic relationships within both platforms. Dave has been in the printing industry for close to 30 years with a rich background in leading the print sales and manufacturing divisions. Dave's focus has been on expanding LSC's innovative solutions and supply chain management services as well as supporting and promoting the evolving publishing industry.

cost of their production down. That is really the focus of our strategy: saving cost and creating efficiency along the supply chain at the sales and marketing end also helps them to sell more products. It's a double winner for the client enabling them to sell more product while producing it faster through our proven print capability."

The conversation is no longer about traditional offset versus digital printing – LSC can handle any volumes in either format – but more about e-services, warehousing and fulfillment as well as supply chain management. LSC's

clients include educational giants like McGraw-Hill, Pearson, Houghton Mifflin Harcourt, new edtech players like Amplify, general publishers such as Random House and HarperCollins as well as niche players like Workman Publishing and Abrams. It is also a major printer of bibles and religious books. "These are all very different businesses, but they all need both product and services," says McCree. "We set out to be more intimate than the average large printing organization by making sure we are meeting the needs of each one of those clients wherever

EXECUTIVE PROFILE

Michael Shea – Senior Vice President, Book Division, LSC Communications – is a seasoned printing and publishing executive with over 20 years of pioneering ventures in content management, custom publishing and book manufacturing. Throughout his career, he has demonstrated the vision and drive to capture high-growth opportunities in the rapidly changing publishing and printing industries. His early successes with technology-driven print solutions led to more comprehensive solutions spanning the entire spectrum of book manufacturing including content management, physical and digital production, distribution and inventory management. His most recent focus has been working with industry supply chain participants to combat book piracy.

CLICK TO WATCH: 'XFROM FILE TO FINAL DESTINATION'

that need might be. They knew we could manufacture a book for them; now we are managing their warehousing as well, distributing their product from our warehouses across the USA, and even handling the back-end collection and cash applications within their business."

EXPLORING NEW PUBLISHING LANDSCAPES

Surprisingly perhaps, confirms Books Division SVP Michael Shea, the fastest-growing book sector last year was in hardbacks. In 2018, the American Association of Publishers (AAP) reported that despite the success of e-books, the case bound books segment grew by 6% while e-books declined by 4%. While this trend sustains the core printing capability of LSC, the biggest potential lies in innovation: specifically, the provision of value-added services that enable publishers to offload the purely administrative aspects of book delivery.

Publishers may have previously been constrained by a traditional mindset but today, the benefits of consolidating warehousing and order fulfillment are driving change, no doubt stimulated by the Amazon model. LSC has expanded

"WE ARE COMMITTED TO HELP PROTECT OUR CLIENTS' INTELLECTUAL PROPERTY AND TO SUPPORT TECHNOLOGY INNOVATION WITHIN THE SUPPLY CHAIN"

—

Mike Shea,
Senior Vice President, Book and Directory
Division, LSC Comminications

its warehousing capacity to meet this demand and now has a spread of facilities over the Midwest and East Coast. The LSC book fulfillment footprint now totals more than 3.7 million sq. ft. of operating space, serving clients in all of its market sectors. Most recently, LSC has acquired Elsevier's warehousing and distribution facility in Missouri to strengthen its full range of supply chain services for publishers of both printed and electronic books. It's a great demonstration of the new service model, says McCree, in partnership with one of the world's leading publishing houses.

Educational technology, or edtech, is a fast-expanding and very fluid area of content delivery, explains Shea. "There are hundreds of new and disruptive startups, attracting billions of dollars in investment, challenging established players like Amazon, Apple, Google and Microsoft." These companies are seizing on technologies like virtual reality (VR), artificial intelligence (AI) and audio-visual (AV) tools delivered using cloud technology – but while this has disrupted print, it hasn't replaced it.

EXECUTIVE PROFILE

Brittyne Lewis – Product Development Director, LSC Publisher Services, LSC Communications – has worked directly with global publishers in various capacities at LSC Communications over the past 10 years. She has a diverse background in managing software and relationships with major retailers and publishers. In her role as Director of Product Development, Brittyne drives the development and strategy of new products and solutions to meet publishers' needs by anticipating market requirements, working directly with publishers, and monitoring the industry trends. Apart from work, Brittyne enjoys spending time with her family, gardening, reading books to her children, and eating tacos and BBQ in Austin, Texas.

"We found there wasn't the network infrastructure to support all this digital delivery. There was an ongoing request and requirement for printed material – as the digital curriculum develops it is supplemented with print, and the print component has continued to grow pretty dramatically. We are working with the most advanced clients and publishers in that space, at the school and college level, including the providers of open educational resource (OER) material such as California State University's MERLOT project, which publish low-cost printed books to supplement online content," Shea adds.

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OpenStax, a nonprofit edtech initiative based at Rice University makes textbooks available in free digital formats and at a low cost in print. LSC prints a significant number of these core textbooks, mostly at the freshman and sophomore level, which sell at a fraction of the cost of the mainstream equivalents. "OpenStax has really changed the economics of making printed material available to students," he explains. All of these initiatives benefit from LSC's unrivaled digital print capacity. Even more importantly though, the very complexity and immediacy they have brought to the University Press underlines the need for the comprehensive service platform the company

has developed to manage the logistics and fulfillment aspects of the entire supply chain.

PARTNERSHIP IN TECHNOLOGY

Brittyne Lewis, who looks after side of the business that deals with metadata, audio, artificial intelligence, retail data tracking, and digital technologies, was keen to explain the ways in which technology has disrupted the information market. "Every year something new comes up whether it's from publishers' prospectuses, how Amazon, Google and Apple are operating or new data being available," says Lewis. "Data presents a big challenge. The retail industry, for example, has been able to capture a lot of customer data, but in the publishing space that hasn't really happened to the same extent – yet. So I'd say we aim to help publishers to navigate the digital landscape."

To make this possible LSC is exploring and growing every opportunity. In the summer of 2018, it took the first step and investing in an AI tech start-up focused on the publishing and media industry, with an eye towards providing target audience data to drive marketing strategies. LSC has also developed a publisher-facing platform called HarvestView designed to increase book discoverability and help

optimize books for sale online. This is key to publishers' success both on Amazon and other e-tailers given the multitude of brick-and-mortar closures over the years. It will strengthen LSC's leadership position in content logistics, distribution and monetization across all formats, channels and platforms.

LSC has morphed into a solutions provider, Lewis continues. No longer simply the output partner for a printed book, it now provides tools that enable strategy formulation and efficiencies in the supply chain. A good example would be the multi-year supply chain services agreement it signed in December 2018 with the United Church of Canada, under which it will provide a range of distribution services from LSC's Newmarket, Ontario location.

NIMBLE, AGILE – AND DEPENDABLE

Michael Shea is determined that LSC will continue to leverage best-of-breed technology solutions to serve its clients. To address the age-old problem of piracy in global textbook publishing, the company worked with a long-standing partner in print and in July 2017 LSC launched its IntercepTag solution,

delivering a platform for verifying textbook authenticity through the scanning of secure unique identifier codes. The platform uses HP's tried and tested Link Technology for product authentication to help protect intellectual property and fight counterfeiting throughout the entire supply chain. Publishers can apply an IntercepTag serialized mark, a unique anti-piracy identifier code, on each book at the time of production via a label or digitally printed cover. "It's a tangible demonstration of our robust Supply

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$3.6bn
Approximate
revenue (2017)

2016
Year founded

23,000
Approximate number
of employees

Chain as a Service (SCaaS) offering," emphasizes McCree. "We are committed to helping protect our clients' intellectual property and to support technology innovation within the supply chain. As we look to roll out Phase II of our InterceptTag solution, we will now be looking to help our clients link directly with their end customers, the consumers."

He summarizes his position with a powerful statement of the strategy that will define LSC in the digital age. "When people think of LSC, and specifically the LSC book business, they think of us

as a printer. I don't want to under-emphasize that. It is an important aspect of who we are and it is a critically important business that is growing strongly again after a flat period. That said, we are looking at an incredibly exciting time over the coming years. By capturing more and more of the supply chain services, fulfillment, distribution and warehousing side of our clients' businesses, they can focus on their core business of content creation, editorial and sales that will only create more opportunities for us to work in partnership with them as

"WE AIM TO
HELP PUBLISHERS
TO NAVIGATE
THE DIGITAL
LANDSCAPE"

—

Brittyne Lewis,
Technology Executive, Book and Directory
Division, LSC Comminications

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they attempt to utilize Amazon and other e-marketplaces.

"The new entrants to publishing and the technology marketplace that we have been talking about only add to that excitement. Printing has certainly changed, and we are leading that change. There's a significant change, with a move from long runs and putting stock into a warehouse to more dynamic, agile digital print. We see it as an inventory-on-demand scenario, which is a really good fit with our business. After all, we already have one of the largest digital print capability in the marketplace."

Thus, LSC retains its commanding position in the market as a dependable printer that anyone with a printed product needs to be talking to, while evolving into a very significant service partner, helping publishers around the world with whatever they need to get their product to market and into the hands of the end customer. ■

LSC
COMMUNICATIONS

PROCUREMENT TRANSFORMATION IN THE HEART OF PHILADELPHIA

WRITTEN BY
ANDREW WOODS

PRODUCED BY
DENITRA PRICE

WE SPEAK TO ASSISTANT VICE PRESIDENT OF PROCUREMENT SERVICES JULIE ANN JONES REGARDING DREXEL UNIVERSITY'S PROCUREMENT TRANSFORMATION

Procurement is undergoing nothing short of a revolution right now, with technology transforming both operations and capabilities far beyond merely a back-office function. Purchasing goods and services strategically with an emphasis on value and cost savings has become a staple of modern business practice, and higher education is not exempt from this trend. Rising tuition costs and changes in enrollment patterns to more affordable options have caused budgets to tighten, leading to mergers and even closures among some smaller, private educational institutions. In this environment, colleges and universities are re-evaluating their purchasing policies and procedures in order to maximize the student tuition dollar, reduce expenses, and remain competitive.

Drexel University, located in Philadelphia, Pennsylvania, is one such institution, having

"WE TRY OUR BEST TO PARTNER WITH DEPARTMENTS TO MAKE SURE THEY'RE GETTING THE BEST VALUE"

—

Julie Ann Jones,
Assistant Vice President
Procurement Services

recently expanded its Procurement Services department under new leadership. Julie Ann Jones joined Drexel, the 15th largest private university in the US, last January as Assistant Vice President of Procurement Services. What brought Jones to Drexel was the opportunity to build a procurement department at a university that has the institutional will to make meaningful change to the way it does business, including the development of a more socially responsible and economically inclusive procurement strategy.

The procurement space at Drexel involves an annual spend of approximately $350mn across a diverse range of departments, and transitioning this function through the prism of social responsibility and economic inclusion is no small undertaking. However, Jones has the necessary experience in spades – having engaged with suppliers during her seven years working in IT and on supply chain systems at Philadelphia Housing Authority and while serving as Executive Director, Project Management & Procurement at La Salle University.

In effecting this institutional change, Jones placed a premium on pragmatism

and flexibility while still being mindful of her team's core mission. "A lot of the changes in procurement have happened pretty fast," she explains. "We had to begin to transition into new, creative ways of thinking. And with that kind of culture shift come policy and process updates."

Understanding the needs of Drexel meant not strictly adhering to a best price model. Instead, Jones reshifted the focus of the procurement function to what she calls 'best value'. "We have to be budget conscious, of course, but sometimes you might also have to pay a little bit more because the product or the service that you need is really represented better at a slightly higher price," she explains. "We want to provide a quality service and get real results."

SUPPLIER DIVERSITY AND ECONOMIC INCLUSION

A key dynamic in instituting policy and process changes was Drexel University's commitment to working alongside the local community. "It's relationship building, essentially. Procurement's not just an administrative function but also a customer service function while also being very strategic," Jones explains. The university is a key member of Philadelphia Anchors for Growth and Equity (PAGE),
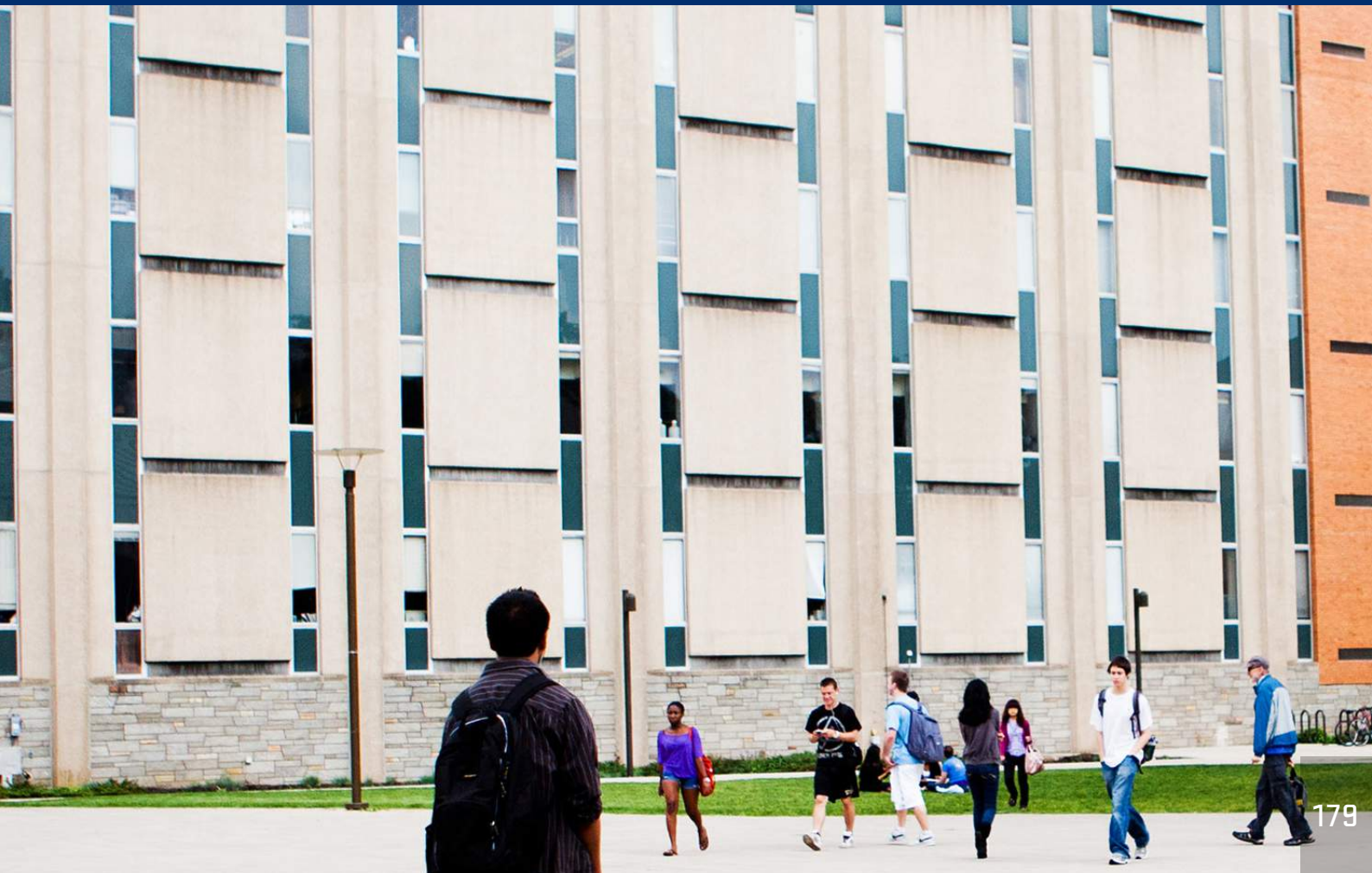
EXECUTIVE PROFILE

Julie Ann Jones is a Project Management and Procurement Strategist who partners with executives, cross-divisional teams, and external entities to strategically source and manage contractual engagements to the financial and product benefit of her sponsor. Julie has a history of transforming daily cross-functional operations through the development of innovative systems and enterprise architectures for organizations in diverse industries. She has significant strength in building, training and leading dynamic teams, inspiring ingenuity, creativity, accountability, and morale. Julie is currently serving as the Assistant Vice President of Procurement Services at Drexel University, where she oversees the University's significant spend portfolio.

which works to better connect large institutional buyers to local suppliers and their respective supply chains across what are termed the 'eds and meds' – educational and medical institutions across the city. It's a 'buy-local' program close to Jones' heart; her late father was a small business owner.

The initial aim of the scheme is to localize $500mn in goods and services contracts across 13 city hospitals and universities within the city of Philadelphia. The initiative is also hoping to create 5,000 living wage jobs for local residents over the next 8-10 years. "The idea is that we all come to the table to share data and strategies. We get really deliberate about this work to see if we can bring some of the spend dollars back into Philadelphia," she explains. "Baltimore had a really successful initiative and we've been working closely with the team that heads

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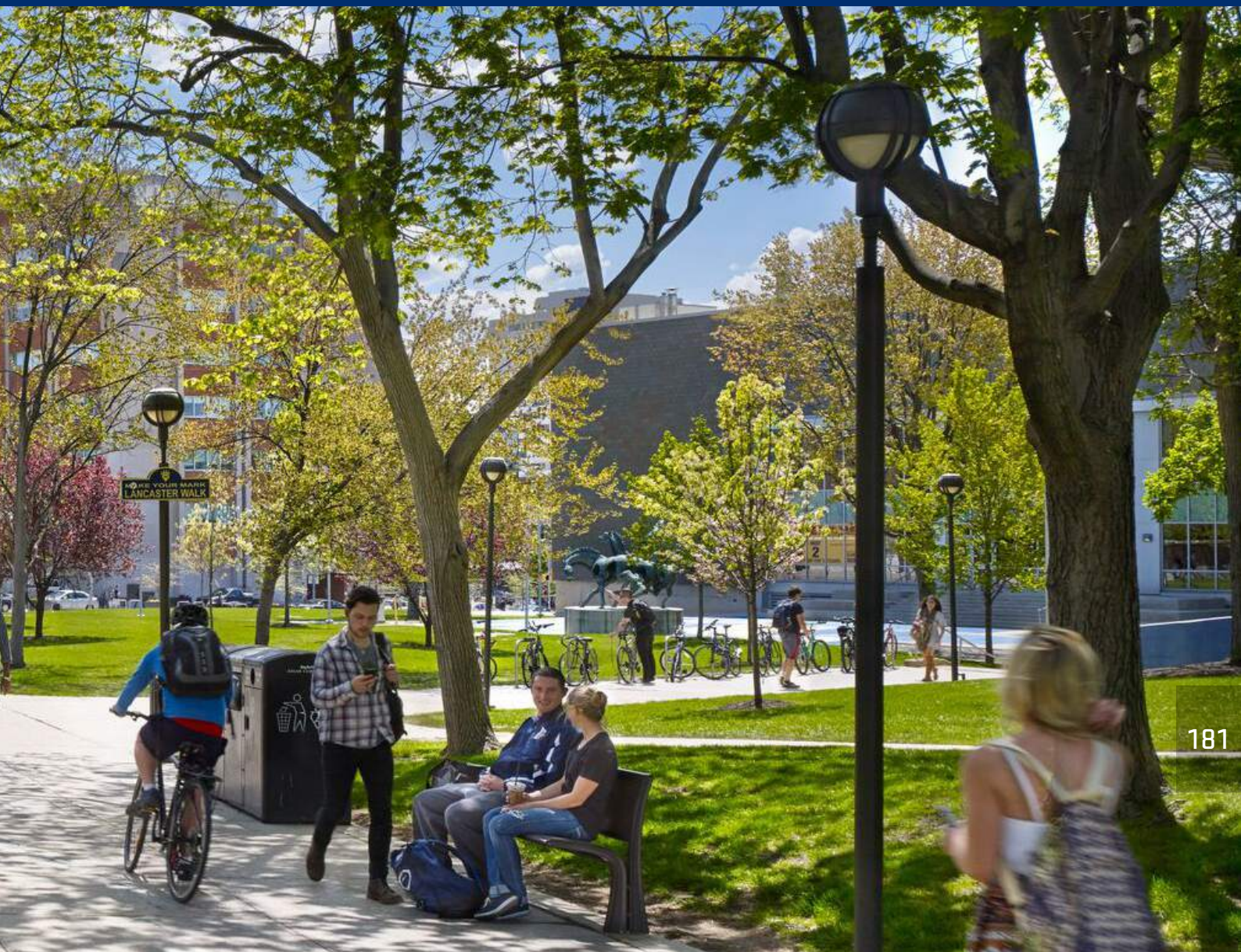
that up. I sat on the panel in October, and we had some really great conversations about how to do this work and how to make it mean something. So, it's an interesting time."

Local suppliers are benefiting from an overarching supplier diversity program that plays a huge part in the new drive at Drexel, with a dedicated Director of Supplier Diversity appointed last August. "We have the capacity on our team now

to truly help manage that aspect of any of these larger contracts and hold these suppliers accountable to it. We can then see what that process looks like on a quarterly basis and how we quantify and report that when we look at our diversity numbers," Jones outlines. The Smart Source procurement system at Drexel is also being utilized more rigorously to support the university's supplier diversity strategy.

Jones is fully invested in the local and diverse economic impact of both the university and its partners. "We're not just checking boxes to make sure we're hitting certain arbitrary goals or numbers but focusing on how we are really impacting these businesses in our community. Are the businesses prepared? Do they have the capacity to do business with the larger institutions? And if they don't, can we give them smaller pieces, or can we put them in contact with people to help build their capacity so they're ready next time?

"So, a lot of these programs have different goals. You have the community partnership folks that are on the relationship side of things, out in the community, hearing the problems. Then there's the business side of the house, which I would consider to be procurement, facilities and HR and now we're starting to engage with our internal folks as well as with our external neighborhoods. So, a big focus since the director got in has been inserting ourselves into these processes, into the community, into these conversations, talking about
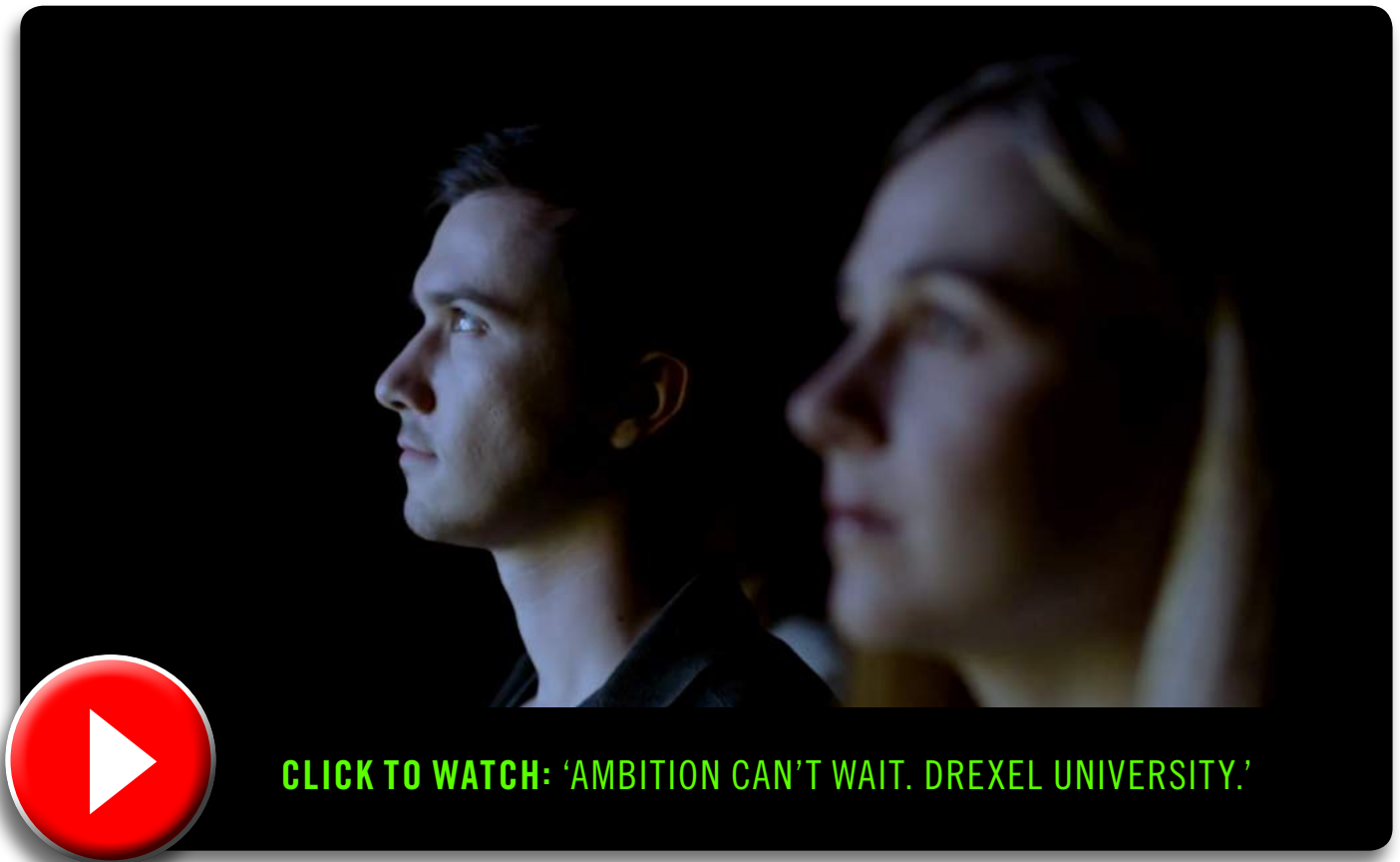
CLICK TO WATCH: 'AMBITION CAN'T WAIT. DREXEL UNIVERSITY.'

how we affect all this, not just through direct purchase, but through other strategic things we can do."

Sustainability continues to influence many aspects of business strategy across numerous departments and it's an influence behind the future of procurement at Drexel. "Sustainability is that last tier. Some of our partners already report in on it, but that's the next pillar we'll focus on. The Director (of Supplier Diversity) and I have spent a significant amount of time talking about what this program's going to look like and how we're going to engage in a very different and deliberate way."

TEAM BUILDING

To bring in the processes Jones saw as essential to Drexel's strategy, adding headcount to the small existing team was a critical priority. Fortunately, Jones had both the support of Drexel and the ability to hire the majority of her now fully-staffed department while retaining existing talent. "The seat here at Drexel had been empty for about a year and several open positions on the team were deliberately left until my position was filled," she says. "We're 17 strong right now but of that 17 only four have been here longer than 11 months. It's a really young team, and of the folks we interviewed, hired and brought in, none came from higher education; not by design, just by the pool of candidates and their skillset and what they brought to the table. Having them come in fresh to higher education has actually been a gift because it's all changing so fast, they get to be on the ground floor as we create this."

Jones introduced what she describes as a 'think-tank environment'. "It's working very well," she enthuses. "I'm already getting a lot of positive feedback which I am extremely happy with. The last thing you want, especially when you're trying to build a new team, is to have somebody coming in thinking they know exactly how to do it. Higher education culture

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is very unique in and of itself, and each institution will be very different to the next. So, what you think you know really doesn't matter when you go to a new university."

The procurement system Jones inherited at Drexel was a procure to pay (P2P) system implemented back in 2014. However, the legacy system was not yet being fully utilized, which is not entirely uncommon. "We have a pretty robust system, and now we're truly engaged in catching up with some of the maintenance items that make it a lot more user friendly. We're also looking at how to most effectively capture data."

Jones' goal for this year – "and we're certainly on track to do that" – has been data scrubbing. "We've been standardizing our reporting, trying to be consistent and repeatable in the information and the data we share internally to make decisions, but also externally to be able to represent ourselves as a significant anchor institution in Philadelphia, which we are."

A key outcome of robust data capture is the ability to centralize pricing negotiations with suppliers where the university's expenditures cut across multiple departments. "I'm very sensitive to the fact that we can make a big impact on those smaller departments, and they mean just as much to me as the

15
Colleges
and schools

1891
Year founded

24,190
Approximate number
of students

university holistically, so I don't always want to talk about the university's bottom line." Jones has just four strategic sourcing specialists and one director able to facilitate RFPs across approximately $350mn of spend. "We're not going to be able to facilitate every RFP, but we try our best to partner with the departments to make sure they're getting the best value, and then for the smaller ones we try to give guidance to help them run their own bids. Higher education procurement is generally pretty decentralized and we're attempting to restructure that a little bit and offer some solutions university wide via website portals and internal communication, so these departments can benefit from the entire university spend."

Jones sees procurement continuing to shift both at Drexel and in the wider business community, as it transforms

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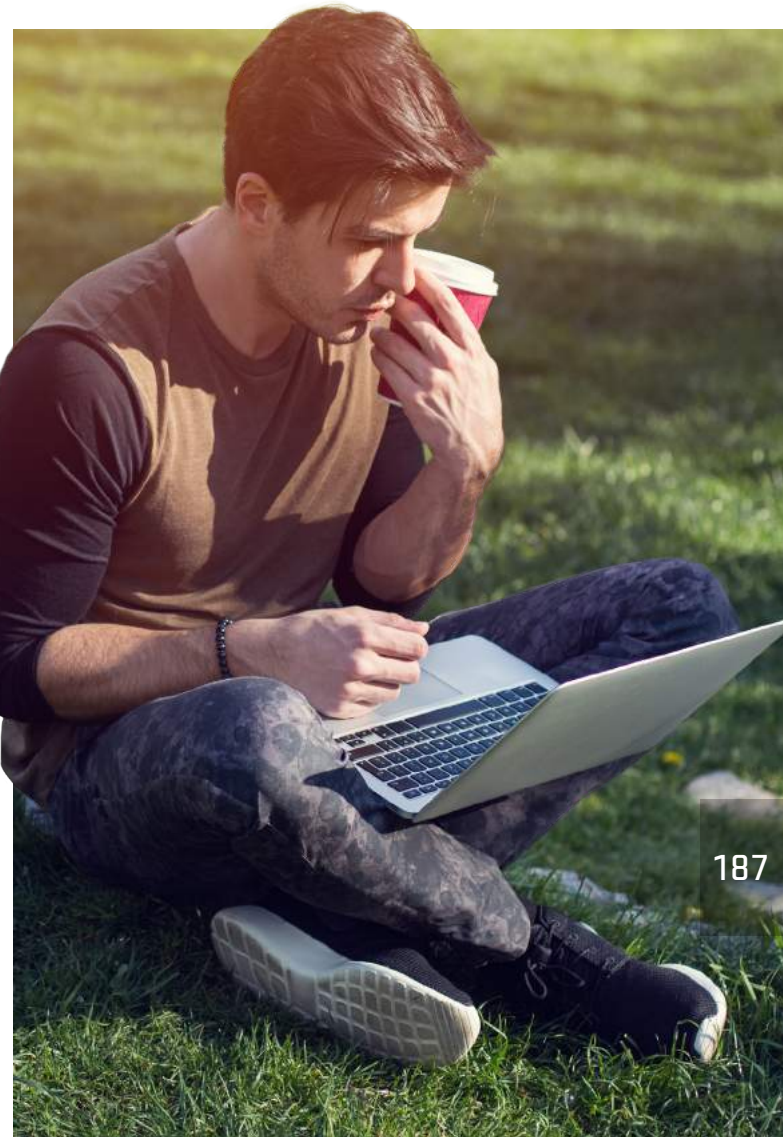
into a strategic function on a global scale. "We're really going to see it (procurement) continue to move forward as a strategic business partner. I think we're going to see a lot of our executive level folks turning to procurement with questions, strategic partnerships and initiatives, and asking us to be at those tables to come up with ideas and brainstorm with them. Procurement is going to continue to become more of a financial resource,

whether it's by budget savings or aggressive partnerships. Some of our partnerships actually do result in money coming back in to the university, and into whatever entity you're speaking of."

The procurement space at Drexel is undergoing a massive recalibration and eventually Jones wants to be able to provide an annual report for procurement at Drexel incorporating all its extensive external and internal activities

"HIGHER EDUCATION PROCUREMENT IS GENERALLY PRETTY DECENTRALIZED AND WE'RE ATTEMPTING TO RESTRUCTURE THAT A LITTLE BIT AND OFFER SOME SOLUTIONS UNIVERSITY WIDE"

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Julie Ann Jones,
Assistant Vice President
Procurement Services

as the university continues to nurture its clients as well as the local citizens and businesses of Philadelphia. "We want to talk about all the wonderful things that we do," Jones says. "We want to highlight the extracurricular aspects of procurement and what we've participated in and how we've been impactful, not just financially, but also socially and civically within our community."

Year after year, Drexel's Procurement department continues to make meaningful changes in its business model while exchanging value with the community to become a leading benchmark to other universities. Jones is proud to have demonstrated this and with a strong team and commitment to sustainability, this progress is set to continue. ■

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DREXEL UNIVERSITY
Procurement
Services

WERC

Warehouse benchmarking study is a top tool for measuring performance

WRITTEN BY **TOBY GOOLEY**

THE EXPLOSIVE GROWTH OF E-COMMERCE IS MAKING IT HARDER AND HARDER FOR DISTRIBUTION MANAGER TO PROVIDE EFFICIENT AND TIMELY PROCESSING, HANDLING, FULFILLMENT AND DELIVERY OF ORDERS

A September 2018 CBRE report projects that U.S. warehouses will need 452,000 more workers this year and next to handle soaring volumes of e-commerce shipments. Meanwhile, online buyers' expectations for fast, low-cost, perfect service are raising the competitive bar. The need to measure performance both internally and against other companies will only grow.

This reality makes an annual benchmarking study conducted by the Warehousing Education and Research Council (WERC) all the more valuable. Now in its 15th year, the "DC Measures" study polls warehouses and DCs on their performance on 35 operational metrics, or key performance indicators (KPIs). The metrics are grouped into five sets: customer, operational, financial, capacity/quality, and employee/labor.

The study aims to identify which metrics are important to warehousing professionals as well

Nimble.

You need to learn fast, stay lean and be gutsy to remain competitive in this brave new world.

WERC has an unrivalled education program. We've got an in-depth online training, live webinars and self-guided learning choices to fit every schedule. Our annual conference offers exceptional peer-driven learning opportunities.

You won't find better education anywhere.

werc.org

WAREHOUSING EDUCATION AND RESEARCH COUNCIL

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as how performance against KPIs changes over time, according to researchers Dr. Karl Manrodt of Georgia College & State University, Dr. Donnie Williams of the University of Arkansas, and WERC researcher and founder of the consulting firm TSquared Logistics Joseph Tillman. It also provides benchmarks that managers can use to evaluate their performance on everything from order-picking accuracy to capacity utilization, among many other metrics. The survey goes out to WERC members and readers of study co-sponsor DC Velocity magazine every January; the results are presented in a detailed report and at WERC's annual conference. (The 2019 conference will be held in Columbus, Ohio, April 28 – May 1. For more information, .)

The primary report looks at performance metrics for all respondents. Those statistics are broken out into five classifications: "best-in-class," "advantage," "typical," "disadvantage," and "major opportunity," allowing managers to see where their own facilities sit on the spectrum. (The median is also included in the report but is not assessed.) They also have the option of purchasing an interactive "comparison report" that lets them

EXECUTIVE PROFILE

Joe Tillman

Joe Tillman is the founder of TSquared Logistics and a WERC Researcher. Joe has a keen interest in all things supply chain and uses his high-energy approach to life to author articles for industry publications, and speak to supply chain industry groups. He co-leads the Warehousing Education and Research Council's influential annual benchmarking study, "DC Measures." Joe has over 15 years experience in inventory management, hazardous materials training, transportation, and warehousing.

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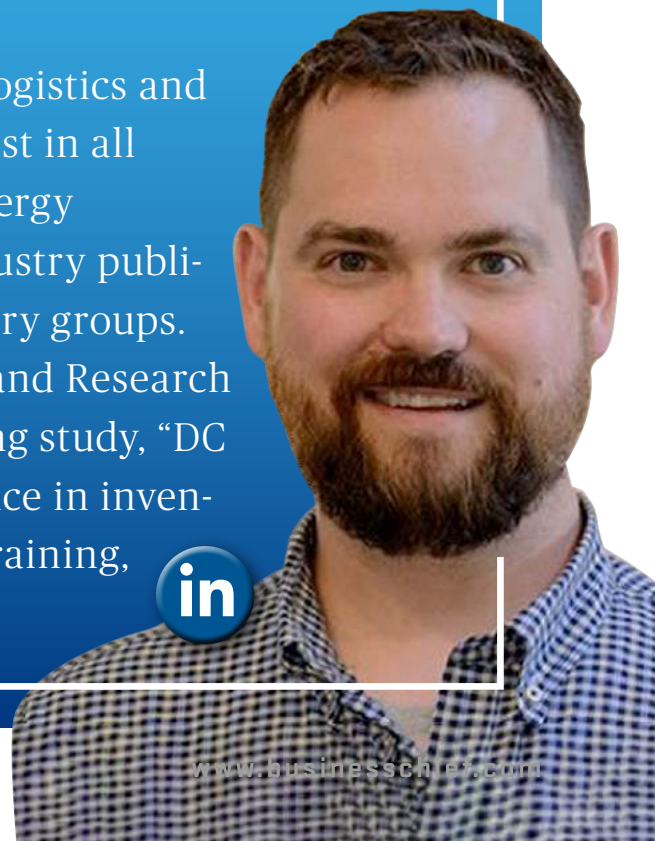
1977
Year founded

1,700+
Approximate number
of employees

Donnie Williams

Dr. Williams teaches Master's students to think critically and strategically about Logistics Management and how the Supply Chain must be integrated in order to gain competitive advantages in today's global marketplace. Dr. Williams teaches undergraduates the principles of Operations Management and Supply Chain Management, and works to help them discover the career in business that they will flourish in.

deep dive into the findings to uncover trends and explore whether they have an impact on warehouse performance. They sometimes turn up surprises. For example, this year, five of the top 10 performance metrics respondents said they use most often were related to labor. Just two years ago, four of those (contract employees as a percentage of total workforce; overtime hours as a percentage of total hours; part-time workforce to total workforce; and percentage of employees who are cross-trained) were ranked at the bottom of respondents' lists.

Another surprise: Adoption rates for some efficiency-enhancing technologies has not grown as much as expected. For example, only 65 percent of respondents are currently using a warehouse management system (WMS), a long-established technology that's generally considered to be a "must have." Moreover, there was no statistically significant difference in performance between companies with and without a WMS. In the team's estimation, this probably reflects current users' failure to fully utilize the software's capabilities,

measure their own performance on KPIs to that of respondents within the same demographic, based on industry, type of customer served, type of picking operation, and other factors. "This will help to answer questions like where should we make improvements, and what specific activities should we be looking at" in order to make those improvements, Tillman explains.

The research team also takes a

or possibly that they are overlaying the WMS on a manual system. There was, however, a correlation between newer technologies and better performance on relevant KPIs. "For example, if you're looking at internal order cycle time, then RFID helps. If you're looking at on-time receipt and putaway, then a pick-to light system might have an impact there," Williams says.

The "DC Measures" study is anything but static. Research questions and topics change from year to year to reflect warehouse professionals' current concerns. "At the heart of the research is a conversation between warehousing professionals and the researchers. We want to answer questions that are relevant and provide real benefits to the industry," Manrodt says.

Warehouse and DC professionals can get in on that conversation by attending a webcast of the DC Measures Study on January 10, 2019; WERC will open the survey in January and those who take part will get a copy of the final

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EXECUTIVE PROFILE

Karl Manrodt

Dr. Manrodt serves as a Professor of Logistics at Georgia College & State University, located in Milledgeville, Georgia. He is also the Director of the Master of Logistics and Supply Chain Management program, an on-line master's program for working professionals. His degrees include a B.A. in Philosophy and Psychology, Wartburg College, M.S. in Logistics, Wright State University, and his Ph.D. at the University of Tennessee. Dr. Manrodt also had served the profession in several forums. He served on the Board of Directors for the Council of Supply Chain Management Professionals as well as other leadership roles with WERC.

CLICK TO WATCH: WERC'S ANNUAL CONFERENCE 2019

"At the heart of the research is a conversation between warehousing professionals and the researchers. We want to answer questions that are relevant and provide real benefits to the industry"

—

Karl Manrodt,
Professor of Logistic

report. It also pay to attend WERC's 42nd Annual Conference for Logistics Professionals, April 28 – May 1, 2019, in Columbus, Ohio. In addition to a presentation on the 2019 "DC Measures" study, the conference will include educational sessions, facility tours, networking opportunities, and the WERC Solutions Center exhibition. For more information, go to: www.werc.org/2019

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Greater IT collaboration enabled through digital transformation

WRITTEN BY
DALE BENTON

PRODUCED BY
JAMES BERRY

ERIC CHAMPAGNE, CHIEF INFORMATION OFFICER AT LA VIE EN ROSE, EXPLORES HOW THE COMPANY'S DIGITAL TRANSFORMATION BRINGS GREATER IT COLLABORATION

—

In 2004, one of Canada's largest and most successful lingerie and swimwear retailer embarked on a global expansion plan. Fast forward to today and Boutique La Vie en Rose Inc. is well and truly a global company, operating in more than 14 countries including Saudi Arabia, the United Arab Emirates, Lebanon, Georgia and Morocco to name a few. While the company has plans to expand further, it still represents a true Canadian success story and has more than 245 stores nationwide operating under two distinct banners, la Vie en Rose and Bikini Village. The first caters to women aged 25 to 45 looking for quality

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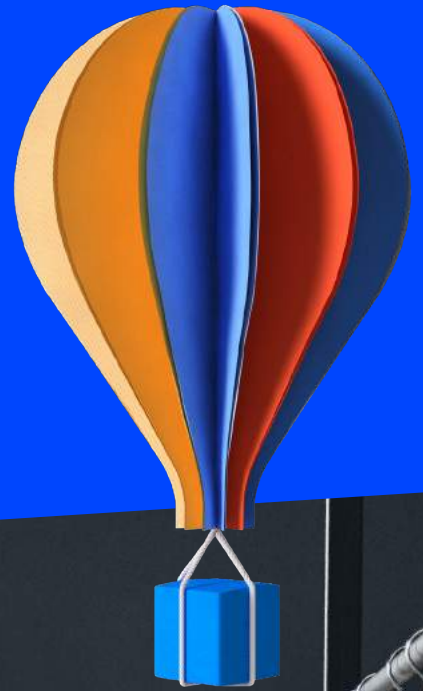
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intimate apparel, lingerie, loungewear and sleepwear as well as swimwear and beachwear at affordable prices. The second is the premier destination for the best selection of brand-name swimwear, beachwear, and accessories for both men and women.

In order for the company to successfully operate across such a footprint it needs to have an efficient and seamless IT infrastructure in place to be able to meet the demands of both the business, but also of the customer. With technology transforming the business landscape

> **"MY OBJECTIVE IS THAT ALL BUSINESS UNITS SEE IT AS A PARTNER, HELPING THEM LOOK AT NEW SOLUTIONS AS WE AIM TO BECOME MORE EFFICIENT AS A COMPANY"**
>
> —
>
> **Eric Champagne**,
> Chief Information Officer,
> La Vie en Rose

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at an ever-increasing rate, the challenges and pressures placed on the IT function become progressively more difficult to overcome. If the company wishes to succeed and to grow further, getting this balance right is fundamental. This is the challenge that faces Éric Champagne, Chief Information Officer at La Vie en Rose. For him, IT first and foremost has one true goal. "Our true mission is to support our teams effectively. Innovation is a mean, but not the goal," he says. "If we don't support them with their basic IT needs, it's less likely they will ask us to assist them in their projects. My objective is that all business units see IT as a partner, helping them look at new solutions as we aim to become more efficient as a company."

This is key for Champagne. Acting as a partner to the business allows greater collaboration and in turn, greater solutions to the challenges that an ever-changing demand can place on the company. Through regular engagement and strategy meetings, IT has a seat at the table and can better understand the business's needs, avoid surprises and align to unified goals.

Champagne is currently spearheading

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a five-year digital transformation program, one that will see the company implement new POS and ERP systems and truly transform its entire IT infrastructure to better support the business. The key driver of this transformation was a legacy system in place that, as a result of technology and innovation, could no longer meet La Vie en Rose's and Bikini Village's current operational demands. "Our current systems are not capable of supporting the changing requirements from the consumers and in turn our business units. It is getting increasingly

difficult to manage," he says. "In order to better support the teams, we must ensure the business units understand our current infrastructure and our ecosystem limitations as well as our capability to respond or to implement new solutions."

The first step in this transformation was a request for proposal (RFP) process, ensuring that the customer remained central to any implementation. La Vie en Rose created a 2,000+ requirement list and ran this process through all 12 of the company's business units in order to identify each business

requirement and ultimately the systems that could create a seamless and efficient operation. This is where Champagne was able to identify the changes that needed to be made, replacing the complete ERP and POS systems, adding a product lifecycle management system and adding merchandise financial planning systems.

This is where the company called upon the services of Cegid, provider of SaaS business management solutions and CGS for its BlueCherry Enterprise Software. With Cegid and CGS respectively, La Vie en Rose will be able to implement the new systems and integrate between them. "This integration then makes the customer journey inside the system completely seamless. An easy journey translates to a better customer experience. If you start complicating the journey and the data flow surrounding it, it just creates a lousy customer experience, which creates a poor conversation with the consumers risking them to simply stop communicating with our brands. It is therefore mandatory to ensure that the data flows well and the communication is flawless."

There is a larger challenge with technology transformation that centres around following
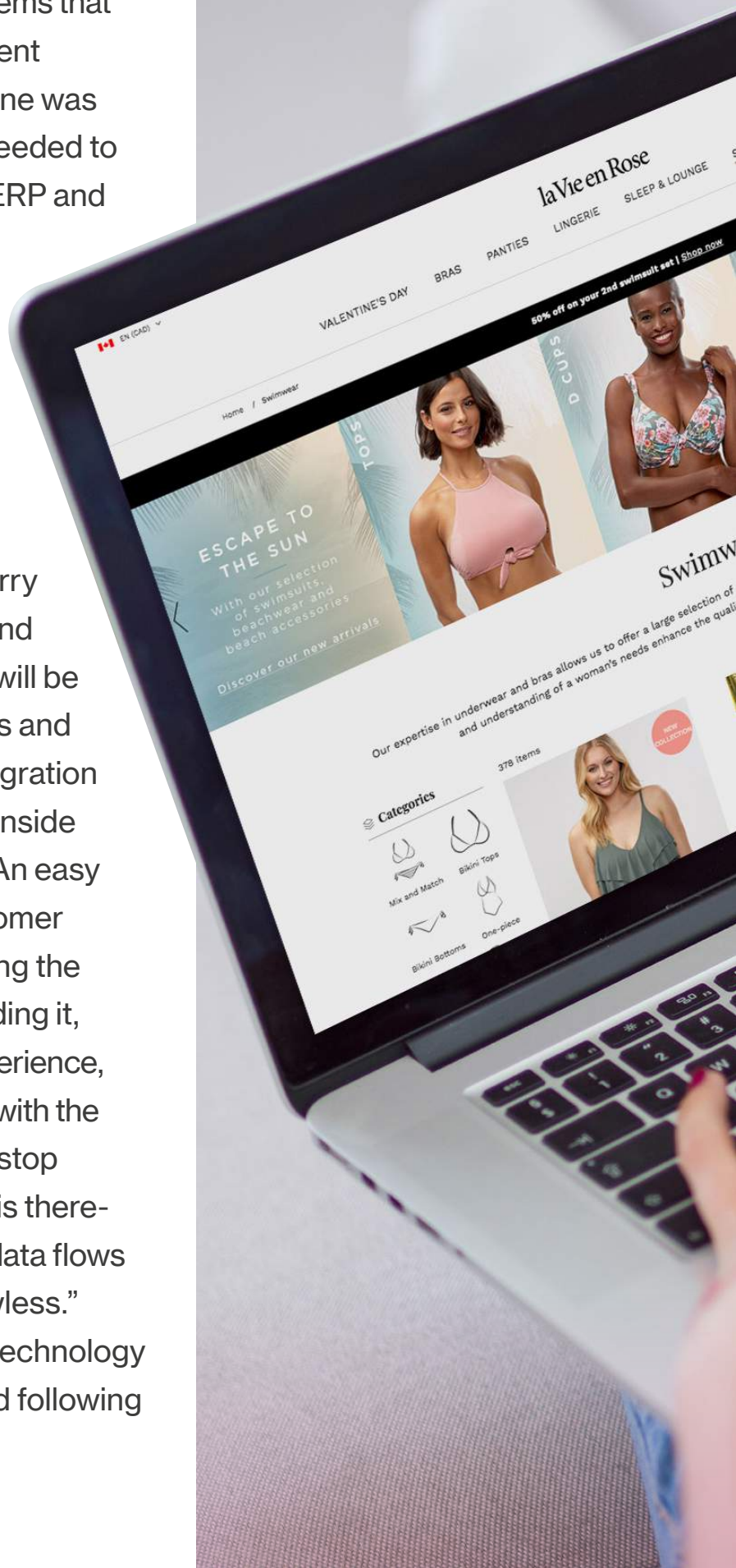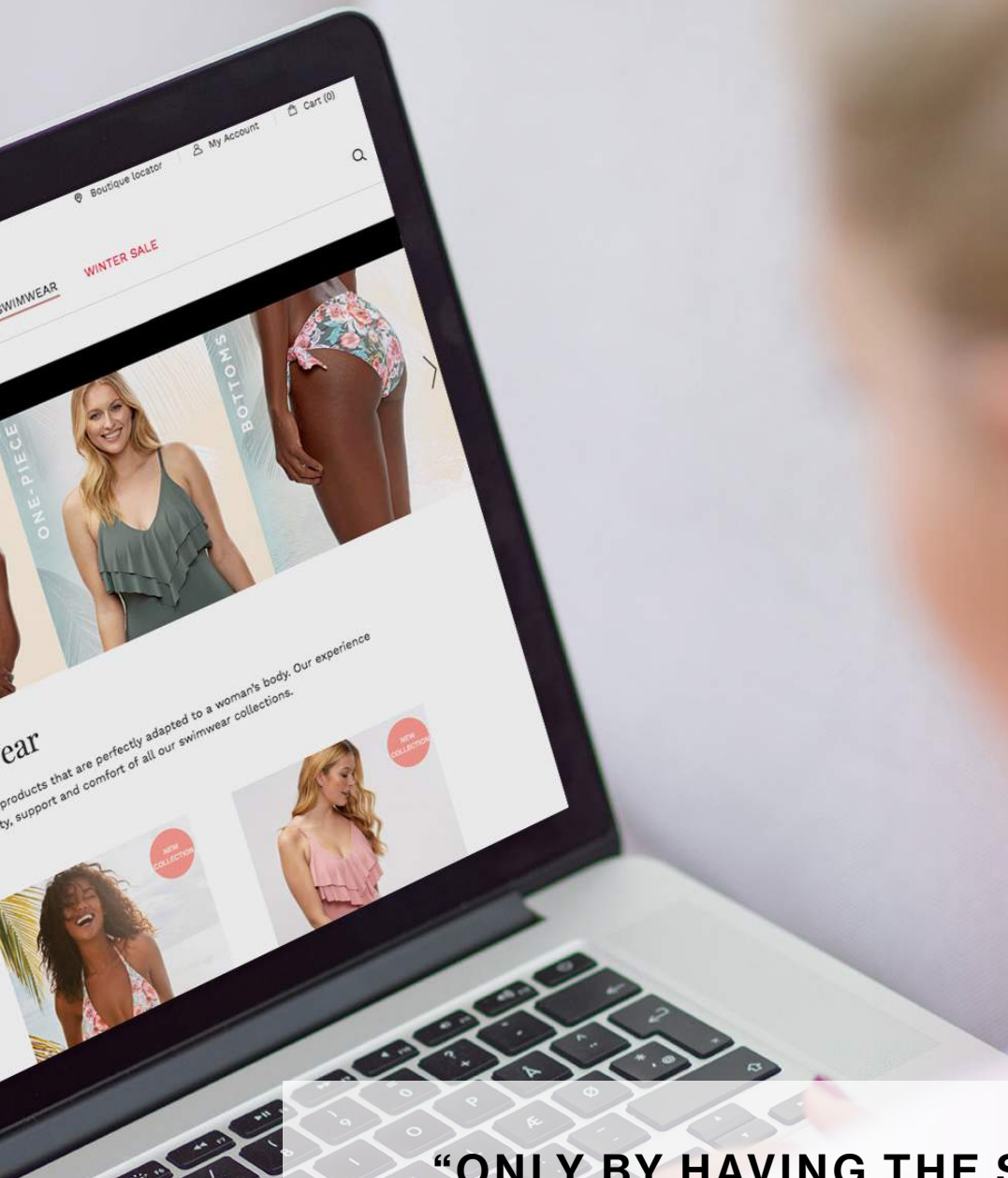
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"ONLY BY HAVING THE SYSTEMS USED WILL WE BE ABLE TO CONFIRM THAT THEY ARE WORKING EFFECTIVELY AND IN RETURN ENABLE THE BUSINESS UNITS TO IMPROVE THE CUSTOMER EXPERIENCE, WHICH IN THE END IS THE ULTIMATE GOAL FOR THE COMPANY. ALL THIS IS FOR THE CUSTOMER"

—

Eric Champagne,
Chief Information Officer, La Vie en Rose

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technology trends without fully understanding and identifying the use cases. Champagne is aware of this challenge but understands that the company can call upon its partnerships with Cegid and CGS as well as working across its vendor network to understand not only what's happening in the marketplace but how it could add value La Vie en Rose. "Currently our ERP, merchandise financial planning and product cycle management as well as our POS system are core elements of our retail operation," he says. "It was important to us to find a solution that didn't make us dependent on a specific development or proprietary database and language. We didn't want to be attached to one vendor alone. This will allow us to implement a new vendor's solution in a modern language recognized by our other systems. Thus, permitting us to benefit from the changing technology landscape in the market, as and when, with ease."

A key example as to how La Vie en Rose will benefit from this approach is the company's plan to embrace

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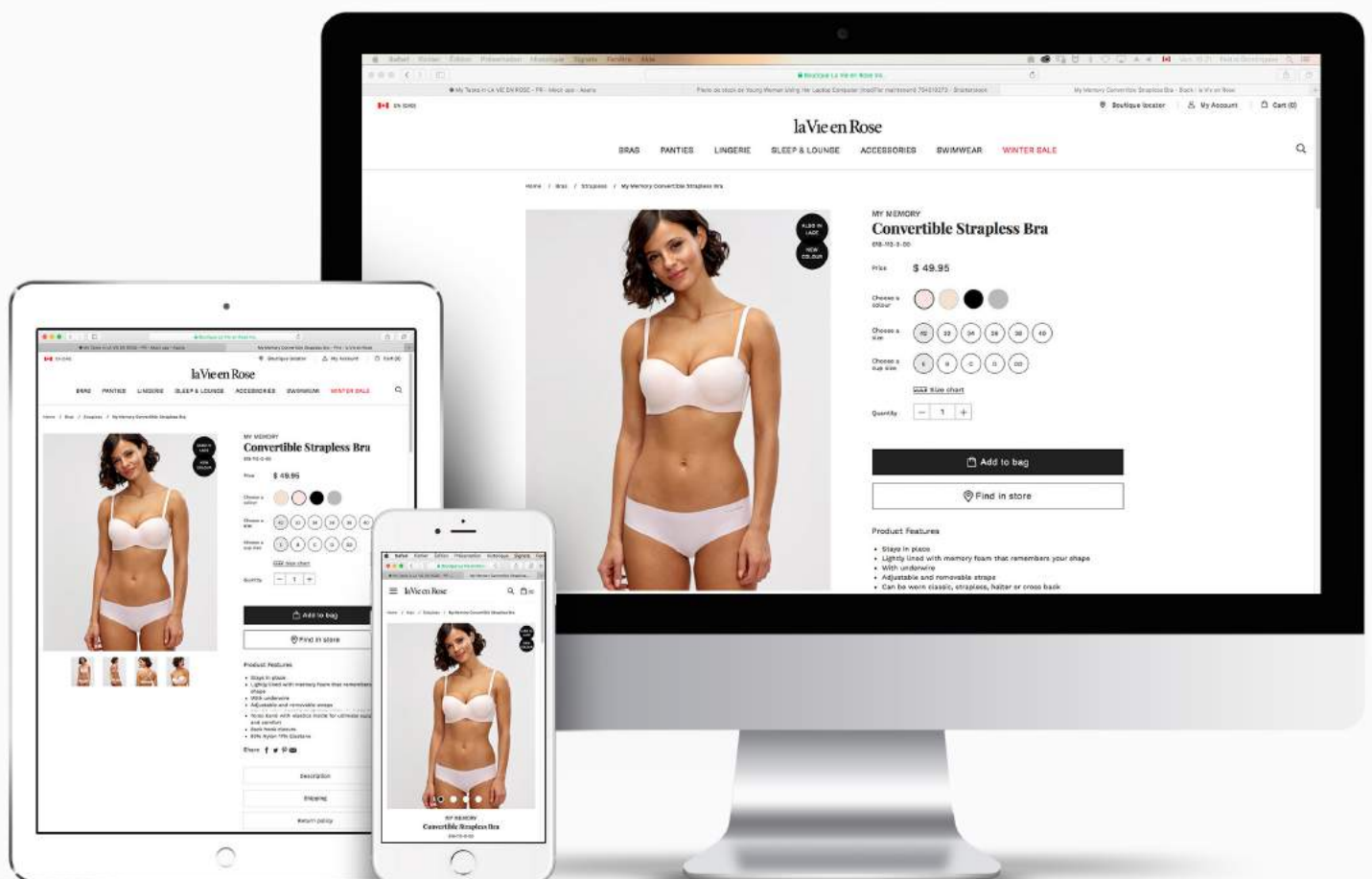
cloud-based technology in the near future. The current strategy will lay the foundation for an entirely cloud-based infrastructure, and while Champagne admits that there is a little trepidation in placing all major systems within a single cloud solution, he is proud of how diligent the company has been in the way it is approaching this transition. La Vie en Rose has worked closely with Amazon and Microsoft and is investing in this cloud journey incrementally, rather than isolating money into a full project. This he feels makes it easier for the company from a financial perspective but it also opens the door to the

BIKINI VILLAGE

innovative technologies that are disrupting the landscape. "We'll have the base. Artificial Intelligence, Virtual Reality, even Augmented Reality, these are the buzzwords that all retailers are discussing at the moment," says Champagne. "Right now, we are focusing on having the systems in place to support our customers, so whatever buzzword comes back or whatever the color of day, we will have the system to support these demands."

Another major challenge that comes with technology transformation is a change in culture. La Vie en Rose has more than 30 years of successful operation and to try and redefine the entire operational process through technology requires a cultural shift. The goal of this is more a shift in the relationship between IT and the

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—

Eric Champagne,
Chief Information Officer,
La Vie en Rose

business units, without changing the culture that made La Vie en Rose successful and this is where the challenge resides. Champagne admits that, almost in spite of its success, IT has operated almost separately to the business and this acted as a barrier to unlocking the value of technology. "Due to the age and the complexities of our existent systems, IT was often assigned to execute basic tasks that we shouldn't be doing," he says. "Changing a culture is always a challenge. To drive ours to evolve,

we're creating an IT ambassador inside each business unit so that all units can become more self-sufficient with their IT demands and focus more on the basic tasks they need to accomplish."

Champagne can already point to

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a better and improved relationship between IT and the other business units and he feels that a key part of this is because of the RFP process because it created a way forward for the company built on a unanimous, collaborative decision. This approach extends into the way in which the company chooses partners. Champagne has been working in IT for almost 30 years and he believes that its crucial to create an ecosystem of collaboration. "I created this ecosystem between the company, the business units and the partners so that we all understand where we need to go," he says. "It gave us the opportunity to gather information, to find solutions or acquire knowledge.

"RIGHT NOW, WE ARE FOCUSING ON HAVING THE SYSTEMS IN PLACE TO SUPPORT OUR CUSTOMERS, SO WHATEVER BUZZWORD COMES BACK OR WHATEVER THE COLOR OF DAY, WE WILL HAVE THE SYSTEM TO SUPPORT THESE DEMANDS"

—

Eric Champagne,
Chief Information Officer, La Vie en Rose

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It favoured the development of more ideas and at the end of the day, it defined even more where we're going."

Two years into this five-year journey and La Vie en Rose has already begun to see the fruits of its labor. As an organization, there will be strategic KPIs and measures of success, but for Champagne he will value the success of this transformation with a simple metric: are users utilizing the ecosystem to its full potential. "No one wants to spend time and money buying and implementing systems that won't be used by the business units," he says. "Only by having the systems used will we be able to confirm that they are working effectively and in return enable the business units to improve the customer experience. Which in the end is the ultimate goal for the company. All this is for the customer." ■

la Vie en Rose

CITY OF MISSISSAUGA:
A DIGITAL TRANSFORMATION

WRITTEN BY
SOPHIE CHAPMAN

PRODUCED BY
ARRON RAMPLING

AS THE CITY OF MISSISSAUGA CONTINUES TO INTEGRATE TECHNOLOGY, CIO SHAWN SLACK REVEALS HOW THE CITY BECAME SMART

W elcome to the City of Mississauga, the sixth largest City in Canada and a great place to live, work and play.' The City has been undergoing a massive digital transformation and according to Shawn Slack, the Director of Information Technology and Chief Information Officer (CIO) for the City, "has been improving services through the use of technology for many years – and is seen as a Smart City leader globally as a result".

The City's Strategic Plan was adopted by its Council in 2009 with five strategic pillars focused on addressing the priorities for the 21st century. These priorities included: developing a transit-oriented city; ensuring youth, older adults and new immigrants thrive; completing neighborhoods; cultivating creative and innovative businesses; and living green.

With the recent announcement of the Federal Government of Canada's Smart Cities Challenge, the City of Mississauga decided to submit a proposal to the challenge in May 2018. The City also developed a Smart City Master
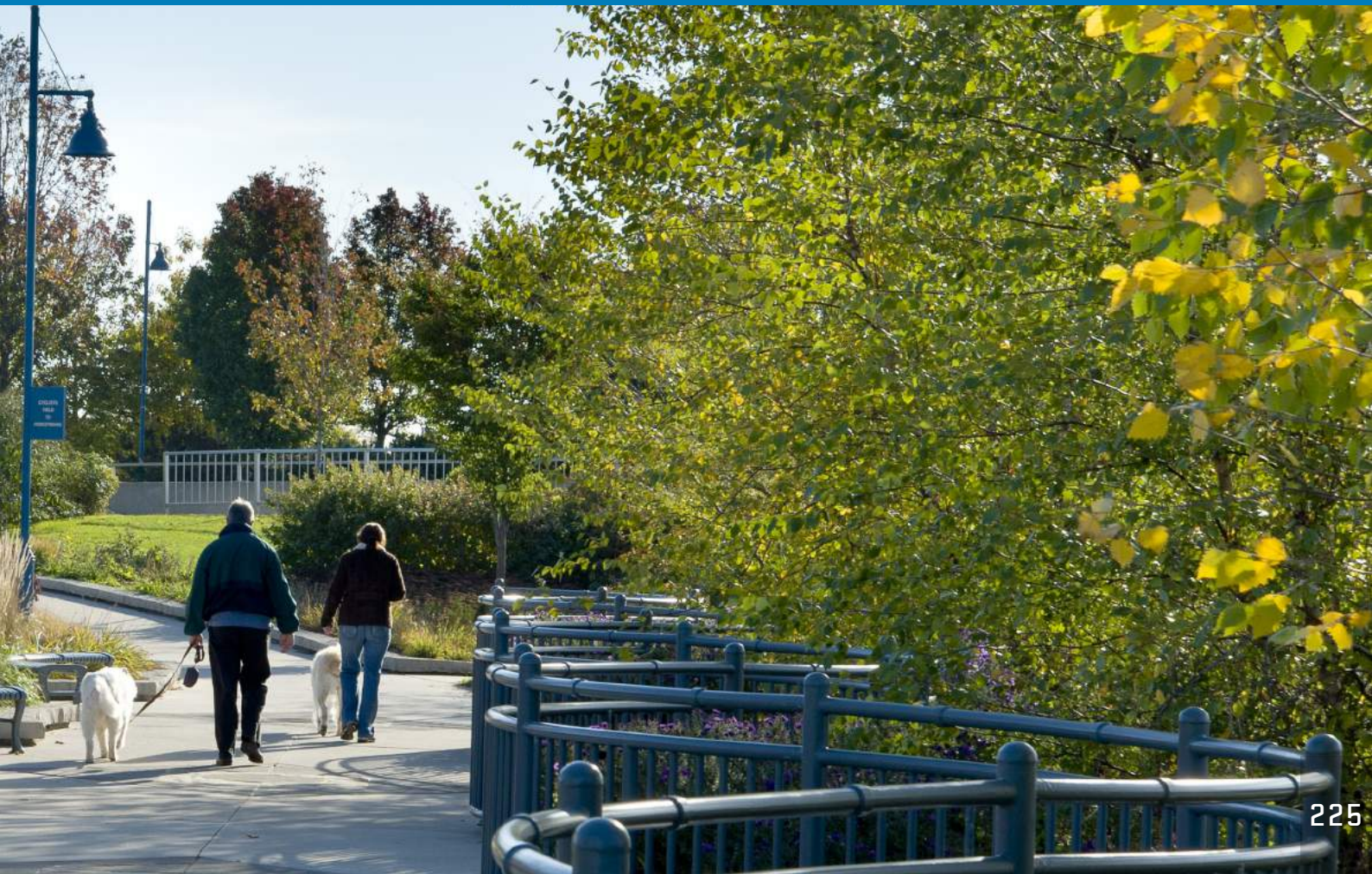
Plan that provided a framework and vision for the future as the City continues to enable Smart City technologies. The submission focused on social and economic resilience based on the input of residents and business through a series of public and online engagement sessions.

The City confirmed early on in the engagement process that a Smart City is for everyone and a fundamental goal of social and economic resilience emerged through a review of a study completed by local agency United Way titled 'The Opportunity Equation' which identified a noticeable increase in low income families since 1970 and a similar decrease in middle income families across the Greater Toronto Area (GTA). Being better informed of the challenges in a community is essential to the planning for services and the report really emphasized the importance of digital inclusion and working with local agencies like the United Way to provide opportunity to those at risk. "The ability to connect, adapt and succeed in our communities were key goals of the

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As Canada becomes increasingly urbanized—in 2017, 81.35 percent of the total population lived in cities*—our municipalities must take a visionary approach to their planning and development. They need to learn to harness the power of advanced, connected technologies that will help them build smarter cities. This includes embracing the possibilities that the Internet of Things (IoT) offers to improve the efficiency of services, the sustainability of industries and the wellbeing of communities.

Charlie Wade, Rogers Senior Vice President, Enterprise Product and Solutions, gives his perspective on how IoT solutions are making smarter cities possible.

Q: IoT is a hot topic currently. How are IoT solutions helping to build better cities?

IoT solutions connect devices and things that weren't traditionally connected to the Internet, and equip them with sensors and software so they capture data for tracking, monitoring, transacting and real-time decision making. The adoption of IoT solutions powered by wireless networks is creating amazing opportunities for municipalities and the people they serve. It's helping them achieve environmental goals, create opportunities for economic growth and improve services for their citizens.

Q: How are wireless networks evolving to support the wider adoption of IoT solutions?

New Long Term Evolution for Machines (LTE-M) networks are a recent innovation that is making it easier and less costly for municipalities and businesses to take advantage of IoT at scale. LTE-M was designed with low-bandwidth IoT and machine-to-machine (M2M) solutions in mind. With LTE-M, you can use simple, less expensive IoT devices that use less power, which means device batteries can be much smaller and last for years. LTE-M also provides deeper coverage than regular LTE networks, so that devices can stay connected in hard-to-reach locations like tunnels and basements.

Q: What IoT solutions are municipalities implementing with success?

There are many ways cities are capturing the power of IoT today. Public transit tracking solutions allow riders to get real-time updates on vehicle arrival times. Bike and car-sharing apps are connecting people to their nearest available rides. Drivers can also find the nearest available parking spot, pay for it and add time—all on a mobile app. In the public safety realm, cities have implemented video surveillance and gunshot detection solutions that provide the police with critical real-time data. Cities are also automating their streetlights, so they switch on at dusk and off at daylight, and dim at times when there are fewer vehicles on the road.

"With LTE-M, you can use simple, less expensive IoT devices that use less power, which means device batteries can be much smaller and last for years."

Charlie Wade, Rogers Senior VP, Enterprise Product and Solutions

Q: What sets Rogers apart in its approach to IoT?

At Rogers, we believe that cities need to approach IoT strategically and see all the opportunities to connect multiple systems and realize the greatest return on their investment. Smart cities need smart partners to help them solve for their needs. With our 20 years of experience implementing IoT solutions, we empower municipalities with industry-leading partner solutions, proven expertise and the network they need to realize all the benefits of IoT. We're committed to delivering IoT experiences that help organizations make more possible.

*Source: https://www.statista.com/statistics/271208/urbanization-in-canada/

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Smart City submission with a focus on youth, those at risk and our entrepreneurs, schools and the startup community," states Slack.

Enabling City services through the use of technology has been at the heart of the organization's operations. Technology is integrated into strategic and business planning processes, with technology roadmaps for each municipal service defined in business plans and budgets. The City was an early adopter of the cloud in 2002, moving its website and online services to the cloud as a hosted and managed service. The City has also been a leader in the public sector through its adoption of Open Data, bring your own device (BYOD) and social media. The City is currently going through another major digital transformation of its website by migrating to Amazon Web Services (AWS) and open source software such as WordPress in an effort to modernize the digital experience. The City also moved to Micro Services architecture for software development. This digital transition puts the focus on user experience, usability

EXECUTIVE PROFILE

Shawn Slack is the Director of Information Technology and Chief Information Officer for the City of Mississauga. Early in his career with the City of Mississauga, he led the vision and plan to provide all City services online. He also oversaw the implementation of the City's first Customer Service Strategy which transformed customer service across all channels including internet, phone and counters as well as the implementation of 311. Currently, Shawn is engaged in many great initiatives and projects guided by a new IT Master Plan endorsed by Council in 2015 which focusses on Fostering Open and Accessible Government, Enabling Decisions through Research & Analytics, Creating a Connected & Engaged Workplace and Improving Services through Innovation & Partnerships.

and find-ability ensuring that the customer and the customer experience meets today's digital standards.

In 2015, City IT staff initiated a review of cloud services to better understand the various applications of cloud technologies, related operational impacts, security, privacy, and finally cost implications. Test environments were established for Amazon Web Services (AWS), Microsoft Azure and Google. On conclusion of the review, City staff were better informed on adoption of cloud. The introduction of cloud technologies such as Software as a Service (SaaS) has enabled and advanced the City's mobile workforce providing real time access to information in the field resulting in a more efficient and informed workforce.

As cloud and other data driven technologies are introduced it is extremely important to assess the purpose and intent behind the data collection, while respecting privacy and transparency to ensure that

CLICK TO WATCH: 'CITY OF MISSISSAUGA'S NEW BRAND'

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sensitive data is managed and secure. "It is a risk to get caught up in the excitement of digital and forget our role as government leaders; we have really got to pay attention to our role. This is why privacy and transparency are so important. We are encouraged by some examples we have seen in other cities where open engagement on the adoption of technology and the collection of data has built trust with residents. By engaging with communities, it becomes easier to implement, adopt, or even experiment with these types of technologies," states Slack.

Adopting mobile and cloud technologies has allowed the City of Mississauga to champion being a paperless operation, starting with the City Leadership Team who have used secure cloud storage and mobile technology to enable paperless meetings and collaboration through video conferencing to attend meetings and share presentation materials. This has significantly reduced the use of paper and the need to drive to meetings; a small but important environmental statement. Cloud technologies and mobile access to applications have also created access to digital resources

for staff in the City who previously would have not been able to reach such materials. "The cloud allowed us to quickly and effectively provide access to operational data and employee information to a very large portion of our workforce that typically does not have a computer such as transit operators and works operations staff, and that's been very well received," notes Slack.

Slack is proud to illustrate how the City has become connected and engaged Smart City. "We have always invested in technology to improve services, and with Smart City becoming a global phenomenon, we have been able to benchmark and learn from other great cities around the world." As defined by the British Standards Institute, a smart city is "the effective integration of physical, digital and human systems in the built environment to deliver a sustainable, prosperous and inclusive future", and the City of Mississauga highlights this in its commitment to digital transformation.

However, the significant journey is not over yet and despite reaching Smart City status, Mississauga will continue to evolve. "The City is completing a Smart City Master Plan which is engaging industry and the public in a conversation about technology and the community so that the City can align Smart City technologies with the Strategic Plan initiatives and input through this engagement. An important aspect of Smart City is paying attention to new and emerging technologies, and assessing them early on to understand if the technology is
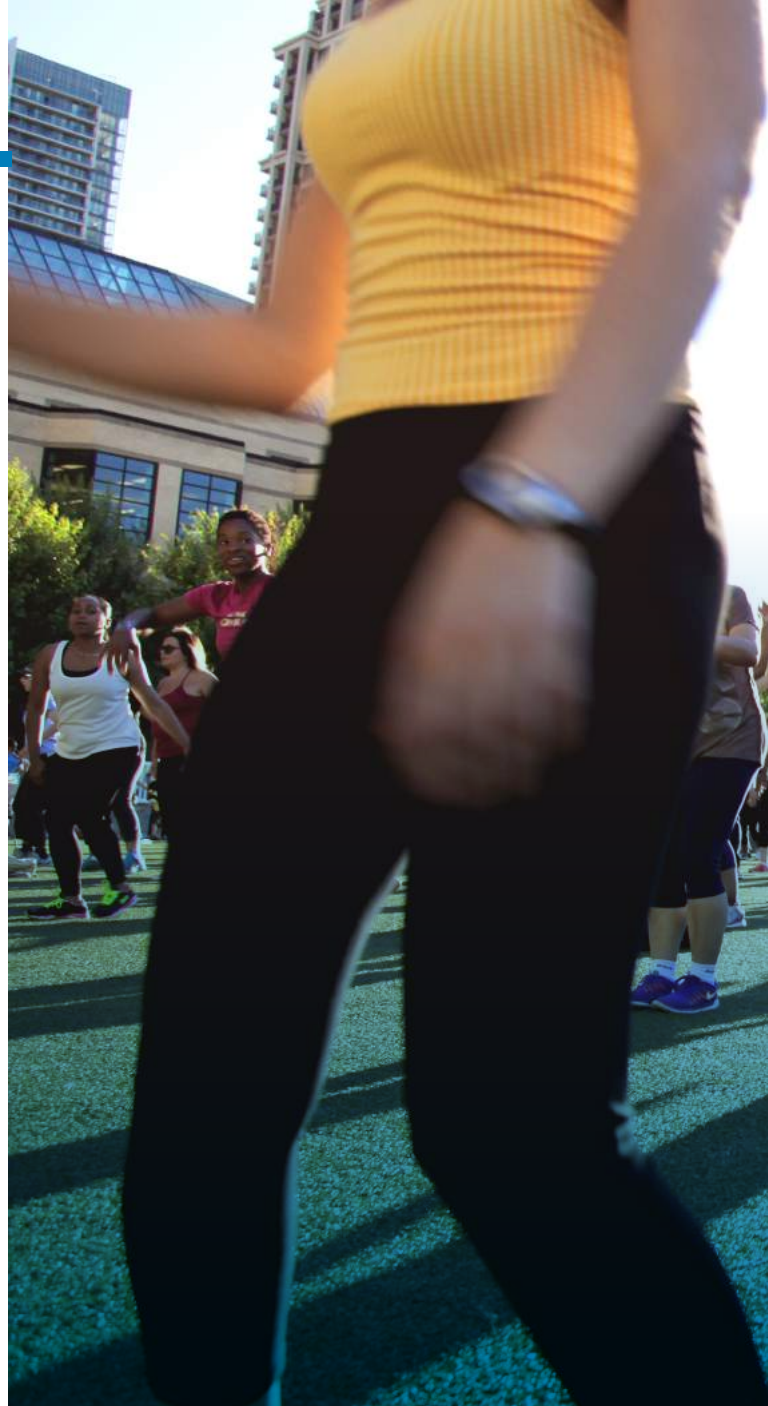
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"WE ARE ENABLING A CON- NECTED AND ENGAGED CITY"

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—

Shawn Slack,
CIO, City of Mississauga

mature enough to apply to City services and equally important to understand if we are ready for the adoption of the new technology," Slack continues.

The concept of exploration can be an effective way to try new technologies, such as artificial intelligence (AI) or augmented reality (AR), and understand the capabilities, risks and how they can be applied to services. In order to evolve,

the team must look ahead for future trends, technologies and opportunities. For Slack, digital transformation – something at the core of developing a Smart City – is about foresight. "It is about assessing which capabilities are maturing and ready for implementation. For us, the transformation of services is important, to improve customer outcomes and make the city more efficient.

Another important dynamic is collaboration and partnerships focusing on shared innovation and exploration of new technologies, which will help in understanding the implications of new technology and also build stronger relationships with industry and community agencies," claims Slack.

Collaboration and co-creation are key to Smart City development, according to the CIO. For example, working with cellular provider Rogers, the City been able to connect its fleet of vehicles and mobile workforce, thus enabling real time data and decision support opportunities. "Today we have connected over 600 buses that are collecting information

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regarding the bus operations and route information making real time bus location a service directly available to the public. Information on the bus operation informs the timing of maintenance, warranty and mileage routines so that buses can be taken out of service at optimal times and minimizes service interruption. We are able to have real-time bus information, none of which would be possible without the cellular infrastructure provided by Rogers."

In addition to connected buses the City has also connected 700 city vehicles comprised of fire trucks, works and parks operations vehicles, snow operations vehicles and facility maintenance vehicles providing real time location-based information. The connected snow fleet provides real time snow plow information for the public along with the expected level of service for snow clearing. The onboard sensors also track when the snow blades are active, when and where salt or sand is applied, and the rate at which it is applied. This information is invaluable to the operations of a large and complex service during a snow storm. The City recently implemented an Advanced Traffic Management System (ATMS) which required the connection of over 700 traffic intersections. While the City was able to connect two thirds

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of the intersections on the City's fiber and Wi-Fi network the remaining intersections were connected by the Rogers cellular network providing reliable real time data to the ATMS. Rogers is also working with the City on exploring 5G technologies and planning a pilot project focused on how 5G will work within the built form to provide a higher quality of connectivity for residents and businesses, while also considering how the technology will look within the streetscape.

Cellular network and mobile technology are also enabling a mobile strategy for the City's office space. An initiative called Our Future Corporation (OFC) is transforming the way of work, the use of technology, space, and collaboration. A pilot project was initiated on the fifth floor at City Hall transforming the space into individual workspaces and collaboration units so that staff had a choice as to where to sit and work. Over 90% of the staff on the floor are mobile, having no defined desk or desk phone, and the necessary mobile technology to be connected anywhere, anytime. All the staff are equipped with mobile technology that automatically connects through a secure VPN connection on the wireless infrastructure. "If I'm not near the wireless infrastructure, then it connects to my Rogers cellular hotspot on my phone. It is so seamless; you never have to think about it," Slack explains.

CLICK TO WATCH: 'TECH AND THE CITY'

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The City of Mississauga has had the foresight to design and build its own high-speed fiber network, known as the Public Sector Network (PSN), in partnership with three other municipalities. This has resulted in the largest publically owned and operated fiber network in Canada. The investment, which started over 20 years ago, enables a city-wide fiber network and Wi-Fi network that supports all voice and data needs for the City and provides wireless connectivity to the public for many City services. This fiber infrastructure connects all of the buildings for all City Services, becoming the foundation for the City's IoT network of connected sensors. Through a partnership

with Cisco Canada the City has been able to build out an extensive Wi-Fi network in all City libraries, community centers, arenas, marinas and many outdoor locations such parks, Celebration Square, and four small business areas where district Wi-Fi has been provided.

Being a connected and engaged City is an important objective and in 2018 over 8mn hours of free public Wi-Fi was used across the City. Providing this access in so many locations across the City is one way of tackling the digital divide and providing opportunity for those who might not otherwise have had this access. In May of 2017, the City of Mississauga was the first City in Canada to become a virtual campus. The City partnered with CANARIE and Eduroam to provide a gateway to over 70,000 post-secondary institutions from around the world for visiting students and exchange students who access its Wi-Fi network. In the first year there were over 1mn international students using the service, with over half of them from Europe. "There's a term out there that Wi-Fi is the new oxygen. This really demonstrates that providing connectivity is a city service. So, the digital divide is something that we really pay attention to," states Slack.

Mississauga has certainly demonstrated that it is a Smart City leader in Canada and beyond, but the journey is not over yet; in fact,

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"THE CLOUD ALLOWED US TO QUICKLY AND EFFECTIVELY PROVIDE ACCESS TO OPERATIONAL DATA AND EMPLOYEE INFORMATION"

—

Shawn Slack,
CIO, City of Mississauga

there is a great deal more to do. The Smart City Master Plan will provide a framework and vision for the future. Having a Smart City lens integrated into its planning process will inform how the City's services can effectively adopt new technologies, such as artificial intelligence, augmented reality, and major shifts in industry that affect the built environment like autonomous vehicles, drones and 5G networks. Collaboration and partnerships will continue to be important in the future as exploration and experimentation of new technologies de-risk the adoption of emerging technologies while creating unique opportunities to engage the community in an open way.

A Smart City is one that inspires possibilities and the City of Mississauga has established a strong commitment through its Strategic Plan, Master Plans and Smart City initiatives. "I am excited for the future," says Slack. "We are enabling a connected and engaged City. We are actively addressing the digital divide and providing opportunity in a City with a renowned welcoming world culture!" ■

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creation
T E C H N O L O G I E S

Collaboration across the digital supply chain

WRITTEN BY
CATHERINE STURMAN
PRODUCED BY
ARRON RAMPLING

Creation Technologies has digitally overhauled its supply chain capabilities and sought to upskill its talented workforce to become future supply chain leaders

Globalization and digitization are fully disupting the supply chain industry, where connectivity and demands for rapid, efficient solutions are driving continuous change. From utilizing predictive analytics to unlock greater value from large volumes of data, to the implementation of automation, robotics, Internet of Things (IoT) and cloud computing, the industry is undergoing a seismic shift. In order to garner further insights in remaining agile and to guarantee customer trust, industry leaders have sought to reshape traditional supply chain models.

Providing exceptional end-to-end solutions for original equipment manufacturers (OEMs) worldwide, Creation Technologies is no stranger in delivering bespoke solutions for those who in need of a responsive design and manufacturing partner. Amidst an evolving technology landscape, the company has partnered with more than 200 OEMs worldwide since its inception, accelerating time-to-market, reducing customer operating costs, while sharing innovative ideas

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In today's non-stop high-stakes world of complex global commerce, companies thrive or fail by the responsiveness of their supply chains. Commitments must be met, margins maintained and market share fiercely protected. Responding to customers with the correct answer at the right time can be a big challenge when shifting trade regulations, devastating events and unexpected market demands threaten supply chain stability.

Creation Technologies, a global provider of transformative end-to-end solutions for OEMs, understands how critical fast and accurate responses are for customers. It's why the company chose the Kinaxis® RapidResponse® platform.

Leveraging RapidResponse's supply chain planning applications, concurrent planning technique and what-if scenarios, Creation Technologies is highly responsive and agile in the face of any supply chain challenges that arise. Concurrent planning delivers a supply chain that's completely connected and synchronized. The company also has increased visibility and flexibility to yield supply chain opportunities, and is able to leverage economies of scale in procurement while reducing landed cost.

"With RapidResponse, we can predict, monitor and respond to supply chain challenges proactively from a single concurrent point of view," said Ana Cantu, Executive Vice President of Supply Chain, Creation Technologies. "This enables us to mitigate risk, control volatility, shave cost and increase value for our customers every day. And that's what we're all about – building tangible value for our OEM customers."

Making the right planning decisions with confidence

From demand planning to capacity planning to supply balancing and more – all powered by empirical data and predictive analytics – RapidResponse's cross-functional collaborative applications help Creation Technologies enhance process planning, minimize constraints and enhance supply chain performance.

"One of our biggest challenges is the complexity of our business. We serve higher mix, low to mid-volume markets, which drives very high mix in our supply chain"

—

Ana Cantu,
Executive Vice President of Supply Chain

which can ultimately lead to increased annual revenue.

Leading the company's USD 500mn+ global supply chain function across Canada, Mexico, China and the United States, Executive Vice President of Supply Chain, Ana Cantu admits that she remains fiercely passionate about "not only adding value to the businesses, but to the individuals that are the heart of the partnerships between Creation Technologies and its customers." Stepping into her first leadership

role aged 25, Cantu has been a significant force in driving the digital transformation of Creation's supply chain, where over the last few years, high growth market segments, such as automotive, medical and Internet-of-Things (IoT) products have caused a number of supply constraints across all markets. This, combined with supplier consolidation in several component markets such as ceramic capacitors, has created a complex dynamic, where such constrained supply has led to steady price increases previously unheard of.

With nine manufacturing facilities, two design centers, a rapid prototyping center and a global materials sourcing group at the business, Cantu has sought to overhaul its end-to-end product supply and demand planning capabilities, as well as its distribution and logistics divisions for all business units. Taking a deep dive into its business model and the number of suppliers at the business, Creation has retained the suppliers

with which it can develop vital synergies and build an open dialogue and environment to bring forth an innovative business approach which is not only mutually supportive, but more effective in meeting customer needs.

"One of our biggest challenges is the complexity of our business. We serve higher mix, low to mid-volume markets, which drives very high mix in our supply chain," she explains. We have nearly 100,000 active component part numbers and ship over 15,000 finished goods from all nine sites. Developing tools and processes that standardize practices and consolidate activities where synergies can be realized are a critical piece of our supply chain transformation journey."

Building a deep understanding of its customers' needs and providing highly responsive tailored solutions, Creation is the optimal partner for the high complexity, low to mid volume products of mid-sized and smaller OEMs with well-established market positions. B2B data interfaces with suppliers and customers are increasingly common for Creation, where it has looked to unlock the opportuni-

CLICK TO WATCH: 'CREATION TECHNOLOGIES: EMS & INNOVATION LEADER, THE FUTURE IS BRIGHT'

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ties available across an increasingly agile supply chain.

"During 2018, Creation saw growth with customers across all market sectors. Technologies, such as IoT are driving growth, along with a strong economy. Creation is particularly strong in the medical and industrial market, which are both experiencing strong growth," she adds. Nonetheless, as global competition continues to rise, it is clear that technology alone cannot be the sole area of investment to ensure success across the supply chain. Faced with opportunities to collaborate with

COMPANY FACTS

- The US Bureau of Labor Statistics has reported that jobs in logistics in particular are estimated to grow by 26% between 2010 and 2020

- Globalization and digitisation are fully disrupting the supply chain industry, where connectivity and demands for rapid, efficient solutions are driving continuous change

- Amidst an evolving technology landscape, the company has collaborated with more than 200 OEMs worldwide

- Cantu has sought to overhaul its end-to-end product supply and demand planning capabilities, as well as its distribution and logistics divisions for all business units

- Creation has therefore turned its attentions towards high complexity, low to mid volume products for mid-sized and smaller OEM's with well-established market positions

"Technologies, such as IoT, are driving growth. Creation is particularly strong in the medical and industrial market, which are both experiencing strong growth"

—

Ana Cantu,
Executive Vice President of Supply Chain

other market leaders in order to build on its competitive edge, Creation has partnered with Kinaxis and deployed the company's Rapid Response software to improve its responsiveness and ability to remain nimble as consumer demands evolve.

"Rapid Response is a best-in-class and well-established tool for this purpose. After reviewing several options, Rapid Response was the clear choice for Creation," explains Cantu. "More than anything, Rapid Response allows us to be much more responsive. Analysis that used to take days now takes minutes. We can quickly evaluate changes in demand and associated constraints, allowing us to make decisions much faster."
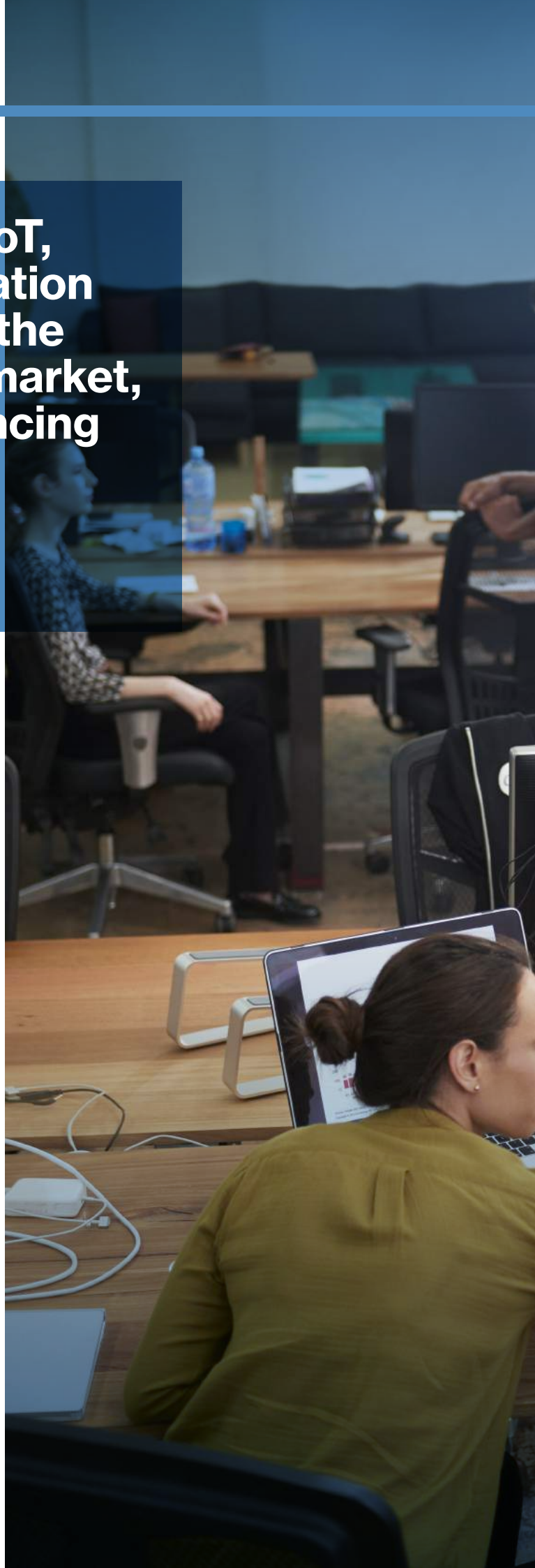
Presently in its implementation phase, three out of Creation's nine business units have utilized the software and witnessed significant improvements in responding to customer demands, as well as identifying supplier constraints. This has also filtered into its ability to share essential findings with customers and propose new solutions which would best fit the specific business situation. Further, Creation's supplier portal increasingly allows the firm to consolidate all its procurement activities across nine sites into a single location, leading to complete end-to-end visibility and strong operational efficiency.

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"Communication with our suppliers is now automated, eliminating the need for our procurement team to manually generate material requirements planning (MRP) signals to our suppliers," adds Cantu. "We are in the early stages of implementing the software, but the signs are good and we expect to achieve the savings outlined in our original business plan. The capabilities of B2B tools will also continue to expand, allowing supplier and customer ERP systems to interface directly, with fewer layers of human interpretation and action. Creation will continue to stay on the leading edge of these developments."

Although supply chain management remains a vital component to any successful organisation, global supply chain labor shortages will continue to

"Rapid Response allows us to be much more responsive. We can quickly evaluate changes in demand and associated constraints, allowing us to make decisions much faster"

—

Ana Cantu,
Executive Vice President of Supply Chain

feed into increased demands for talent worldwide. The US Bureau of Labor Statistics has reported that jobs in logistics in particular are estimated to grow by 26% between 2010 and 2020. A report by DHL, 'The Supply Chain Talent Shortage: From Gap to Crisis' has also found that demand for supply chain professionals exceeds supply by a ratio of six to one. Not only are increased numbers retiring from the workforce, workers are now asked to have a varied skillset as a result of increased digitization and strategic thinking.

"The ideal employee has both tactical/operational expertise and professional competencies such as analytical skills, but 58% of companies say this combination is hard to find. Additionally, tomorrow's talent must excel at leadership, strategic thinking, innovation and high-level analytic and technological capabilities," the report explains.

Passionate about upskilling the workforce to counteract these challenges, Creation Technologies succeeds in attracting and developing its workforce, due to its vision of making its employees their customers trusted partner and investing in its team members, moulding them into professional supply chain leaders of the future. "We are a growing company with great opportunities for our people. We have a strong purpose, which is to enrich lives by sustaining strong profitable growth in an enjoyable and caring culture. I enjoy our fast-paced environment with its many challenges and the opportunity to constantly learning new things," notes Cantu. "However,

"The capabilities of B2B tools will also continue to expand, allowing supplier and customer ERP systems to interface directly, with fewer layers of human interpretation and action"

—

Ana Cantu,
Executive Vice President of Supply Chain

what I enjoy most is being able to spend time with my team to develop and coach them, as well as spending time with customers, consulting them on their needs. Ultimately, I suppose I enjoy helping those around me to succeed."

Creation partners with OEMs to deliver and scale the results that matter most to them – across the entire product lifecycle. To achieve such impact, Creation promotes technology leadership, cross-functional collaboration, and a responsive supply chain network founded on a robust digital infrastructure. Working hand in hand with its customers Creation provides tailored supply chain solutions to bolster their market competitiveness. Creation will continue to invest in its workforce and deploy innovative digital tools; continue to grow, continue to lead, and deliver the high level of performance demanded by the evolving needs of its clients. ■

creation
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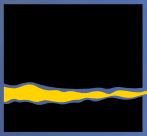
BANRO
CORPORATION

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A journey of transformation through rehabilitation

WRITTEN BY
DALE BENTON

PRODUCED BY
RICHARD DEANE

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Brett Richards, Chairman and CEO of Banro Corporation, talks through the challenge of re-establishing the company as a leader following bankruptcy and distress

For more than 20 years, Banro Corporation Limited had established a firm foothold as one of Africa's premier gold mining companies. Situated in the Democratic Republic of the Congo (DRC), Banro has the largest African land package for an operating gold mining company and has the only large-scale industrialised mining operation in South Kivu and Maniema. With more than 8Moz of Global Resources in the DRC it was once the largest gold mining company in the country from 2006 to 2014. Alongside its two operating mines and a number of mining licences, Banro also has 17 additional exploration licences and a number of early stage exploration projects. Banro's story seemed to go from success to success, but in 2017 the company suffered from a combination of security and community issues and went into financial distress. By November

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2017, it had gone through a CCAA (Canada) Bankruptcy proceeding.

Fast forward to early 2018 and the company emerged from its bankruptcy process with a financial restructuring and Banro embarked on a major rehabilitation project to re-establish the company as a premier central Africa gold mining company. Having worked in the global mining industry for over 20 years, with significant roles at Kinross Gold and a founding member of Katanga Mining,

Brett Richards, Chairman and Chief Executive Officer, is best placed to spearhead this transformation journey. "I've worked in Africa for the past eight years or so with private equity firms looking at the rehabilitation of assets to deliver value. Banro had and still has a number of operating challenges and has been under capitalised due to the bankruptcy," he says. "It's also one of the toughest jurisdictions in the world and so I've had to draw upon all of my

skills, whether it's geopolitical or socio-economic, to overcome the challenges that we are facing."

Banro's transformation is one of two parts. First, Richards and the company will look to recapitalise the company over the next year in order to reposition the company to where its history and land package should place its cost structure and operating environment amongst its peers. This first phase of rehabilitation is one of trying to understand a number of legacy deficiencies in order to take the necessary steps in order to stabilise the business. When Richards entered the business, Banro was faced with fresh security challenges that he believes "paralysed" the business temporarily. Step one of the journey was to re-establish community relationships. "It's our obligation as a company to provide a safe workplace for our people and a safe workplace for our whole community to live in," he says. "That's achieved

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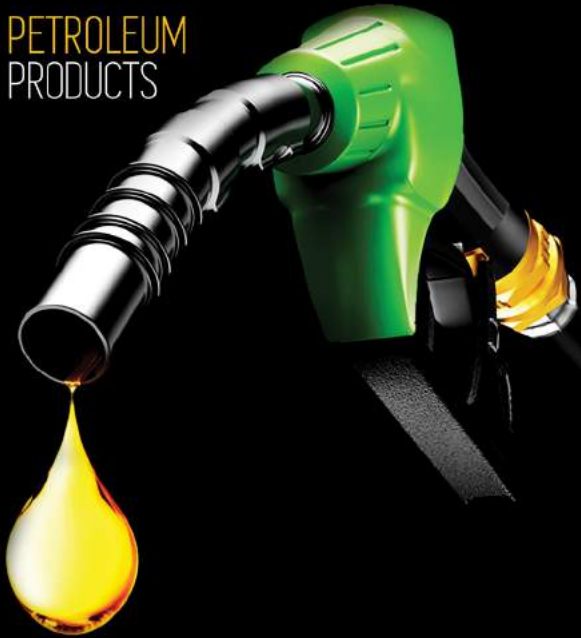
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> "Our commitment to customer satisfaction coupled with the high quality of our service delivery has allowed us to become one of the leading suppliers in the DRC."

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through a security discipline whereby you have to proactively engage with the communities and the local authorities and government to mitigate those potential situations."

"Communication in our Namoya and Twangiza regions, all the way down to the traditional leaders, to the various key people in the provinces and communities, all the way up to our security partners, is vital to establishing the platform of a safe environment."

Richards points to a breakdown in trust in the run up to the bankruptcy and as the company began to wind down, the communities could no longer see the benefit of having Banro operating in the area again. "We had to go right back to the basics to rebuild all of that," he says. "I think we've really done a fantastic job on achieving that."

The results speak for themselves. Banro has now established a platform that engages all parts of the stakeholder ecosystem that considers safety, security and community engagement perspectives in order to operate successfully and regrow the company in the right direction. These "boilerplate" problems have now been addressed

"It's our obligation as a company to provide a safe workplace for our people and a safe workplace for our whole community to live in"

—

Brett Richards,
Chairman and CEO of Banro Corporation

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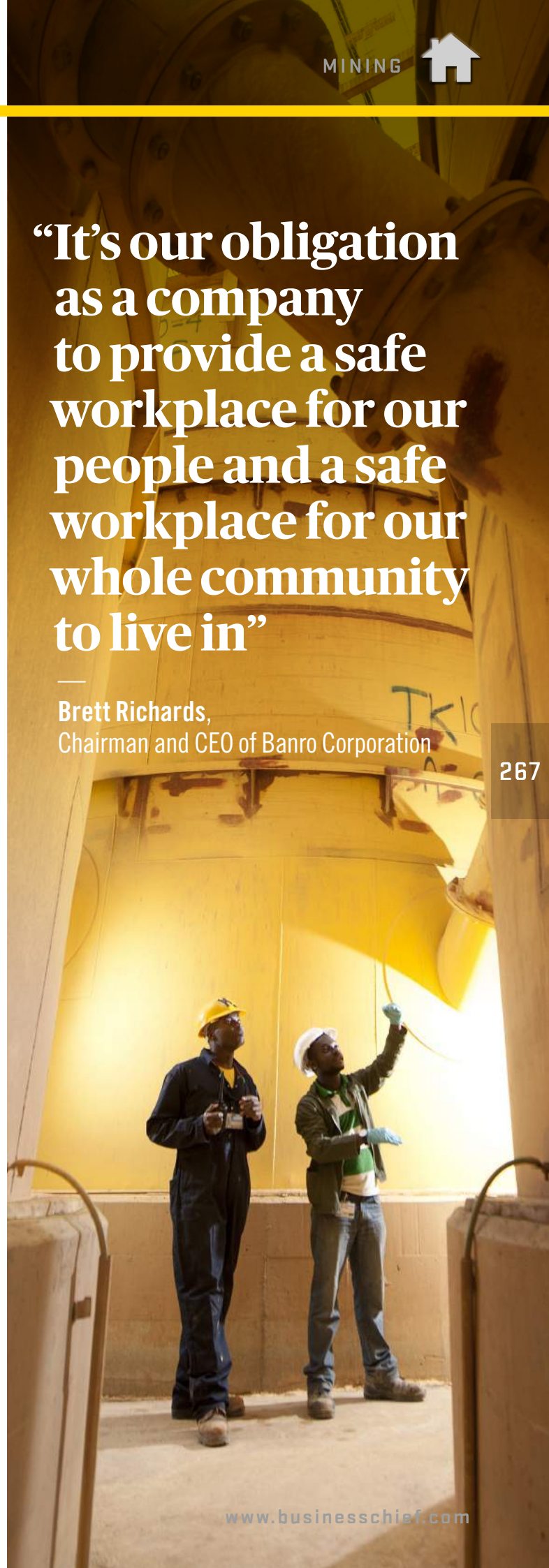
and allow the company to look a little deeper at the financial and technical deficiencies that also played a key role in the bankruptcy. Richards says that now the company has identified what it's going to take to rehabilitate the company, the task is now to execute on the various technical and operational challenges the company needs to make it competitive again. "I think the victories we've had over the last year addressed those challenges and now we have given ourselves the platform to be successful. We've identified the pathway to success," he says. "Now it's time to act and find the capital to move forward and start the next stage of this journey."

The next stage is the size and scale of the opportunity Banro has at its disposal through its large land package. The long-term plan is to grow the company beyond its two operating mines and key to unlocking this is through attracting investors. With all that Banro has gone through, the level of risk associated with investing in the company is understandably high, but Richards believes that the successes it has achieved to date have already begun to change that conversation. "It says

to them that Banro have done it and they've been successful in doing it while operating in the most challenging jurisdiction in the most challenging country," he says. "But it's not just those challenges. The investment appetite will come from the size and scale of what Banro has in the ground. It's not just what we have now, it's what we have over the next five years with our exploration package and our goals. The potential we have in Africa is second to none."

As a company that's been operating successfully for more than 20 years, Banro has amassed a strong portfolio of suppliers

"I think the victories we've had over the last year represent those challenges and now we have given ourselves the platform to be successful. We've identified the pathway to success"

—

Brett Richards,
Chairman and CEO of Banro Corporation

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and partners that have been integral to establishing its position on the mining map. When the company hit financial distress, these suppliers could have been forgiving for parting ways and protecting their own investments, but Banro has been blessed with extremely loyal partners that continue to support the business through thick and thin. "They know it's difficult but one thing that I said when I came in was, 'we are going to pay you, we are not going to run away from our obligations; we will work this out and establish a plan to move forward together'," says Richards. "I can't speak highly enough about the fact that Banro is still operating today is probably because of our suppliers, and because they allowed us the liberty to work through some challenging times at their expense. I understand that, and I get it and I appreciate it, and I tell them that every chance I get."

One such partner has been Engen, one of Africa's leading petroleum oil providers and Banro's primary fuel supplier since the company was founded. Richards believes that Engen, as with

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"I can't speak highly enough about the fact that Banro is still operating today is probably because of our suppliers, and because they allowed us the liberty to work through some challenging times at their expense"

Brett Richards,
Chairman and CEO of Banro Corporation

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all of the company's suppliers, have continuously worked with Banro to make the "elasticity in the business work".

"They have been stalwarts in working with us," he says. "It's a testament to their values. They are in this with Banro as a partner and they're in with us for the long run."

As Banro looks to the future, it can do so through a sound commitment to getting the basics right from operational level right through the management and stakeholder engagement. The future is bright for Banro and the company has identified key targets over the next two years that will firmly reposition it as the premier African gold mining company. ◼
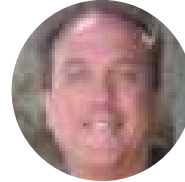
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